South African Maritime Safety Authority

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Development of a Safe System of Work for Container Top Work

TO MASTERS OF ALL SHIPS IN SOUTH AFRICAN PORTS, SHIP OPERATORS, OWNERS, MANAGERS AND SHIP'S AGENTS, STEVEDORES, LABOUR BROKERS, TERMINAL OPERATORS, PORT AUTHORITY AND PRINCIPAL OFFICERS

Summary

This Marine Notices serves to inform the maritime industry of:

1. The dangers of working on container tops
2. The recommendation to develop and implement a safe system of work for safely accessing and working on container top
3. Introduces ICHCA International Limited, Safety Briefing Pamphlet, 34: Container Top Work
4. Annex 1: Methods of safely accessing container tops
5. Annex 2: Methods of working safely whilst on container tops

1. Dangers of Container Top Work

1 Stevedores may need to access container tops for numerous reasons, including:

- To place or remove twistlocks and or other securing equipment
- Hook and unhook lifting gear
- Position containers or cargo
- Release jammed twistlocks

Whilst accessing and working on container tops there have been several accidents which have resulted in fatalities and serious injuries to stevedores. Examples of these are:

1. Falling from ladders whilst accessing a container stow
2. Being struck by swinging container spreaders or lifting gear
3. Falling off a container stow whilst hooking or unhooking lifting gear
4. Falling off a container whilst climbing from one container to another or jumping across walk ways.
5. Being struck by or crushed by suspended containers

2. The use of semi-automatic twistlocks reduce the necessity of stevedores having to work on containers tops, however not all vessels carry them.

Vessel design can reduce the necessity for stevedores to work on container stows e.g. deck cell guides. It is important to note that from 2015, all new container ships have to be designed in such a way as to eliminate the necessity for personnel to go onto container tops. In the interim, ship owners and terminals operators need to ensure that ships built prior to 2015 take into account MSC/Circ 886 and Annex 14 of the IMO Code of Safe Practice for Cargo stowage and Securing in order to eliminate or minimise the need for personnel to work on container tops.

3. The necessity for stevedores to work on container tops is still a reality and ensuring their safety is a challenge as fall prevention equipment can impede movement and finding a suitable anchorage point is often difficult.

   Given the frequency and nature of accidents, SAMSA deems container top work onboard ships to be extremely hazardous and strongly recommends that prior to any work being conducted on container tops, a safe system of work is developed and agreed to by all parties involved in this process,.

2. Safe System of Work

The following should be considered for inclusion in the safe system of work for accessing and working on containers tops aboard ships:

1. Supervision

Container top work should only be conducted under the supervision of a competent person who is aware of the hazards and precautions.

2. Training

1. Stevedores and or terminal operator personnel must be trained on the safe system of work with respect to stevedores accessing and working on container tops.
2. Crane Operators responsible for transporting stevedores in safety cages to container tops must be competent.

3. Medical Fitness

1. Stevedores should be medically fit to work at heights.
2. Crane Operators responsible for transporting stevedores in safety cages to containers tops must also be medically fit.

4. Personal Protective Equipment (PPE)

1. Mandatory personal protective equipment is to be worn: Reflective safety vest, non-slip safety shoes, overalls, gloves and a hard hat.
2. Fall prevention and fall arrest equipment must be regularly inspected for defects.

5. Equipment

1. The construction of safety cages, platforms on the cranes headblocks and gondolas must be certified by the Department of Labour.
2. Safety cages, platforms on the cranes headblocks and gondolas must be inspected for defects at least every quarter and same recorded.
3. Ships lifting appliances and shore cranes must be tested and inspected according to the applicable regulatory requirements.

6. Transportation of Stevedores in Safety Cages / Platforms / Gondolas

1. When the crane is being used to transport stevedores the maximum speed of hoist and trolley drives should be limited to 0.76 m per second. The movement should be smooth.
2. All parts of the body, particularly the hands and head must be kept inside the safety cage, platform or gondola at all times.

7. Lighting

Adequate illumination should be provided if work on container tops is necessary during the hours of darkness.

8. Adverse Weather Conditions

The safe system of work for container top work should clearly identify the weather conditions under which all container handling operations should discontinue e.g. high winds.

9. Communication

1. When stevedores are working on container tops, in conjunction with a crane, it is important that a clear communication system is established with the Crane Operator. There should be one person in charge of each operation on container tops and the Crane Operator is to follow instructions from that person only.
2. Communication with the Crane Operator can be by radio, hand signals or by a third party such as a supervisor.
3. If handheld radios are used, caution is to be exercised in allocating channels and the parties are to identify who they are and who they are talking to (call signs), to ensure that an instruction by one Crane Operator is not acted upon by another.

10. Flat Racks

1. Difficulties may also occur when access is necessary to block stows or flat racks, open top, over height, soft top or tank containers which do not have rigid roofs. Ship planners are advised to arrange for such containers to be stowed in alternate rows with conventional closed containers so that there is safe access to both sides of these types of containers.
2. The use of over height lifting frames can eliminate the need to manually connect lifting gear to containers with over height cargo.

11. Jammed Twistlocks

The freeing of jammed container securing devices are operations that need to be undertaken by experienced persons who are aware of the potential dangers of such operations.

12. Ships Gear

When ship's gear is used to handle containers, where practicable, automatic spreaders should be used. This will eliminate the necessity for stevedores to work on container tops to hook or unhook lifting gear.

13. Means of Accessing Container Tops

Methods of accessing container tops are listed in the Annex 1. The preferred means of accessing container tops and the risks and precautions attached to this should be included in the safe system of work.

14. Work on Top of Containers

Methods of working safely on container tops are listed in the Annex 2. The preferred means of safe container top work and the risks and precautions attached to this should be included in the safe system of work.

15. Emergencies

Should a stevedore fall whilst using a fall arrest system, an effective means of rescuing him / her should be in place to prevent suspension trauma.

3. ICHCA

ICHCA International Limited is an independent, non-political, international membership organisation dedicated to the promotion of safety and efficiency in the handling and movement of goods by all modes of transport.

ICHCA's International Safety Panel of experts, have developed a publication on container top work which provides a guideline on how this work can be conducted in a safe manner. The full name of the publication is as follows:

ICHCA International Limited
International Safety Panel
Safety Briefing Pamphlet Series 34
Container Top Work

Many of the recommendations included in this Marine Notice are extracted from this publication and it is strongly recommended that the entire illustrated document is obtained from ICHCA International Limited. Their website address is www.ichca.com.

4. Annex 1 - Means of Accessing Container Tops

When it is necessary to access container tops aboard ships, it should be by means of:

1. A safety cage whenever this is practicable.
2. A suitably protected platform on the headblock of a crane or on a spreader.
3. A gondola whenever this is practicable.
4. Ladders should only be used for access to container tops aboard ships when there is no other means of access available.

1. Safety Cages

1. There are various designs of safety cages used to access container tops.
2. Safety cages should have a secondary means of securing the cage onto the spreader or crane hook when the cage is in use.
3. The design of the secondary means of attachment should be simple to secure.

2. Platforms on Headblocks or Spreaders

When it is not practicable to use a personnel cage, a platform may be provided on the headblock or spreader of a crane to lift stevedores onto container tops.

3. Gondolas

1. Gondolas are smaller safety cages that are intended to be used between or alongside container stows.
2. The use of gondolas, may avoid the need for stevedores to go onto container tops and enable lashing and other operations to be carried out in a safe manner.
3. Gondolas should preferably be rigidly attached to spreaders in order to minimise swaying and associated trapping hazards.
4. Gondolas should have a secondary means of securing the cage onto the spreader.

4. Portable Ladders

1. As already mentioned, portable ladders should only be used to access container tops if there is no other safer means of access available.
2. Portable ladders should only be used to access to the tops of containers two high.
3. Climbing the doors of containers is to be avoided.
4. The requirements stated in the Occupational Health and Safety Act, 1993, General Safety Regulations, 13A Ladders must be complied with.
5. Portable ladders should be used with a height to base ratio of 4:1.
6. Ladders should extend about 1 metre above the top of the container.
7. Portable ladders that are sound are to be used.
8. Precautions should be taken to prevent the ladder from slipping.

5. Annex 2 - Work on Top of Containers

1. Methods for conducting work on container tops can be carried out from a suitably protected position such as a safety cage or gondola.

A. Work from Safety Cages

1. Work on container tops can be carried out from the safety cages or gondolas.
2. Work can be carried out directly from a safety cages that is placed on a container.
3. Work can be carried out from cages suspended a short height above the top of a stow and moved across it
4. Access to twistlocks or other container securing equipment on the top of a stow can be safely obtained through cut-outs or hinged flaps in the corners or ends of the floor of a safety cage.
5. Work can be carried out from cages or gondolas suspended between or to the side of stows.

B. Work from Landed Safety Cages

1. Work on container tops can be carried out using the safety cage, which is lowered onto the top of the stow and for stevedores protected by appropriate fall prevention or fall protection system to work outside it. This allows the crane to work elsewhere while work is being carried out on container tops;
2. The crane must not work in the same row outboard of those on the container tops and should be separated from them by the width of at least one container.

C. Work Secured to Suspended Equipment

Work on container tops can be carried out using an appropriate fall protection system secured to a suitable anchorage on safety cages, spreaders or headblocks that are suspended. These can be traversed across the stow from outboard towards the quay as the work is carried out.

2. Methods for conducting work on container tops can be done by working on top of the container itself, using fall prevention equipment

1. Work with Portable Personnel Securing Systems

A number of fall protection systems have been developed using portable anchorages that are inserted into corner castings of containers, e.g.;

A. Safety Line

The use of a safety line, secured between two fittings in two diagonally opposite corner castings on top of the container. Stevedores can secure themselves to the safety line by short lifelines. According to ICHCA this method has proved to be unsuccessful as it is cumbersome and the safety line was felt to be a tripping hazard. A similar method is currently being used in the Port of Cape Town, whereby the fall arrestor is connected to the safety line. However, whilst rigging the safety line, stevedores are unprotected from falling.

B. The "Eddie"

The "Eddie", is a portable adaptor bracket and fall arrest block which can be inserted in a corner casting and stevedores can connect fall protection equipment to it.

2. Fall Protection Systems

A fall protection system may be one of the following:

1. Fall Prevention Equipment

Fall prevention equipment, is equipment used to prevent persons from falling from an elevated position and includes personal equipment, body harness, body belts, lanyards, lifelines or physical equipment, guardrails, screens, barricades anchorages or similar equipment..

2. Fall Arrest System

1. Fall arrest systems only allow a person to fall off the edge of a container for a short distance. It incorporates lifelines attached to inertia reels that lock in the event of a sudden jerk. The anchorage point for an inertia reel block should be carefully positioned in relation to the place where the person is to work.
2. The manufacturer's advice should always be taken into account when selecting an appropriate anchorage point for an inertia reel block, as some blocks are only suitable for use in connection with direct vertical loads.

Any queries in this regard must be addressed to Kirsty Goodwin

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