

*Adopted on 20 November 1973
Agenda item 10*

**RECOMMENDATION ON SAFE ACCESS TO AND WORKING IN LARGE TANKS,
AND RECOMMENDATION ON SAFE ACCESS TO AND WORKING IN
LARGE CARGO HOLDS OF BULK CARRIERS**

THE ASSEMBLY,

NOTING Article 16(i) of the Convention on the Inter-Governmental Maritime Consultative Organization concerning the functions of the Assembly,

RECOGNIZING that with the increasing size of tankers and bulk carriers and the associated increase in the dimensions of tanks and cargo holds of such vessels, there is a need for improving safe access to and working in those spaces,

HAVING CONSIDERED the Recommendation by the Maritime Safety Committee at its twenty-sixth session,

ADOPTS the Recommendation on Safe Access to and Working in Large Tanks and the Recommendation on Safe Access to and Working in Large Cargo Holds of Bulk Carriers, the texts of which are set out in the Annexes to this Resolution,

AGREES that in respect of Ore/Bulk/Oil Carriers or Ore/Oil Carriers, the more stringent requirements of the two Recommendations should apply, according to the nature of the carriage and the characteristics of the space in question,

INVITES all governments concerned to take steps to give effect to the Recommendations as soon as possible.

ANNEX I

RECOMMENDATION ON SAFE ACCESS TO AND WORKING IN LARGE TANKS

Safe access to cargo tanks can only be provided on the assumption that an adequate standard of tank cleaning and ventilation is achieved prior to entry.

Sludge accumulation on platforms and ladders should be kept to a minimum consistent with operational practice. Where appropriate, consideration should be given to preventing the build-up of sludge on access platforms and horizontal structures in general by suitable design of tank structure and positioning of washing machines. Sludge accumulation on the tank bottom should be controlled by an efficient tank draining system. No personnel should enter any cargo tank without a suitable breathing apparatus before the air in the tank has been tested by a responsible officer using an approved gas measuring device and found to be free of gas, containing sufficient oxygen and safe for inspection or work.

An adequate supply of fresh air is to be available for all men working within a tank having due regard to the nature and location of the work.

ACCESS TO TANKS

1. (a) Tanks, and subdivisions of tanks, having lengths of 35 metres and above should be fitted with at least two access hatchways and ladders, as far apart as practicable longitudinally.
- (b) Tanks less than 35 metres in length should be served by at least one access hatchway and ladder.
- (c) The dimensions of any access hatchway should be sufficient to allow a person wearing a self-contained breathing apparatus to ascend or descend the ladder without obstruction and also to provide a clear opening to facilitate the hoisting of an injured person from the bottom of the tank. In no case should the clear opening be less than 600 mm x 600 mm.

- (d) When a tank is subdivided by one or more wash bulkheads at least two hatchways should be fitted, and these hatchways should be so located that the associated ladders effectively serve all subdivisions of the tank.

ACCESS WITHIN TANKS

- 2. (a) Where one or more wash bulkheads are fitted in a tank they should be provided with openings not less than 600 mm x 800 mm and so arranged as to facilitate the access of persons wearing breathing apparatus or carrying a stretcher with a patient.
- (b) To provide ease of movement on the tank bottom throughout the length and breadth of the tank, a passageway should be fitted on the upper part of the bottom structure of each tank, or alternatively, manholes having at least the dimensions of 600 mm x 800 mm should be arranged in the floors at a height of not more than 600 mm from the bottom shell plating. Passageways in the tanks should have a minimum width of 600 mm considering the requirement for the possibility of carrying an unconscious person. Elevated passageways should be provided with guard rails over their entire length. Where guard rails are provided on one side only, footrails should be fitted on the opposite side. Shelves and platforms forming a part of the access to the tanks should be of non-skid construction where practicable and be fitted with guard rails. Guard rails should be fitted to bulkhead and side stringers when such structures are being used for recognized access.
- (c) Access to elevated passageways from the ship's bottom should be provided by means of easily accessible passageways, ladders or treads. Treads shall provide lateral support for the foot. Where rungs of ladders are fitted against a vertical surface, the distance from the centre of the rungs to that surface shall be at least 150 mm.
- (d) Where manholes are fitted access should be facilitated by means of steps and handgrips with platform landings on each side.
- (e) When the height of the bottom structure does not exceed 1.50 metres, the passageways required under paragraph 2(b) may be replaced by alternative arrangements having regard to the bottom structure and the requirement for ease of access of a person wearing a self-contained breathing apparatus or carrying a stretcher with a patient.
- (f) Guard rails should be 900 mm in height and consist of a rail and intermediate bar. These guard rails should be of substantial construction.

CONSTRUCTION OF LADDERS

- 3. (a) In general, the ladders should not be inclined at an angle exceeding 70°. The flights of ladders should not be more than 9 metres in actual length. Resting platforms of adequate dimensions should be provided.
- (b) Ladders and handrails should be constructed of steel of adequate strength and stiffness and securely attached to the tank structure by stays. The method of support and length of stay should be such that vibration is reduced to a practical minimum.
- (c) Provision should be made for maintaining the structural strength of the ladders and railings taking into account the corrosive effect of the cargo.
- (d) The width of ladders between stringers should not be less than 400 mm.
- (e) The treads should be equally spaced at a distance apart measured vertically not exceeding 300 mm. They should be formed of two square steel bars of not less than 22 mm by 22 mm in section fitted to form a horizontal step with the edges pointing upward, or of equivalent construction. The treads should be carried through the side stringers and attached thereto by double continuous welding.
- (f) All sloping ladders should be provided with handrails of substantial construction on both sides fitted at a convenient distance above the treads.

RESCUE AND EVACUATION ARRANGEMENTS

- 4. (a) For fast evacuation of injured personnel out of a tank, the following equipment should be provided:
 - (i) a portable davit with facility for manual operation of lightweight construction, suitable for securely positioning over tank access;

- (ii) a cage or suitable stretcher fitted with guidelines at the lower end.
- (b) All access openings to the tank should be opened up and the stretcher and hoist should be positioned so as to be readily available before the tank is entered.

ANNEX II

RECOMMENDATION ON SAFE ACCESS TO AND WORKING IN LARGE CARGO HOLDS OF BULK CARRIERS

Safe access to cargo holds can only be provided on the assumption that adequate ventilation of the holds is provided for the protection of personnel prior to their entry. Consideration should be given to preventing the accumulation of hazardous or noxious vapours in the holds by appropriate ventilation. No personnel should enter a hold that has been battened down for a long time or poorly ventilated before the oxygen content of the air in the hold has been observed by a responsible officer using an oxygen meter or equivalent device and found to be safe for inspection or work.

An adequate supply of fresh air is to be available for all men working within the cargo hold having due regard to the nature and location of the work.

ACCESS TO CARGO HOLDS

1. (a) If separate hatches are used as access to the ladders required by paragraph 2, each hatch should have a clear opening of at least 600 mm x 600 mm.
- (b) When the access to the cargo hold is arranged through the cargo hatch, the top of the ladder should be placed as close as possible to the hatch coaming.
- (c) Accesses and ladders should be so arranged that personnel equipped with self-contained breathing apparatus may readily enter and leave the cargo hold.
- (d) Access hatch coamings having a height greater than 900 mm should also have steps on the outside in conjunction with cargo hold ladders.

ACCESS WITHIN CARGO HOLDS

2. (a) Each cargo hold should be provided with at least two ladders as far apart as practicable longitudinally. If possible these ladders should be arranged diagonally, e.g. one ladder near the forward bulkhead on the port side, the other one near the aft bulkhead on the starboard side, from the ship's centre-line.
- (b) Ladders should be so designed and arranged that the risk of damage from the cargo handling gear is minimized.
- (c) Vertical ladders may be permitted provided they are arranged above each other in line with other ladders to which they form access and resting positions are provided at not more than 9 metres apart.
- (d) Tunnels passing through cargo holds should be equipped with ladders or steps at each end of the hold so that personnel may easily get across such tunnels.
- (e) Where it may be necessary for work to be carried out within a cargo hold preparatory to loading, consideration should be given to suitable arrangements for the safe handling of portable staging or movable platforms.