

United States
Coast Guard

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NAVIGATION AND VESSEL INSPECTION CIRCULAR No. 4-91

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Subj: Pilot Transfer Arrangements

- Ref: (a) 1974 Safety of Life at Sea Convention (SOIAS), Regulation V/17, "Pilot Ladders and Mechanical Pilot Hoists"
(b) 46 CFR 32.90; 78.90; 97.90; 108.719; and 195.40

1. PURPOSE. This Circular transmits the current guidance on embarking and disembarking maritime pilots, as adopted by the International Maritime Organization (IMO).
2. PERIODICALS AFFECTED. NVIC 1-73 is canceled.
3. DISCUSSION.
 - a. Enclosure (1) is IMO Resolution A.667(16) on pilot transfer arrangements. Coast Guard approved pilot ladders under the 163.003/. I. approval series meet the construction standards for pilot ladders under sections 2.1 and 2.2 6f the Annex of the Resolution. Coast Guard approved mechanical pilot hoists under the 163.002/.. 1. approval series meet the construction standards for mechanical pilot hoists under section 4 of the Annex. Section 3 of the Annex should be used as a guide for the design and installation of any accommodation ladder used to embark pilots away from the dock.
 - b. Enclosure (2) is a reproduction of a poster developed by the International Maritime Pilots' Association (IMPA) to illustrate the IMO recommendations. The poster is printed in color on heavy waterproof stock, and measures approximately 300 mm (12 in) by 400 mm' (16 in). The poster is available through IMPA member organizations, including the American Pilots' Association (APA) and their membership. For more information on obtaining this poster, contact local APA member pilots associations, or either APA or IMPA:

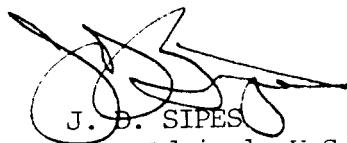
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4. IMPLEMENTATION.

- a. The Coast Guard recommends that operators of vessels embarking or disembarking maritime pilots away from the dock, comply with the pilot transfer arrangements described in enclosures (1) and (2). The Coast Guard also recommends that vessels obtain the poster illustrated in enclosure (2) and post it where it is accessible to the officer who supervises the embarking and disembarking of the pilot.
- b. Enclosure (1) is the basis for a future revision to SOLAS Regulation V/17 (reference (a)'. Maritime safety administrations of SOLAS signatory countries will accept arrangements in accordance with enclosure (1) as fully equivalent to the current SOLAS Regulation V/17 requirements. Enclosure (1) is fully consistent with the regulations on pilot boarding arrangements cited in reference (b).



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End: (1) IMO Res. 667 (16)
(2) IMPA Poster

INTERNATIONAL MARITIME
ORGANIZATION

A 16/Res.667
30 November 1989
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ASSEMBLY - 16th session
Agenda item 10

IMO

RESOLUTION A.667(16)
adopted on 19 October 1989
PILOT TRANSFER ARRANGEMENTS

THE ASSEMBLY,

RECALLING Article 15(j) of the Convention on the International Maritime Organization concerning the functions of the Assembly in relation to regulations and guidelines concerning maritime safety,

RECALLING FURTHER resolution A.275(VIII), Recommendation on Performance Standards for Mechanical Pilot Hoists and resolution A.426(XI), Arrangements for Embarking and Disembarking Pilots in Very Large Ships,

RECALLING ALSO the provisions of regulation V117 of the International Convention for the Safety of Life at Sea, 1974,

HAVING CONSIDERED the recommendation made by the Maritime Safety Committee at its fifty-seventh session,

1. ADOPTS the Recommendation on Pilot Transfer Arrangements set out in the Annex to the present resolution;
2. INVITES Member Governments to draw the attention of all concerned to this Recommendation;
3. FURTHER INVITES Member Governments to ensure that pilot ladders, mechanical pilot hoists and their arrangements, use and maintenance conform to standards not inferior to those set out in the Annex to the present resolution.

ANNEX

RECOMMENDATION ON PILOT TRANSFER ARRANGEMENTS

1 General

Ship designers are encouraged to consider all aspects of pilot transfer arrangements at an early stage in design. Equipment designers and manufacturers are similarly encouraged, particularly with respect to the provisions of paragraphs 2.1.1.3, 3.1 and 3.3.

2 Pilot ladders2.1 Position and construction.

2.1.1 Every pilot ladder should be so positioned and secured that:

- .1 it is clear of any possible discharges from the ship;
- .2 it is within the parallel body length of the ship and, as far as is practicable, within the midship half-length of the ship; and
- .3 each step rests firmly against the ship's side. Where constructional features, such as rubbing bands, would prevent the implementation of this provision, special arrangements should, to the satisfaction of the Administration, be made to ensure that persons are able to embark and disembark safely.

2.1.2 Shipside doors used for pilot transfer should not open outwards.

2.1.3 A single length of pilot ladder should be used capable of reaching the water from the point of access to, or egress from, the ship and due allowance should be made for all conditions of loading and trim of the ship, and for an adverse list of 15°. The securing strongpoints, shackles and securing ropes should be at least as strong as the side ropes specified in subsection 2.2 below.

2.1.4 The steps of the pilot ladders should comply with the following requirements:

- .1 if made of hardwood, they should be made in one piece, free of knots;
- .2 if made of material other than hardwood, they should be of equivalent strength, stiffness and durability to the satisfaction of the Administration;
- .3 the four lowest steps may be of rubber of sufficient strength and stiffness or other material to the satisfaction of the Administration;
- .4 they should have an efficient non-slip surface;
- .5 they should be not less than 400 mm between the side ropes, 115 mm wide and 25 mm in depth, excluding any non-slip device or grooving;
- .6 they should be equally spaced not less than 300 mm or more than 380 mm apart; and
- .7 they should be secured in such a manner that each will remain horizontal.

- 2.1.5 No pilot ladder should have more than two replacement steps which are secured in position by a method different from that used in the original construction of the ladder, and any steps so secured shall be replaced as soon as reasonably practicable by steps secured in position by the method used in the original construction of the pilot ladder. When any replacement step is secured to the side ropes of the pilot ladder by means of grooves in the sides of the step, such grooves should be in the longer sides of the step.
- 2.1.6 Pilot ladders with more than five steps should have spreader steps not less than 1.80 m long provided at such intervals as will prevent the pilot ladder from twisting. The lowest spreader step should be the fifth step from the bottom of the ladder and the interval between any spreader step and the next should not exceed nine steps.

2.2 Ropes

- 2.2.1 The side ropes of the pilot ladder should consist of two uncovered ropes not less than 18 mm in diameter on each side and be continuous with no joins below the top step.
- 2.2.2 Side ropes should be made of manila or other material of equivalent strength, durability and grip which has been protected against actinic degradation and is satisfactory to the Administration.
- 2.2.3 Two man-ropes of not less than 28 mm in diameter properly secured to the ship should be kept at hand ready for use if required.

2.3 Associated equipment

- 2.3.1 A lifebuoy equipped with a self-igniting light should be kept at hand ready for use.
- 2.3.2 A heaving line should be kept at hand ready for use.
- 2.3.3 When required by section 5, stanchions and bulwark ladders should be provided.
- 2.3.4 Lighting should be provided such that both the pilot ladder overside and the position where any person embarks or disembarks on the ship are adequately lit.

3. Accommodation ladders used in conjunction with pilot ladders

- 3.1 The accommodation ladder should be sited leading aft. When in use, the lower end of the ladder should rest firmly against the ship's side within the parallel body length of the ship and within the midship half-length and clear of all discharges. Equally safe arrangements which might be more suitable for special types of ships may be accepted.
- 3.2 The length of the accommodation ladder should be sufficient to ensure that its angle of slope does not exceed 55°.
- 3.3 The lower platform of the accommodation ladder should be in a horizontal position when in use.

- 3.4 Intermediate platforms, if fitted, should be self-levelling. Treads and steps of the accommodation ladder should be so designed that an adequate and safe foothold is given at the operative angles.
- 3.5 The ladder and platforms should be equipped on both sides with stanchions and rigid handrails, but if handropes are used they should be tight and properly secured. The vertical space between the handrail or handrope and the stringers of the ladder should be securely fenced.
- 3.6 The pilot ladder should be rigged immediately adjacent to the lower platform of the accommodation ladder and the upper end should extend at least 2 m above the lower platform.
- 3.7 Lighting should be provided at night such that the full length of the ladder is adequately lit.
- 3.8 If a trapdoor is fitted in the lower platform to allow access from and to the pilot ladder, the aperture should not be less than 750 mm x 750 mm. In this case the after part of the lower platform should also be fenced as specified in paragraph 3.5 above, and the pilot ladder should extend above the lower platform to the height of the handrail.
- 3.9 Accommodation ladders, together with any suspension arrangements or attachments fitted and intended for use in accordance with this recommendation, should be to the satisfaction of the Administration.

4 Mechanical pilot hoists

- 4.1 Approval, location and maintenance
 - 4.1.1 The mechanical pilot hoist and its ancillary equipment should be of a type approved by the Administration. The pilot hoist should be designed to operate as a moving ladder to lift and lower one person on the side of the ship, or as a platform to lift and lower one or more persons on the side of the ship.
 - 4.1.2 The hoist should be so located that it is within the parallel body length of the ship and, as far as is practicable, within the midship half-length of the ship and clear of all discharges.
 - 4.1.3 From a standing position at the control point, it should be possible for the operator to have the hoist under observation continuously between its highest and lowest working positions.
 - 4.1.4 There should be on board a copy of the manufacturer's maintenance manual approved by the Administration, which contains a maintenance log book. The hoist should be kept in good order and maintained in accordance with the instructions of the manual.
 - 4.1.5 A record of maintenance and repairs of the hoist should be entered in the maintenance log book by the officer responsible for its maintenance.

4.2 Construction of hoist

- 4.2.1 The working load of a hoist should be the sum of the weight of the hoist ladder or lift platform and falls in the fully lowered condition and the maximum number of persons which the hoist is designed to carry, the weight of each person being taken as 150 kg. The maximum complement a hoist is permitted to carry should be clearly and permanently marked on the hoist.
- 4.2.2 Every hoist should be of such construction that, when operating under the working load determined in accordance with paragraph 4.2.1, each component has an adequate factor of safety having regard to the material used, the method of construction and the nature of its duty:
- .1 the average lifting and lowering speeds should be between 15 m/min and 21 m/min when the pilot hoist is carrying its full working load;
 - .2 the pilot hoist should be capable of lifting, lowering, and stopping when carrying 2.2 times its working load.
- 4.2.3 In selecting the materials of construction, regard should be paid to the conditions under which the hoist will be required to operate.
- 4.2.4 There should be safe means of access between the ladder at its upper limit and the deck, and vice versa; such access should be gained directly by a platform securely guarded by handrails.
- 4.2.5 Any electrical appliance associated with the ladder section of the hoist should not be operated at a voltage exceeding 25V.
- 4.2.6 The hoist should consist of the following main parts:
- .1 a mechanically powered winch;
 - .2 two separate falls;
 - .3 a ladder or platform consisting of two parts:
 - .3.1 a rigid upper part for the transportation of any person upwards or downwards;
 - .3.2 a flexible lower part, consisting of a short length of pilot ladder, which enables any person to climb from the pilot launch or tender to the rigid upper part of the ladder and vice versa.

4.3 Mechanically powered winch

- 4.3.1 The source of power for the winches should be electrical, hydraulic or pneumatic. In the case of a pneumatic system, an exclusive air supply should be provided with adequate arrangements to control its quality. In the case of ships engaged in the carriage of flammable cargoes, the source of power should not be such as to cause a hazard to the ship. All systems should be capable of efficient operation under the conditions of vibration, humidity and range of temperature likely to be experienced in the ship in which they are installed.

- 4.3.2 The winch should include a brake or other equally effective arrangement (such as a properly constructed worm drive) which is capable of supporting the working load in the event of power failure. The brake or other arrangement should be capable of supporting the working load when the hand gear is in use.
- 4.3.3 Efficient hand gear should be provided to lower or recover, at a reasonable speed, the person or persons carried in the event of power failure.
- 4.3.4 Any crank handle provided for manual operation should, when engaged, be so arranged that the power supply is automatically cut off.
- 4.3.5 Efficient arrangements should be provided to ensure that the falls wind evenly on to the winch-drums.

4.4 Controls

- 4.4.1 Hoists should be fitted with automatic safety devices in order to cut off the power supply when the ladder comes against any stop so as to avoid overstressing the falls or any other part of the hoist: provided that in the case of hoists operated by pneumatic power, the safety cut-out device may be omitted if the maximum torque available from the air motor cannot result in overstressing of the falls or other parts of the hoist.
- 4.4.2 All hoist controls should incorporate an emergency stop to cut off the power supply and, in addition, an emergency stop switch within easy reach of the person or persons carried.
- 4.4.3 The hoist controls should be clearly and durably marked to indicate 'lift', "stop" and "lower". The manner in which these controls operate should correspond to the manner in which the hoist operates and should automatically return to the "stop" position when released.
- 4.4.4 The hoist should be securely attached to the structure of the ship. Attachment should not be solely by means of the ship's side rails. Proper and strong attachment points should be provided for hoists of the portable type on each side of the ship. A portable hoist should be equipped with an interlock that prevents operation of the hoist when the hoist is not correctly installed.

4.5 Falls

- 4.5.1 Two separate wire falls should be used, made of flexible steel rope of adequate strength and resistant to corrosion in a salt-laden atmosphere.
- 4.5.2 The falls should be securely attached to the winch-drums and the ladder. These attachments should be capable of withstanding a proof load of not less than 2.2 times the load on such attachments. The falls should be maintained at a sufficient relative distance from one another, so as to reduce the possibility of the ladder becoming twisted.

- 4.5.3 The falls should be of sufficient length to allow for all conditions of freeboard likely to be encountered in service and to retain at least three turns on the winch-drums with the hoist in its lowest position.
- 4.5.4 The falls should be so arranged that the ladder or lift platform remains level if one fall breaks.
- 4.5.5 A minimum safety factor of 6 should be applied to the falls. The devices for attaching the falls to the winch should be capable of supporting 2.2 times the working load with the falls run all the way out.

4.6 Ladder or platform section

- 4.6.1 The rigid ladder part should be not less than 2.50 m in length and be equipped in such a way that the person carried can maintain a safe position whilst being hoisted or lowered. Such part should be provided with:
 - .1 a sufficient number of steps to provide a safe and easy access to and from the platform referred to in paragraph 4.6.2;
 - .2 safe handholds capable of being used under all conditions including extremes of temperature, together with non-slip steps;
 - .3 a spreader at the lower end of not less than 180 m. The ends of the spreader should be provided with rollers which should roll freely on the ship's side during the whole operation of embarking or disembarking;
 - .4 an effective guard ring, suitably padded, so positioned as to provide physical support for the person carried without hampering movement;
 - .5 adequate means for communication between the person carried and the operator and the responsible officer who supervises the embarkation or disembarkation of the person carried.
- 4.6.2 A hoist designed to operate as a lift platform should have a platform:
 - .1 with a non-slip surface at least 750 mm by 750 mm exclusive of the surface area of any trap door in the floor;
 - .2 limited to one person per square meter of floor area or fraction thereof, exclusive of the area of any trapdoor;
 - .3 with a trapdoor, if provided, at least 750 mm by 750 mm, so arranged that a pilot ladder may be rigged through the trapdoor, extending above the platform to the height of the handrail;
 - .4 enclosed by a guardrail at least 1 m above the surface of the platform. At least two intermediate rails should be provided between the floor and the guardrail. The rails should be set back from the edge of the platform at least 50 mm. Each gate in the rails should have a latch that can keep the gate securely closed.

- 4.6.3 Below the rigid part mentioned in paragraph 4.6.1, a section of flexible ladder comprising eight steps should be provided and constructed in accordance with the requirements of section 2, except that it need not be equipped with spreader steps; however, it should have appropriate fittings at the top for securing it to the rigid ladder.
- 4.6.4 The side ropes of the flexible ladder section should be in accordance with section 2.2. Each rope should be continuous with no joins below the top step.
- 4.6.5 The steps of the flexible ladder section and those of the rigid ladder section should be in the same vertical line, of the same width, spaced vertically equidistant and placed as close as practicable to the ship's side. The handholds of both parts of the ladder section should be aligned as closely as possible.
- 4.6.6 If belting is fitted in way of the hoist position, such belting should be cut back sufficiently to allow the hoist to be placed as close as practicable to the ship's side.

4.7 Operation of the hoist

- 4.7.1 Rigging, testing and use of the hoist should be supervised by a responsible officer of the ship. Any person engaged in rigging and operating the hoist should have been instructed in the rigging and operating procedures as contained in the approved manual and the equipment should be tested prior to use.
- 4.7.2 Lighting should be provided so that the hoist overside, its controls and the position on the ship where the person carried embarks or disembarks is adequately lit. The equipment specified in subsection 2.3 should be kept at hand ready for use.
- 4.7.3 A pilot ladder complying with the provisions of section 2 should be rigged adjacent to the hoist and available for immediate use so that access to it is available from the hoist during any point of its travel. The pilot ladder should be capable of reaching the sea level from its own point of access to the ship.
- 4.7.4 The position on the ship's side where the hoist will be lowered should be indicated.
- 4.7.5 An adequate protected stowage position should be provided for the portable hoist. In very cold weather, to avoid the danger of ice formation, the portable hoist should not be rigged until use is imminent.

4.8 Testing

- 4.8.1 Every new hoist should be subjected to an overload test of 2.2 times the working load. During this test the load should be lowered a distance of not less than 5 m and the brake applied to stop the hoist drum. Where a winch is not fitted with a brake, and depends upon an equally effective arrangement, as prescribed in paragraph 4.3.2, to support the load in the event of power failure, the load should be lowered at the maximum permitted lowering speed and a power failure should be simulated to show that the hoist will stop and support the load.

- 4.8.2 An operating test of 10% overload should be carried out after installation on board the ship to the satisfaction of the Administration.
- 4.8.3 Subsequent examinations of the hoists under working conditions should be made at each annual or intermediate survey and at each renewal survey for the ship's safety equipment certificate.

5 Access to deck

Means should be provided to ensure safe, convenient and unobstructed passage for any person embarking on, or disembarking from, the ship between the head of the pilot ladder, or of any accommodation ladder or other appliance provided pursuant to paragraph 4.2.4 above and the ship's deck. Where such passage is by means of:

- .1 a gateway in the rails or bulwark, adequate handholds should be provided;
- .2 a bulwark ladder, such ladder should be securely attached to the ship to prevent overturning. Two handhold stanchions should be fitted at the point of embarking on or disembarking from the ship on each side which should be not less than 0.70 m or more than 0.80 m apart. Each stanchion should be rigidly secured to the ship's structure at or near its base and also at a higher point, should be not less than 32 mm in diameter and should extend not less than 1.20 m above the top of the bulwarks. Stanchions or handrails should not be attached to the bulwark ladder.