

hoist control lever. The lubricating instructions must state the recommended lubricants for the temperature range in which the hoist is designed to operate. The temperature range must be stated in both degrees Celsius and Fahrenheit.

(b) *Marking of controls.* Each control on a pilot hoist and each position of the control must be identified by a marking on the hoist.

(c) *Marking of gauges.* Each gauge on a pilot hoist must be marked with its normal operating range.

(d) *Manual.* Each pilot hoist must have a manual of installation instructions, operating instructions, maintenance and repair instructions, a lubrication chart, a parts list, a list of sources of repair parts, and a log for keeping maintenance records. Each manual must be in English.

§ 163.002-21 Approval tests.

(a) *General.* If a pilot hoist fails one of the tests in this section the cause of the failure must be identified and any needed design changes made. After a test failure and any design change, the failed test, and any other previously completed tests affected by the change, must be rerun.

(b) *Visual examination.* Before starting the tests described in this section an assembled pilot hoist is examined for evidence of noncompliance with the requirements in §§ 163.002-11 and 163.002-13.

(c) The following approval tests must be conducted:

(1) *Rung strength.* If the pilot hoist has a rigid ladder a static load of 900 kilograms (2000 pounds) is applied to the center of a ladder rung for one minute. The load must be uniformly distributed over a 100 millimeter (4 inch) wide contact surface. The test must be repeated using a second ladder rung. The rungs must not break or crack during these tests.

(2) *Platform strength.* If the pilot hoist has a lift platform, the platform is lifted to a level where it is supported only by its suspension components. A static load of 900 kilograms (2000 pounds) is then applied to the center of the platform for one minute. The load must be uniformly distributed over a 100 millimeter (4 inch) square contact surface.

The test must be repeated enough additional times so that the load is placed in the center of each hatch cover when in its closed position, and in the center of each area of the platform located between floor supports. The platform must not break or crack during these tests.

(3) *Deck interlock.* If the pilot hoist is portable, it is placed in an uninstalled position. Its hoist control lever is then activated. The deck interlock must prevent movement of the ladder or lift platform when the lever is activated.

(4) *Lifting and lowering speed and level wind.* The hoist is installed in a level operating position and a weight equal to the weight of the pilot ladder plus 150 kg (330 lb.) times the maximum persons capacity of the hoist is placed on its ladder or lift platform. The ladder or lift platform is repeatedly raised and lowered under power operation until a total distance of at least 150 meters (500 feet) has been traversed. The ladder or lift platform is raised and lowered each time through a distance of at least 5 meters (16 feet). The average speed of raising the ladder or lift platform and the average lowering speed during this test must both be between 15 and 21 meters per minute (50 and 70 feet per minute). During the test, each suspension cable must have one level wind of wrap each time it is rewound onto its drum.

(5) *Upper position stop.* The hoist is installed in a level operating position and a weight equal to the weight of the pilot ladder plus 150 kg (330 lb.) times the maximum persons capacity is attached to the hoist. The hoist must be able to raise the weight to the upper limit of travel of the ladder or lift platform and must be able to stop at the upper limit without jarring, jerking, or damage. The test is repeated with no weight on the ladder or lift platform.

(6) *Cable securing device.* If the hoist has suspension cables, it is installed in a level operating position and the cables are run all the way out. A weight equal to 2.2 times the working load is then attached to the cables. The cables must remain securely attached to the drums for at least one minute after the weight has been attached.

(7) *Controls and power indicator.* The hoist is installed in a level operating

position and a weight equal to the working load is attached to the hoist. The hoist control lever is then operated with the power both on and off. The lever, when operated, must meet the requirements in §163.002-13(1). The power indicator must meet the requirements in §163.002-13(n) during the test. When the power is turned off, the ladder or lift platform must stop immediately and remain stationary until power is turned on. The emergency stop switch on the ladder or lift platform is activated at some point when the ladder or lift platform is being raised or lowered. Upon activation, the ladder or lift platform must stop and remain stationary.

(8) *Hand operation and interlock.* The hoist is installed in a level operating position and a weight equal to the working load is attached to the hoist. The hand operated device is then engaged. One person, when using the hand operated device, must be able to raise and lower the weight through a distance of at least 5 meters (16 ft.) in each direction and must be able to raise and lower it at a speed of at least 1.5 meters per minute (5 ft. per minute). When raising or lowering the hoist with the hand operated device, the power source for the hoist is turned on, or an attempt is made to turn it on. Then, with power source turned off, the hand operated device is disengaged. The power source is then turned on and an attempt made to engage the hand operated device. The interlock must prevent simultaneous operation of the power source and the hand operated device.

(9) *2.2x overload.* The hoist is installed in a level operating position. Each roller on the ladder or lift platform is placed in contact with a vertical surface. A weight equal to the difference between 2.2 times the working load and the weight of the ladder or lift platform is placed on the ladder or lift platform. The ladder or lift platform is raised through a distance of at least 5 meters (16 feet) and the hoist control lever is then released. The ladder or lift platform must stop without jarring or damage and must hold the weight for at least one minute. The weight is then lowered through a distance of not less than 5 meters (16 feet) and the control

lever is then released. The ladder or lift platform must stop within 600 millimeters (2 ft.) of where the hoist was when the lever was released and the ladder or lift platform must remain stationary for at least one minute thereafter. Each roller must move smoothly over the vertical surface without jamming or sliding during the test.

(10) *6x overload.* The hoist is installed in a level operating position. A load of six times the working load is attached to the hoist. (If the hoist has suspension cables, the cables must be run out at least one meter (3 ft.) before adding the load to the hoist). The weight must remain stationary for at least one minute without damage to any part of the hoist. The test is repeated simulating a vessel list of 15 degrees toward the side on which the hoist is installed.

(11) *Level wind suspension cable.* If the hoist has suspension cables, it is installed in a level operating position with the cables wound onto the drums. A weight equal to the working load is attached to the hoist. The cables are run all the way out and then rewound back onto the drums at least ten times. Each drum and cable is observed for level winding as the cable is wound onto the drum. The test must be repeated with a weight equal to the weight of the rigid ladder or lift platform. In each test, each cable must always rewind onto the drum in one level wind of wrap.

(12) *Rung friction test.* One rung of each type used on a rigid ladder must be subjected to this test. This test compares the dry and wet surface friction characteristics of ladder rungs with those of a standard oak step.

(i) The standard step must have a surface of clean oak that meets §163.003-11(b) of this chapter and that is 115 mm (4½ in.) wide by 400 mm (16 in.) long. The stepping surface must have grooves that are 3 mm (¼ in.) deep and 3 mm wide. The grooves must run in two different directions at right angles to each other, and at 45 degree angles with each edge of the stepping surface, so that the grooves form a diamond pattern covering the stepping surface. The centers of all parallel grooves must be 13 mm (½ in.) apart.

(ii) The standard step must be set in a level position. A metal block must be

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placed on one end of the step so that the block is in contact with the stepping surface. The metal block must weigh between 1.5 kg (3.3 lb.) and 3.0 kg (6.6 lb.) and must not be more than 100 mm (4 in.) wide by 135 mm (5 $\frac{3}{8}$ in.) long. The surface of the block in contact with the step must have leather or composition shoe sole material attached to it.

(iii) The end of the step that has the metal block on it must be slowly raised until the block starts to slide. The angle of the step in this position must be measured and recorded. The step and block must then be placed under water and the procedure repeated.

(iv) The procedure in paragraph (c)(12)(iii) of this section must be repeated using a rigid ladder rung in place of the standard step.

(v) The ladder rung must then be secured in a horizontal position with a block resting on its stepping surface. The block must be of a size similar to the one used in the previous tests and have the same shoe sole surface used in the previous tests. The block must be arranged to apply a vertical load of 40 kg (88 lb.) to the rung. The block must be then moved back and forth in the same line from one end of the stepping surface to the other. This must be done for a total of 1,500 cycles.

(vi) The rung must again be tested as described in paragraph (c)(12)(iii) of this section, except that the initial position of the block must be on a part of the stepping surface that was subjected to the 1,500 cycles of rubbing.

(vii) The angles at which the block starts to slide on a wet and dry ladder rung when tested under paragraphs (c)(12)(iv) and (c)(12)(vi) of this section must be equal to or greater than the corresponding angles measured for the standard step when tested under paragraph (c)(12)(iii) of this section.

§ 163.002-25 Marking.

(a) Each pilot hoist manufactured under Coast Guard approval must have a corrosion-resistant nameplate. The nameplate must contain the—

- (1) Name of the manufacturer;
- (2) Manufacturer's brand or model designation;
- (3) Working load;
- (4) Lift height;

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- (5) Maximum persons capacity;
- (6) Hoist serial number;
- (7) Date of manufacture; and
- (8) Coast Guard approval number.

(b) The hoist must be permanently and legibly marked with the name of the laboratory that conducted the production tests.

§ 163.002-27 Production tests and examination.

Each pilot hoist manufactured under Coast Guard approval must be tested as prescribed in §163.002-21(c)(9) and subpart 159.007 of this chapter. The tests must be conducted by an independent laboratory. If the hoist fails the tests its defects must be corrected and retested until it passes. The laboratory must also conduct the visual examination described in §163.002-21(b). The hoist may not be sold as Coast Guard approved unless it passes testing and unless each defect discovered in the visual examination is corrected

Subpart 163.003—Pilot Ladder

SOURCE: CGD 74-140, 46 FR 63291, Dec. 31, 1981, unless otherwise noted.

§ 163.003-1 Scope.

(a) This subpart contains standards and approval and production tests for a pilot ladder used on a merchant vessel to embark and disembark pilots and other persons when away from the dock.

(b) The requirements in this subpart apply to a pilot ladder designed for use along a vertical portion of a vessel's hull.

§ 163.003-3 ASTM standard.

The following standard of the American Society for Testing and Materials (ASTM) is incorporated by reference into this subpart: ASTM D 1435-94, Standard Practice for Outdoor Weathering of Plastics. You may obtain this standard from the Society at 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

[USCG-1999-5151, 64 FR 67185, Dec. 1, 1999]

§ 163.003-7 Independent laboratory.

The approval and production tests in this subpart must be conducted by or