

## **6 LAUNCHING AND EMBARKATION APPLIANCES**

### **6.1 LAUNCHING AND EMBARKATION APPLIANCES**

#### **6.1.1 LAUNCHING AND RECOVERY APPLIANCES**

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**6.1.1 LAUNCHING AND RECOVERY APPLIANCES**  
**EVALUATION AND TEST REPORT**

<b>Manufacturer</b>	
<b>System type</b> <b>Serial number</b> <b>Maximum Working Load</b> <b>Maximum Turning Moment</b>	
<b>Winch type</b>	
<b>Serial number</b>	
<b>Date</b>	
<b>Place</b>	
<b>Name and signature of surveyor</b>	
<b>Approval Organization</b>	

<b>Launching &amp; Recovery Appliances</b>	Manufacturer: _____	Date: _____	Time: _____
	Model: _____	Surveyor: _____	
	Lot/Serial Number: _____	Organization: _____	

<b>6.1.1.1 Submitted drawings, reports and documents</b>			
<b>Submitted drawings and documents</b>			<b>Status</b>
<b>Drawing No.</b>	<b>Revision No. &amp; date</b>	<b>Title of drawing</b>	

<b>Submitted reports and documents</b>			<b>Status</b>
<b>Report/Document No.</b>	<b>Revision No. &amp; Date</b>	<b>Title of report / document</b>	
		Maintenance Manual -	
		Operations Manual -	

<b>Launching &amp; Recovery Appliances</b>	Manufacturer: _____	Date: _____	Time: _____
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6.1.1.2 Quality Assurance	Regulations: MSC.81(70) 2/1.1 and 1.2
<p>Except where all appliances of a particular type are required by chapter III of the International Convention for the Safety of Life at Sea, 1974, as amended, or the International Life-Saving Appliance (LSA) Code, to be inspected, representatives of the Administration should make random inspection of manufacturers to ensure that the quality of life-saving appliances and the materials used comply with the specification of the approved prototype life-saving appliance.</p> <p>Manufacturers should be required to institute a quality control procedure to ensure that life-saving appliances are produced to the same standard as the prototype life-saving appliance approved by the Administration and to keep records of any production tests carried out in accordance with the Administration's instructions.</p>	<p>Quality Assurance</p> <p>Standard Used: - _____</p> <p>Quality Assurance Procedure: _____</p> <p>Quality Assurance Manual: - _____</p> <p>Description of System.</p> <p>Quality Assurance System acceptable Yes/No</p> <p>Comments/Observations</p>

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6.1.1.3 Visual inspection	Regulations: LSA Code 6.1; III, 16.2	
Test Procedure	Acceptance Criteria	Significant Test Data
<p>Confirm that installation has been manufactured to approved drawings.</p> <p>Visually inspect the appliance. Conduct measurements and verify clearances as required.</p> <p>Remote control</p> <p>Limit switches</p> <p>Provisions for hanging off pendants</p>	<p>Amount of maintenance should be restricted to a minimum.</p> <p>Parts which require maintenance should be easily accessible and easily maintained.</p> <p>Effectiveness under icing conditions</p> <p>The launching mechanism should be so arranged that it may be actuated by one person from a position within the survival craft or rescue boat</p> <p>Manual brakes should be so arranged that the brake is always applied, unless the operator or a mechanism activated by the operator holds the brake control in the 'off' position.</p> <p>Where davit arms are recovered by power, safety devices should be fitted which will automatically cut off the power before the davit arms reach the stops in order to prevent over-stressing the falls or davits, unless the motor is designed to prevent such over-stressing.</p> <p>There should be provisions for hanging-off the lifeboat to free the release gear for maintenance</p> <p>Structural members and all blocks, falls, padeyes, links, fastenings and all other fittings used in connection with launching equipment should be designed with not less than a minimum factor of safety on the basis of the maximum working load assigned and the ultimate strength of the material used for construction. A minimum factor of safety of 4.5 should be applied to all davit and winch structural members, and a minimum factor of safety of 6 should be applied to falls, suspension chains, links and blocks.</p>	<p>Passed/ Failed</p> <p>Passed/ Failed</p> <p>Passed/ Failed</p> <p>Passed/ Failed</p> <p>Type:</p> <p>Type:</p> <p>Passed/ Failed</p> <p>Passed/ Failed</p> <p>Comments/Observations</p>

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<b>6.1.1.4 Static proof load test</b>	<b>Regulations: LSA Code 6.1.1.5 - 6.1.1.6; MSC.81(70) 1/8.1.1</b>
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Test Procedure	Acceptance Criteria	Significant Test Data
<p>For lifeboats other than free-fall lifeboats, davits and launching appliances, except the winch brakes, should be subjected to a static proof load of 2.2 times their maximum working load.</p> <p>With the load at the full outboard position, the load should be swung through an arc of approximately 10° to each side of vertical in the intended fore and aft plane.</p> <p>The test should be done first in the upright position, followed by tests simulating a shipboard condition of list of 20° both inboard and outboard.</p>	<p>The launching appliance and its attachments other than winch brakes should be of sufficient strength to withstand a static proof load on test of not less than 2.2 times the maximum working load.</p> <p>There should be no evidence of significant deformation or other damage as a result of this test.</p>	<p>MWL : ..... kN</p> <p>Test load (2.2 x MWL): ..... kN</p> <p>There should be no evidence of significant deformation or other damage</p> <p>Passed/Failed</p> <p>upright Passed/ Failed</p> <p>20° inboard list Passed/ Failed</p> <p>20° outboard list Passed/ Failed</p>

<b>Launching &amp; Recovery Appliances</b>	Manufacturer: _____	Date: _____	Time: _____
	Model: _____	Surveyor: _____	
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6.1.1.5 Operational load test	Regulations: LSA Code 6.1.1.1 - 6.1.1.3; MSC.81(70) 1/8.1.2	
Test Procedure	Acceptance Criteria	Significant Test Data
<p>For lifeboats other than free-fall lifeboats, a mass equal to 1.1 times the maximum working load should be suspended from the lifting points with the launching appliance in the upright position.</p> <p>The load should be moved from the full inboard to the full outboard position using the means of operation that is used on the ship.</p> <p>The test should be repeated with the launching appliance positioned to simulate a combined 20<sup>0</sup> inboard list and 10<sup>0</sup> trim.</p> <p>All the tests should be repeated with a mass equal to that of a fully equipped lifeboat, without persons, or the lightest survival craft intended for the use with the davit to ensure the satisfactory functioning of the davit under very light load conditions.</p> <p>Note: Notwithstanding the 10<sup>0</sup>trim and 20<sup>0</sup> list requirements, lifeboat launching appliances for oil tankers, chemical tankers and gas carriers with a final angle of heel greater than 20<sup>0</sup> should be capable of operating at the final angle of heel on the lower side of the ship, taking into consideration the final damaged waterline of the ship.</p>	<p>The appliance should successfully lower the load under all of the conditions, and there should be no evidence of significant deformation or other damage as a result of the tests.</p> <p>Each launching appliance together with all its lowering and recovery gear should be so arranged that the fully equipped survival craft or rescue boat it serves can be safely lowered against a trim of up to 10<sup>0</sup> and a list of up to 20<sup>0</sup> either way:</p> <p>When boarded, as required by regulation III/23 or III/33, by its full complement of persons;</p> <p>Without persons in the survival craft or rescue boat.</p> <p>A launching appliance should not depend on any means other than gravity or stored mechanical power which is independent of the ship's power supplies to launch the survival craft or rescue boat it serves in the fully loaded and equipped condition and also in the light condition.</p>	<p>weight of the lightest the lifeboat / rescue boat ** intended for use:</p> <p>LWL. .... kN</p> <p>MWL : ..... kN</p> <p>Test load (1.1 x MWL) : ..... kN</p> <p>clear of davit horn ?** Passed/ Failed</p> <p>Does the appliance successfully lower the load under these conditions without evidence of significant deformation or damage? Passed/Failed</p> <p>upright (1,1x MWL) Passed/Failed</p> <p>20<sup>0</sup> inboard list +10<sup>0</sup>trim (1.1xMWL) Passed/Failed</p> <p>20<sup>0</sup> inboard list +10<sup>0</sup>trim (LWL) Passed/Failed</p> <p>Stored power Passed/Failed</p> <p>Start pressure: k Pa</p> <p>Min. pressure: k Pa</p> <p>Pressure drop after one movement: k Pa</p> <p>Time from inboard to outboard: sec</p> <p style="text-align: right;">** if applicable</p>

<b>Launching &amp; Recovery Appliances</b>	Manufacturer: _____	Date: _____	Time: _____
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<b>6.1.1.6 Turning in test</b>	<b>Regulations: LSA Code 6.1.1.3; MSC.81(70) 1/8.1.3</b>
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Test Procedure	Acceptance Criteria	Significant Test Data
<p>With the appliance in the full upright position the maximum design hoisting load should be moved from the full outboard to the full inboard position using the means of operation that is used on the ship.</p>	<p>The appliance should successfully move the maximum designed hoisting load from the outboard to the inboard position without causing permanent deformation or other damage.</p>	<p>maximum designed hoisting load : ..... kN</p> <p>Does the launching appliance successfully move the load from outboard to inboard? Passed/ Failed</p> <p>Does the launching appliance show any evidence of significant deformation or other damage as a result of this test? Passed/ Failed</p>

<b>Launching &amp; Recovery Appliances</b>	Manufacturer: _____	Date: _____	Time: _____
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6.1.1.7 Winch brake test	Regulations: LSA Code 6.1.2.5; MSC.81(70) 1/8.1.4	
Test Procedure	Acceptance Criteria	Significant Test Data
<p>Winch drums should be wound to the maximum number of turns permitted and a static test load of 1.5 times the maximum working load should be applied and held by the brake. This load should then be lowered for at least one complete revolution of the barrel shaft. A test load of 1.1 times the maximum working load should then be lowered at maximum lowering speed through a distance of at least 3 m and stopped by applying the hand brake sharply.</p> <p>This test should be repeated a number of times.</p> <p>If the winch design incorporates an exposed brake, one of these tests should be carried out with the brake wetted.</p> <p>The various tests should achieve a cumulative lowering distance of at least 150 m. Operation of the winch with a load of a mass equal to that of a fully equipped lifeboat, without persons, or the lightest survival craft intended for use with the winch should also be demonstrated.</p> <p>Following completion of these test (and 6.1.1.8, 6.1.1.9), the winch should be stripped for inspection.</p>	<p>The test load should drop no more than 1 m when the brake is applied (except that the stopping distance may be exceeded if an exposed brake is wetted).</p> <p>The launching appliance should successfully lower a mass equal to that of a fully equipped lifeboat, without persons, or the lightest craft (or rescue boat) intended for use with the winch.</p> <p>Inspection of the stripped winch should reveal no significant damage or undue wear.</p>	<p>weight of the lightest the lifeboat / rescue boat *</p> <p style="text-align: right;">: ..... kN</p> <p>MWL : ..... kN</p> <p>Test 1:</p> <p>Static test load (1.5 x MWL): ..... kN</p> <p>Does the brake test hold the test load (1.5x MWL)? pass/fail</p> <p>MWM: kNm Drum diam. mm Wire diam. Mm Number of turns Max. lowering speed m/s</p> <p>Test 2</p> <p>Dynamic Test load (1,1 x MWL): Kn brake test carried out after &gt; 3m with max lowering speed Stop within 1 meter? Passed/Failed</p> <p>* <i>delete as appropriate</i> <span style="float: right;"><i>continued</i></span></p>



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<b>6.1.1.8 Rescue boat launching appliance recovery speed test</b>	<b>Regulations: LSA Code 6.1.1.9; MSC.81(70) 1/8.1.5</b>
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Test Procedure	Acceptance Criteria	Significant Test Data
It should be demonstrated that a winch intended for use with a rescue boat is capable of recovering the rescue boat with the number of persons for which it is to be approved and its equipment or an equivalent mass at a rate of not less than 0.3 m/s.	Each rescue boat launching appliance should be fitted with a powered winch motor capable of raising the rescue boat from the water with its full rescue boat complement of persons and equipment at a rate of not less than 0.3 m/s.	Hoisting load: measured recovering speed of the boat :                      m/s

<b>6.1.1.9 Hand operation test</b>	<b>Regulations: LSA Code 6.1.2.6; MSC.81(70) 1/8.1.6</b>
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Test Procedure	Acceptance Criteria	Significant Test Data
<p>The hand operation of the winch should be demonstrated.</p> <p>If the winch is designed for quick recovery by hand with no load, this should be demonstrated with a load of 1.5 times the mass of the empty lifting arrangements.</p>	An efficient hand gear should be provided for recovery of each survival craft and rescue boat. Hand gear handles or wheels should not be rotated by moving parts of the winch when the survival craft or rescue boat is being lowered or when it is being hoisted by power.	<p>Hoisting load:</p> <p>Test 1: Test load (1 x hoisting load): winch can be operated satisfactorily by hand?              Passed/ Failed</p> <p>Arrangement provided for protection against moving parts and rotating handles?      Passed/ Failed</p> <p>Type:</p> <p>Test 2: Only for quick recovery Test load (1.5 x weight of empty lifting arrangement): kN</p> <p>Is quick recovery satisfactory?      Passed/ Failed</p>

**Launching & Recovery Appliances**

Manufacturer: \_\_\_\_\_ Date: \_\_\_\_\_

Model: \_\_\_\_\_ Surveyor: \_\_\_\_\_

Lot/Serial Number: \_\_\_\_\_ Organization: \_\_\_\_\_