

## ANNUAL SURVEY CHECKLIST FOR OTHER SHIP TYPES

**Ship Name:**

**Report No.:**

**I.R. No.:**

| <b>DOCUMENTATION</b>  |
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| <p><b>APPROVED TRIM &amp; STABILITY INFORMATION</b><br/>Confirmation of availability of trim and stability booklet approved by administration.</p>  |
| <p><b>CARGO SECURING MANUAL</b><br/>Confirmation of availability of approved cargo securing manual.</p>   |
| <p><b>STATUTORY CERTIFICATES</b><br/>Valid Statutory certificates available on board.</p>   |
| <p><b>FIRE CONTROL PLANS</b><br/>Verification of proper posting of fire control plans (including duplicate sets permanently stored in a prominently marked weather tight enclosures outside deckhouse</p>   |
| <p><b>LOADING MANUAL</b><br/>Verified that vessel has an approved Loading Manual. (IRS Rules, Part 3,Ch. 5,Cl.1.3)</p>  |
| <p><b>LOADING INSTRUMENT</b><br/>Availability of an approved loading instrument together with its operational manual and verification of test cases (IRS Rules, Part 3, Ch. 5, Cl. 1.3)</p>   |
| <p><b>STEERING GEAR ENTRIES REQUIRED BY SOLAS/FLAG</b><br/>Verification of entries made in the ship's log for departure<br/>Steering checks &amp; Emergency Steering drills.</p>  |
| <p><b>DAMAGE CONTROL PLANS</b><br/>Verification that damage control plans are available.<br/>(Note- Applicable to above 500 GT Dry cargo ship over 100 m in length keel laid on or after 01/01/1992, Dry cargo ship over 80 m in length keel laid on or after 01/01/1998, All cargo ship regardless of length keel laid on or after 01/01/2009 and all Passenger ships)</p> |
| <p><b>DAMAGE STABILITY</b><br/>Availability of damage stability information<br/>(Note- Applicable as per SOLAS Ch. II Part B-1 reg 25.1, Cargo vessel &gt; 80 m length after 10/07/08 and length &gt; 100 m from 01/02/1992, Passenger ships regardless of length)</p>  |
| <p><b>HULL AND MACHINERY SURVEYS</b><br/>Verification that no CSH/CSM items are overdue.</p>  |
| <p><b>MANOEUVRING BOOKLET</b><br/>Confirming that the manoeuvring booklet is on board and that the manoeuvring information is displayed on the navigating bridge</p>  |
| <p><b>CONSTRUCTION DRAWINGS MAINTAINED ON BOARD</b><br/>Confirming that structural alterations performed, if any, have been approved by the classification society</p>  |

Condition to be reported using number code as follows:

1. When examined found to be satisfactory and/or examined/tested satisfactory and/or confirmed arrangements exist in satisfactory condition. No repairs considered necessary this time.
  2. Repairs now recommended and were carried out satisfactorily. After repairs found to be satisfactory and/or examined / tested satisfactorily and/or confirmed arrangements exist in satisfactory condition.
  3. Repairs now recommended and remain outstanding.
  4. Opportunity to examine/test was not provided this time. Remains outstanding.
- NA – Not Applicable.

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| and reported on the as-built drawings kept on board. (Constructed on or after 1st Jan. 2007)  |
| <b>EMERGENCY TOWING PROCEDURES</b><br>Confirm that ship specific emergency towing procedures available on board.  |
| <b>COATING TECHNICAL FILE</b><br>Confirmation that the maintenance, repair and partial recoating of dedicated ballast tanks and double side skin spaces, as appropriate, are recorded in the coating technical file.  |
| <b>OPERATING AND MAINTENANCE MANUAL (OMM) FOR RO-RO SHIPS</b><br>Verification of the approved copy of operating and maintenance manual on board and possible modifications are included. It is to be verified that documented operating procedures for closing and securing doors are kept on board and posted at an appropriate place. The OMM is to be examined with special attention to the register of inspections and its contents as a basis for survey.   |
| <b>HARMONIC DISTORTION RECORD FOR VESSEL FITTED WITH HARMONIC FILTER.</b><br>Verification of annual measurement record of harmonic distortion level at bus bar (Applicable for vessel keel laid before 1 July 2017 and for any modification on electrical distribution system on existing vessel, total distortion measured along with equipment running at the time of measurement to be recorded.)  |
| <b>OPERATIONAL MANUAL FOR EFFECT OF HARMONIC FILTER</b><br>Verification that following document are available on board.<br><ol style="list-style-type: none"> <li>1) Effect of failure on harmonic filter on electrical distribution system.</li> <li>2) Permitted modes of operation for maintaining harmonic distortion level within acceptable limit during normal operation and during failure of filter.</li> <li>3) Approved copy of relaxation on allowable distortion limit, if any</li> <li>4) Record of harmonic distortion level measured.</li> </ol><br>(Note- Applicable for vessel keel laid on or after 01 July 2017 and on exiting ship retrofitted with harmonic filter on or after 01 July 2017.) |
| <b>ALTERNATIVE DESIGN &amp; ARRANGEMENT</b><br>Confirm that, where applicable the approved documentation for the alternative design and arrangement is in board.  |
| <b>CLASS CERTIFICATE</b><br>Confirmation that the Class annual/Intermediate/renewal* survey completed satisfactorily and Class Certificate endorsed/interim certificate issued*_ on .....   |
| <b>WEATHER DECK</b>   |
| <b>MASTS AND STANDING RIGGING</b><br>Masts, Derricks & Crane columns including their standing rigging   |
| <b>FIRE DOORS AND CONTROLS</b><br>Operation of manual/automatic fire doors, no holding back arrangements exist  |
| <b>ANCHORING &amp; MOORING EQUIPMENT</b><br>Anchoring equipment & mooring equipment   |
| <b>SOUNDING PIPES</b><br>Sounding pipes, including self closing devices on short sounding pipes   |

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NA – Not Applicable.

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| <b>HATCHWAYS</b><br>Examination and testing of hatchways on freeboard and superstructure decks including efficient condition of closing appliances.  |
| <b>WEATHER DECKS</b><br>Examination of weather decks, ships side plating above water line.   |
| <b>FREEBOARD MARKS</b><br>Verification of freeboard marks  |
| <b>VENTILATORS</b><br>Examination and or testing of ventilators including efficiency of their closing appliances   |
| <b>WINDOWS, SIDE SCUTTLES AND DEAD LIGHTS</b><br>Examination and or testing of windows, side scuttles and dead lights  |
| <b>SCUPPERS, SANITARY DISCHARGES, VALVES AND CONTROLS</b><br>Examination scuppers and sanitary discharges and valves together with valves and their control gear   |
| <b>SKYLIGHTS AND FIDDLEY OPENINGS</b><br>Examination and or testing of skylights and fiddley openings including their closing appliances   |
| <b>EXPOSED CASINGS, DECK HOUSES, COMPANION WAYS AND SUPERSTRUCTURES</b><br>Examination and / testing of exposed casings, deck houses, companionways and superstructure bulkheads including closing appliances  |
| <b>GUARD RAILS AND/OR BULWARKS</b><br>Examination of the condition and arrangement, fittings & appliances for timber deck cargo  |
| <b>WT BULKHEAD OPENINGS</b><br>Watertight bulkheads penetrations examination as far as practicable for satisfactory condition, watertight doors in watertight bulkheads  |
| <b>Towing and mooring equipment</b><br>Confirming that the towing and mooring equipment is properly marked with any restriction associated with its safe operation. (Constructed on or after 1 <sup>st</sup> Jan. 2007)  |
| <b>CARGO HATCH COVERS AND COAMINGS</b><br>Cargo hatch covers and coamings including their closing appliances, stowage, fit & operation   |
| <b>AIR PIPES</b><br>Examination and or testing of air pipes including efficiency of their closing appliances, weld connection between Air pipes and deck plating.<br>Confirmation that vents from bunker tanks and ballast tanks (with cathodic protection) are equipped with flame screens. |
| <b>GANGWAYS &amp; LIFELINES</b><br>Examination of the condition and arrangement including portable fittings.   |
| <b>FREEING PORTS</b><br>Examination of the condition and arrangement including shutters and crew protection bars   |

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| <p><b>NEW INSTALLATION OF MATERIALS CONTAINING ASBESTOS</b></p> <p>Confirming that new equipment containing asbestos was not fitted on board since last survey</p>   |
| <p><b>CARGO SHIPS EXCEPT TANKERS</b></p> <p>Confirming, as far as practicable, that no changes have been made in the structural fire protection, examining any manual and automatic fire doors and proving their operation, testing the means of closing the main inlets and outlets of all ventilation systems and testing the means of stopping power ventilation systems from outside the space served</p>  |
| <p><b>GANGWAY AND ACCOMMODATION LADDER</b></p> <p>Satisfactory examination of various items pertaining to accommodation ladder, gangways, Davits, Winches. Verification of inspection and maintenance records. (IRS Rules Part 1 Ch.2, Cl.6.2.2.9 to 6.2.2.13)</p>   |
| <p><b>TOWING &amp; MOORING EQUIPMENT</b></p> <p>Confirm that the towing and mooring equipment is properly marked with any restriction associated with its safe operation (Applicable for ships constructed after 01/01/2007)</p>   |
| <p><b>INTERNAL SPACES</b></p> <p>Verification of the permanent means of access where appropriate of the internal spaces as far as practicable. (IRS Rules Part 1 Ch.2, Cl 6.2.2.14)</p>  |
| <p><b>UPGRADATION / REPAIR TO COATING</b></p> <p>Confirmation that maintenance, repair and partial recoating had been done as per manufacturer's specification using acceptable coating system, suitable surface preparation and adequate film thickness under the supervision of coating manufacturer's representative/coating inspector. These had been verified through stage/patrol inspection during survey and considered acceptable.</p> <p>Note: Ballast tank for which coating condition was upgraded to "GOOD" this time during survey are to be listed in the "Remark" section.</p>   |
| <p><b>ADDITIONAL REQUIREMENTS FOR DRY CARGO SHIPS CARRYING CONTAINERS</b></p>  |
| <p><b>STOWAGE AND SECURING ARRANGEMENTS FOR CONTAINERS</b></p>   |
| <p>i) Confirmation that cargo securing fittings including their weld attachments and supporting structures are in efficient condition.</p>   |
| <p>ii) Confirmation that rod, wire or chain lashings, twistlocks, stackers, buttresses, shores, cell guides, other locking devices and container connectors used for securing containers are maintained in efficient condition.</p>  |
| <p>iii) Confirmation that portable cargo securing devices are certified and assigned with a max, securing load.</p>  |
| <p><b>OPEN HATCH SHIPS</b></p>   |
| <p>i) Where the vessel is exempted from the requirements of providing hatch covers for cargo holds from the flag administration, verification that necessary documentation to this effect is available onboard.</p> <p>ii) Confirmation that the vessel maintains fully operational hold dewatering systems, including all system redundancies (The operability and condition of the hold dewatering systems and freeing ports if they are fitted should be inspected monthly by the crew and entered in the ship's log book for annual verification). Verification that the vessel is fitted with pumping of hold bilges by at least three bilge pumps and an examination and test of the system carried out to confirm the bilge pumping system is in good order.</p> <p>iii) Examination and test of high bilge level alarms for all open cargo holds to confirm these are in</p> |

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NA – Not Applicable.

satisfactory condition(The alarms should annunciate in the machinery spaces and the manned control location and be independent of bilge pump controls. )

iv) Examination of fixed water spray system for all open cargo holds to confirm these are maintained in good condition and ready for use. (The system shall be capable of spraying water into the cargo hold from deck level downward.)

v) Whenever a fire detection system (as part of IMDG Cargo) is fitted in open hold area, verification that the fire detection system is maintained in good condition and ready for use.

#### **NON WEATHER TIGHT HATCHES ABOVE SUPERSTRUCTURE DECK**

Confirmation that non-weather tight hatch covers, if provided above a level equivalent to second tier superstructure; or above a level equivalent to third tier superstructure in the forward quarter of the ship's length, necessary approval from the flag administration is available on board. An examination and test of the bilge pumping and bilge high level alarm system for these holds to be carried out to confirm these are in good order.

#### **ADDITIONAL SAFETY ASPECTS**

When oil or dangerous goods are intended to be carried in limited quantities inside the containers, verification that the vessel is in possession of valid statutory certificate to this effect to confirm that additional safety aspects as per relevant code/convention requirements are complied with.

#### **VESSEL AGE BETWEEN 10-15 YEARS (GENERAL DRY CARGO SHIPS)**

##### **CARGO HOLDS:**

Overall survey of one forward and one after cargo hold and their associated tween deck spaces, if necessary TM should be carried out towards suspect and substantial corrosion areas as a consequence of previous special survey.

#### **VESSEL AGE ABOVE 15 YEARS (GENERAL DRY CARGO SHIPS)**

##### **CARGO HOLDS:**

Overall survey of all cargo holds and tween deck spaces.

Close up survey of forward cargo hold and one selected cargo hold. (Min. 25% of frames, all piping and penetrations in cargo holds, including overboard piping are to be examined)

#### **RO – RO SHIPS**

##### **SHELL AND INNER DOORS**

Verification as far as practicable that the bow, inner, side shell and stern doors are maintained in a satisfactory condition. Confirm that no unapproved changes have been made to the bow, inner, side, and stern doors since the last survey.

##### **STRUCTURAL EXAMINATION**

Structural arrangement of doors including plating, secondary stiffeners, primary structure, hinging arms and welding. Shell structure surrounding the opening of the doors and the securing, supporting and locking devices including shell plating, secondary stiffeners, primary structure and welding. Hinges and bearings, thrust bearings, hull and door side supports for securing, supporting and locking devices are to be examined.

##### **CLOSE UP SURVEYS**

Minimum close up survey as per our rules part 1 ch.2 table 6.2.6.4 is to be carried out at every annual survey. NDT is to be carried out in the surrounding areas and for similar items as considered necessary by

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| the surveyor if the crack is found.   |
| <p><b>SEALING ARRANGEMENT</b></p> <p>Satisfactory examination of packing material/rubber gaskets and retaining bars or channels including welding is to be carried out.</p>   |
| <p><b>DRAINAGE ARRANGEMENT</b></p> <p>An examination of drainage arrangement including bilge wells and drain pipes is to be carried out. The drainage facilities are to be examined visually for blockage or other damage and the provision of means to prevent blockage of drainage arrangements are to be confirmed, for closed vehicle and ro-ro spaces and special category spaces where fixed pressure water spraying systems are used</p>   |
| <p><b>FUNCTION TEST OF DOORS</b></p> <p>Checking of the satisfactory operation of the bow, inner, side shell and stern doors during a complete opening and closing operation is to be carried out as applicable. Proper working of hinging arms and hinges, proper engagement of the thrust bearings, device for locking the door in the open position, securing supporting and locking devices, mechanical lock of the securing devices, proper locking of hydraulic securing devices in the event of a loss of the hydraulic fluid, according to the procedure provided by the OMM are to be checked satisfactorily. Correct indication of open/closed position of doors and securing/locking devices at navigation bridge and other control stations, isolating of the hydraulic securing/locking devices from other hydraulic systems. Confirmation that the operating panels inaccessible to unauthorized persons, verification of the notice plates on the operating panels, examination of electrical equipments for opening, closing and securing of doors are to be checked.</p> |
| <p><b>MEASUREMENT OF CLEARANCES</b></p> <p>Clearances of hinges, bearings, and thrust bearings are to be taken, where no dismantling is required. If dismantling is carried out, a visual examination of hinge pins and bearings together with NDT of the hinge pin is to be carried out. Clearances of securing, supporting and locking devices are to be measured, where indicated in the OMM.</p>  |
| <p><b>FUNCTION TEST OF THE INDICATOR SYSTEM</b></p> <p>Checking of the satisfactory operation of the indicator system is to be carried out by checking alarms, lamp test function on both the panels, verification that it is not possible to turn off the indicator light on both panels, fail safe performance, condition of sensors and protection from water, ice formation and mechanical damage.</p>  |
| <p><b>TEST OF WATER LEAKAGE DETECTION SYSTEM</b></p> <p>The system is to be checked including alarm on the navigation bridge and engine control room panel as per OMM. Test of television surveillance system where fitted is to be done satisfactorily.</p>  |
| <p><b>TIGHTNESS TEST OF SHELL DOORS</b></p> <p>A hose test or equivalent is to be carried out as deemed necessary by the surveyor.</p>  |
| <b>MACHINERY SPACES</b>   |
| <p><b>MACHINERY AND BOILER SPACES</b></p> <p>Machinery, boilers and other pressure vessels, associated piping systems and fittings are so installed and protected as to reduce to a minimum any danger to persons on board, due regard being given to moving parts, hot surfaces and other hazards</p>  |

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4. Opportunity to examine/test was not provided this time. Remains outstanding.

NA – Not Applicable.

**FIRE/EXPLOSION HAZARDS**

- i) Propulsion system and auxiliary machinery, boilers, all pressurized systems (steam, pneumatic, hydraulic) and their associated fittings were examined to see whether they are being properly maintained and with particular attention to the fire and explosion hazards
- ii) Verification that oil / water leakages, accumulation of oil, with potential source of ignition does not exist in the machinery spaces. Leakages if any have been dealt and source of leakages rectified.
- iii) Confirmation that floor plates & gratings are secured and found to be in order.

**STEERING GEAR**

All main and auxiliary steering arrangements and their associated equipment and control systems were examined and tested. Steering chains are verified for wear and tear and it was ensured wear is within 12% of the original rule diameter. Confirmation that various alarms required for hydraulic power operated, electric and electro-hydraulic steering gears are, operating satisfactorily and that the recharging arrangements for hydraulic power operated steering gears are being maintained. Log entries made in accordance with statutory requirements were verified where applicable

**MEANS OF COMMUNICATION**

All means of communication between the navigating bridge and the machinery control positions including engine room telegraph, as well as the bridge and the main / alternative steering position, if fitted, are tested. Where ships having emergency steering positions there are means of relaying heading information and, when appropriate, supplying visual compass readings to the emergency steering positions. Confirmation that means of indicating the angular position of the rudder are operational

**BOILERS AND PRESSURE VESSELS**

Periodical Surveys of boilers and other pressure vessels have been carried out as required by the Rules and the safety devices have been tested. External visual examination. External examination of boilers including test of safety & protective devices and test of safety valve using it's relieving gear. For exhaust gas economisers, review of engine log book to verify that Chief Engineer has tested the safety valves at sea within the window period of Annual Survey

**REMOTE CONTROLS**

Means for the operation of the main and auxiliary machinery essential for propulsion and the safety of the ship, including when applicable, the means of remotely controlling the propulsion machinery from the navigating bridge and the arrangements to operate the main and other machinery from a machinery control room

**BILGE PUMPING ARRANGEMENT**

Examination of the bilge pumping systems and bilge wells including operation of each bilge pump (including hand pumps and eductors), extended spindles and level alarms, where fitted. Operational confirmation of emergency bilge suction and bilge-pumping system for each watertight compartment and drainage from enclosed cargo spaces situated on freeboard deck. Vessels having single cargo hold and load line length less than 80 m, examination & random test of water ingress detection alarm system should be verified.

**NORMAL OPERATION OF PROPULSION MACHINERY**

Confirming that the normal operation of the propulsion machinery can be sustained or restored even though one of the essential auxiliaries becomes inoperative (IRS Rules Part 1 Ch.2, Cl 6.2.4.4)

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| <p><b>FIRST START ARRANGEMENT</b><br/>Operational confirmation of the means provided to bring the machinery into operation from the dead ship condition without external aid</p>  |
| <p>Sea Water Pipe Expansion Joints<br/>Examining visually the condition of any expansion joints in sea water system.</p>  |
| <p><b>AUTOMATION</b><br/>General Examination of automation equipment. Operation of safety devices, bilge level detection and alarm systems and control systems. Examination and testing of the general emergency alarm system and confirmation of the engineer's alarm that it is clearly audible in the engineer's accommodation</p>   |
| <p><b>SCHEDULE OF BATTERIES</b><br/>Schedule of batteries for essential and emergency services available on board and maintenance being done as per this schedule.</p>  |
| <p><b>MACHINERY SPACE VENTILLATION</b><br/>Confirmation that machinery space ventilation is in good working condition.</p>  |
| <p><b>MACHINERY VERIFICATION RUNS</b><br/>Towards completion of Special/Continuous Survey of Machinery, trial of main &amp; auxiliary machinery including the steering gear &amp; controls carried out to confirm satisfactory operation (In afloat condition).</p>   |
| <p><b>SEA TRIAL</b><br/>In case of major repairs to main propulsion machinery or steering gear, confirmation that a sea trial has been carried out satisfactorily to confirm proper operation of the relevant machinery in all respects.</p>  |
| <p><b>ELECTRICAL INSTALLATION</b></p>   |
| <p><b>ELECTRICAL SYSTEM</b><br/>General examination visually and in operation, as feasible, of the main electrical machinery, the emergency sources of electrical power, the switch gear, other electrical equipment including the lighting system. The precautions provided against shock, fire and other hazards of electrical origin for proper maintenance</p>  |
| <p><b>EMERGENCY SOURCE OF POWER</b><br/>The operation of the emergency source(s) of electrical power, including their starting arrangement, the systems supplied, and when appropriate, their automatic operation as far as practicable</p>   |
| <p><b>MONITORING OF HARMONIC DISTORTATION</b><br/>Confirmation that equipment for continuous monitoring of harmonic distortion level is in good order, alarm tested ,logging of measured value verified in engine log book or electronically in case where automation system fitted and found to to satisfactory.<br/>(Note -Applicable for vessel keel laid on or after 01 July 2017 and on exiting ship retrofitted with harmonic filter on or after 01 July 2017.)</p> |
| <p><b>PROTECTION ARRANGEMENT FOR HARMONIC FILTER</b><br/>Confirmation that protection for harmonic filter, including alarm tested and found satisfactory.<br/>(Note- Applicable for vessel keel laid on or after 01 July 2017 and on exiting ship retrofitted with harmonic filter on or after 01 July 2017.)</p>   |

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| <b>ALTERNATIVE DESIGN AND ARRANGEMENT</b>   |
| Where applicable, examination of alternative design and arrangement for machinery or electrical installations or fire safety, in accordance with the test inspection and maintenance requirements if any specified in the approved documentation is to be carried out   |
| <b>FIREFIGHTING ARRANGEMENTS</b>  |
| <b>MAIN AND EMERGENCY FIRE PUMP</b><br>Verification that each Fire pump (including starting and priming arrangements) is capable of producing the required two jets of water produced simultaneous from different hydrants at any part of the ship whilst the required pressure is maintained in the fire main  |
| <b>FIREMAINS, HYDRANTS, HOSES, NOZZLES AND APPLICATORS</b><br>Condition of fire main (no soft patches or doublers) together with flanges and valves, hydrants, hoses, nozzles, applicators, spanners, relief valves and international shore connection  |
| <b>READINESS OF FIRE HYDRANTS, HOSES</b><br>Each hose complete with couplings, nozzle (dual-purpose nozzles where applicable) and tools kept ready for use  |
| <b>PORTABLE EXTINGUISHERS AND FOAM APPLICATORS</b><br>Confirmation that portable fire extinguishers correspond to the fire control plan w.r.t. number, type and location and that when examined were in good condition, fully charged and ready for use.  |
| <b>SPARE CHARGES</b><br>Availability of spare charge/s for each portable extinguisher or additional portable extinguishers of the same type   |
| <b>FIRE AND/OR SMOKE DETECTION SYSTEM</b><br>Confirmation of proper functioning of fire detection and alarm system and sample extraction smoke detection system;  |
| <b>REMOTE STOPPING OF FANS, OIL PUMPS, ETC</b><br>Verify that the remote controls for stopping fans and machinery are in working order. Examination of the arrangements for remote closing of valves for oil fuel, lubricating oil and other flammable oils and confirming, as far as practicable and as appropriate, the operation of the remote means of closing the valves on the tanks that contain oil fuel, lubricating oil and other flammable oils.   |
| <b>FIREMAN'S OUTFITS &amp; EEBDS</b><br>Confirmation that the fire fighters' outfits including its self-contained compressed air breathing apparatus and emergency escape breathing devices (EEBDs) are complete and in good condition and that the cylinders, including the spare cylinders, of any required self-contained breathing apparatus are suitably charged, and that on board means of recharging breathing apparatus cylinders used during drills or a suitable number of spare cylinders to replace those used are provided, and provision of two-way portable radiotelephone apparatus of an explosion-proof type or intrinsically safe |
| <b>FIXED FIRE FIGHTING SYSTEM</b><br>i) Examination of fixed fire fighting system (including fixed fire fighting system of the machinery, cargo vehicle, special category and ro-ro spaces, as appropriate) controls, piping, instructions and marking. Checking for evidence of proper maintenance and servicing including date of last systems tests<br>ii) Verification with regard to correct positioning(for in service condition) of safety pins where used on  |

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| <p>cylinder head discharge valves for fixed fire fighting CO2 system are in accordance with manufacture's instruction manual.</p> <p>iii) Examination of the fixed carbon dioxide extinguishing systems, where applicable, are provided with two separate controls, one for opening of the gas piping and one for discharging the gas from the storage container, each of them located in a release box clearly identified for the particular space.</p>                         |
| <p><b>CLOSING ARRANGEMENTS FOR SKYLIGHTS, FLAPS ETC</b></p> <p>Examination of closing arrangements of ventilators, funnel annular spaces, skylights, doorways and tunnel where applicable, including condition of operating mechanism e.g. wire ropes, hydraulic piping etc</p>  |
| <p><b>FIRE DOORS &amp; CONTROLS</b></p> <p>Examination of any manual and automatic fire doors and proving their operations</p>   |
| <p><b>MEANS OF ESCAPE</b></p> <p>Confirmation that the means of escape from accommodation, machinery and other spaces are satisfactory</p>   |
| <p><b>GASEOUS FUEL FOR DOMESTIC PURPOSE</b></p> <p>Arrangements found in satisfactory condition.</p>   |
| <p style="text-align: center;"><b>GENERAL</b></p>  |
| <p><b>HOUSE KEEPING</b></p> <p>i) Verification that general housekeeping / cleanliness in engine room, on deck, accommodation, hospital, galley, wash basins and toilets are satisfactory.</p> <p>ii) Confirmation that no loose drums and no heavy items without securing/lashing on deck.</p> <p>iii) Confirmation that Spare anchor where provided, its lashing bracket in good condition.</p>  |
| <p><b>FLAG SPECIFIC REQUIREMENTS</b></p> <p>Confirmation that flag specific requirements/instructions, if any are complied with.</p> <p>Please Provide details in Remark section.</p>  |
| <p><b>H.O. INSTRUCTIONS</b></p> <p>Confirmation that H.O. Instructions pertaining to this survey if any communicated separately, have been complied with. Please Provide details in Remark section.</p>  |
| <p style="text-align: center;"><b>ADDITIONAL REQUIREMENTS TOWARDS CLASS INTERMEDIATE SURVEY</b></p>  |
| <p><b>PIPING SYSTEM</b></p> <p>(This section is applicable to general dry cargo vessels and where the intermediate survey is equivalent to the previous special survey)</p> <p>Examination of all bilge and ballast piping systems incl. operational testing to working pressure to confirm that the tightness and condition are satisfactory. Above to include all piping in the ballast tanks, cargo holds, pipe tunnels, cofferdams and void spaces bounding cargo holds.</p> |
| <p><b>CLOSE-UP/OVERALL EXAMINATION OF CARGO HATCH COVERS AND COAMINGS INCL. OPERATION OF HATCH COVERS, AS APPLICABLE</b></p> <p>(This section is applicable to general dry cargo vessels and where the intermediate survey is equivalent to the previous special survey)</p> <p>i) Examination of cargo hatch covers and coamings including their closing appliances, stowage, fit &amp; operation.(IRS Rules)</p>   |

Condition to be reported using number code as follows:

1. When examined found to be satisfactory and/or examined/tested satisfactory and/or confirmed arrangements exist in satisfactory condition. No repairs considered necessary this time.
  2. Repairs now recommended and were carried out satisfactorily. After repairs found to be satisfactory and/or examined / tested satisfactorily and/or confirmed arrangements exist in satisfactory condition.
  3. Repairs now recommended and remain outstanding.
  4. Opportunity to examine/test was not provided this time. Remains outstanding.
- NA – Not Applicable.

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| ii) Confirmation that all mechanically operated hatch covers have been checked for operation and effectiveness of sealing arrangement and found to be satisfactory. (Drainage channels and non return valves for cargo hatch to be specially examined.)  |
| <b>ADDITIONAL REQUIREMENTS TOWARDS SPECIAL SURVEYS</b>   |
| <b>CLOSE-UP/OVERALL EXAMINATION OF CARGO HATCH COVERS AND COAMINGS INCL. OPERATION OF HATCH COVERS, AS APPLICABLE</b>  |
| i) Examination of cargo hatch covers and coamings including their closing appliances, stowage, fit & operation.(IRS Rules)   |
| ii) Confirmation that all mechanically operated hatch covers have been checked for operation and effectiveness of sealing arrangement and found to be satisfactory. Drainage channels and non return valves for cargo hatch to be specially examined.  |
| <b>MOORING ROPES AND TOW LINES</b>   |
| Confirmation that sufficient mooring ropes and tow lines as required by rules are provided onboard.  |
| <b>AIR PIPES</b>   |
| For vessels other than passenger vessels, internal examination of automatic air pipe heads at special survey as required by IRS Rules, to confirm these are maintained in satisfactory condition.  |
| <b>CHAIN LOCKER</b>  |
| Examination of chain locker, hold fast, hawse pipes and chain stoppers and pumping arrangement of the chain locker.  |
| <b>MEANS OF EMBARKATION AND DISEMBARKATION</b>   |
| Confirmation that accommodation ladders, gangways and its winches incl. brake system operationally tested with specified maximum operation load in accordance with IRS Rules Part 1 and found to be satisfactory.  |
| <b>PIPING SYSTEM</b>   |
| For general dry cargo ships, examination of all bilge and ballast piping systems incl. operational testing to working pressure to confirm that the tightness and condition are satisfactory. Above to include all piping in the ballast tanks, cargo holds, pipe tunnels, cofferdams and void spaces bounding cargo holds. |
| <b>ADDITIONAL REQUIREMENTS FOR RO-RO SHIP FOR SPECIAL SURVEYS</b>  |
| <b>STRUCTURAL EXAMINATION</b>  |
| Confirmation that the examination of the door incl. thickness measurement and testing carried out satisfactorily for compliance with applicable requirements, so that the structural and weather tight integrity remain effective.   |
| <b>CLOSE-UP, THICKNESS MEASUREMENT AND NDT</b>   |
| i) Confirmation that close-up survey of securing, supporting and locking devices including welding as required by IRS Rules Part 1, Ch.2, Table 6.2.6.4 have been carried out satisfactorily   |
| ii) Confirmation that non-destructive testing and thickness measurements are carried out satisfactorily on securing, supporting and locking devices, including welding, to the extent considered necessary.  |
| <b>TIGHTNESS TEST</b>  |
| Confirmation that the effectiveness of sealing arrangements have been verified by hose testing or  |

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  3. Repairs now recommended and remain outstanding.
  4. Opportunity to examine/test was not provided this time. Remains outstanding.
- NA – Not Applicable.

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| equivalent.  |
| <b>MEASUREMENT OF CLEARANCES</b>   |
| Confirmation that the clearances of hinges, bearings and thrust bearings have been taken and found to be satisfactory. Where dismantling is carried out, confirmation that a visual examination of hinge pins and bearings together with NDT of the hinge pin carried out satisfactorily.  |
| <b>DRAINAGE ARRANGEMENTS</b>   |
| Confirmation that the non return valves of the drainage system examined in dismantled condition and found to be satisfactory.  |
| <b>ADDITIONAL ANNUAL SURVEY REQUIREMENTS FOR PASSENGER/RO-RO FERRY/FERRY</b>   |
| <b>GENERAL EMERGENCY ALARM AND PUBLIC ADDRESS SYSTEM</b>   |
| Verification that general alarm and public address system is operational throughout the accommodation and service spaces and control stations and open decks, as applicable.   |
| <b>MEANS OF ESCAPE FOR PASSENGERS</b>  |
| Confirmation that the means of escape provided for passengers are so arranged that the persons onboard can safely and swiftly escape to the lifeboat and life raft embarkation deck; and escape routes are maintained in a safe condition, clear of obstacles and additional aids for escape shall be provided as necessary to ensure accessibility, clear marking, and adequate design for emergency situations.  |
| <b>SIDE SCUTTLES</b>   |
| Confirmation that the side scuttles if fitted below bulkhead deck are of fixed type & provided with deadlight; and if fitted with openable type, time of opening such side scuttles in port and of closing and locking them before the ship leaves port are entered in log-book.   |
| <b>MOVABLE CAR DECKS</b>   |
| Examination of pontoon racks including lashing arrangements, stowing arrangements and drainage arrangements in pontoon storage area to confirm these are in efficient condition.   |
| <b>ARRANGEMENT FOR CARRIAGE OF MOTOR VEHICLES WITH FUEL IN THEIR TANKS</b>   |
| 1) Checking for evidence of proper maintenance, testing and inspection including verification to confirm that following are maintained in good condition.<br>i) automatic fire alarm system in cargo holds.<br>ii) fixed fire extinguishing system in cargo holds.<br>iii) portable fire extinguishers in cargo holds and at cargo hold entrances.<br>iv) ventilation system in cargo holds including remote indicators on bridge.<br>v) electrical equipment in cargo holds, if fitted.<br>2) Confirmation that required signboards are posted. |
| <b>LOG ENTRIES</b>   |
| i) Confirmation that log entries with respect to closing / opening of the hinged doors, portable plates, side scuttles, gangway, cargo and bunkering ports and other openings, which are required to be kept closed during navigation have been made.<br>ii) Confirmation that periodical operation and inspection / drills for operating watertight doors, side   |

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  3. Repairs now recommended and remain outstanding.
  4. Opportunity to examine/test was not provided this time. Remains outstanding.
- NA – Not Applicable.

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| <p>scuttles, valves and closing mechanisms of scuppers, ash-chutes and rubbish-chutes in passenger ships have been done weekly and entered in the log books available onboard for satisfactory operation/condition (Note: In ships in which the voyage exceeds one week in duration a complete drill shall be held before leaving port, and others thereafter at least once a week during the voyage).</p> <p>iii) Confirmation that the periodic testing of complete emergency system incl. the testing of automatic starting arrangements carried out and recorded.</p>   |
| <p><b>SUBDIVISION LOADLINE MARKING</b></p>  |
| <p>Verification that subdivision loadline marking is as per Passenger ship safety certificate.</p>  |
| <p><b>WATERTIGHT DOORS</b></p>  |
| <p>i) Verification that means of indication for all power-operated sliding watertight doors at all remote operating positions (i.e. navigation bridge and at the location where hand operation is provided (above the bulkhead deck)), including audible alarm for indicating the doors being closed from remote positions are working satisfactorily.</p> <p>ii) Confirmation that electrical power required for power-operated sliding watertight doors, associated control, indications and alarm circuits is supplied from the emergency switchboard either directly or by a dedicated distribution board situated above the bulkhead deck and also automatically supplied by the transitional source of emergency electrical power (for controls, indications and alarms) in the event of failure of either the main or emergency source of electrical power, as applicable.</p>   |
| <p><b>FIRE GROWTH POTENTIAL</b></p>   |
| <p>i) Confirmation that for passenger ships carrying more than 36 passengers, power ventilation, except machinery space and cargo space ventilation and any alternative system, fitted with controls so grouped that all fans can be stopped from either of two separate positions (Note: Fans serving power ventilation systems to cargo spaces is capable of being stopped from a safe position outside such spaces).</p> <p>ii) For passenger ships, confirmation of satisfactory operational condition of controls required for opening and closure of skylights, closure of openings in funnels which normally allow exhaust ventilation and closure of ventilator dampers, stopping forced and induced draught fans, oil fuel transfer pumps, oil fuel unit pumps, lubricating oil service pumps, thermal oil circulating pumps and oil separators (purifiers) and the controls for any required fire-extinguishing system.</p> |
| <p><b>SMOKE GENERATION POTENTIAL AND TOXICITY</b></p>   |
| <p>Verification that satisfactory records are available on passenger ships (constructed on or after 1 July 2008) to ensure paints, varnishes and other finishes including primary deck coverings used on exposed surfaces of cabin balconies(excluding natural hard wood decking systems) are of type which is not capable of producing excessive quantities of smoke and toxic products at elevated temperatures(in accordance with fire test procedures code).</p>  |
| <p><b>FIRE PATROL</b></p>   |
| <p>Confirmation from records for ships carrying more than 36 passengers, an efficient patrol system is maintained so that an outbreak of fire may be promptly detected.</p>   |
| <p><b>SPRINKLER AND WATER SPRAY SYSTEM</b></p>  |
| <p>Verification that controls, piping, instructions, notices and markings are in order. Checking for evidence of</p>  |

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2. Repairs now recommended and were carried out satisfactorily. After repairs found to be satisfactory and/or examined / tested satisfactorily and/or confirmed arrangements exist in satisfactory condition.
3. Repairs now recommended and remain outstanding.
4. Opportunity to examine/test was not provided this time. Remains outstanding.

NA – Not Applicable.

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| proper maintenance, testing and inspection. Verification that system is in good order, maintained ready for use and visual/ audible alarms are operational. Checking by means of simulation for automatic starting of sprinkler pump/s, when there is a drop in pressure in the line.  |
| <b>FIRE EXTINGUISHING ARRANGEMENTS IN CARGO SPACE</b>  |
| Verification that controls, piping, instructions, notices and markings are in order. Checking for evidence of proper maintenance, testing and inspection. Verification that system is in good order, maintained ready for use.<br>(Note: All cargo spaces of passenger ships of 1,000 gross tonnage and upwards are to be protected by a fixed carbon dioxide or inert gas fire-extinguishing system complying with the provisions of the Fire Safety Systems Code or by a fixed high-expansion foam fire- extinguishing system which gives equivalent protection).  |
| <b>FIRE &amp; SMOKE DETECTION SYSTEMS</b>  |
| <b>FIRE DETECTION AND ALARM SYSTEM</b>   |
| Examination and testing, where applicable, of any fire detection and fire alarm arrangement on cabin balconies.  |
| <b>SMOKE DETECTION AND ALARM SYSTEM</b>  |
| For passenger ships constructed on or after 1 July 2010, confirming the smoke detectors in cabins, when activated, are emitting, or cause to emit, an audible alarm within the space where they are located.   |
| For passenger ships constructed on or after 1 July 2010, confirming detectors and manually operated call points of a fixed fire detection and fire alarm system can be remotely and individually identified.   |
| <b>SUPPLEMENTARY LIGHTING SYSTEM</b>   |
| i) Verification that supplementary lighting in cabins to indicate the exit (so that occupants will be able to find their way to the door ) are in good order. Also verification that such lighting is connected to an emergency source of power or have a self contained source of electrical power in each cabin and automatically illuminated (Applicable for passenger ship contracted on or after 01/07/2010).<br>ii) Verification that the vessel is provided with supplementary emergency lighting system of adequate illumination in all passenger public spaces and alleyways. Also verification that the source of power for the supplementary lighting is an accumulator battery located within the lighting units and is being continuously charged. Confirmation that all crew space alleyways, recreational space and every working space that is normally occupied are provided with portable rechargeable battery operated lamps unless they are fitted with the supplementary emergency lighting mentioned earlier (Applicable to every passenger ship with ro-ro cargo spaces). |
| <b>FLOODING DETECTION SYSTEM</b>   |
| Confirmation that the operation of the flooding detection system for watertight spaces below the bulkhead deck on passenger ships carrying 36 or more persons (constructed on or after 01 July 2010) are in efficient condition.   |
| <b>REFUSE CHUTES AND ASH SHOOTS</b>  |
| i) Confirmation that the inboard openings of ash and rubbish chutes, etc. where fitted, are provided with efficient covers. If the inboard opening is situated below the bulkhead deck, confirmation that the cover is   |

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3. Repairs now recommended and remain outstanding.
4. Opportunity to examine/test was not provided this time. Remains outstanding.

NA – Not Applicable.

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| <p>watertight and, in addition screw down non-return valve fitted in the chutes above the deepest subdivision load line is satisfactory.</p> <p>ii) Confirmation that the control of valve is from a position above the bulkhead deck and provided with open/shut indicators.</p>   |
| <b>WATER TIGHT INTEGRITY ABOVE BULKHEAD DECK</b>  |
| <p>i) Confirmation that, provisions for efficient drainage of enclosed cargo spaces above the bulkhead deck is provided.</p> <p>ii) Confirmation that the space between the bow door/visor and inner door/ramp is adequately drained, either by a bilge suction or by scuppers (both port and starboard) and arrangement found to be in satisfactory condition.</p>   |
| <b>ADDITIONAL ANNUAL SURVEY REQUIREMENTS FOR TUG / ANCHOR HANDLING TUG</b>  |
| <b>FENDERING ARRANGEMENT</b>  |
| Confirmation that the fenders provided from pushing operation and all around on the ship's side are in efficient condition  |
| <b>TOWING HOOK</b>  |
| <p>i) Examination of towing hook incl. remote operation from navigation bridge to confirm these are maintained in efficient condition.</p> <p>ii) Confirmation that wire rope for mechanical releasing used for remote operation is in satisfactory condition.</p> <p>iii) Confirmation that for pneumatic releasing device, mechanical slip device is in good order.</p>   |
| <b>TOWING WINCH</b>   |
| <p>i) Verification of the operation of the disconnection coupling of the towing winch from the navigation bridge.</p> <p>ii) Verifying that the brake liner for towing winch is satisfactory.</p> <p>iii) Confirmation that, possible arrangement to carry out the emergency release sequence (emergency release/application of brakes) even during a black-out is in satisfactory condition.</p> <p>iv) Confirmation that the arrangement for quick release of the winch drum brake from all control stands is satisfactory.</p> |
| <b>PERIODICAL TESTING OF TOWING GEARS</b>   |
| Confirmation that the towing gears and quick release devices (upon initial testing) has been thoroughly examined every two years and subjected to load test at an approved testing facility (Note: Functional safety of towing gear and quick release devices are to be tested by ship staff every month).  |
| <b>ADDITIONAL ANNUAL SURVEY REQUIREMENTS FOR SUPPLY VESSELS</b>   |
| <b>FENDERING ARRANGEMENT</b>  |
| Confirmation that the longitudinal fenders incl. sloping fenders in between are fitted on ship sides at upper deck and forecastle deck are in efficient condition.  |
| <b>WINDOWS</b>  |
| <p>Confirmation that no modification has been done from the initial arrangement with respect to windows and its deadlight used in deck houses and these are maintained in efficient condition.</p> <p>(- On aft ends: in second tier above the freeboard deck and higher – Hinged deadlights are required for second tier.</p> <p>- On sides: in second tier above the freeboard deck and higher – Hinged deadlights are required for second</p>  |

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  2. Repairs now recommended and were carried out satisfactorily. After repairs found to be satisfactory and/or examined / tested satisfactorily and/or confirmed arrangements exist in satisfactory condition.
  3. Repairs now recommended and remain outstanding.
  4. Opportunity to examine/test was not provided this time. Remains outstanding.
- NA – Not Applicable.

and third tiers.

- on fronts: in third tier above the freeboard deck and higher - Hinged deadlights are required for third tier; for fourth and fifth tiers, portable deadlights stowed adjacent to the windows for quick mounting may be accepted. Deadlights for at least two wheelhouse front windows are to have means for providing clear view).

**EQUIPMENT AND CARGO HANDLING ARRANGEMENT**

Confirmation that where cement and dry mud tanks are situated in way of engine room, suitable signboards for access doors between the two spaces are posted to indicate that these doors to be kept closed while the system is under pressure. Also verification that, no modification with respect to the upper parts of the tanks with hatches, pipe connections and other fittings and tanks are segregated from the engine room by steel deck and bulkhead. (Note: Exemption letter for allowing cement tanks/Mud Tanks in way of engine room from the flag is to be available on board).

**ADDITIONAL ANNUAL SURVEY REQUIREMENTS FOR TRAWLERS AND FISHING VESSELS**

**SKYLIGHTS**

Confirmation that the skylights leading to accommodation and machinery space below freeboard deck are capable of being closed weather tight from both sides and in efficient condition (Also to be positioned clear of deck working areas).

(Note: Scuttles may be fitted on skylights for accommodation spaces only).

**STERN TRAWLERS**

Confirmation that stern trawlers, if not provided with suitable protection such as doors, gates or nets at the top of the stern ramp up to the same height as the adjacent bulwark or guard rail, a chain or other means of protection are fitted across the ramp and is in satisfactory condition.

**WEATHER DECK IN WAY OF WORKING AREA OF NETS**

Examination of weather deck in way of the working area of the nets, connection to hull structure of masts, gantries, winches and trawl gallows(for side trawlers) to confirm satisfactory condition.

**CREW PROTECTION**

Verification to confirm the condition of storm rails etc. for the protection of the crew against falling overboard.

**GARBAGE CHUTES**

Examination of the weather tight arrangement of the inboard end of garbage chutes and the operation of screw down non-return valve fitted on outboard end (1.5 m above deck) is in satisfactory condition.

**REFRIGERATED FISH HOLD**

Where the refrigerated fish hold spaces are provided, verification that the insulation arrangement is in satisfactory condition.

For ships assigned with HY notation, additional requirements of refrigerated spaces are to be verified and reported in relevant checklist.

**ADDITIONAL ANNUAL SURVEY REQUIREMENTS FOR DREDGERS**

**SCUPPERS, SANITARY DISCHARGES AND SIDE SCUTTLES**

i) Confirmation that, all areas where mechanical damage is likely (due to barges coming alongside), all side scuttles, scuppers and discharges including their valves, controls and their indicators are well protected and are in efficient condition.

ii) Verification that the scuppers are free from obstructions (Possibility of scuppers becoming blocked by sand and other spoil that may spill on to the deck) and are maintained in efficient condition.

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3. Repairs now recommended and remain outstanding.
4. Opportunity to examine/test was not provided this time. Remains outstanding.

NA – Not Applicable.

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| iii) Examination as far as practicable, of superstructure hinges and blocks, deck hinges, hydraulic jacks and associated piping systems and alarms to confirm these are maintained in efficient condition.  |
| iv) Examination, as far as practicable, of attachments of suction piping and lifting systems to the structure and external examination of piping in dredging machinery spaces for absence of corrosion and leakage.   |
| v) Verification of the condition of the dredging machinery space and related equipment to confirm these are free from hazards with regard to electrical shocks, rotating machinery, fire and explosion.   |
| <b>ADDITIONAL ANNUAL SURVEY REQUIREMENTS FOR FLOATING DRY DOCKS</b>   |
| <b>OPERATING AND BALLASTING MANUAL</b>  |
| Confirmation that the vessel is provided with approved operating and ballasting manual.   |
| <b>BALLAST PUMPS</b>  |
| Confirmation that the dock is provided with at least two water ballast pumps for deballasting (The arrangements for deballasting are to be such that in case of failure to one pump an alternative pumping is available for each ballast tank) and the operation found to be satisfactory.  |
| <b>POWER OPERATED BALLAST VALVES</b>  |
| i) Verification that the power operated ballast valves are provided with arrangements for manual operation or a fail safe device and these are in satisfactory condition.<br>ii) Where manual operation of ballast valves is provided or where power operated valves are capable of manual operation in case of power failure, confirmation that suitable instructions are provided in the operating manual of the dock, that the sea inlet, discharge and distribution valves, in the ballast systems are to be immediately closed in the event of power failure during ballasting / deballasting.   |
| <b>DEFLECTION CONTROL SYSTEM</b>  |
| i) Confirmation that two completely independent deflection meters are fitted and these are in good order with valid calibration.(Meters are for outputting deflections over the length of the dock. One of the two deflection monitoring systems is required to be of hydraulic type. Means are provided for readings of one of the system to be displayed on an indicator board in the control room of the dock.)<br>ii) Confirmation that the arrangements for visual and audible warning and for automatically stopping the ballast pumps before the maximum allowable deflection is reached are satisfactory.<br>(Note: One deflection control system may be accepted for docks designed to operate without using differential ballasting. Such a system should then be of optical type). |
| <b>FIRE PUMPS</b>   |
| Verification to confirm that fire pumps capable of providing minimum pressure at all hydrants of the dry dock and the largest vessel to be docked, sufficient to produce jet throw of at least 12m. through any adjacent hydrants. Where emgy. Fire pump provided, verification that same is maintained in efficient condition and ready for use.   |
| <b>ADDITIONAL REQUIREMENTS FOR WELL STIMULATION VESSELS</b>   |
| <b>DOCUMENTATION</b>  |
| <b>INTACT AND DAMAGE STABILITY</b>  |
| Availability of intact and damage stability information when the vessel is permitted to carry more than the maximum aggregate quantity (800 m3 or a vol. in cubic meters equal to 40% of the vessel's deadweight calculated at a cargo density of 1.0, whichever is lesser) of hazardous and noxious liquids confirming compliance with Res. MSC 235(82).   |
| <b>OPERATION MANUAL</b>   |
| Verification that the approved copy of operation manual is available onboard with instructions and information on safety aspects related to well stimulation processing.  |

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3. Repairs now recommended and remain outstanding.
4. Opportunity to examine/test was not provided this time. Remains outstanding.

NA – Not Applicable.

| <b>WELL STIMULATION EQUIPMENT AND SYSTEMS</b>  |
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| <p><b>GENERAL</b><br/>Examination of the well stimulation equipment and systems taking into account the operational safety arrangement to prevent any danger to person or any hazards to marine environment.</p>   |
| <p><b>TANKS AND PIPING ARRANGEMENT</b><br/>(i) Verification that no alteration has been done to the tanks, piping &amp; pumping arrangement for acids, liquefied nitrogen, cargoes that react with other cargo in hazardous manner and chemicals other than acids where provided for well stimulation processing plant.</p>  |
| <p>(ii) Internal Examination and testing of tank/s at each renewal survey</p>  |
| <p><b>TANK VENTING</b><br/>Verification of outlet from safety valve of Nitrogen tank and vent outlet from acid tanks to open deck including pressure/vacuum valves and flame screens and confirmation that thermal isolation from cold pipes is maintained in good order.</p>  |
| <p><b>ACCESS OPENINGS</b><br/>Examination of the access for enclosed spaces containing tanks, piping, pumps and blenders for uninhibited acid and where provided verification of air locks including independent mechanical ventilation.</p>   |
| <p><b>VENTILATION</b><br/>Verification with respect to satisfactory operation and effectiveness of ventilation system for spaces used for acid storage and handling, other spaces containing equipment for well stimulation and spaces for additive storage and handling</p>   |
| <p><b>SPILL PROTECTION</b><br/>Examination of lining of corrosion resistant material on surrounding bulkhead and coaming for protection of floors or decks under acid storage tanks, pumps and piping of uninhibited acid. Examination of lining or acid resistant coating on water tight coaming for hatches and other openings.<br/>Examination of the drip trays under loading manifold provided with acid resistant material if handling acids and resistant to cryogenic temperature where liquefied gases are transferred.</p> |
| <p><b>DRAINAGE ARRANGEMENT</b><br/>Examination of provision for separate drain arrangement of acid resistant material for spaces housing acid tanks, including drain arrangement for void spaces, double bottom tanks and ballast tanks which are not separated from tanks containing well stimulation substances or by double bulkhead.</p>   |
| <b>ELECTRICAL INSTALLATION</b>   |
| <p><b>ELECTRICAL EQUIPMENT</b><br/>Examination of electrical equipment and cables in spaces containing acetic acid, enclosed spaces containing acid tanks and acid pumping arrangement in order to confirm that these are safe and explosion proof type and maintained in good order.</p>  |
| <b>CONTROL AND MONITORING</b>  |
| <p><b>VAPOUR AND GAS DETECTION</b><br/>Verification of proper functioning of vapour detection and alarm system for hydrogen or hydrogen chloride gas in enclosed space or semi enclosed spaces containing installations for uninhibited acids and proper functioning of oxygen deficiency monitoring systems for the spaces containing tanks and piping for liquid nitrogen.</p>   |
| <p><b>GAUGING AND LEVEL DETECTION</b><br/>Verification of functioning of gauging and level detection systems for liquefied nitrogen tanks closed gauging system with independent high level alarm for tanks containing hydrochloric acid. Functioning of</p>   |

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3. Repairs now recommended and remain outstanding.
4. Opportunity to examine/test was not provided this time. Remains outstanding.

NA – Not Applicable.

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| detection and alarm system for leakage of liquid in spaces containing equipment and storage tanks for well stimulation system.  |
| <b>EMERGENCY SHUTDOWN</b><br>Verification of satisfactory operation of emergency stop of pumps in the oil well stimulation system, emergency shut off valves of nitrogen tank, emergency depressurizing and disconnection of transfer hose. Verification of duplication arrangement where hydraulic and/or pneumatic power supply provided for actuation of emergency shutdown. |
| <b>VOICE COMMUNICATION</b><br>Verification of voice communication between central control station for well stimulation operation and vessel's position keeping control stations.  |
| <b>POWER SUPPLY FOR CONTROL AND MONITORING SYSTEM</b><br>Verification that power supply from UPS (uninterrupted power supply) capable of operating for atleast 30 mins and UPS powered by both main and emergency power systems.  |
| <b>POWER SUPPLY FOR EMERGENCY CONTROL &amp; SHUTDOWN</b><br>Verification that power supply is available from both main and emergency supply to hydraulic/pneumatic pump motors for actuation of emergency control and or shutdown   |
| <b>POSITION KEEPING</b>   |
| <b>DYNAMIC POSITIONING SYSTEMS</b><br>Confirmation that the vessel maintains class notation in respect of dynamic positioning system (DP (2) or DP (3)) and confirmation that system survey has been carried out satisfactorily.  |
| <b>MOORING WITH ANCHORS</b><br>Examination of anchors cables and associated winches where used for position mooring.  |
| <b>PERSONNEL AND FIRE PROTECTION</b>  |
| <b>DECONTAMINATION SHOWERS AND EYE WASHES</b><br>Verification of satisfactory operation of decontamination showers and eye washes on deck. Confirmation in respect of proper functioning of temperature control of water.   |
| <b>PERSONAL PROTECTIVE EQUIPMENT</b><br>Verification of protective equipment available onboard at suitable location for handling of hydraulic acid  |
| <b>FIRE PROTECTION</b><br>Verification that fixed fire extinguishing systems and fire extinguishers are provided as per approved plan and maintained ready for use.   |
| <b>ADDITIONAL REQUIREMENTS FOR OIL RECOVERY VESSELS</b>   |
| <b>DOCUMENTATION</b>  |
| <b>OPERATING MANUAL</b><br>Verification that the approved copy of operating manual is available onboard which includes guidelines and information regarding safety aspect of oil recovery or subsequent conditions, firefighting, maintenance procedures gas measurement and action in case of gas detection.   |
| <b>SHIP STRUCTURE</b>   |
| <b>COAMING</b><br>Examination of coaming to contain deck spills including those provided in oil handling areas and equipment on deck around pumps, transfer flanges and other connections. Confirmation that permanent attachment of closing devices for the drains for coaming are provided. Examination of removable spill coaming where provided.                            |

Condition to be reported using number code as follows:

1. When examined found to be satisfactory and/or examined/tested satisfactory and/or confirmed arrangements exist in satisfactory condition. No repairs considered necessary this time.
2. Repairs now recommended and were carried out satisfactorily. After repairs found to be satisfactory and/or examined / tested satisfactorily and/or confirmed arrangements exist in satisfactory condition.
3. Repairs now recommended and remain outstanding.
4. Opportunity to examine/test was not provided this time. Remains outstanding.

NA – Not Applicable.

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| <b>OIL RECOVERY EQUIPMENT</b>   |
| <b>OIL RECOVERY EQUIPMENT</b>   |
| (i) Examination of oil recovery equipment including its support   |
| (ii) Testing of proper operation of the recovery equipment at each renewal survey.  |
| <b>OIL RECOVERY TANK, PUMPING AND PIPING SYSTEM</b>   |
| <b>OIL RECOVERY TANK</b>  |
| (i) External examination of tank/s, piping.   |
| (ii) Internal examination and verification of coating condition, pressure testing of tanks where the tank is adjacent to engine room without cofferdam at each renewal survey.  |
| <b>VENT PIPES</b>   |
| Examination of vent pipes, flameproof wire gauze, closing appliance. Verification of portable vent pipes where applicable.  |
| <b>LEVEL GAUGING AND OVERFILLING CONTROL OF OIL RECOVERY TANKS</b>  |
| Examination of sounding pipes or other level gauging devices and testing of high level audio & visual alarms or overflow control system.  |
| <b>OIL RECOVERY PUMPS</b>   |
| External examination of oil recovery pumps, foundations and testing of remote operation/shut down devices   |
| <b>BILGE PUMPING ARRANGEMENT</b>  |
| Examination of bilge pumping arrangement and its remote operation from outside the oil recovery pump room.  |
| <b>FIRE DETECTION, PROTECTION AND FIGHTING</b>  |
| <b>FIXED FIRE FIGHTING</b>  |
| Examination of fixed fire extinguishing system for pump rooms of oil recovery operations.   |
| <b>FIRE FIGHTING</b>  |
| Verification of provision of fire extinguishers and foam applicator as per approved plan for oil recovery area.   |
| <b>FIXED WATER SPRAYING SYSTEM FOR WINDOWS/SIDE SCUTTLES</b> (not applicable to vessels with class notation FP 60C)   |
| Examination of a fixed water spraying system for windows and side scuttles cover where provided.  |
| <b>VAPOUR DETECTOR</b>  |
| Confirmation that vessel is provided with gas detection instrument or system and oil flash point measurement equipment with valid calibration records.  |
| <b>ACCESS OPENING BETWEEN HAZARDOUS AND NON-HAZARDOUS AREA</b>  |
| Examination of arrangement of self closing gastight doors, airlock & provision of signboards as applicable  |
| <b>VENTILATION SYSTEMS</b>  |
| <b>VENTILATION SYSTEM</b>   |
| Verification of ventilation system including dampers for operation and effectiveness. Examination of protection screens at intake and outlets of ducts. Verification that warning notices are posted outside compartment. Confirmation that ventilation system can be controlled from outside the oil recovery pump-room. |
| <b>SPARK ARRESTERS IN EXHAUST LINES</b>   |
| Verification of spark arrester in exhaust lines from engines, gas turbines, boilers and incinerator etc.  |

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NA – Not Applicable.

## **ELECTRICAL INSTALLATIONS**

### **ELECTRICAL INSTALLATION**

Examination of intrinsically safe type electrical installation in hazardous area. Testing of insulation level monitoring device including audio and visual alarm for abnormal low level insulation.

### **POWER SUPPLY**

Verification of the adequate power supply available for the equipment used during oil recovery operations.

## **GUIDANCE NOTES**

1. **APPROVED TRIM & STABILITY INFORMATION:-** SOLAS 88 Amend / II-1 / Reg. 22.
2. **FIRE CONTROL PLANS:** - SOLAS Ch. II-2, Reg. 15, part E, Cl. 2.4
3. **STEERING GEAR ENTRIES REQUIRED BY SOLAS:** - SOLAS 99/00 Amend / V / Reg. 26
4. **DAMAGE STABILITY:** - SOLAS Ch. II Part B-1 reg 25.1
5. **DAMAGE CONTROL PLANS:** - SOLAS 88/90 Amend / II-1 / Reg. 22-1
6. **Manoeuvring Booklet:** - SOLAS 81 Amend / II-1 / Reg. 28
7. **CARGO SECURING MANUAL:** - SOLAS 01-03 Amend / VI / Reg. 5
8. **Construction drawings maintained on board:** - SOLAS 05 Amend / II-1 / Reg. 3-7
9. **Cargo Ships except tankers:** - SOLAS 99/00 Amend / II-2 / Reg. 9.2.3
10. **Towing and mooring equipment :** - SOLAS 05 Amend / II-1 / Reg. 3-8
11. **New installation of materials containing asbestos:** - SOLAS 05 Amend / II-1 / Reg. 3-5

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