

**PART II RULES FOR THE CONSTRUCTION
AND CLASSIFICATION OF SHIPS
IDENTIFIED BY THEIR MISSION**

TITLE 48 DIVING SUPPORT VESSELS

SECTION 3 HULL EQUIPMENT

CHAPTERS

- A APPROACH
- B DOCUMENTS, REGULATIONS AND
 STANDARDS
- C DIVING SUPPORT SYSTEMS
- D SPECIFIC SYSTEM REQUIREMENTS
- E FIRE DETECTION, PROTECTION,
 PREVENTION AND FIGHTING VESSELS
 HAVING GT ≥ 500
- F FIRE DETECTION, PROTECTION,
 PREVENTION AND FIGHTING VESSELS
 HAVING GT < 500
 - See Part II, Title 11, Section 3
- G. DSV VESSELS WITH DYNAMIC
 POSITIONING SYSTEMS
- H EVALUATION OF SCANTLING OF THE
 HATCH COVERS AND HATCH COAMINGS IN
 THE CLOSING ARRANGEMENT OF CARGO
 HOLDS OF SHIPS
 - See Part II, Title 11, Section 3
- T TESTS AND INSPECTIONS

CONTENTS			
CHAPTER A	5		
APPROACH	5		
A1. APPLICATION	5		
100. Application.....	5		
CHAPTER B	5		
DOCUMENTS, REGULATIONS AND STANDARDS ...	5		
B1. DOCUMENTS TO BE SUBMITTED TO RBNA 5			
100. Application.....	5		
200. Data, specifications and general arrangement.....	5		
300. Piping.....	5		
400. Fire prevention, detection and fighting:	5		
B2. STANDARDS AND REGULATIONS	6		
100. National Administration	6		
200. Other regulations.....	6		
CHAPTER C	7		
DIVING SUPPORT SYSTEMS CONDITIONS	7		
C1. DIVING SUPPORT SYSTEMS CONDITIONS	7		
100. Application.....	7		
200. Diving systems in class with other class societies on board RBNA classed diving support vessels	7		
500. Medical arrangements	8		
C2. MAN LABOUR	8		
100. Application.....	8		
CHAPTER D	8		
SPECIFIC SYSTEM REQUIREMENTS	8		
D1. LIFTING APPLIANCES	8		
100. Application.....	8		
300. Personnel transfer.....	9		
D2. POSITIONING BY MOORING SYSTEMS	9		
100. Application.....	9		
200. Anchor mooring systems in open waters.....	10		
300. Mooring to fixed installations.....	10		
400. Checking the security of moorings.....	10		
		500. Thruster Units.....	10
		D5. FIRE FIGHTING EQUIPMENT	11
		100. Application.....	11
		200. Fire fighting equipment	11
		300. Portable fire extinguishers requirements and spare charges.....	11
		D12. HYPERBARIC EVACUATION	11
		100. Application.....	11
		200. Hyperbaric evacuation	11
		CHAPTER E	12
		FIRE PROTECTION, FIRE DETECTION AND FIRE EXTINGUISHMENT	12
		E1. GENERAL	12
		100. Application.....	12
		E4. PROBABILITY OF IGNITION	12
		100. Fire protection	12
		E7. DETECTION AND ALARMS	13
		100. Detection and alarms for DSV vessels.....	13
		E9. CONTAINMENT OF FIRE	13
		100. Diving systems in enclosed spaces.....	13
		200. Diving systems on open deck area	13
		E11. FIRE FIGHTING	13
		100. Fixed fire fighting in enclosed spaces.....	13
		CHAPTER G	13
		DSV OR SDSV VESSELS WITH DYNAMIC POSITIONING SYSTEMS	13
		100. Notation SPD-2.....	13
		CHAPTER T	13
		INSPECTIONS AND TESTS	13
		T1. CARGO OR SERVICE HANDLING	13
		100. Performance trials	13
		T8. DYNAMIC POSITIONING SYSTEMS	14
		100. Trial for DSV vessels fitted with dynamic positioning systems	14
		T9. DIVING SYSTEMS	14
		100. General	14

**CHAPTER A
APPROACH**

CHAPTER CONTENTS

A1. APPLICATION

A1. APPLICATION

100. Application

101. This section contains additional requirements to Part II, Title 11, Section 3 concerning hull equipment systems, fire detection, prevention, protection and fighting, materials and specific systems and equipment for diving support vessels.

102. This section applies to all DSV vessels, except where specifically mentioned.

103. Vessels in compliance with this Title will be assigned the service notations:

- a. DSV – diving support vessels for deep waters (See Part II, Title 48, Section 1, A.2, 119).
- b. SDSV – shallow diving support vessels (See Part II, Title 48, Section 1, A.2, 149)

**CHAPTER B
DOCUMENTS, REGULATIONS AND STANDARDS**

CHAPTER CONTENTS

B1. DOCUMENTS TO BE SUBMITTED TO RBNA

B2. REGULATIONS AND STANDARDS

B1. DOCUMENTS TO BE SUBMITTED TO RBNA

100. Application

101. The documents and plans hereunder are additional to Part II, Title 11, Section 3 and are applicable to diving support vessels.

200. Data, specifications and general arrangement

201. The following data and specifications of the diving system installation are to be submitted for RBNA approval:

- a. Diving system description with general arrangement and system limits
- b. Locations, supporting structures and interface conditions
- c. Installation, repair and replacement of system elements and fittings
- d. Data of contained gases and liquids
- e. Geometrical restrictions such as specifications of diameter, requirement for fittings, valves, flanges and flexible hoses

300. Piping

- a. Diagram of the breathing gases system
- b. Diagram for the exhaust gases and relief valves

400. Fire prevention, detection and fighting:

- a. Safety objectives
- b. Fire fighting and Safety Plan containing the following information:
 - b.1. Structural fire protection, showing the method of construction, purpose and category of the various spaces of the ships, the fire rating of bulkheads and decks, means of closings of openings in A and B class divisions, draught stops.
 - b.2. Natural and mechanical ventilation systems showing the penetrations on A class divisions, location of dampers, means of closing, arrangements of air conditioning rooms
 - b.3. Means of escape and, where required, the relevant dimensioning. Escape route signage
 - b.4. Automatic fire detection systems and manually operated call points
 - b.5. Fire pumps and fire main including pumps head and capacity, hydrant and hose locations

- c. Arrangement of fixed fire-extinguishing systems

500. Position keeping by mooring systems

501. Plans and data dealing with positional mooring arrangements and the associated equipment are to be submitted, including the following:

- a. Mooring arrangements with details of mooring patterns, anchor lines and fittings, etc.

- b. Mooring equipment with details of anchors, fairleads and cable stoppers.
- c. Winches or windlasses with details of gearing shafting, brake systems, ratchet and pawl, drum/cable lifter and frame.

502. In addition, details of proposals for the redundancy provided in machinery, electrical installations and control systems are to be submitted. These proposals are to take account of the possible loss of performance capability should a component fail. Where a common power source is utilized for thrusters, details of the total maximum load required for thruster-assist are to be submitted.

503. Plans of control, alarm and safety systems, including the following, are to be submitted:

- a. Functional block diagrams of the control system(s).
- b. Functional block diagrams of the position reference systems and the environmental sensors.
- c. Details of the electrical supply to the control system(s), the position reference system(s) and the environmental sensors.
- d. Details of the monitoring functions of the controllers, sensors and reference system, together with a description of the monitoring functions.
- e. List of equipment with identification of the manufacturer, type and model.
- f. Details of the overall alarm system linking the centralised control station, subsidiary control stations, relevant machinery spaces and operating areas.
- g. Details of the control stations e.g. control panels and consoles, including the location of the control stations.
- h. Test schedules which are to include the methods of testing and the test facilities provided.

505. The following supporting plans, data, calculations or documents are to be submitted:

- a. Design criteria showing operating and survival environment, water depth range and required station keeping limits.
- b. Environmental forces on ship showing wind, current and wave drift.
- c. Ship motions showing first order wave motions, surge, sway and yaw.
- d. Mooring analysis, including computer printout where relevant.

- e. Strength calculations for anchors, fairleads, winches/ windlasses, cable stoppers and special fittings.
- f. Thruster arrangements for thruster-assist systems, including powers, thrusts and interactions between thrusters, thruster and hull, thruster and current.

600. Position keeping by Dynamic Positioning

601. See Part II, Title 103, Section 8, Subchapter F5 of these Rules.

B2. STANDARDS AND REGULATIONS

100. National Administration

101. These rules include compliance with the requirements of NORMAM 15 – DPC – Chapter 13 – “*Emprego de Embarcações de Posicionamento Dinâmico para Apoio as Operações de Mergulho*” (Use of dynamic positioning for the support of diving operations).

200. Other regulations

201. These rules are in compliance with the following regulations / guidelines:

- a. IMCA - IMCA M 103 Rev. 1 – “Guidelines for the Design and Operation of Dynamically Positioned Vessels – Chapter 2 – Diving Support Vessels”
- b. IMCA M 175 – “Guidance on Operational Communications: Part 1 – Bridge and Dive Control”
- c. IMCA D 018 “Code of Practice for the Initial and Periodic Examination, Testing and Certification of Diving Systems”
- d. . IMO “Code of Safety for Diving Systems” adopted 23 November 1995 as res. A.831(19).), and the NORMAM 06 Annex 6-A translation of the Code.
- e. “Guidelines and Specifications for Hyperbaric Evacuation Systems”, adopted by the IMO organization by resolution A.692(17).
- f. IMCA publication D052 “Guidelines on Hyperbaric Evacuation Systems.”

**CHAPTER C
DIVING SUPPORT SYSTEMS CONDITIONS**

CHAPTER CONTENTS

C1. DIVING SUPPORT SYSTEMS CONDITIONS

C2. MANLABOUR

C1. DIVING SUPPORT SYSTEMS CONDITIONS

100. Application

101. The Class Service Notation DSV or SDSV will not be assigned to a vessel unless the diving support systems installed on board have the following certificates:

- a. Diving System Class Certificate by RBNA or by an IACS Classification Society;
- b. IMO Diving System Safety Certificate (DSSC) (ref. IMO Code of Safety for diving systems adopted 23 November 1995 as res. A.831(19).), as required by the vessel's Maritime Administration.

200. Diving systems in class with other class societies on board RBNA classed diving support vessels

201. Where a diving system Classified by another classification Society, is installed on board a ship classed by RBNA, the diving system shall be designed, manufactured and maintained in Class in accordance with the rules and the requirements of the Class Society in which the diving system is classed and periodical surveys shall be carried out by that Class Society. Statutory requirements-and periodical surveys shall be carried out by a recognized organisation or by the Flag Administration itself.

202. The certificates covered by item C1.201 shall be submitted to RBNA:

203. RBNA shall verify compliance as per list below:

- a. Verification that the recognized Classification Society mentioned in C1.201 covers the full diving system;
- b. The interfaces between the diving system and the vessel are in accordance with the requirements of Part II, Title 48 of the Rule;
- c. All pressure components for surface oriented diving vessels are certified by a recognized authority;
- d. The following diving support system plans shall be submitted to RBNA:
 - d.1. General arrangement of the vessel including the block diagram of the dive system;

- d.2. Efforts and accelerations introduced by the diving system to the foundations;
- d.3. Allowable deflections for the diving system;
- d.4. Interface of the diving system piping, fire fighting and electrical systems with the vessel's systems;
- d.5. Safety Plan including escape routes for critical dive personnel involved in launching or manning hyperbaric evaluation systems

e. The labels, markings and colour codes of all components, resulting from the classification of the diving system by the other Class Society shall be verified.

300. Environmental conditions

**301. Ambient conditions
[IACS UR M40]**

301. All equipment and systems on board must be designed and constructed to resist to the ambient conditions found on board such as temperature, ship's motions, vibrations, corrosive environment.

302. The ambient condition requirements are to be applied to the layout, selection and arrangement of all diving support shipboard machinery, equipment and appliances as to ensure proper operation.

303. **Ambient conditions: temperatures** the ambient conditions specified under Part II, Title 11, Section 5, Subchapter D1, Table T.D1.201.1 are to be applied to the layout, selection and arrangement of all diving support shipboard machinery, equipment and appliances as to ensure proper operation.

304. **Ambient conditions - Inclinations** All diving support equipment and systems on board must be designed and constructed to resist to the ambient conditions found on board such as temperature, ship's motions, vibrations, corrosive environment

305. The ambient conditions specified under the present chapter in Part II, Title 11, Section 5, Subchapter D1, Table T.D1.302.1 are to be applied to the layout, selection and arrangement of all diving support shipboard machinery, equipment and appliances to ensure proper operation.

400. Requirements for materials and equipment for the vessel

401. The requirements for materials and equipment for the diving support vessel covered by this Title 48 are those presented in Part III Title 61 Section 2 and 3 of the Rules, as indicated the relevant Chapter of this Section 3.

500. Medical arrangements

501. Medical arrangements shall be available on board to enable immediate response to the injury or sickness of divers.

C2. MAN LABOUR

100. Application

101. The application of the Rules takes for granted the adequate qualification and expertise of the man labour to carry out the operation of the systems herein described.

CHAPTER D SPECIFIC SYSTEM REQUIREMENTS

CHAPTER CONTENTS

D1. LIFTING APPLIANCES

D2. ANCHORING, MOORING AND TOWING

D3. MANOEUVERING SYSTEMS
See Part II, Title 11, Section 3, D3

D4. LIFE SAVING APPLIANCES (LSA)
See Part II, Title 11, Section 3, D4

D5. FIRE DETECTION, PREVENTION,
PROTECTION AND FIGHTING

D6. HULL OPENING: MEANS OF PROTECTION
AND CLOSURE
See Part II, Title 11, Section 3, D3

D7. HULL EQUIPMENT: FITTINGS AND
ACCESSORIES
See Part II, Title 11, Section 3, D3

D8. SINGLE POINT MOORING
See Part II, Title 11, Section 3, D83

D9. FREEING PORTS
See Part II, Title 11, Section 3, D9

D10 SHIPBOARD FITTINGS AND SUPPORTING
HULL STRUCTURES ASSOCIATED WITH TOWING
AND MOORING ON CONVENTIONAL VESSELS
See Part II, Title 11, Section 3, D10

D11. SIDE SCUTTLES AND WINDOWS
See Part II, Title 11, Section 3, D3

D12. HYPERBARIC EVACUATION

D1. LIFTING APPLIANCES

100. Application

101. Cargo Gear is to be certified in accordance with the RBNA Guide for Certification of Lifting Appliances, for the type of cargo gear being provided. As an alternative, evidence of approval by the International Cargo Gear Bureau may be submitted

102. The present Subchapter D1 presents additional requirements to those in D1.101 for the handling system for diving bells.

200. Handling system for diving bells

201. A diving system should be equipped with a main handling system to ensure safe transportation of the diving bell between the work location and the surface compression chamber.

202. The handling system should be designed with adequate safety factors considering the environmental and operating conditions, including the dynamic loads which are encountered while handling the diving bell through the air-water interface.

203. The handling system should enable smooth and easily controllable handling of the diving bell.

204. The lowering of diving bells under normal conditions should not be controlled by brakes, but by the drive system of the winches.

205. If the energy supply to the handling system fails, brakes should be engaged automatically.

206. At least two means of deploying and recovery of divers should always be available.

a. The first should always be a mechanical system by which, in normal circumstances, divers should be deployed and recovered. The primary purpose of doing so is to enhance the safety of their deployment from a floating vessel, to and from the surface of the sea and through it, whatever their physical condition. The nature of the mechanical means selected (e.g., stage, basket or any form of diving bell) must depend upon the nature of the diving tasks. However, whatever the type of means is chosen, it should meet the following additional criteria:

a.1. The system should never be used for anything but the deployment and recovery of divers.

a.2. In the event of failure of the main lifting gear, arrangements should always be provided to enable the divers to be recovered to the vessel.

a.3. The handling arrangements should always prevent excessive lateral, vertical and rotational movement taking place.

a.4. Redundancy should be available in power supplies to ensure that no single failure can cause loss of motive power or control to the handling system.

a.5. In mid-water operations, means should be included to prevent the apparatus containing the divers dropping below the intended working depth under any circumstances.

b. The second means of diver deployment should be another mechanical system conforming to the criteria set out above for the primary system. The secondary

system should be immediately available for recovering divers when diving is being carried out.

207. Where the secondary recovery involves buoyant ascent the bell should have sufficient stability to maintain a substantially upright position and means should be provided to prevent accidental release of the ballast weights.

208. Handling systems and mating devices should enable easy and firm connection or disconnection of a diving bell to a surface compression chamber, even under conditions where the support ship or floating structure is rolling, pitching or listing to predetermined degrees.

209. Where a power actuating system is used for mating operations, an auxiliary power actuating system or an appropriate means should be provided to connect a diving bell to a surface compression chamber, in the event of failure of the normal power actuating system.

210. Where a stage or basket is employed it should be in compliance with the following:

a. Be large enough to accommodate an incapacitated as well as a fit diver;

b. Fitted with hand-grips.

c. Fitted with a detachable guard on the open side of the basket.

d. If a ladder is employed, it should always supplement the mechanical systems, and extend at least 1.5 metres below the surface of the water in calm conditions. The ladder shall also extend 1.5 metres above the deck and have suitable hand holds at the top to assist the diver.

e. Divers shall not be expected to climb more than 3 metres from the water and the added risks which ladders introduce shall be taken into account.

300. Personnel transfer

301. The necessary clear space and facilities shall be available in the ships covered by this Title to transfer personnel to or from them by basket or helicopter winch.

302. A clear zone shall be available painted yellow with a matt, anti-slip surface and be at least 5 metres across and clear on three sides.

D2. POSITIONING BY MOORING SYSTEMS

100. Application

101. This Subchapter D2 refers to positioning of a DSV vessel by means of mooring system, and is additional to Part II, Title 11, Section 3, D2.

102. A Diving support vessel shall be able to keep its

position safely throughout the diving operation.

103. Where a positioning by mooring system is employed, the position keeping may be achieved:

- a. by a pattern of anchors around the ship, if in open water;
- b. by a combination of anchors and moorings to fixed installations;

200. Anchor mooring systems in open waters

201. Whenever seabed obstructions exist, the ship's normal anchoring arrangements may be unsuitable.

202. Diving support vessels using anchor mooring systems shall be fitted with at least two winch drums capable of independent and simultaneous operation.

203. Where there are no moorings to fixed installations, a further two winch drums, wire rope and suitable anchors are to be fitted with the above capabilities for stern deployment.

204. Bow mooring arrangements should be able of deploying ample wire rope cable for the operating conditions and anchors should always be fit for purpose in terms of suitability for:

- a. the ship,
- b. the mooring system used,
- c. The sea bed and the environmental conditions.

205. Line out meters with bridge read-out should always be fitted.

206. When wire rope is used, and the wrap on the winches cannot be seen either from the bridge or by a competent person at the winch, a closed circuit TV system with video display units (VDU) on the bridge should be provided.

207. Where moorings run on deck, precautions should be taken to avoid hazard to personnel and equipment in the vicinity when under tension. Adequate shielding should be provided for as much of their length as practicable.

208. Brakes are installed on each of the mooring system's four deck-mounted, AC motor driven winches. The Units serve as stop-and-set parking brakes to hold the vessel in precise position. In the event of power loss, the brakes are calibrated to provide a controlled emergency stop which prevents vessel drift while protecting drivetrain components.

300. Mooring to fixed installations

301. Suitable mooring points should be provided on fixed installations, which ideally could take the form or

permanently rigged mooring ropes which can be passed to the DSV.

302. Where this arrangement is impossible, strops should be rigged which by holding their connecting eyes clear of the legs of platforms, reduce the risk to personnel in boats while running moorings. These strops should be protected by anti-chafe sheathing.

303. The breaking strain of mooring should not exceed the maximum permissible loading on the relevant part of the platform structure.

304. Moorings should have enough redundancy to ensure that the failure of any single mooring rope will not be a hazard to personnel, the vessel or the installations. A 4-point, computer-controlled mooring system maintains the ship's position over a dive site while compensating for swell, tide and prevailing wind

305. The units serve as stop-and-set parking brakes to hold the vessel in precise position. In the event of power loss, the brakes are calibrated to provide a controlled emergency stop which prevents vessel drift while protecting drivetrain components.

400. Checking the security of moorings

401. A mooring analysis for each mooring plan should be carried out to a standard sufficient to ensure that the ship will be capable of maintaining the required position.

402. The mooring analysis will provide the calculated maximum working tensions which can be expected to be applied to each mooring to retain the ship in position in the worst environmental conditions which are forecast.

403. Once the ship is moored, anchor wires should be tensioned to 125% of the calculated maximum working tensions, but never exceeding the safe working load.

404. Thereafter mooring tensions should be monitored. A reading in the tension-meter which is over the calculated maximum working tensions for more than a brief and isolated period is a clear indication that the limits of safe conditions for remaining moored have been reached.

405. Suitable tension meters should always be fitted to measure the tension in wire moorings. Read-outs should be available on the bridge to monitor the actual tensions and, if the limits as defined above are being approached, the diving operation should be stopped.

500. Thruster Units

501. Diver protection: where the ship is fitted with thrust units to enable the ship to be better manoeuvred safely when mooring and, specially, when unmooring and/or for keeping position, means must be available and applied to physically ensure that, when diving is going on, screws an unprotected thrusters cannot rotate or rudders be operated unless the ship is being maintained in

position by DP. A notice to this effect must be prominently displayed on the bridge and at the dive positions.

D5. FIRE FIGHTING EQUIPMENT

100. Application

101. The requirements of Part II, Title 11, Section 3, D.5 are to be applied.

102. The present Subchapter D5 covers additional requirements to those in D5.101 above specific to DSV Vessels.

200. Fire fighting equipment

201. Suitable fire fighting equipment to cover a full range of potential ship and diving equipment fires should be permanently available, as follows:

- a. Portable fire extinguishers of approved types are to be fitted throughout the enclosed space where the diving systems are installed in such a manner that there is never more than 10 metres walking space between them.
- b. Open deck areas where diving systems are installed are to be equipped with fire extinguishing systems suitable for the location. Fire hoses connected to the fire main may be considered as acceptable.
- c. A portable fire extinguisher shall be fitted at the Dive Control Position room.
- d. Breathing equipment with built-in communications should be provided for use by personnel required to continue working in the Dive Control Position if the area becomes smoke filled.
- e. A complete set of fireman's outfit, additional to other sets required on board, is to be located at the Dive Control Position.

300. Portable fire extinguishers requirements and spare charges

See Part II, Title 11, Section 3, Chapter D.

D12. HYPERBARIC EVACUATION

100. Application

101. All vessels with notation DSV giving support for diving operations at a diving depth over 50 meters shall be provided with a Hyperbaric Evacuation System.

200. Hyperbaric evacuation

201. An evacuation system shall be provided for vessels with notation DSV having sufficient capacity to evacuate all divers under pressure, in the event of the ship having to be abandoned, and shall be in accordance with the provisions of the "Guidelines and Specifications for Hyperbaric Evacuation Systems", adopted by the IMO organization by resolution A.692(17).

202. Reference is made to IMCA publication D052 "Guidelines on Hyperbaric Evacuation Systems."

Guidance

In the event of fire or collision, where the diving support vessel must be abandoned, the evacuation of divers in saturation inside a diving system poses a particular problem as they cannot be readily decompressed, but must be transferred to a pressurized compartment which must be detached from the diving system of the ship and where they will have to remain for a minimum of 72 hours. Such units are designated HRU, Hyperbaric Rescue Unit. The most common type of HRU is a pressure vessel mounted on a conventional self-propelled lifeboat. The lifeboat engine often provides elements of the life support.

End of guidance

CHAPTER E
FIRE PROTECTION, FIRE DETECTION AND
FIRE EXTINCTION

CHAPTER CONTENTS

E1. GENERAL

E2. FIRE SAFETY OBJECTIVES AND
FUNCTIONAL REQUIREMENTS

See Part II, Title 33, section 3, Chapter E

E3. DEFINITIONS

See Part II, Title 33, section 3, Chapter E

E4. PROBABILITY OF IGNITION

E5. FIRE GROWTH POTENTIAL

See Part II, Title 33, section 3, Chapter E

E6. SMOKE GENERATION POTENTIAL AND
TOXICITY

See Part II, Title 33, section 3, Chapter E

E7. DETECTION AND ALARM

E8. CONTROL OF SMOKE SPREAD

See Part II, Title 33, section 3, Chapter E

E9. CONTAINMENT OF FIRE

E10. STRUCTURAL INTEGRITY

See Part II, Title 33, section 3, Chapter E

E11. FIRE FIGHTING

E12. MEANS OF ESCAPE

E13. ALTERNATIVE DESIGN ARRANGEMENTS

See Part II, Title 33, section 3, Chapter E

E14. PROTECTION OF VEHICLE, SPECIAL
CATEGORY AND Ro-Ro SPACES

See Part II, Title 33, section 3, Chapter E

E15. CASUALTY THRESHOLD, SAFE RETURN TO
PORT AND SAFE AREAS

See Part II, Title 33, section 3, Chapter E

E16. DESIGN CRITERIA FOR SYSTEMS TO
REMAIN OPERATIONAL AFTER A FIRE
CASUALTY

See Part II, Title 33, section 3, Chapter E

E17. SAFETY CENTRE ON PASSENGER SHIPS

See Part II, Title 33, section 3, Chapter E

E1. GENERAL

100. Application

101. The requirements of Part II, Title 11, Section 3, Chapter E are to be applied.

102. The present Chapter E covers additional requirements to those in E1.101 above specific to DSV Vessels.

E4. PROBABILITY OF IGNITION

100. Fire protection

101. Diving systems are to be installed in safe areas on a dive support vessel, i.e., areas outside hazardous zones 0, 1 and 2 as defined in IEC 60079.

Guidance

Hazardous area: area in which an explosive gas atmosphere is or may be expected to be present, in quantities such as to require special precautions for the construction, installation and use of electrical apparatus

Zone 0: area in which an explosive gas atmosphere is present continuously or is present for long periods

Zone 1: area in which an explosive gas atmosphere is likely to occur in normal operation]

Zone 2: area in which an explosive gas atmosphere is not likely to occur in normal operation and, if it does occur, is likely to do so only infrequently and will exist for a short period only

Extended hazardous area: area in which an explosive atmosphere is not likely to occur in normal operation and, if it does occur, is likely to do so only infrequently and will exist for a short period only (and comparable with zone 2 as defined in IEC 60079)

End of guidance

a. In exceptional cases to be assessed by RBNA, diving systems may be installed in extended hazardous areas.

102. Flammable substances and materials should never be located in the vicinity of the diving support equipment. This includes storage of pure oxygen or high oxygen content gas.

103. Means should be available to protect highly flammable substances from fire.

E7. DETECTION AND ALARMS

100. Detection and alarms for DSV vessels

101. All equipment and spaces which form part of the dive support arrangements must be protected by a dedicated fire detection and protection system according to RBNA Rules, NORMAM or IMO regulations.

102. In addition, an audio visual fire alarm system should be provided as follows:

- a. Diving systems installed in enclosed spaces: automatic fire alarm systems with the loop or group of detectors is to be independent of those for other spaces;
- b. Diving systems installed on open decks: automatic fire detection and alarm systems suitable for the area;
- c. The fire detection panel is to be located in the vessel's position control station with repeaters at the dive control station and the engine room control.

E9. CONTAINMENT OF FIRE

100. Diving systems in enclosed spaces

101. Enclosed spaces containing diving systems are to have boundaries built by A-60 class bulkheads or decks. All piping systems, protections and ventilation ducts are to be insulated to the A-60 standard.

200. Diving systems on open deck area

201. Where diving systems are installed on open decks or other spaces adjacent to Class A machinery spaces, the systems the separation bulkheads or decks from the machinery spaces is to be Class A-60.

E11. FIRE FIGHTING

100. Fixed fire fighting in enclosed spaces

101. Suitable fire fighting equipment to cover a full range of potential ship and diving equipment fires should be permanently available, as follows:

- a. Diving system enclosed spaces;
- b. Enclosed spaces intended for the storage of berthing gas cylinders;
- c. Means should be provided for the cooling of DCC installed in enclosed spaces.

CHAPTER G DSV OR SDSV VESSELS WITH DYNAMIC POSITIONING SYSTEMS

CHAPTER CONTENTS

G11. DSV OR SDSV VESSELS WITH DYNAMIC POSITIONING SYSTEM

100. Notation SPD-2

101. For diving support vessels, equipped with a dynamic positioning system, the class notation **SPD-2** or higher is mandatory.

See Part II, Title 103, Section 8.

CHAPTER T INSPECTIONS AND TESTS

CHAPTER CONTENTS

T1. CARGO OR SERVICE HANDLING

T2. ANCHORING, MOORING POSITIONING SYSTEMS

T3. MANOEUVRING SYSTEM See Title 11

T4. LIFESAVING APPLIANCES See Title 11

T5. FIRE SAFETY EQUIPMENT See Title 11

T6. HULL OPENINGS - PROTECTION AND CLOSING See Title 11

T7. HULL EQUIPMENT AND APPENDAGES See Title 11

T8. DYNAMIC SYSTEM POSITIONING SYSTEMS

T8. DIVING SYSTEMS

T1. CARGO OR SERVICE HANDLING

100. Performance trials

101. The testing of lifting systems is to be in accordance with the RBNA "Guide for Lifting

Appliances”, as modified by the requirements of IMCA D018 “Code of Practice for the Initial and Periodic Examination, Testing and Certification of Diving Systems”.

T2. MOORING AND ANCHORING POSITIONING SYSTEM

100. Pre-operation trials

101. The pre-operation trials are carried out in addition to those carried out at the manufacturers for the certification of the equipment. These trials are to be carried out before the system and its equipment enter into operation.

102. The pre-operation tests are to be carried out at sea trials, for the purpose of evidencing that the positional mooring and anchoring system, and/or thruster-assisted positional mooring systems are in compliance with the position-keeping parameters specification.

103. For this purpose, the RBNA surveyor will check the following main points, during the sea trials:

- a. Response of the system to simulated failures of major items of control and mechanical equipment, including loss of electrical power.
- b. Response of the system under a set of predetermined manoeuvres for changing:
 - b.1. Location of area of operation.
 - b.2. Heading of the ship.
- c. Automatic thruster control and line tension optimization.
- d. Monitoring and consequence analyses.
- e. Simulation of line breakage and damping.
- f. Continuous operation of the thruster-assisted positional mooring system over a period of four to six hours.

T8. DYNAMIC POSITIONING SYSTEMS

100. Trial for DSV vessels fitted with dynamic positioning systems

See Part II, Title 103, Section 8, Chapter T

T9. DIVING SYSTEMS

100. General

101. Where the diving systems are classified by RBNA, the quay and sea trials of the diving system will be

carried out simultaneously with the vessel’s support systems, in compliance with IMCA D 018 “Code of Practice for the Initial and Periodic Examination, Testing and Certification of Diving Systems”.

102. Where the diving systems have been certified by another Classification Society or Maritime Authority, the RBNA surveyor will follow the tests carried out by the recognized organizations responsible for the certification of the diving systems, while testing simultaneously the vessel’s support systems.

103. Where there is an Admission to Class of an existing vessel fitted with a system classified by another Classification Society or Maritime Authority, evidence and reports of the initial classification tests shall be submitted to the RBNA. Operational tests may be required for acceptance of the vessel in Class if so deemed necessary by RBNA Headquarters.

104. Reference is made to the IMCA D 018 Code, Chapter 3, “Competent Person”.

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