

Regulations of 2 February 2016 No. 90 on evacuation and life-saving appliances on mobile offshore units

Legal basis: Laid down by the Norwegian Maritime Authority on 2 February 2016 under the Act of 16 February 2007 No. 9 relating to ship safety and security (Ship Safety and Security Act) sections 2, 9, 11, 13, 21 and 22, cf. Formal Delegation of 16 February 2007 No. 171 and Formal Delegation of 31 May 2007 No. 590.

EEA references: The EFTA Surveillance Authority (ESA) have been notified of sections 3 to 38 of the Regulations pursuant to the requirements of Act of 17 December 2004 No. 101 on European notification of technical rules (EEA Hearing Act) and the EEA Agreement Annex II Chapter XIX point (Directive 98/34/EC as amended by Directive 98/48/EC).

Amendments: Amended by Regulation of 5 July 2016 No. 897.

Chapter 1

Introductory provisions

Section 1

Scope of application

These Regulations apply to Norwegian mobile offshore units.

Section 2

Definitions

For the purpose of these Regulations, the following definitions shall apply:

- a) "*SOLAS*": The International Convention for the Safety of life at Sea, 1974, consolidated edition 2014.
- b) "*LSA Code*": International Life-Saving Appliances Code, consolidated edition 2010 as amended by MSC.293(87), MSC.320(89) and MSC.368(93).
- c) "*MODU Code*": Code for the construction and equipment of mobile offshore drilling units, 2009.
- d) "*MSC.81(70)*": Revised recommendation on testing of life-saving appliances, consolidated edition 2010 as amended by MSC.295(87), MSC.321(89) and MSC.323(89).

Chapter 2

Certification requirements

Section 3

Certification

- (1) Life-saving appliances and launching arrangements which are brought on board after 1 July 2003 shall be certified.
- (2) The unit's deck crane which is used for the launching and recovery of the fast rescue boat shall be certified for personnel transport.
- (3) Certification means approval or type-approval by:
 - a) a Notified Body
 - b) an accredited certifying body
 - c) a recognised classification society
 - d) other public or private institution recognised by the Norwegian Maritime Authority
 - e) the administration of a country that has ratified SOLAS.
- (4) Operational limitations provided by the manufacturer shall be stated in the certificate.

Section 4

Requirements for welding and NDT

- (1) Welding shall be carried out by personnel who are certified for the material grade in question in accordance with one of the following standards:
 - a) ISO 9606-1:2013 (Qualification testing of welders - Fusion welding - Part 1: Steels)

- b) ISO 9606-2:2004 + NA1:2013 (Qualification test of welders - Fusion welding - Part 2: Aluminium and aluminium alloys)
 - c) ASME Section IX.
- (2) NDT shall be carried out by personnel who are certified in accordance with NS-EN ISO 9712:2012 (Non-destructive testing - Qualification and certification of NDT personnel) or equivalent standard.
- (3) Personnel who are certified means persons approved by a recognised classification society, an accredited certifying body or other public or private institution recognised by the Norwegian Maritime Authority.

Chapter 3

Evacuation

Section 5

Evacuation analysis for evacuation by sea

An evacuation analysis shall be prepared, which shall be based on the unit's dimensioning accidental events, cf. section 24 of the Regulations of 22 December 1993 No. 1239 on risk analyses for mobile offshore units (Risk analyses Regulations). The evacuation analysis shall demonstrate that, following any accidental event, escape routes, temporary refuges, muster stations and life-saving appliances are so arranged that:

- a) all persons on board can be evacuated by lifeboats in the course of 15 minutes regardless of weather conditions. The time is measured to the point where the lifeboats have been launched and released;
- b) the liferafts are appropriately placed for alternative evacuation;
- c) a sufficient number of personal life-saving appliances are available for use for purposes of both rescue and evacuation by sea.

Section 6

Muster list

- (1) The muster list shall specify:
- a) all alarms to be given on the Public Address and General Alarm (PAGA) system. It shall also specify how the order to evacuate shall be given;
 - b) which persons are assigned to ensure that the life-saving and fire-extinguishing appliances are maintained in good condition and are ready for immediate use;
 - c) substitutes for key personnel.
- (2) The muster list shall provide information on where each person shall meet, and the duties to be performed by each person in an emergency, such as:
- a) closing of watertight doors, fire doors, ventilation system, valves and similar openings on the unit
 - b) stop of machinery
 - c) equipping of lifeboats and other life-saving appliances
 - d) preparation and launching of lifeboats
 - e) preparation of other life-saving appliances
 - f) mustering of additional personnel
 - g) use of communication equipment
 - h) fire extinction
 - i) emergency duties on the helicopter deck
 - j) special duties assigned in the event of an uncontrolled escape of hydrocarbons or hydrogen sulphide, including emergency shutdown.
- (3) The muster list shall be posted in the emergency response room, central control room, engine control room, living quarters and central service spaces. Excerpts from the muster list, showing alarms and each person's duties and meeting place, shall be posted in cabins and service spaces.
- (4) The muster list and any amendments thereof shall be dated and signed by the Offshore Installation Manager.

Section 7

Safety plan

- (1) The safety plan shall be in accordance with ISO 17631:2002 (Ships and marine technology - Shipboard plans for fire protection, life-saving appliances and means of escape) or equivalent standard.
- (2) The safety plan shall be posted in control stations and in central and conspicuous places in the accommodation.
- (3) The safety plan and any amendments thereof shall be dated and signed by the Offshore Installation Manager.

Section 8

Marking of escape routes

Escape routes shall have clearly visible, continuous and self-explanatory marking.

Chapter 4

Number and location of life-saving appliances

Section 9

Location of lifeboats, liferafts and fast rescue boats

Lifeboats, liferafts and fast rescue boats which are not certified for use in hazardous areas shall be stowed outside of hazardous areas. Hazardous areas means all areas where, due to the possible presence of an explosive atmosphere, the use of unsuitable equipment, machinery or electrical equipment may cause an explosion or fire.

Section 10

Number and location of lifeboats

- (1) The number and location of lifeboats shall be based on the evacuation analysis, cf. section 5.
- (2) It shall be possible to launch lifeboats with capacity for all persons on board at the least favourable angle of heel specified in the stability calculations, cf. section 21 of the Regulations of 20 December 1991 No. 878 on stability, watertight subdivision and watertight/weathertight means of closure on mobile offshore units (Stability Regulations).
- (3) On mobile offshore drilling units (MODUs) it shall be possible to evacuate all persons on board by lifeboats, even if the lifeboats in one lifeboat station are lost or unavailable.
- (4) The lifeboats shall be positioned with the bow pointing away from the unit, and shall be capable of safe launching at a distance of not less than 5 metres from fixed structures at the unit's least favourable angle of heel. This does not apply to ship-shaped units.
- (5) On units connected by gangway to any other installation, no lifeboats shall be positioned on the side facing the other installation.
- (6) Free-fall lifeboats shall be certified for launching from the relevant heights and angles at the unit's least favourable angle of heel.

Section 11

Number and location of liferafts

- (1) There shall be sufficient liferaft capacity for the total number of persons on board.
- (2) The location of the liferafts shall be based on the evacuation analysis, cf. section 5.
- (3) On ship-shaped units, it shall be possible to evacuate all persons on board using liferafts, even if the liferafts on any one side are lost or unavailable.
- (4) Where the distance from the extreme end of the stem or stern to the nearest lifeboat or liferaft is more than 100 metres, an extra liferaft shall be arranged at the stem or stern.
- (5) Liferafts shall be arranged in marine evacuation systems (MES). Alternatively, liferafts may be placed at separate davits with no more than three liferafts at each davit.
- (6) Liferafts shall be certified for being launched from the relevant heights at the unit's least favourable angle of heel.

Section 12

Location of fast rescue boat

- (1) The fast rescue boat shall have a separate launching arrangement, or shall be readily reached by two deck cranes certified for such launching operations, cf. section 33 fifth paragraph.
- (2) The fast rescue boat shall be so positioned that:
 - a) the launching does not impede the launching of lifeboats or liferafts;
 - b) it can be launched safely within five minutes of the sounding of the alarm, both during operation and transit.

(3) The fast rescue boat shall be capable of safe launching at a distance of not less than 8 metres from the unit's fixed structures, when the unit has no heel during operation or transit. This does not apply to ship-shaped units.

Section 13

Number and location of immersion suits

- (1) Immersion suits for all persons on board shall be stored readily available in the living quarters.
- (2) Immersion suits equivalent in number to at least 50 per cent of the lifeboat capacity at the lifeboat station shall be kept at each lifeboat station. The immersion suits shall be stored in solid cabinets which are clearly marked. It shall not be possible to lock the cabinets.
- (3) Any person designated to operate a fast rescue boat shall be provided with a suitable immersion suit or anti-exposure suit stored in an appropriate place, shielded from the weather elements and arranged for drying between use.

Section 14

Number and location of lifejackets

- (1) There shall be lifejackets for everyone on board.
- (2) The lifejackets may be replaced with immersion suits. The number of immersion suits shall then be increased by at least 20 per cent of the maximum allowed persons on board.
- (3) The lifejackets, or the immersion suits referred to in the second paragraph, shall be stored in locations where no immersion suits have been placed in accordance with section 13, and on the basis of the evacuation analysis, cf. section 5.

Section 15

Number and location of lifebuoys

- (1) The number and location of lifebuoys shall satisfy section 10.13 of the MODU Code. "Should" in the MODU Code shall be replaced by "shall".
- (2) The requirement for quick release in section 10.13.2 of the MODU Code does not apply.

Section 16

Number and location of VHF's and SARDs

- (1) The number and location of VHF radiotelephone apparatuses (VHF) and SARDs for lifeboats and liferafts shall satisfy section 10.14 of the MODU Code. "Should" in the MODU Code shall be replaced by "shall".
- (2) The fast rescue boat shall have VHF.

Section 17

Emergency ladders

Semi-submersible units shall have at least two external, fixed emergency ladders without safety hoops, extending from the main deck to the pontoon deck. The emergency ladders shall be positioned as far as possible away from each other, and may alternatively be replaced by stairways.

Section 18

Line-throwing appliance

The unit shall have at least one line-throwing appliance satisfying section 7.1 of the LSA Code.

Section 19

Rocket parachute flares

The unit shall have at least 12 rocket parachute flares satisfying section 3.1 of the LSA Code.

Chapter 5

Requirements for life-saving appliances

Section 20

Joint requirements for life-saving appliances

- (1) The life-saving appliances shall satisfy section 1.2 of the LSA Code.
- (2) Electrical equipment shall have at least protection grade IP56 when arranged outside.
- (3) Electrical equipment shall have at least protection grade IP44 when arranged inside.
- (4) The nominal supply voltage to lifeboats and the fast rescue boat shall not exceed 230V.

Section 21

Joint requirements for lifeboats

- (1) Lifeboats shall satisfy sections 4.4, 4.6, 4.7, 4.8 and 4.9 of the LSA Code, except the final sentence of section 4.4.6.11.
- (2) Lifeboats on semi-submersible or self-elevating units shall, instead of the angles of heel specified in section 4.4.1.1 of the LSA Code, be constructed to be capable of being launched at an angle of heel of at least 17 degrees in any direction.
- (3) Lifeboats shall:
 - a) be arranged for evacuation by helicopter;
 - b) in the fully loaded condition have a static pulling power of at least $(0.9 \times WE)$ kN, where WE is the weight in tonnes of a fully equipped lifeboat without persons on board;
 - c) have an engine housing and battery casing which are watertight at a water pressure equal to the pressure resulting from the maximum flooding level in accordance with section 4.4.1.1 of the LSA Code;
 - d) have a ventilation arrangement which prevents flooding of water in the event of capsizing, and which, when hatches and windows are closed, provides sufficient fresh air for the number of persons for which it is approved, and sufficient air for the engine when running at full power;
 - e) have seats and harnesses appropriate for persons of a height and weight as described in MSC.81(70) section 2.7.2.
- (4) Lifeboats of the same type shall have identical release mechanisms.
- (5) It shall be possible to operate and control the air supply system from the helmsman's position in the lifeboat.
- (6) It shall be possible to remove the air cylinders from the lifeboat.
- (7) The air cylinders and cylinder valves shall be inspected and pressure-tested at the renewal of the unit's certificates. The inspection shall be performed by an inspector approved by the Norwegian Labour Inspection Authority or equivalent authority in other countries.
- (8) Documentation shall be provided to verify that lifeboats are dimensioned and produced so that personnel cannot be injured when launching at the least favourable angle of heel, cf. section 21 of the Stability Regulations, and at the environmental loads for which the boat is intended.

Section 22

Additional requirements for conventional lifeboats

Conventional lifeboats shall have fenders on both sides.

Section 23

Liferafts

Liferafts shall satisfy section 4.2 of the LSA Code, and shall be provided with a float-free arrangement in accordance with section 4.1.6.3 of the LSA Code.

Section 24

Fast rescue boat

- (1) The fast rescue boat shall satisfy section 5.1.4 of the LSA Code, except section 5.1.4.11 and the final sentence of section 4.4.6.11.
- (2) The fast rescue boat shall be:
 - a) certified for a specified number of persons;

- b) designed and equipped for the recovery of persons from the sea.
- (3) The fast rescue boat shall be constructed and arranged so that it may readily be recovered by way of cranes or davits from other ships or units.

Section 25

Immersion suits

- (1) Immersion suits shall satisfy section 2.3 of the LSA Code, except sections 2.3.1.7 and 2.3.2.1.
- (2) Immersion suits shall:
 - a) have a visor;
 - b) be capable of turning an unconscious person, in maximum 15 seconds including inflation time, from any position to a position where the mouth is above water. The Norwegian Maritime Authority's testing procedure (test of self-righting function when certifying immersion suits for use on mobile offshore units) shall be used for the certification.
- (3) The hoisting strap, tightening devices, zips, retro-reflectors, pockets, etc. shall:
 - a) be so attached as not to impair the properties of the suit;
 - b) not interfere with the ability to use the immersion suit.
- (4) Immersion suits stored in the living quarters, cf. section 13 first paragraph, may be immersion suits approved for helicopter transport on the Norwegian continental shelf.

Section 26

Lifejackets

- (1) Lifejackets shall satisfy section 2.2 of the LSA Code.
- (2) Mobile offshore units operating north of 30°N and south of 30°S shall carry lifejackets with thermal insulation, or thermal suits in combination with lifejackets.
- (3) The thermal protection shall satisfy MSC/Circ.922 (Recommendations on performance standards and tests for thermal protective lifejackets (TP-lifejackets)).
- (4) Thermal protective lifejackets and thermal suits in combination with lifejackets may, as an alternative to the requirement of the first paragraph, satisfy the requirements of section 2.2 of the LSA Code, 2003 edition.
- (5) The lifejackets shall have:
 - a) lights satisfying section 2.2.3.1 of the LSA Code;
 - b) thigh straps or an equivalent solution.

Section 27

Lifebuoys

Lifebuoys shall satisfy section 2.1 of the LSA Code.

Section 28

VHF and SARD

- (1) VHF and SARD shall satisfy section 10.14 of the MODU Code. "Should" in the MODU Code shall be replaced by "shall".
- (2) VHF in lifeboats and fast rescue boat shall have a headset. The master shall be able to use the VHF while driving the boat.
- (3) If the VHF in the lifeboat is hand-held, it shall be connected to an additional antenna which is permanently fitted in the lifeboat.
- (4) VHF and SARD shall be wheelmarked.

Chapter 6

Requirements for launching arrangements

Section 29

Joint requirements for launching arrangements

- (1) When stowed, the life-saving appliances shall be secured.

- (2) Hydraulic systems shall be dimensioned, arranged and tested in accordance with ISO 8434 (Metallic tube connections for fluid power and general use), DIN 2353 (Compression Fittings) or SAE J514-2 (Hydraulic Tube Fittings).
- (3) Steel wire ropes, chains, shackles, etc. shall be certified.
- (4) Swivels, shackles, turnbuckles and discs shall be secured.
- (5) At least three turns of steel wire rope shall be left on the winch drum after the life-saving appliance has been lowered to the water surface in the least favourable conditions of draught and angle of heel. The attachment of the steel wire rope to the drum shall be capable of supporting the weight of a fully loaded life-saving appliance.
- (6) Steel wire ropes shall be unloaded when the boats are in the stowed position. Mobile offshore units need not comply with this requirement if the building contract is placed before 2 February 2016, or the unit is certified before 2 February 2016.

Section 30

Launching arrangements for conventional lifeboats

- (1) Launching arrangements for conventional lifeboats shall satisfy sections 6.1.1 and 6.1.2 of the LSA Code, except section 6.1.2.8.
- (2) Launching arrangements for conventional lifeboats on semi-submersible units and on self-elevating units shall, instead of the angles of heel specified in section 6.1.1.1 of the LSA Code, be constructed for launching at an angle of heel of at least 17 degrees in any direction.
- (3) The launching arrangement shall be fitted with a fixed power-operated winch. The winch shall have an automatic acceleration brake regulating the lowering speed to $1 \text{ m/s} \pm 10 \text{ per cent}$. When not in operation, the control lever for the winch motor shall automatically move to the stop position.
- (4) The launching arrangement shall be fitted with a brake of such characteristics that dynamic additional forces will not exceed 50 per cent of the weight of a fully loaded boat at full braking power. If this level is exceeded, this shall be compensated by strengthening the lifeboats' suspension attachments and launching arrangement, or by arranging a shock absorbing system, cf. section 33 third paragraph.
- (5) Lifeboat securing arrangements shall be so constructed that they do not interfere with the lowering of the lifeboat.
- (6) Recovery shall stop automatically when the lifeboat has reached its end position in the launching arrangement.

Section 31

Launching arrangements for free-fall lifeboats

- (1) Launching arrangements for free-fall lifeboats shall satisfy section 6.1.4 of the LSA Code.
- (2) Launching arrangements for free-fall lifeboats on semi-submersible units and on self-elevating units shall, instead of the angles of heel specified in section 6.1.1.1 of the LSA Code, be constructed for launching at an angle of heel of at least 17 degrees in any direction.
- (3) Secondary launching arrangements used for drills and maintenance purposes may be constructed for angles of heel of 2 degrees trim and 5 degrees list for ship-shaped units, and 5 degrees list in any direction for semi-submersible units and self-elevating units.
- (4) Launching arrangements shall be so designed that all functions, including the release mechanism, may be tested on board.

Section 32

Marine evacuation systems (MES) and liferafts davits

- (1) MES shall satisfy section 6.2 of the LSA Code.
- (2) Liferaft davits, cf. section 11 fifth paragraph, shall satisfy section 6.1.5 of the LSA Code.
- (3) MES and liferaft davits on semi-submersible units and on self-elevating units shall, instead of the angles of heel specified in sections 6.2.2.1.4 and 6.1.1.1 of the LSA Code, be constructed for launching at an angle of heel of at least 17 degrees in any direction.

Section 33

Launching arrangement for fast rescue boat

- (1) The launching arrangement for the fast rescue boat shall satisfy section 6.1.7 of the LSA Code, except section 6.1.1.1 and the first sentence of section 6.1.7.5.
- (2) The lowering and hoisting speed shall be capable of ungraduated adjustment. The maximum lowering speed shall be $1 \text{ m/s} \pm 10 \text{ per cent}$.

- (3) The launching arrangement shall have shock-absorbing or motion-compensating components which ensure that neither the boat nor the launching arrangement is subjected to strain from dynamic additional forces with a factor of more than 3.0 for the following load cases:
 - a) braking at full lowering speed;
 - b) recovery of boat at the calculated maximum wave height.
- (4) Dynamic loads shall be documented and used in the strength calculations. The calculations shall demonstrate that the stress of the load cases described in the third paragraph (a) or (b) does not exceed 85 % of the material's yield stress.
- (5) Deck cranes used for the lowering and hoisting of the fast rescue boat shall be:
 - a) connected to an emergency source of power;
 - b) fitted with a special safety device which temporarily renders the emergency release system unoperational;
 - c) fitted with two brake systems. One of the brakes shall work directly on the winch drum and be independent of the other.
- (6) The unit shall have procedures ensuring that priority is given to quick launching and safe operation when using deck crane.
- (7) The connection between the deck crane's hook and the fast rescue boat shall be a fibre rope which is permanently provided in the fast rescue boat when the boat is on board the unit. The fibre rope shall be of a length which ensures both adequate shock absorption and a safe distance between the crane's hook and the boat in heavy seas.

Chapter 7

Drills, tests, inspection and maintenance

Section 34

Drills and training

- (1) Drills shall be performed every other week.
- (2) The drill program shall include drills within all relevant accidental events for the unit, cf. section 24 of the Risk Analyses Regulations, and shall be so planned that all personnel within one year participates in the drills that are relevant for each individual person.
- (3) The drills shall train the participants in handling realistic emergency situations and the use of alternative escape routes and life-saving appliances.
- (4) The drills shall include:
 - a) the functions and use of the life-saving appliances in accordance with the manufacturer's instructions;
 - b) start of engines on lifeboat and fast rescue boat;
 - c) lowering of conventional lifeboat and fast rescue boat. The lifeboat used during the drills shall vary.
- (5) When conditions permit, lifeboat and fast rescue boat shall be launched and manoeuvred during drills.
- (6) A simulated launch of the free-fall lifeboats shall be carried out semi-annually.
- (7) Standby vessels stationed by the unit shall be included in the drills.
- (8) The completion of drills shall be documented.
- (9) During weeks where there are no drills, cf. first paragraph, the crew shall practice the duties given in the muster list, cf. section 6 second paragraph.

Section 35

Testing of life-saving appliances and launching arrangements

- (1) The testing of life-saving appliances and launching arrangements shall satisfy MSC.81(70).
- (2) Testing of prototypes:
 - a) Deceleration measurements shall be carried out to determine the characteristics of brakes and shock absorbers.
 - b) Acceptance criteria for testing of lifeboats shall ensure that the launching of the lifeboat, in the environment for which it is intended, does not cause injury to any personnel, and are based on risk assessment, model tests or similar design studies.
 - c) For free-fall lifeboats, deflection and water pressure shall be measured on the most exposed areas of the superstructure and the hull during the launch.
- (3) Testing during production:
 - a) Inspection and thickness measurements shall be carried out of the hull and superstructure and around the hook attachment points of lifeboats and fast rescue boat.
 - b) Vital components of hooks, hook attachments, bolts, etc. shall be subjected to NDT after test loading.
 - c) For the launching arrangements, welds, axles, rings, chains, bolts, etc. which are exposed to high levels of stress shall be subjected to NDT after test loading.

- (4) Testing during installation:
- a) Acceptance criteria shall ensure that the launching of the life-saving appliance, in the environment for which it is intended, does not cause injury to any personnel, and shall be based on risk assessment, model tests or similar design studies.
 - b) Stress-exposed welds between the launching arrangement and the unit shall be subjected to NDT after the installation test.

Section 36

Maintenance and inspections

- (1) The maintenance program shall satisfy SOLAS Regulations III/20 and III/36. Regulation III/20.4 does not apply.
- (2) Steel wire ropes used in launching shall be renewed every four years. Steel wire ropes for launching other appliances than MES may be turned end for end at intervals of not more than 30 months and be renewed when necessary due to deterioration, or at least every five years, whichever is the earlier.
- (3) Steel wire ropes for launching other appliances than MES shall be unreeled and lubricated annually with equipment pressing the lubrication into the core of the steel wire rope.
- (4) Maintenance and conversions shall be carried out in accordance with the manufacturer's instructions.
- (5) Launching arrangements, hooks, hook attachments, etc. shall be subjected to a thorough examination every five years. The examination shall include NDT of safety-critical components.
- (6) Lifeboats shall be tested once every five years to the same extent as in an installation test.

Chapter 8

Concluding provisions

Section 36

Exemptions

- (1) The Norwegian Maritime Authority may exempt a mobile offshore unit from one or more of the requirements of the Regulations if the company applies for an exemption in writing and one of the following requirements is met:
 - a) it is established that the requirement is not essential and that the exemption is justifiable in terms of safety;
 - b) it is established that compensating measures will maintain the same level of safety as required by these Regulations.
 - c) it is established that the requirement hinders the development and use of innovative solutions when such solutions will maintain the same level of safety as required by these Regulations.
- (2) A statement from the safety representative(s) shall be attached to the application for exemption.

Section 37

Transitional provisions

Mobile offshore units may as an alternative to the requirements of sections 2 to 36, except sections 6 and 34, comply with Appendix I until the next certificate issue, if the building contract has been placed before 2 February 2016 or the unit is certified before 2 February 2016.

Section 38

Entry into force

These Regulations enter into force on 2 February 2016. As from the same date the Regulations of 4 July 2007 No. 853 on evacuation and life-saving appliances on mobile offshore units are repealed.

Appendix I

(With reference to section 38 of the Regulations, Appendix 1 contains excerpts from the Regulations of 4 July 2007 No. 853 on evacuation and life-saving appliances on mobile offshore units. These Regulations were repealed on 2 February 2016. The numbering in Appendix 1 corresponds to the section number of the repealed Regulations.)

7. Certification

Life-saving appliances and launching arrangements brought on board after 1 July 2003 shall be certified.

The documentation requirements for deck cranes shall apply if the units deck cranes are used for the launching and recovery of rescue boats, cf. section 11 first and fourth paragraphs. The deck crane shall be certified for personnel transport.

Operational limitations given by the manufacturer shall be stated in the certificate.

8. General requirements

In addition to para. 1.2 of the LSA Code, the following shall apply:

- a) Only certified material shall be used for structural components.
- b) Welding shall be carried out by personnel certificated in accordance with EN-287-1, ISO 9606-2 or ASME section IX for the relevant groups of materials. Non-Destructive Testing (NDT) shall be carried out by personnel certificated in accordance with EN 473 or an equivalent recognized standard.
- c) For life-saving appliances with associated launching arrangements designed for use in areas with a daily mean temperature considerably lower than 0°C, materials and equipment calculated to ensure reliable performance down to the lowest specified temperature shall be used.
- d) Electrical installations shall comply with the Regulations in force of the Norwegian Directorate for Civil Protection. Electrical equipment fitted on the outside shall have an enclosure rating of at least IP56. For electrical equipment fitted on the inside, the enclosure rating shall be at least IP44. The rated supply voltage to lifeboats and rescue boats shall not exceed 230 V.
- e) Documentation shall be provided to verify that the lifeboats and rescue boats have been dimensioned and constructed to avoid injury to on-board personnel under the most unfavourable conditions, cf. section 21 in Regulations of 20 December 1991 No. 878, including the environmental loads for which the boats are designed.
- f) Lifeboats, liferafts and rescue boats shall be stowed at a safe distance from defined hazardous areas.

The release mechanisms of all lifeboats of the same type on the unit shall be identical.

9. Life-saving appliances

Lifeboats shall comply with the requirements of paragraphs 4.4, 4.6, 4.7, 4.8 and 4.9 of the LSA Code, except the last sentence of para. 4.4.6.11, and para. 4.7.3.2 in its entirety. Equipment for producing drinking water in accordance with para. 4.4.7.5 of the LSA Code is not required. Regarding medical supplies for life-saving appliances, see section 13 of Regulations of 9 March 2001 No. 439 on medical supplies on ships. The following additional requirements shall be complied with:

- a) Except for free-fall lifeboats, fenders shall be fitted on both sides of lifeboats installed on mobile offshore units which are not of ship design.
- b) The lifeboat shall be arranged for safe and efficient evacuation by helicopter. Design features which may get caught in the helicopter's hoisting wires shall be avoided.
- c) The fully loaded lifeboat shall have a static pulling power of at least $(0.9 \times WE)$ kN, where WE is the weight in tonnes of a fully equipped unoccupied lifeboat.
- d) The lifeboat shall be provided with a self-contained air supply system in accordance with para. 4.8 of the LSA Code. Additionally, it shall be possible to operate and control the air supply system from the helmsman's position in the lifeboat. Air cylinders shall be tested and marked in accordance with a recognized standard and it shall be possible to remove the cylinders for inspection.
- e) The capacity of the lifeboat's ventilation arrangement shall be such that when hatches and other openings are closed, sufficient fresh air will be provided for the number of persons for which the lifeboat is approved, as well as sufficient air for the engine when running at full power. The arrangement shall be so designed as to prevent any intake of water when the boat is capsized.
- f) The engine housing and battery casing shall be watertight at a water pressure equal to the pressure resulting from the highest level of water flooding in accordance with para. 4.4.1.1 of the LSA Code.
- g) Attachment of lifeboat hooks to the hull shall be dimensioned for relevant loads.
- h) In regard to size, height and weight, seats and harnesses shall as a minimum fit personnel in accordance with MSC.81(70) paragraph 2.8.2.

Fast rescue boats shall comply with the requirements of para. 5.1 of the LSA Code, with the exception of para. 4.4.1.5.3, 4.4.1.6, 4.4.6.8, 4.4.7.2, 4.4.7.4, 5.1.1.6, 5.1.1.10 and the last sentence of para. 4.4.6.11. Additionally, the recommendations provided in para. 4.1 of MSC/Circ.809 shall be complied with. The following limitations and additions shall apply:

- a) The boat shall be certified for a specific number of persons not exceeding 10.
- b) The boat shall maintain stability when flooded.
- c) The boat shall be equipped with a rigid one-point suspension device. There shall be a safety factor of at least 6 against this device breaking or breaking loose from its attachment to the hull.
- d) If the boat is provided with an «off-load» hook, the hook and its attachment shall be designed for relevant loads. The hook shall be so designed as to be suitable for launching arrangements as set out in section 11 subparagraph 4, and

it shall be so constructed and arranged that easy recovery of the boat is possible using cranes or davits from ships or units other than the mother unit.

- e) The hull of the boat shall be suitable for high speeds in heavy seas.
- f) The boat shall be designed and arranged so as to enable recovery of persons from the sea.
- g) The boat's engine fuel shall have a flash point of 43°C or more.
- h) The propulsion system shall be screened to avoid causing injury to persons in the water and to prevent damage from floating debris when sailing at full speed.

Liferafts shall be in accordance with para. 4.2 of the LSA Code. Regarding medical supplies for liferafts, see section 13 of Regulations of 9 March 2001 No. 439 on medical supplies on ships. The following additional requirement shall be complied with:

- a) Liferafts shall be provided with a float-free arrangement in accordance with para. 4.1.6.3 of the LSA Code.

Immersion suits shall be in accordance with para. 2.3 of the LSA Code, with the exception of para. 2.3.2.1. The following additional requirements shall be complied with:

- a) Para. 2.2.1.3.1 of the LSA Code.
- b) The immersion suit shall have sufficient buoyancy and stability to turn an unconscious person, in less than 15 seconds, from any position to a position where the mouth is above water, including inflation time. Certification of the suit shall be subject to the Norwegian Maritime Authority's testing procedure for the suit's self-righting function until an international procedure for such testing is established.
- c) The suit shall be provided with a hoisting strap with a suitable hooking and clasp device attached. The suit and hoisting strap shall be capable of supporting a load of 3 kN without suffering damage.
- d) The hoisting strap, tightening devices, zips, retro-reflectors, pockets, etc. shall be attached so as not to impair the properties of the suit or interfere with the ability to use it.
- e) The suit shall be provided with a lifeline (buddy-line) with a safety hook. The line shall be minimum 1 m in length with a breaking strength of minimum 1 kN. The suit shall be provided with a fastening device for the hook.
- f) The suit shall be provided with a protective visor to prevent water spray in the user's face.

Lif jackets shall be in accordance with para. 2.2 of the LSA Code. Additionally, lif jackets shall comply with the following requirements:

- a) They shall be provided with a light in accordance with para. 2.2.3.1 of the LSA Code;
- b) they shall have thermal protection which satisfies the requirements of IMO MSC/Circ.922;
- c) they shall be of an arrangement or design which makes them easy to don correctly;
- d) they shall be provided with fastening straps not requiring the use of loops or similar devices and not based on knotting; and
- e) they shall be provided with crotch straps or an equivalent solution which ensures that the jacket stays in place when used.

Lifebuoys shall be in accordance with para. 2.1 of the LSA Code.

10. Radio life-saving appliances

Lifeboats shall be provided with a fixed two-way VHF-radiotelephone apparatus and a radar transponder. A two-way VHF radiotelephone apparatus (hand-held VHF) is permissible, if it can be fastened to a bracket and enables communication without removing the apparatus from the bracket.

Lifeboats shall be provided with an antenna for connection to the VHF-radiotelephone mentioned above. The antenna may be fitted on the inside of the lifeboat.

The fast rescue boat shall be provided with a hand-held VHF-radiotelephone.

The equipment mentioned in the first to third paragraphs shall be approved and marked (wheel-marked) in accordance with Regulations of 29 December 1998 No. 1455 on marine equipment.

11. Launching arrangements

Launching arrangements for lifeboats, rescue boats and liferafts shall comply with the requirements provided in para. 6.1.1, 6.1.2, 6.1.4 and 6.1.5 of the LSA Code. Rescue boats may alternatively be launched and recovered by means of the unit's deck cranes, cf. subparagraph 4 below. Additionally, the following general requirements shall apply:

- a) When stowed, life-saving appliances shall be properly secured.
- b) Hydraulic systems shall be dimensioned, arranged and tested in accordance with a recognized standard.
- c) Steel wires, chains, shackles, etc. shall be certified.
- d) Swivels, shackles, turnbuckles and discs shall be secured.
- e) At least 3 turns of steel wire shall remain on the winch drum after the life-saving appliance has been lowered to the surface under the most unfavourable conditions of draught and angle of heel. The attachment of the steel wire to the drum shall at least be capable of supporting the weight of a fully loaded life-saving appliance.

Additionally, except for free-fall lifeboats, the following special requirements for lifeboat launching shall be complied with:

- a) The launching arrangement shall be fitted with a fixed power-operated winch.
- b) The winch shall have an automatic acceleration brake which maintains the lowering speed at 60 m/minute $\pm 10\%$.

- c) When not in operation, the control lever for the winch motor shall automatically move to the «stop» position.
- d) The launching arrangement shall be designed and calculations made for an angle of heel of at least 17° in any direction, cf. section 21 of Regulations of 20 December 1991 No.878.
- e) It shall be possible, from both the unit and the lifeboat, to halt the launching during all stages of the operation.
- f) The stop/parking brake shall be capable of preventing dynamic additional forces from exceeding 50% of the weight of a fully loaded boat at full braking power (panic braking). If this level is exceeded, the suspension attachments and launching arrangement must be strengthened or a shock absorbing system arranged in compensation, cf. subparagraph 4 paragraph d).
- g) Lifeboat securing arrangements shall be so designed that they will not cause difficulties during lowering of the boat.
- h) Lifeboats shall have a relief arrangement for hooks/release mechanisms for maintenance and inspection purposes. This arrangement shall have a safety factor of 6 against breakage.
- i) Recovery shall stop automatically when the lifeboat has reached its end position within the launching arrangement.

For free-fall lifeboats, the following special requirements for lifeboat launching shall be complied with:

- a) With the exception of the alternative launching arrangement, the launching arrangement shall be designed and calculations made for an angle of heel of at least 17° in any direction, cf. section 21 of Regulations of 20 December 1991 No.878.
- b) The launching arrangement shall be such as to allow testing on board of all functions, including the release mechanism.

Special additional requirements for the launching and recovery of rescue boats:

- a) Launching against heel and trim is not required.
- b) The launching arrangements lowering speed shall not exceed 60 m/minute ±10%. The recovery speed shall be at least 50 m/minute with maximum weight of the boat. The lowering and recovery speed shall be capable of ungraduated adjustment.
- c) Arrangement shall be made for one-point lowering and recovery. It is not necessary to be able to control the launching from the rescue boat.
- d) The launching arrangement shall include shock absorbing and/or motion compensating components which ensure that neither the boat nor the launching arrangement is subjected to strain from dynamic additional forces which imply maximum tension exceeding 33% of the yield strength, in the following cases:
 - 1. Braking at full lowering speed; and
 - 2. recovery of boat at maximum calculated wave height.
 The calculated dynamic additional forces shall be based upon the shock-loads from the given load cases.
- e) Where a deck crane is used, cf. subparagraph 1, the following shall apply in addition to the above requirements:
 - 1. The cranes shall be connected to an emergency power supply,
 - 2. The cranes shall be provided with a special safety device which temporarily renders the emergency release system unoperational,
 - 3. The cranes shall be provided with two brake systems. One of the brakes shall work directly on the winch drum and be independent of the other,
 - 4. Special procedures shall be designed to ensure that priority is given to quick launching and safe operation, and
 - 5. The connection between the crane's hook and the rescue boat shall be a fibre rope which is permanently provided in the rescue boat. The fibre rope shall be of a length which ensures both adequate shock absorption and a safe distance between the crane's hook and the rescue boat in a heavy sea.

Special additional requirements for the launching of liferafts:

- a) The launching arrangement shall be calculated for an angle of heel of at least 17° in any direction, cf. section 21 of Regulations of 20 December 1991 No.878.

12. Testing of life-saving appliances and launching arrangements

Life-saving appliances with associated launching arrangements shall be tested in accordance with Regulations III/4 and III/5 of the SOLAS Convention and IMO Resolution MSC.81(70) «Revised recommendation on testing of lifesaving appliances». The following additional requirements shall apply:

- a) Testing of prototypes:
 - 1. Deceleration measurements shall be carried out to determine the characteristics of brakes and any shock absorbers.
 - 2. For lifeboats the following requirements for prototype testing shall be complied with:
 - 2.1. Acceptance criteria shall be documented prior to prototype testing. These criteria can be based on risk evaluations, model tests or similar design studies. The acceptance criteria shall as a minimum ensure that the launching of the lifeboat, in the environment it is designed for, does not cause injury to any personnel.
 - 2.2. Deflection and water pressure shall be measured on the most exposed areas of the superstructure and the hull during the launch of free-fall lifeboats.
- b) Testing during production (yard tests):

1. Inspection and measurements shall be carried out of the hull and superstructure thickness and around the hook attachment points of lifeboats and rescue boats.
 2. A suitable method shall be employed for NDT control of vital components in hooks, hook attachments, bolts, etc. after test loading.
 3. For the launching arrangement, a suitable method shall be employed for NDT control, after test-loading, of welds, axles, rings, chains, bolts, etc. which are exposed to high levels of stress.
- c) Testing during installation (on-board tests):
1. Acceptance criteria shall be documented prior to installation testing. These criteria can be based on risk evaluations, model tests or similar design studies. The acceptance criteria shall as a minimum ensure that the launching of the life-saving appliance, in the environment it is designed for, does not cause injury to any personnel.
 2. A suitable method shall be employed for NDT control of welds between the launching arrangement and the unit after installation.

13. Evacuation by sea – evacuation analysis

An evacuation analysis shall be prepared, cf. Regulations of 22 December 1993 No. 1239, based on the unit's dimensioning accidental events and requirements given in this chapter. The analysis shall show that, after any accident, escape routes, temporary refuges and mustering stations are appropriately arranged so that:

- a) At least one escape route is accessible from all spaces/areas to a temporary refuge.
- b) All persons on board can be evacuated by lifeboats in the course of 15 minutes regardless of weather conditions. The time shall be measured to the point where the lifeboats are launched and released.
- c) The location of the liferafts is appropriate for alternative evacuation.
- d) Personal life-saving appliances in sufficient numbers are suitably located for purposes of both rescue and evacuation by sea.

Temporary refuges shall be located in close proximity to the lifeboat stations.

14. Number and location of lifeboats

The number and location of lifeboats shall be determined on the basis of the evacuation analysis and the following considerations:

- a) It shall be possible to launch the necessary number of lifeboats with sufficient aggregate capacity to accommodate all persons on board at the least favourable angle of heel as shown by the stability calculations, cf. section 21 of Regulations of 20 December 1991 No. 878.
- b) For mobile drilling units, the following requirements shall also be complied with:
 1. For drillships, it shall be possible to evacuate all persons on board by lifeboats if all lifeboats on any side are lost or unusable.
 2. For self-elevating and semi-submersible drilling units, it shall be possible to evacuate all persons on board by lifeboats if all lifeboats at one location are lost or unusable.
- c) For units which are not of a ship design, the following shall be complied with specifically:
 1. Lifeboats shall be positioned with the bow pointing outwards/away from the unit.
 2. For a lifeboat to be included in the lifeboat capacity at the most unfavourable conditions shown by the stability calculations, cf. section 21 of Regulations of 20 December 1991 No. 878, the lifeboat shall be capable of safe launching at a distance of not less than 5 metres from fixed structure.
 3. Positioning for launching while underway is not considered necessary.
 4. On units connected by gangway to any other installation, no lifeboats shall be positioned on the side facing the other installation.
- d) For free-fall lifeboats, including their associated launching arrangements, to be included in the lifeboat capacity at the most unfavourable conditions shown by the stability calculations, cf. section 21 of Regulations of 20 December 1991 No. 878, the free-fall lifeboats, and their launching arrangements, shall be certified for launching at the relevant heights and angles.

15. Number and location of liferafts

There shall be sufficient liferaft capacity for the total number of persons on board. Their location shall be based on the result of the evacuation analysis, cf. section 13.

For units of a ship design, the following requirements shall also be complied with:

- a) It shall be possible to evacuate all persons on board by liferafts if all liferafts on any one side are lost or unusable.
- b) Where it is more than 100 metres from the stem or stern to the nearest lifeboat or liferaft, an extra liferaft shall be arranged fore or aft close to the stem or the stern.

The liferafts shall be located within their own launching arrangement, with no more than 3 liferafts per launching arrangement.

For a liferaft to be included in the liferaft capacity, the liferaft shall be certified for launching at the relevant heights.

16. Location of fast rescue boats

At least one fast rescue boat shall be provided in a safe location on board. The location shall be either within a separate launching arrangement or in an appropriate place where the rescue boat is readily reached by at least two deck cranes intended for use in such launching operations, cf. section 11 subparagraph 1, and subparagraph 4, paragraph e).

Additionally, the location shall be such that:

- a) the launching of the rescue boat will not impede the launching of lifeboats and liferafts; and
- b) the rescue boat may be launched safely within 5 minutes of the sounding of the alarm, both during operation and transit.

On units which are not of a ship design, and when the unit has no heel during operation or transit, the rescue boat shall be capable of safe launching at a distance of not less than 8 metres from the unit's permanent structures.

17. Personal life-saving appliances

Immersion suits:

- a) Immersion suits for all persons on board shall be stored in a readily accessible place in the living quarters.
- b) Immersion suits equivalent in number to at least 50 % of the carrying capacity stipulated at each lifeboat station shall be kept at each lifeboat station. These suits shall be stored in solid chests which are clearly marked and which cannot be locked.
- c) Additionally, any person designated to operate a rescue boat shall be provided with a suitable immersion suit or anti-exposure suit, stored in an appropriate place.

Lif jackets:

- a) Lif jackets shall be stowed in appropriate places as shown by the evacuation analysis, cf. section 13, taking into account the personnel at locations where immersion suits are not readily accessible. The total number of lif jackets shall not be lower than the total number of persons on board.
- b) The lif jackets may be replaced with immersion suits. This requires extra immersions suits, amounting to 20 % of the maximum allowed number of personnel on board, in excess to the requirement in the first paragraph.

Lifebuys:

- a) Lifebuys shall be appropriately stowed in readily accessible places on the unit, and at least 8 lifebuys shall be carried.
- b) Units of a ship design which are:
 1. between 100 and 150 metres in length shall carry at least 10 lifebuys.
 2. between 150 and 200 metres in length shall carry at least 12 lifebuys.
 3. more than 200 metres shall carry at least 14 lifebuys.
- c) At least half the lifebuys shall be fitted with a self-igniting light in accordance with para. 2.1.2 of the LSA Code.
- d) At least two of the lifebuys referred to in subparagraph c) shall also have self-activating smoke signals in accordance with para. 2.1.3 of the LSA Code.
- e) At least two lifebuys, located far from each other, neither being among the lifebuys referred to in subparagraphs c) or d), shall be provided with a buoyant rescue line in accordance with para. 2.1.4 of the LSA Code. The length of the lines shall be at least 1.5 times the distance from the deck to the waterline measured when the unit is in transit mode, and not less than 30 metres.

18. Other life-saving appliances

The following additional life-saving appliances and other equipment for evacuation shall be carried on board:

- a) Units which are not of a ship design shall have fixed emergency ladders extending from the deck to the pontoon deck or similar level, and at least one such ladder on each side. Emergency ladders shall not have safety hoops.
- b) One line-throwing appliance in accordance with para. 7.1 of the LSA Code.
- c) 12 rocket parachute flares in accordance with para. 3.1 of the LSA Code.

19. Marking of evacuation routes

Evacuation routes shall be marked. Markings shall be conspicuous and easily intelligible.

20. Safety plan

On all units updated safety drawings shall be displayed, giving an outline presentation of life-saving appliances and launching arrangements. The drawings shall be permanently displayed in the control stations and central, clearly visible places in the accommodation. The drawings shall give a clear overview of the number, capacity and location of the life-saving appliances on board. Coloured symbols in accordance with an approved standard shall be used.

21. Drills

See section 38, cf. 34 of the Regulations.

22. Maintenance and control

Life-saving appliances and equipment for evacuation shall be kept in good working order and be ready for use at all times.

Maintenance and control shall be carried out in accordance with an updated maintenance programme which complies with applicable regulatory requirements and the recommendations of the supplier.

The maintenance programme shall be in accordance with Regulations III/20 and III/36 of the SOLAS Convention, with the following additions:

- a) Every five years, the launching arrangement, hooks, attachments, etc. shall be subject to a thorough examination, including NDT control of vital components.
- b) Maintenance and conversions etc. shall be carried out according to the manufacturer's instructions.
- c) All inspections, tests, replacements and repairs shall be recorded in the maintenance system.

Lifeboats shall be tested to the same extent as in an installation test, once every five years.