Subject

Summary of SOLAS Chapter III and LSA Code amendments adopted by Marine Safety Committee (MSC) at the 81st and 82nd session

ClassNK
Technical Information

No. TEC-0698
Date 23 May 2007

To whom it may concern

Marine Safety Committee (MSC) has amended SOLAS Chapter III by Res.MSC201(81) and Res.MSC216(82) and done LSA Code by Res.MSC207(81) and MSC218(82) at the 81st and 82nd session. Principal revised points are mentioned as follows. Please refer to the attachment (amended parts are underlined) and ClassNK Technical Information TEC-0691 for further information.

1. Principal revised points by Res.MSC.201(81):
   (1) Number of infant lifejackets for passenger ships on voyages less than 24 hours has been specified.
   (2) If adult lifejackets are not designed to fit person weighting up to 140kg and with a chest girth of up to 1,750 mm, accessories to secured to such persons have been required.

   This resolution will enter into force on 1st July 2010.

2. Principal revised points by Res.MSC.207(81):
   (1) Operational air temperature range (-15°C to +40°C) of personal life-saving appliances has been specified.
   (2) A mass of lifebuoys intended to operate the quick release arrangement provided for the self-activated smoke signals and self-igniting lights (not less than 4 kg) has been specified.
   (3) Requirements of a lifejacket (Art.2.2) have been totally amended.
   (4) Classification of an immersion suit as a lifejackets has been deleted.

   This resolution will enter into force on 1st July 2010.

3. Principal revised points by Res.MSC.216(82)
   (1) A methodology for alternative design and arrangement for life-saving appliances and arrangements has been specified.
   (2) Mass of a liferaft stowed in a position providing for easy side-to-side transfer at a single open deck level (less than 185 kg) has been specified.
   (3) Remotely located survival craft carried in accordance with Reg.III/31.1.4 has been included in watch or work stations specified in Reg.III/32.3.3.

   In this resolution, amendment (1) will enter into force on 1st July 2010 and the others will do on 1st July 2008.

(To be continued)

4. Principal revised points by Res.MSC.218(82)
   (1) Performance requirement of a food ration, fresh water and their container for a liferaft have been specified.
   (2) The inflation system of an inflatable liferaft has been required to be complied with ISO 15738:2002.
   (3) Performance requirement of a boarding ramp fitted at least one entrance of an inflatable or a rigid liferaft has been specified.
   (4) Performance requirements of a lifeboat to be launched by a fall or falls have been totally amended.
   (5) Performance requirements of a fast rescue boat and its launching appliance have been newly added.

   This resolution will enter into force on 1st July 2008.

5. Early implementation of amendments to SOLAS Chapter III and LSA Code by IMO MSC.1/Circ.1215

   To encourage early implementation of the important safety improvements addressed therein and to ensure that equipment tested and approved according to the new requirements is readily available, IMO MSC.1/Circ.1215 has been issued. Please be advised that some Flag states or Administrations may implement the aforementioned amendments prior to their scheduled dates of entry into force by this Circular.

For any questions about the above, please contact:

NIPPON KAIJI KYOKAI (ClassNK)
Material and Equipment Department, Administration Center, Head Office
Address: 4-7 Kioi-cho, Chiyoda-ku, Tokyo 102-8567, Japan
Tel.: +81-3-5226-2020
Fax: +81-3-5226-2057
E-mail: eqd@classnk.or.jp

Attachment:

1. Summary of Revised SOLAS Chapter III
2. Summary of Revised LSA Code

1. Summary of Revised SOLAS Chapter III

Note : "III/x.x.x" in the column "Paragraph number" means Reg.x.x.x of SOLAS Chapter III.

Paragraph number	Amended requirement	Effective date and Note
Evaluation, testing and approval of life-saving appliances and arrangements		
III/4.3	Before giving approval to novel life-saving appliances or arrangements, the Administration shall ensure that such:	1 January 2010 Replaced
III/4.3.1	appliances provide safety standards at least equivalent to the requirements of this chapter and the Code and have been evaluated and tested based on the guidelines developed by the Organization*; or *Refer to the guidelines to be developed by the Organization	1 January 2010
III/4.3.2	arrangements have successfully undergone an engineering analysis, evaluation and approval in accordance with regulation 38.	1 January 2010
Communications		
III/6.4.3	The general emergency alarm system shall be audible throughout all the accommodation and normal crew working spaces. On passenger ships, the system shall also be audible on all open decks.	1 July 2008 Replaced
Personal life-saving appliances		
III/7.2.1.1	for passenger ships on voyages less than 24 hours, a number of infant lifejackets equal to at least 2.5 % of the number of passengers on board shall be provided;	1 July 2010 Newly added Existing para. 7.2.1.1 has been renumbered to 7.2.1.3.
III/7.2.1.2	for passenger ships on voyages 24 hours or greater, infant lifejackets shall be provides for each infant on board,	1 July 2010 Newly added Existing para. 7.2.1.2 has been renumbered to 7.2.1.4.
III/7.2.1.5	if adult lifejackets provided are not designed to fit person weighting up to 140kg and with a chest girth of up to 1,750 mm, a sufficient number of suitable accessories shall be available on board to allow them to secured to such persons.	1 July 2010 Newly added
Survival craft muster and embarkation arrangements		
III/11.7	An embarkation ladder complying with the requirements of paragraph 6.1.6 of the Code extending, in a single length, from the deck to the waterline in the lightest seagoing condition under all conditions of trim of up to 10° and a list of up to 20° either way shall be provided at each embarkation station or at every two adjacent embarkation stations for survival craft launched down the side of the ship. However, the Administration may permit such ladders to be replaced by approved devices to afford access to the survival craft when waterborne, provided that there shall be at least one embarkation ladder on each side of the ship. Other means of embarkation enabling descent to the water in a controlled manner	1 July 2008 Partly changed

	may be permitted for the liferafts required by regulation 31.1.4.	
Stowage of rescue boats		
III/14.1	in a state of continuous readiness for launching in not more than 5 min and if the inflatable type, in a fully inflated condition at all times;	1 July 2008 Partly changed
Emergency training and drills		
III/19.3.3.4	In case of a lifeboat arranged for free-fall launching, at least once every three months during an abandon ship drill the crew shall board the lifeboat, properly secure themselves in their seats and commence launch procedures up to but not including the actual release of the lifeboat (i.e. the release hook shall not be released). The lifeboat shall then either be free-fall launched with only the required operating crew on board, or lowered into the water by means of the secondary means of launching with or without the operating crew on board. In both cases the lifeboat shall thereafter be maneuvered in the water by the operating crew. At intervals of not more than six months, the lifeboat shall either be launched by free-fall with only the operating crew on board, or simulated launching shall be carried out in accordance with the guidelines developed by the Organization. * * Refer to Measures to prevent accidents with lifeboat, (MSC.1/Cir.1206)	1 July 2008 Replaced
Operational readiness, maintenance and inspections		
III/20.4.1	Falls used in launching shall be inspected periodically* with special regard for areas passing through sheaves, and renewed when necessary due to deterioration of the falls or at intervals of not more than 5 years, whichever is the earlier. * Refer to Measure to prevent accidents with lifeboat (MSC.1/Circ.1206)	1 July 2008 Replaced Existing paragraph 20.4.2 has been deleted.
III/20.6.2	all engines in lifeboats and rescue boats shall be run for a total period of not less than 3 min. provided the ambient temperature is above the minimum temperature required for starting and running the engine. During this period of time, it should be demonstrated that the gear box and gear box train are engaging satisfactorily. If the special characteristics of an outboard motor fitted to a rescue boat would not allow it to be run other than with its propeller submerged for a period of 3 min, a suitable water supply may be provided. In special cases, the Administration may waive this requirement for ships constructed before 1 July 1986;	1 July 2008 Partly changed
III/20.8	Servicing of inflatable liferafts, inflatable lifejackets, marine evacuation systems, and maintenance and repair of inflated rescue boats.	1 July 2008 Replaced

III/20.11.1.3	upon completion of the examination referred to in .2 subjected to a dynamic test of the winch brake at maximum lowering speed. The load to be applied shall be the mass of the survival craft or rescue boat without persons on board, except that, at intervals not exceeding five years, the test shall be carried out with a proof load equal to 1.1 times the weight of survival craft or rescue boat and its full complement of persons and equipment.	1 July 2008 Partly changed
III/20.11.2	Lifeboat or rescue boat on-load release gear, including free-fall lifeboat release systems, shall be:	1 July 2008 Replaced
III/20.11.2.3	operationally tested under a load of 1.1 times the total mass of the boat when loaded with its full complement of persons and equipment whenever the release gear is overhauled. Such over-hauling and test shall be carried out at least once every five years.*	1 July 2008 Partly chnaged
III/20.11.3	Davit-launched liferaft automatic release hooks shall be:	1 July 2008 Newly added
III/20.11.3.1	maintained in accordance with instructions for on-board maintenance as required by regulation 36;	1 July 2008
III/20.11.3.2	subject to a thorough examination and operational test during the annual surveys required by regulations I/7 and I/8 by properly trained personnel familiar with the system; and	1 July 2008
III/20.11.3.3	operationally tested under a load of 1.1 times the total mass of the liferaft when loaded with its full complement of persons and equipment whenever the automatic release hook is overhauled. Such over-hauling and test shall be carried out at least once every five years.* * Refer to the Recommendation on testing of life-saving appliances, as adopted by the Organization by resolution A.689(17). For life-saving appliances installed on board on or after 1 July 1999, refer to the Revised Recommendations on testing of life-saving appliances, as adopted by the Maritime Safety Committee of the Organization by resolution MSC.81(70).	1 July 2008
Survival craft and rescue boats for passenger ships		
III/21.1.2	Passenger ships engaged on short international voyages ~~and complying with the special standards of subdivision prescribed by regulation II-1/6.5~~ shall carry:	1 July 2008 Partly changed Existing para. 21.1.3 has been deleted.
III/21.1.3	All survival craft required to provide for abandonment by the total number of persons on board shall be capable of being launched with their full complement of persons and equipment within a period of 30 min from the time the abandon ship signal is given after all persons have been assembled, with lifejackets donned.	1 July 2008 Partly changed

III/21.2.3	A lifeboat may be accepted as a rescue boat provided that it and its launching and recovery arrangements also complying with the requirements for a rescue boat.	1 July 2008 Replaced
III/21.3.2	The number of lifeboats and rescue boats that are carried on passenger ships engaged on short international voyages ~~and complying with the special standards of subdivision prescribed by regulation II-1/6.5~~ shall be sufficient to ensure that in providing for abandonment by the total number of persons on board not more than nine liferafts need be marshalled by each lifeboat or rescue boat.	1 July 2008 Partly changed
Additional requirements for ro-ro passenger ships		
III/26.3.1	At least one of the rescue boats on a ro-ro passenger ship shall be a fast rescue boat complying with section 5.1.4 of the Code	1 July 2008 Partly changed
III/26.3.2	Each fast rescue boat shall be served by a suitable launching complying with section 6.1.7 of the Code. When approving such launching appliances, the Administration shall take into account that the fast rescue boat is intended to be launched and retrieved even under severe adverse weather conditions, and also shall have regard to the recommendations adopted by the Organization.*	1 July 2008 Partly changed
Survival craft and rescue boats for cargo ships		
III/31.1.1.2	in addition, one or more inflatable or rigid liferafts, complying with the requirements of section 4.2 or 4.3 of the Code, of a mass of less than 185 kg and stowed in a position providind for easy side-to-side transfer at a single open deck level, and of such aggregate capacity as will accommodate the total number of persons on board. If the liferaft or liferafts are not of mass of less than 185 kg and stowed in a position providing for easy side-to-side transfer at a single open deck level, the total capacity available on each side shall be sufficient to accommodate the total number of persons on board.	1 July 2008 Replaced
III/31.1.3.2	unless the liferafts required by paragraph 1.3.1 are of a mass of less than 185 kg and stowed in a position providing for easy side-to-side transfer at a single open deck level, additional liferafts shall be provided so that the total capacity available on each side will accommodate 150% of the total number of persons on board;	1 July 2008 Replaced
III/31.1.3.4	In the event of any one survival craft being lost or rendered unserviceable, there shall be sufficient survival craft available for use on each side, including any which are of a mass of less than 185kg and stowed in a position providing for easy side-to-side transfer at a single open deck level, to accommodate the total number of persons on board.	1 July 2008 Replaced
III/31.2	Cargo ships shall carry at least one rescue boat complying with the requirements of paragraph 5.1 of the Code. A lifeboat may be accepted as a rescue boat, provided that it and its launching and recovery arrangements also comply with the requirements for a rescue boat.	1 July 2008 Partly changed

Personal life-saving appliances for cargo ships		
III/32.3.2	An immersion suit of an appropriate size complying with the requirements of section 2.3 of the Code shall be provided for every person on board the ship. However, for ships other than bulk carriers, as defined in regulation IX/1, these immersion suits need not be required if the ship is constantly engaged on voyages in warm climates where, in the opinion of the Administration, immersion suits are unnecessary.	1 July 2008 Partly changed
III/32.3.3	If a ship has any watch or work stations which are located remotely from the place or places where immersion suits are normally stowed including remotely located survival craft carried in accordance with regulation 31.1.4, additional immersion suits shall be provided at these locations for the number of persons normally on watch or working at those locations at any time.	1 July 2008 Partly changed
Training manual and on-board training aids		
III/35.5	The training manual shall be written in the working language of the ship.	1 July 2008 Newly added
PART C ALTERNATIVE DESIGN AND ARRANGEMENT Regulation 38 Alternative design and arrangement		
III/38.1	The purpose of this regulation is to provide a methodology for alternative design and arrangement for life-saving appliances and arrangements.	1 January 2010 Newly added.
III/38.2.1	Life-saving appliances and arrangements may deviate from the requirements set out in part B, provided that the alternative design and arrangement meet the intent of the requirements concerned and provided an equivalent level of safety to this chapter.	1 January 2010
III/38.2.2	When alternative design or arrangements deviate from the prescriptive requirements of part B, an engineering analysis, evaluation and approval of the design and arrangements shall be carried out in accordance with this regulation.	1 January 2010
III/38.3	The engineering analysis shall be prepared and submitted to the Administration, based on the guidelines developed by the Organization* and shall include, as a minimum, the following elements: *Refer to the Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III (MSC.1/Circ.1212)	1 January 2010
III/38.3.1	determination of the ship type and the life-saving appliance and arrangements concerned;	1 January 2010
III/38.3.2	identification of the prescriptive requirement(s) with which the life-saving appliance and arrangements will not comply;	1 January 2010
III/38.3.3	identification of the reason the proposed design will not meet the prescriptive requirements supported by compliance with other recognized engineering or industry standards;	1 January 2010

III/38.3.4	determination of performance criteria for the ship and life-saving appliance and arrangements concerned addressed by the relevant prescriptive requirement(s).	1 January 2010
III/38.3.4.1	performance criteria shall provide a level of safety not inferior to the relevant prescriptive requirements contained in part B; and	1 January 2010
III/38.3.4.2	performance criteria shall be quantifiable and measurable;	1 January 2010
III/38.3.5	detailed description of the alternative design and arrangements, including a list of the assumptions used in the design and any proposed operational restrictions or conditions;	1 January 2010
III/38.3.6	technical justification demonstrating that the alternative design and arrangements meet the safety performance criteria; and	1 January 2010
III/38.3.7	risk assessment based on identification of the potential faults and hazards associated with proposal.	1 January 2010
III/38.4.1	The engineering analysis required in paragraph 3 shall be evaluated and approved by the Administration, taking into account the guidelines developed by the Organization.* *Refer to the Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III (MSC.1/Circ.1212)	1 January 2010
III/38.4.2	A copy of the documentation, as approved by the Administration, indicating that the alternative design and arrangements comply with this regulation, shall be carried on board the ship.	1 January 2010
III/38.5	The Administration shall communicate to the Organization pertinent information concerning alternative design and arrangements approved by them for circulation to all Contracting Governments.	1 January 2010
III/38.6	If the assumptions and operational restrictions that were stipulated in alternative design and arrangements are changed, the engineering analysis shall be carried out under the changed condition and shall be approved by the Administration.	1 January 2010

2. Summary of Revised LSA Code

Article number	Amended requirement	Date and Note
Definition		
1.1.8	~~"*Required free fall height*" is the greatest distance measured from the still water surface to the lowest point on the lifeboat when the lifeboat is in the launch configuration and the ship is in its lightest seagoing condition.~~	2008/7/1 Deleted
General requirements for life-saving appliances		
1.2.2.2	not be damaged in stowage throughout the air temperature range -30°C to +65°C and, in the case of personal life-saving appliances, unless otherwise specified, remain operational throughout the air temperature range -15°C to +40°C	2010/7/1 Replaced

1.2.2.6	be of international or vivid reddish orange, or a comparably highly visible colouron all parts where this will assist detection at sea;	2010/7/1 Replaced
1.2.3	The Administration shall determine the period of acceptability of life-saving appliances which are subject to deterioration with age. Such life-saving appliances shall be marked with a means for determining their age or the date by which they must be replaced. Permanent marking with a date of expiry is the preferred method of establishing the period of acceptability. Batteries not marked with an expiration date may be used if they are replaced annually, or in the case of a secondary battery (accumulator), if the condition of the electrolyte can be readily checked. In the case of pyrotechnic lifesaving appliances, the date of expiry shall be indelibly marked on the product by the manufacturer.	2008/7/1 Partly changed
Lifebuoys		
2.1.1.7	if it is intended to operate the quick release arrangement provided for the self-activated smoke signals and self-igniting lights, have a mass of not less than 4 kg. and	2010/7/1 Partly changed
2.1.3.6	be provided with a quick-release arrangement that will automatically release and activate the signal and associated self-igniting light connected to a lifebuoy having a mass of not more than 4 kg.	2010/7/1 Newly added
Lifejackets		
2.2.1.1	A lifejacket shall not sustain burning or continue melting after being totally enveloped in a fire for a period of 2s.	2010/7/1 Full-fledged revision for 2.2
2.2.1.2	Lifejackets shall be provided in three sizes in accordance with table 2.1. If a lifejacket fully complies with the requirements of two adjacent size ranges, it may be marked with both size ranges, but the specified ranges shall not be divided. Lifejackets shall be marked by either weight or height, or by both weight and height, according to table 2.1.	
2.2.1.3	If an adult lifejacket is not designed to fit persons weighing up to 140 kg and with a chest girth of up to 1,750 mm, suitable accessories shall be available to allow it to be secured to such persons.	
2.2.1.4	The in-water performance of a lifejacket shall be evaluated by comparison to the performance of a suitable size standard reference lifejacket, i.e. reference test device (RTD) complying with the recommendations of the Organization.* * Refer to the Revised Recommendation on Testing of Life-saving Appliances adopted by the Organization by resolution MSC.81(70), as amended.	
2.2.1.5	An adult lifejacket shall be so constructed that:	
2.2.1.5.1	at least 75% of persons who are completely unfamiliar with the lifejacket can correctly don it within a period of 1 min without assistance, guidance or prior demonstration;	

2.2.1.5.2	after demonstration, all persons can correctly don it within a period of 1 min without assistance;	
2.2.1.5.3	it is clearly capable of being worn in only one way or inside-out and,if donned incorrectly, it is not injurious to the wearer;	
2.2.1.5.4	the method of securing the lifejacket to the wearer has quick and positive means of closure that do not require tying of knots;	
2.2.1.5.5	it is comfortable to wear; and	
2.2.1.5.6	it allows the wearer to jump into the water from a height of at least 4.5 m while holding on to the lifejacket, and from a height of at least 1m with arms held overhead, without injury and without dislodging or damaging the lifejacket or its attachments.	
2.2.1.6	When tested according to the recommendations of the Organization on at least 12 persons, adult lifejackets shall have sufficient buoyancy and stability in calm fresh water to:	
2.2.1.6.1	lift the mouth of exhausted or unconscious persons by an average height of not less than the average provided by the adult RTD;	
2.2.1.6.2	turn the body of unconscious, face-down persons in the water to a position where the mouth is clear of the water in an average time not exceeding that of the RTD, with the number of persons not turned by the lifejacket no greater than that of the RTD;	
2.2.1.6.3	incline the body backwards from the vertical position for an average torso angle of not less than that of the RTD minus 5°;	
2.2.1.6.4	lift the head above horizontal for an average face plane angle of not less than that of the RTD minus 5°; and	
2.2.1.6.5	return the wearer to a stable face-up position after being destabilized when floating in the flexed foetal position.* * Refer to the illustration on page 11 of the IMO Pocket Guide to Cold Water Survival and to the Revised Recommendation on testing of life-saving appliances (resolution MSC.81(70)), as amended.	
2.2.1.7	An adult lifejacket shall allow the person wearing it to swim a short distance and to board a survival craft.	
2.2.1.8	An infant or child lifejacket shall perform the same as an adult lifejacket except as follows:	
2.2.1.8.1	donning assistance is permitted for small children and infants;	
2.2.1.8.2	the appropriate child or infant RTD shall be used in place of the adult RTD; and	
2.2.1.8.3	assistance may be given to board a survival craft, but wearer mobility shall not be reduced to any greater extent than by the appropriate size RTD.	
2.2.1.9	With the exception of freeboard and self-righting performance, the requirements for infant lifejackets may be relaxed, if necessary, in order to:	
2.2.1.9.1	facilitate the rescue of the infant by a caretaker;	

2.2.1.9.2	allow the infant to be fastened to a caretaker and contribute to keeping the infant close to the caretaker;	
2.2.1.9.3	keep the infant dry, with free respiratory passages;	
2.2.1.9.4	protect the infant against bumps and jolts during evacuation; and	
2.2.1.9.5	allow a caretaker to monitor and control heat loss by the infant.	
2.2.1.10	In addition to the markings required by paragraph 1.2.2.9, an infant or child lifejacket shall be marked with:	
2.2.1.10.1	the size range in accordance with paragraph 2.2.1.2; and	
2.2.1.10.2	an “infant” or “child” symbol as shown in the “infant’s lifejacket” or“child’s lifejacket” symbol adopted by the Organization.* * Refer to Symbols related to Life-saving Appliances and Arrangements adopted by the Organization by resolution A.760(18), as amended.	
2.2.1.11	A lifejacket shall have buoyancy which is not reduced by more than 5% after24 h submersion in fresh water	
2.2.1.12	The buoyancy of a lifejacket shall not depend on the use of loose granulated materials.	
2.2.1.13	Each lifejacket shall be provided with means of securing a lifejacket light as specified in paragraph 2.2.3 such that it shall be capable of complying with paragraphs 2.2.1.5.6 and 2.2.3.1.3.	
2.2.1.14	Each lifejacket shall be fitted with a whistle firmly secured by a lanyard.	
2.2.1.15	Lifejacket lights and whistles shall be selected and secured to the lifejacket in such a way that their performance in combination is not degraded.	
2.2.1.16	A lifejacket shall be provided with a releasable buoyant line or other means to secure it to a lifejacket worn by another person in the water.	
2.2.1.17	A lifejacket shall be provided with a suitable means to allow a rescuer to lift the wearer from the water into a survival craft or rescue boat.	
2.2.2	A lifejacket which depends on inflation for buoyancy shall have not less than two separate compartments, shall comply with the requirements of paragraph 2.2.1 and shall:	
2.2.2.1	inflate automatically upon immersion, be provided with a device to permit inflation by a single manual motion and be capable of having each chamber inflated by mouth;	
2.2.2.2	in the event of loss of buoyancy in any one compartment be capable of complying with the requirements of paragraphs 2.2.1.5, 2.2.1.6 and 2.2.1.7; and	
2.2.2.3	comply with the requirements of paragraph 2.2.1.11 after inflation by means of the automatic mechanism.	
2.2.3.1	Each lifejacket light shall:	

2.2.3.1.1	have a luminous intensity of not less than 0.75 cd in all directions of the upper hemisphere;	
2.2.3.1.2	have a source of energy capable of providing a luminous intensity of 0.75 cd for a period of at least 8 h;	
2.2.3.1.3	be visible over as great a segment of the upper hemisphere as is practicable when attached to a lifejacket; and	
2.2.3.1.4	be of white colour.	
2.2.3.2	If the light referred to in paragraph 2.2.3.1 is a flashing light, it shall, in addition:	
2.2.3.2.1	be provided with a manually operated switch; and	
2.2.3.2.2	flash at a rate of not less than 50 flashes and not more than 70 flashes per minute with an effective luminous intensity of at least 0.75 cd.	
Immersion suits		
2.3.1.1.1	it can be unpacked and donned without assistance within 2 min, taking into account donning of any associated clothing*, donning of a lifejacket if the immersion suit is to be worn in conjunction with a lifejacket, and inflation of orally inflatable chambers if fitted; * Refer to paragraph 3.1.3 of the Recommendation on testing of life-saving appliances, adopted by the Organization by resolution MSC.81(70).	2008/7/1 Replaced
2.3.1.1.3	it will cover the whole body with the exception of the face, except that covering for the hands may be provided by separate gloves which shall be permanently attached to the suit;	2010/7/1 Replaced
2.3.1.2	An immersion suit on its own, or worn in conjunction with a lifejacket if necessary, shall have sufficient buoyancy and stability in calm fresh water to:	2010/7/1 Replaced
2.3.1.2.1	lift the mouth of an exhausted or unconscious person clear of the water by not less than 120 mm; and	
2.3.1.2.2	allow the wearer to turn from a face-down to a face-up position in not more than 5 s.	
2.3.1.3.3	jump from a height of not less than 4.5 m into the water without damaging or dislodging the immersion suit, or its attachments, or being injured; and	2010/7/1 replaced
2.3.1.5	An immersion suit which has buoyancy and is designed to be worn without a lifejacket shall be provided with a releasable buoyant line or other means to secure it to a suit worn by another person in the water.	2010/7/1 Newly added
2.3.1.6	An immersion suit which has buoyancy and is designed to be worn without a lifejacket shall be provided with a suitable means to allow a rescuer to lift the wearer from the water into a survival craft or rescue boat.”	2010/7/1 Newly added

2.3.1.7	If an immersion suit is to be worn in conjunction with a lifejacket, the lifejacket shall be worn over the immersion suit. Persons wearing such an immersion suit shall be able to don a lifejacket without assistance. The immersion suit shall be marked to indicate that it must be worn in conjunction with a compatible lifejacket.	2010/7/1 Replaced existing paragraph 2.3.1.5 and renumbered.
2.3.1.8	An immersion suit shall have buoyancy which is not reduced by more than 5% after 24 h submersion in fresh water and does not depend on the use of loose granulated materials.”	2010/7/1 Newly added
2.3.3	~~A person in fresh water wearing either an immersion suit or an immersion suit with a lifejacket, shall be able to turn from a face down to a face up position in not more than 5 s.~~	2010/7/1 deleted
Anti-exposure suits		
2.4.1.1.3	covers the whole body except, where the Administration so permits, the feet; covering for the hands and head may be provided by separate gloves and a hood, both of which shall be permanently attached to the suit;	2010/7/1 Replaced
2.4.1.2	~~An anti-exposure suits which also complies with the requirements of section 2.2 may be classified as a lifejacket.~~	2010/7/1 deleted
2.4.1.2.2	jump from a height of not less than 4.5 m into the water with feet first, without damaging or dislodging the suit, or its attachments, or being injured;	2010/7/1 Renumbered and partly chanted
2.4.1.3	An anti-exposure suit shall be fitted with a light complying with the requirements of paragraph 2.2.3 such that it shall be capable of complying with paragraphs 2.2.3.1.3 and 2.4.1.2.2, and the whistle prescribed by paragraph 2.2.1.14.”	2010/7/1 Renumbered and replaced
2.4.2.1.2	be so constructed that, when worn as marked and following one jump into the water which totally submerges the wearer, the suit continues to provide sufficient thermal protection to ensure that when it is worn in calm circulating water at a temperature of 5°C, the wearer’s body core temperature does not fall at a rate of more than 1.5°C per hour, after the first 0.5 h.	2010/7/1 Renumbered and replaced
General requirements for liferafts		
4.1.2.2	Unless the liferaft is to be launched by an approved launching appliance complying with the requirements of section 6.1 or is not intended for easy side-to-side transfer, the total mass of the liferaft, its container and its equipment shall not be more than 185 kg.	2008/7/1 Partly changed
4.1.3.3	A manually controlled exterior light shall be fitted to the uppermost portion of the liferaft canopy or structure. The light shall be white and be capable of operating continuously for at least 12 h with a luminous intensity of not less than 4.3 candela in all directions of the upper hemisphere. However, if the light is a flashing light it shall flash at a rate of not less than 50 flashes and not more than 70 flashes per min for the 12 h operating period with an equivalent effective luminous intensity. The lamp shall light automatically	2008/7/1 Partly changed

	when the canopy is erected. Batteries shall be of a type that does not deteriorate due to dampness or humidity in the stowed liferaft.	
4.1.3.4	A manually controlled interior light shall be fitted inside the liferaft capable of continuous operation for a period of at least 12 h. It shall light automatically when the canopy is erected and shall produce an arithmetic mean luminous intensity of not less than 0.5 cd when measured over the entire upper hemisphere to permit reading of survival and equipment instructions. Batteries shall be of a type that does not deteriorate due to damp or humidity in the stowed liferaft.	2008/7/1 Partly changed
4.1.5.1.18	a food ration consisting of not less than 10,000 kJ (2,400 kcal) for each person the liferaft is permitted to accommodate. These rations shall be palatable, edible throughout the marked life, and packed in a manner which can be readily divided and easily opened, taking into account immersion suit gloved hands.* The rations shall be packed in permanently sealed metal containers or vacuum packed in a flexible packaging material with a negligible vapour transmission rate (<0.1 g/m2 per 24 hours at 23ºC/85% relative humidity when tested to a standard acceptable to the Administration. Flexible packaging materials shall be further protected by outer packaging if needed to prevent physical damage to the food ration and other items as result of sharp edges. The packaging shall be clearly marked with date of packing and date of expiry, the production lot number, the content in the package and instructions for use. Food rations complying with the requirements of an international standard acceptable to the Organization** are acceptable in compliance with these requirements * Note: A typical suitable composition is: Ration unit: 500-550 g Energy: Minimum 10,000 kJ Moisture: Maximum 5% Salt (NaCl): Maximum 0.2% Carbohydrates: 60-70% weight = 50-60% energy Fat: 18-23% weight = 33-43% energy Protein: 6-10% weight = 5-8% energy * Refer to the recommendations of the International Organization for Standardization, in particular publication ISO 18813:2006 *Ships and marine technology – Survival equipment for survival craft and rescue boats*.	2008/7/1 replaced
4.1.5.1.19	1.5 *l* of fresh water for each person the liferaft is permitted to accommodate, of which either 0.5 *l* per person may be replaced by a de-salting apparatus capable of producing an equal amount of fresh water in 2 days or 1 *l* per person may be replaced by a manually powered reverse osmosis desalinator, as described in paragraph 4.4.7.5, capable of producing an equal amount of fresh water in 2	2008/7/1 replaced

	days. The water shall satisfy suitable international requirements for chemical and microbiological content, and shall be packed in sealed watertight containers that are of corrosion resistant material or are treated to be corrosion resistant. Flexible packaging materials, if used, shall have a negligible vapour transmission rate (<0.1 g/m2 per 24 hours at 23ºC / 85% relative humidity when tested to a standard acceptable to the Administration, except that individually packaged portions within a larger container need not meet this vapour transmission requirement. Each water container shall have a method of spill proof reclosure, except for individually packaged portions of less than 125 ml. Each container shall be clearly marked with date of packing and date of expiry, the production lot number, the quantity of water in the container, and instructions for consumption. The containers shall be easy to open, taking into account immersion suit gloved hands. Water for emergency drinking complying with the requirements of an international standard acceptable to the Organization* is acceptable in compliance with these requirements; * Refer to the recommendations of the International rganization for Standardization, in particular publication ISO 18813:2006 *Ships and marine technology – Survival equipment for survival craft and rescue boats*.	
Inflatable liferafts		
4.2.2.3	The liferaft shall be capable of being inflated by one person. The liferaft shall be inflated with a nontoxic gas. Inflation shall be completed within a period of 1 min at an ambient temperature of between 18℃ and 20℃ and within a period of 3 min at an ambient temperature of -30℃. The inflation system, including any relief valves installed in compliance with paragraph 4.2.2.4, shall comply with the requirements of an international standard acceptable to the Organization* After inflation the liferaft shall maintain its form when loaded with its full complement of persons and equipment. * Refer to the recommendations of the International Organization for Standardization, in particular publication ISO 15738:2002 *Ships and marine technology – Gas inflation systems for inflatable life-saving appliances*	2008/7/1 Partly changed
4.2.4.1	At least one entrance shall be fitted with a boarding ramp, capable of supporting a person weighing 100 kg sitting or kneeling and not holding onto any other part of the liferaft, to enable persons to board the liferaft from the sea. The boarding ramp shall be so arranged as to prevent significant deflation of the liferaft if the ramp is damaged. In the case of a davit-launched liferaft having more than one entrance, the boarding ramp shall be fitted at the entrance opposite the bowsing lines and embarkation facilities.	2008/7/1 Partly changed

4.2.6.3.8	mass of the packed liferaft, if greater than 185 kg;	2008/7/1 Newly added
	Rigid liferafts	
4.3.4.1	At least one entrance shall be fitted with a boarding ramp, capable of supporting a person weighing 100 kg sitting or kneeling and not holding onto any other part of the liferaft, to enable persons to board the liferaft from the sea. In the case of a davit-launched liferaft having more than one entrance, the boarding ramp shall be fitted at the entrance opposite to the bowsing and embarkation facilities.	2008/7/1 Partly changed
	General requirements for lifeboats	
4.4.1.1	All lifeboats shall be properly constructed and shall be of such form and proportions that they have ample stability in a seaway and sufficient freeboard when loaded with their full complement of persons and equipment, and are capable of being safely launched under all conditions of trim of up to 10° and list of up to 20° either way All lifeboats shall have rigid hulls and shall be capable of maintaining positive stability when in an upright position in calm water and loaded with their full complement of persons and equipment and holed in any one location below the waterline, assuming no loss of buoyancy material and no other damage.	2008/7/1 Partly changed
4.4.1.2	Each lifeboat shall be fitted with a permanently affixed approval plate, endorsed by the Administration or its representative, containing at least the following items:	2008/7/1 Replaced
4.4.1.2.1	manufacturer's name and address;	
4.4.1.2.2	lifeboat model and serial number;	
4.4.1.2.3	month and year of manufacture;	
4.4.1.2.4	number of persons the lifeboat is approved to carry; and	
4.4.1.2.5	the approval information required under paragraph 1.2.2.9.	
	Each production lifeboat shall be provided with a certificate or declaration of conformity which, in addition to the above items, specifies:	
4.4.1.2.6	number of the certificate of approval;	
4.4.1.2.7	material of hull construction, in such detail as to ensure that compatibility problems in repair should not occur;	
4.4.1.2.8	total mass fully equipped and fully manned; and	
4.4.1.2.9	the measured towing force of the lifeboat; and	
4.4.1.2.10	statement of approval as to sections 4.5, 4.6, 4.7, 4.8 or 4.9.	
4.4.3.1	Every passenger ship lifeboat shall be so arranged that it can be boarded by its full complement of persons in not more than 10 min from the time the instruction to board is given. Rapid disembarkation shall also be possible.	2008/7/1 Partly changed

4.4.6.8	The speed of a lifeboat when proceeding ahead in calm water, when loaded with its full complement of persons and equipment and with all engine powered auxiliary equipment in operation, shall be at least 6 knots and at least 2 knots when towing a the largest liferaft carried on the ship loaded with its full complement of persons and equipment or its equivalent. Sufficient fuel, suitable for use throughout the temperature range expected in the area in which the ship operates, shall be provided to run the fully loaded lifeboat at 6 knots for a period of not less than 24 h.	2008/7/1 Partly changed
4.4.7.6	Every lifeboat to be launched by a fall or falls, except a free-fall lifeboat, shall be fitted with a release mechanism complying with the following requirements subject to subparagraph .9 below:	2008/7/1 replaced
4.4.7.6.1	the mechanism shall be so arranged that all hooks are released simultaneously;	
4.4.7.6.2	the mechanism shall have two release capabilities: normal (off-load) release capability and on-load release capability:	
4.4.7.6.2.1	normal (off-load) release capability shall release the lifeboat when it is waterborne or when there is no load on the hooks, and not require manual separation of the lifting ring or shackle from the jaw of the hook; and	
4.4.7.6.2.2	on-load release capability shall release the lifeboat with a load on the hooks. This release shall be so arranged as to release the lifeboat under any conditions of loading from no load with the lifeboat waterborne to a load of 1.1 times the total mass of the lifeboat when loaded with its full complement of persons and equipment. This release capability shall be adequately protected against accidental or premature use. Adequate protection shall include special mechanical protection not normally required for off-load release, in addition to a danger sign. To prevent a premature on-load release, on-load operation of the release mechanism should require a deliberate and sustained action by the operator;	
4.4.7.6.3	to prevent an accidental release during recovery of the boat, unless the hook is completely reset, either the hook shall not be able to support any load, or the handle or safety pins shall not be able to be returned to the reset (closed) position without excessive force. Additional danger signs shall be posted at each hook station to alert crew members to the proper method of resetting;	
4.4.7.6.4	the release mechanism shall be so designed and installed that crew members from inside the lifeboat can clearly determine when the system is ready for lifting by:	
4.4.7.6.4.1	directly observing that the movable hook portion or the hook portion that locks the movable hook portion in place is properly and completely reset at each hook; or	

4.4.7.6.4.2	observing a non-adjustable indicator that confirms that the mechanism that locks the movable hook portion in place is properly and completely reset at each hook; or	
4.4.7.6.4.3	easily operating a mechanical indicator that confirms that the mechanism that locks the movable hook in place is properly and completely reset at each hook;	
4.4.7.6.5	clear operating instructions shall be provided with a suitably worded warning notice using colour coding, pictograms, and/or symbols as necessary for clarity. If colour coding is used, green shall indicate a properly reset hook and red shall indicate danger of improper or incorrect setting;	
4.4.7.6.6	the release control shall be clearly marked in a colour that contrasts with its surroundings;	
4.4.7.6.7	means shall be provided for hanging-off the lifeboat to free the release mechanism for maintenance;	
4.4.7.6.8	the fixed structural connections of the release mechanism in the lifeboat shall be designed with a calculated factor of safety of 6 based on the ultimate strength of the materials used, and the mass of the lifeboat when loaded with its full complement of persons, fuel, and equipment, assuming the mass of the lifeboat is equally distributed between the falls, except that the factor of safety for the hanging-off arrangement may be based upon the mass of the lifeboat when loaded with its full complement of fuel and equipment plus 1,000 kg; and	
4.4.7.6.9	where a single fall and hook system is used for launching a lifeboat or rescue boat in combination with a suitable painter, the requirements of paragraphs 4.4.7.6.2.2 and 4.4.7.6.3 need not be applicable; in such an arrangement a single capability to release the lifeboat or rescue boat, only when it is fully waterborne, will be adequate.	
4.4.7.11	A manually controlled exterior light shall be fitted. The light shall be white and be capable of operating continuously for at least 12 h with a luminous intensity of not less than 4.3 cd in all directions of the upper hemisphere. However if the light is a flashing light it shall flash at a rate of not less than 50 flashes and not more than 70 flashes per min for the 12 h operating period with an equivalent effective luminous intensity.	2008/7/1 Partly changed
4.4.7.12	A manually controlled interior light shall be fitted inside the lifeboat capable of continuous operation for a period of at least 12 h. It shall produce an arithmetic mean luminous intensity of not less than 0.5 cd when measured over the entire upper hemisphere to permit reading of survival and equipment instructions; however, oil lamps shall not be permitted for this purpose.	2008/7/1 Replaced

4.4.8.9	watertight receptacles containing a total of 3 *l* of fresh water as described in paragraph 4.1.5.1.19 for each person the lifeboat is permitted to accommodate, of which either 1 *l* per person may be replaced by a desalting apparatus capable of producing an equal amount of fresh water in 2 days, or 2 *l* per person may be replaced by a manually powered reserve osmosis desalinator as described in paragraph 4.4.7.5 capable of producing an equal amount of fresh water in 2 days;	2008/7/1 Partly changed
Partially enclosed lifeboats		
4.5.3	The interior of the lifeboat shall be of a light colour which does not cause discomfort to the occupants.	2008/7/1 Replaced
Totally enclosed lifeboats		
4.6.2.8	its exterior is of a highly visible colour and its interior of a light colour which does not cause discomfort to the occupants;	2008/7/1 Partly changed
Free-fall lifeboats		
4.7.3.3	~~The required free fall height should never exceed the free fall certification height.~~	2008/7/1 Deleted
Rescue boats		
5.1.1.1	5.1.1.1 Except as provided by this section, all rescue boats shall comply with the requirements of paragraphs 4.4.1 to 4.4.7.4 inclusive, excluding paragraph 4.4.6.8, and 4.4.7.6, 4.4.7.8, 4.4.7.10, 4.4.7.11 and 4.4.9. A lifeboat may be approved and used as a rescue boat if it meets all of the requirements of this regulation, if it successfully completes the testing for a rescue boat required in regulation III/4.2, and if its stowage, launching and recovery arrangements on the ship meet all of the requirements for a rescue boat.	2008/7/1 Partly changed
5.1.1.3.2	be capable of carrying at least five seated persons and a person lying on a stretcher all wearing immersion suits, and lifejackets if required. Notwithstanding paragraph 4.4.1.5 , seating, except for the helmsman, may be provided on the floor, provided that the seating space analysis in accordance with paragraph 4.4.2.2.2 uses shapes similar to figure 1 , but altered to an overall length of 1190 mm to provide for extended legs. No part of a seating space shall be on the gunwale, transom, or on inflated buoyancy at the sides of the boat.	2008/7/1 Partly changed
5.1.1.6	Every rescue boat shall be provided with sufficient fuel, suitable for use throughout the temperature range expected in the area in which the ship operates, and be capable of manoeuvring at a speed of at least 6 knots and maintaining that speed, for a period of at least 4 h when loaded with its full complement of persons and equipment.	2008/7/1 Replaced

5.1.1.12	Every rescue boat shall be so arranged that an adequate view forward, aft, and to both sides is provided from the control and steering position for safe launching and manoeuvring, and in particular with regard to visibility of areas and crew members essential to man-overboard retrieval and marshalling of survival craft.	2008/7/1 Newly added
5.1.3.11	~~The inflated rescue boat shall be maintained at all times in a fully inflated condition.~~	2008/7/1 Deleted
5.1.4	Additional requirements for fast rescue boats	2008/7/1 Newly added
5.1.4.1	Fast rescue boats shall be so constructed as to capable of being safely launched and retrieved under adverse weather and sea conditions.	
5.1.4.2	Except as provided by this section, all fast rescue boats shall comply with the requirements of section 5.1, except for paragraphs 4.4.1.5.3, 4.4.1.6, 4.4.7.2, 5.1.1.6 and 5.1.1.10.	
5.1.4.3	Notwithstanding paragraph 5.1.1.3.1, fast rescue boats shall have a hull length of not less than 6 m and not more than 8.5 m, including inflated structures or fixed fenders.	
5.1.4.4	Fast rescue boats shall be provided with sufficient fuel, suitable for use throughout the temperature range expected in the area in which the ship operates, and be capable of manoeuvring for a period of at least 4 h at a speed of at least 20 knots in calm water with a crew of 3 persons and at least 8 knots when loaded with its full complement of persons and equipment.	
5.1.4.5	Fast rescue boats shall be self-righting, or capable of being readily righted by not more than two of their crew.	
5.1.4.6	Fast rescue boats shall be self-bailing or be capable of being rapidly cleared of water.	
5.1.4.7	Fast rescue boats shall be steered by a wheel at the helmsman's position remote from the tiller. An emergency steering system providing direct control of the rudder, water jet, or outboard motor shall also be provided.	
5.1.4.8	Engines in fast rescue boats shall stop automatically or be stopped by the helmsman's emergency release switch, should the rescue boat capsize. When the rescue boat has righted, each engine or motor shall be capable of being restarted provided that the helmsman's emergency release, if fitted, has been reset. The design of the fuel and lubricating systems shall prevent the loss of more than 250 ml of fuel or lubricating oil from the propulsion system should the rescue boat capsize.	
5.1.4.9	Fast rescue boats shall, if possible, be equipped with an easily and safely operated fixed single-point suspension arrangement or equivalent.	

5.1.4.10	A rigid fast rescue boat shall be constructed in such a way that, when suspended by its lifting point it is of sufficient strength to withstand a load of 4 times the mass of its full complement of persons and equipment without residual deflection upon removal of the load.	
5.1.4.11	The normal equipment of a fast rescue boat shall include a VHF radio communication set which is hands-free and watertight.	
Launching and embarkation appliances		
6.1.1.5	The launching appliance and its attachments other than winch brakes shall be of sufficient strength to withstand a factory static proof load test of not less than 2.2 times the maximum working load.	2008/7/1 Partly changed
6.1.1.11	Rescue boat launching appliances shall be provided with foul weather recovery strops for recovery where heavy fall blocks constitute a danger.	2008/7/1 Newly added
6.1.2.12	Manual brakes shall be so arranged that the brake is always applied unless the operator, either on deck or in the survival craft or rescue boat, holds the brake control in the "off" position.	2008/7/1 Partly changed
6.1.2.13	A lifeboat launching appliance shall be provided with means for hanging-off the lifeboat to free the on-load release mechanism for maintenance.	2008/7/1 Newly added
6.1.7	Launching appliances for fast rescue boats	2008/7/1 Newly added
6.1.7.1	Every fast rescue boat launching appliance shall comply with the requirements of paragraphs 6.1.1 and 6.1.2 except 6.1.2.10 and, in addition, shall comply with the requirements of this paragraph.	
6.1.7.2	The launching appliance shall be fitted with a device to dampen the forces due to interaction with the waves when the fast rescue boat is launched or recovered. The device shall include a flexible element to soften shock forces and a damping element to minimize oscillations.	
6.1.7.3	The winch shall be fitted with an automatic high-speed tensioning device which prevents the wire from going slack in all sea state conditions in which the fast rescue boat is intended to operate.	
6.1.7.4	The winch brake shall have a gradual action. When the fast rescue boat is lowered at full speed and the brake is applied sharply, the additional dynamic force induced in the wire due to retardation shall not exceed 0.5 times the working load of the launching appliance.	

6.1.7.5	The lowering speed for a fast rescue boat with its full complement of persons and equipment shall not exceed 1 m/s. Notwithstanding the requirements of paragraph 6.1.1.9, a fast rescue boat launching appliance shall be capable of hoisting the fast rescue boat with 6 persons and its full complement of equipment at a speed of not less than 0.8 m/s. The appliance shall also be capable of lifting the rescue boat with the maximum number of persons that can be accommodated in it, as calculated in accordance with paragraph 4.4.2.	
General alarm and public address system		
7.2.1.1	The general emergency alarm system shall be capable of sounding the general emergency alarm signal consisting of seven or more short blasts followed by one long blast on the ship's whistle or siren and additionally on an electrically operated bell or klaxon or other equivalent warning system, which shall be powered from the ship's main supply and the emergency source of electrical power required by regulation II-1/42 or II-1/43, as appropriate. The system shall be capable of operation from the navigating bridge and, except for the ship's whistle, also from other strategic points. ~~The system shall be audible throughout all the accommodation and normal crew working spaces.~~ The alarm shall continue to function after it has been triggered until it is manually turned off or is temporarily interrupted by a message on the public address system.	2008/7/1 Partly amended
7.2.1.2	The minimum sound pressure levels for the emergency alarm tone in interior and exterior spaces shall be 80 dB (A) and at least 10 dB (A) above ambient noise levels existing during normal equipment operation with the ship underway in moderate weather. ~~In cabins without a loudspeaker installation, an electronic alarm transducer shall be installed, e.g. a buzzer or similar.~~	2008/7/1 Partly amended

Table 2.1 – Lifejacket sizing criteria (Newly added)

Lifejacket marking User's size	Infant	Child	Adult
Weight (kg)	Less than 15	15 or more but less than 43	43 or more
Height (cm)	Less than 100	100 or more but less than 155	155 or more