RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

Part R Fire Protection, Detection and Extinction

Rules for the Survey and Construction of Steel Ships
Part R 2014 AMENDMENT NO.1
Guidance for the Survey and Construction of Steel Ships
Part R 2014 AMENDMENT NO.1

Rule No.9 / Notice No.10 26th February 2014
Resolved by Technical Committee on 4th February 2013 / 29th July 2013
Approved by Board of Directors on 24th September 2013

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RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

RULES

Part R Fire Protection, Detection and Extinction

2014 AMENDMENT NO.1

Rule No.9 26th February 2014
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Approved by Board of Directors on 24th September 2013

Rule No.9 26th February 2014
AMENDMENT TO THE RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

"Rules for the survey and construction of steel ships" has been partly amended as follows:

Part R FIRE PROTECTION, DETECTION AND EXTINCTION

Amendment 1-1

Chapter 3 DEFINITIONS

3.2 Definitions

Paragraph 3.2.26 has been amended as follows.

3.2.26 ~~Helicopter Deck~~ Helideck

~~*Helicopter deck*~~ *Helideck* is a purpose-built helicopter landing area ~~or winching area~~ located on a ship including all structure, fire-fighting appliances and other equipment necessary for the safe operation of helicopters. ~~Helicopter deck for helicopter landing is a "*helicopter landing deck*" and helicopter deck for winching is a "*helicopter winching deck*".~~

Paragraph 3.2.27 has been amended as follows.

3.2.27 Helicopter Facility

Helicopter facility is a ~~helicopter deck~~ helideck including any refuelling and hangar facilities.

Chapter 18 HELICOPTER FACILITIES

18.1 General

Paragraph 18.1.1 has been amended as follows.

18.1.1 Purpose

The purpose of this Chapter is to provide additional measures in order to address the fire safety objectives of this Part for ships fitted with special facilities for helicopters. For this purpose, the following functional requirements are to be met:

(1) ~~helicopter deck~~ helideck structure is to be adequate to protect the ship from the fire hazards associated with helicopter operations;

((2) to (4) are omitted)

18.2 Application

Paragraph 18.2.1 has been amended as follows.

18.2.1 Application

1 In addition to complying with the requirements of **Chapters 4** to **16** as appropriate, ships equipped with ~~helicopter decks~~ helidecks are to comply with the requirements of this Chapter.

2 Where helicopters land or conduct winching operations on an occasional or emergency basis on ships without helidecks, fire-fighting equipment fitted in accordance with the requirements in **Chapter 10** may be used. This equipment is to be made readily available in close proximity to the landing or winching areas during helicopter operations.

18.3 Structure

Paragraph 18.3.1 has been amended as follows.

18.3.1 Construction of Steel or Other Equivalent Material

In general, the construction of the ~~helicopter decks~~ helidecks is to be of steel or other equivalent materials. If the ~~helicopter landing deck~~ helideck forms the deckhead of a deckhouse or superstructure, it is to be insulated to "*A*-60" class standard.

18.4 Escape

Paragraph 18.4.1 has been amended as follows.

18.4.1 Means of Escape

A ~~helicopter landing deck~~ helideck is to be provided with both a main and an emergency means of escape and access for fire fighting and rescue personnel. These are to be located as far apart from each other as is practicable and preferably on opposite sides of the ~~helicopter landing deck~~ helideck.

18.5 Fire-fighting

Paragraph 18.5.1 has been amended as follows.

18.5.1 Fire-fighting Appliances

In close proximity to the ~~helicopter deck~~ helideck, the following fire-fighting appliances are to be provided and stored near the means of access to that ~~helicopter deck~~ helideck:

(1) at least two dry powder extinguishers having a total capacity of not less than 45 *kg*;

(2) carbon dioxide extinguishers of a total capacity of not less than 18 *kg* or equivalent;

(3) ~~a suitable foam application system specified in **(a)** or **(b)** as applicable;~~

~~(a) For a helicopter landing deck,~~ a suitable foam application system consisting of monitors or foam making branch pipes capable of delivering foam to all parts of the ~~helicopter landing deck~~ helideck in all weather conditions in which helicopters can operate. The system is to be capable of delivering a discharge rate as required in **Table R18.1** for at least five minutes~~; or~~

~~(b) For a helicopter winching deck, a suitable foam application system capable of delivering foam to a circle of at least 5 *m* in diameter at a rate of not less than 120 *l/minute* for at least five minutes.~~

(4) the principal agent is to be suitable for use with salt water and a type deemed as appropriate by the Society;

(5) at least two nozzles of a dual-purpose type (jet/spray) complying with the provisions of **10.2.3** and hoses sufficient to reach any part of the ~~helicopter deck~~ helideck;

((6) and (7) are omitted)

18.6 Drainage Facilities

Paragraph 18.6.1 has been amended as follows.

18.6.1 Drainage Facilities

Drainage facilities in way of ~~helicopter landing decks~~ helidecks are to be constructed of steel and are to lead directly overboard independent of any other system (except those from weather decks to outboard directly) and are to be designed so that drainage does not fall onto any part of the ship.

EFFECTIVE DATE AND APPLICATION (Amendment 1-1)

1. The effective date of the amendments is 26 February 2014.

Amendment 1-2

Chapter 9 CONTAINMENT OF FIRE

Table R9.1 and Table R9.2 have been amended as follows.

Table R9.1 Fire Integrity of Bulkheads separating adjacent spaces

Spaces		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Control stations	(1)	*A*-0[e]	*A*-0	*A*-60	*A*-0	*A*-15	*A*-60	*A*-15	*A*-60	*A*-60	*	*A*-60
Corridors	(2)		*C*	*B*-0	*B*-0 *A*-0[c]	*B*-0	*A*-60	*A*-0	*A*-0	*A*-0	*	*A*-30
Accommodation spaces	(3)			*C*[a, b]	*B*-0 *A*-0[c]	*B*-0	*A*-60	*A*-0	*A*-0	*A*-0	*	*A*-30
Stairways	(4)				*B*-0 *A*-0[c]	*B*-0 *A*-0[c]	*A*-60	*A*-0	*A*-0	*A*-0	*	*A*-30
Service spaces (low risk)	(5)					*C*	*A*-60	*A*-0	*A*-0	*A*-0	*	*A*-0
Machinery spaces of category *A*	(6)						*	*A*-0	*A*-0[g]	*A*-60	*	*A*-60[f]
Other machinery spaces	(7)							*A*-0[d]	*A*-0	*A*-0	*	*A*-0
Cargo spaces	(8)								*	*A*-0	*	*A*-0
Service spaces (high risk)	(9)									*A*-0[d]	*	*A*-30
Open decks	(10)										-	*A*-0
Ro-ro and vehicle spaces	(11)											~~*~~[h] *A*-30

Table R9.2 Fire Integrity of Decks separating adjacent spaces

Spaces below ↓	Spaces above →	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Control stations	(1)	*A*-0	*A*-0	*A*-0	*A*-0	*A*-0	*A*-60	*A*-0	*A*-0	*A*-0	*	*A*-60
Corridors	(2)	*A*-0	*	*	*A*-0	*	*A*-60	*A*-0	*A*-0	*A*-0	*	*A*-30
Accommodation spaces	(3)	*A*-60	*A*-0	*	*A*-0	*	*A*-60	*A*-0	*A*-0	*A*-0	*	*A*-30
Stairways	(4)	*A*-0	*A*-0	*A*-0	*	*A*-0	*A*-60	*A*-0	*A*-0	*A*-0	*	*A*-30
Service spaces (low risk)	(5)	*A*-15	*A*-0	*A*-0	*A*-0	*	*A*-60	*A*-0	*A*-0	*A*-0	*	*A*-0
Machinery spaces of category *A*	(6)	*A*-60	*A*-60	*A*-60	*A*-60	*A*-60	*	*A*-60[i]	*A*-30	*A*-60	*	*A*-60
Other machinery spaces	(7)	*A*-15	*A*-0	*A*-0	*A*-0	*A*-0	*A*-0	*	*A*-0	*A*-0	*	*A*-0
Cargo spaces	(8)	*A*-60	*A*-0	*A*-0	*A*-0	*A*-0	*A*-0	*A*-0	*	*A*-0	*	*A*-0
Service spaces (high risk)	(9)	*A*-60	*A*-0	*A*-0	*A*-0	*A*-0	*A*-60	*A*-0	*A*-0	*A*-0[d]	*	*A*-30
Open decks	(10)	*	*	*	*	*	*	*	*	*	-	~~*~~ *A*-0
Ro-ro and vehicle spaces	(11)	*A*-60	*A*-30	*A*-30	*A*-30	*A*-0	*A*-60	*A*-0	*A*-0	*A*-30	~~*~~ *A*-0	~~*~~[h] *A*-30

Note: To be applied to **Tables R9.1** and **R9.2** as appropriate.

a No special requirements are imposed upon bulkheads in methods II*C* and III*C* fire protection.

b In case of method III*C*, "*B*" class bulkheads of "*B*-0" rating are to be provided between spaces or groups of spaces of 50 m^2

and over in area.

c For clarification as to which applies, see **9.2.3-1** and **9.2.3-6**.

d Where spaces are of the same numerical category and superscript d appear, a bulkhead or deck of the rating shown in the tables is only required when the adjacent spaces are for a different purpose (*e.g.* in category **(9)**). A galley next to a galley does not require a bulkhead but galley next to a paint room requires an "*A*-0" bulkhead.

e Bulkheads separating the wheelhouse, chartroom and radio room from each other may have a "*B*-0" rating.

f An "*A*-0" rating may be used if no dangerous goods are intended to be carried or if such goods are stowed not less than 3 *m* horizontally from such bulkhead.

g For cargo spaces in which dangerous goods are intended to be carried, **19.3.8** applies.

h ~~Bulkheads and decks separating ro-ro and/or vehicle spaces are to be capable of being closed reasonably gas tight and such division is to have "*A*" class integrity in so far as reasonable and practicable in the opinion of the Society.~~ (Deleted)

i Fire insulation need not be fitted if the machinery in category **(7)**, in the opinion of the Society, it has little or no fire risk.

* Where an asterisk appears in the tables, the division is required to be of steel or other equivalent material but is not required to be of "*A*" class standard. However, where a deck, except an open deck, is penetrated for the passage of electric cables, pipes and vent ducts, such penetrations are to be made tight to prevent the passage of flame and smoke. Divisions between control stations (emergency generators) and open decks may have air intake openings without means for closure, unless a fixed gas fire-fighting system is fitted.

Chapter 10 FIRE FIGHTING

10.5 Fire-extinguishing Arrangements in Machinery Spaces

10.5.5 Fixed Local Application Fire-fighting Systems

Sub-paragraph -3(1) has been amended as follows.

3 Fixed local application fire-fighting systems are to protect areas such as the following without the necessity of engine shutdown, personnel evacuation, or sealing of the spaces:

(1) the fire hazard portions of internal combustion machinery ~~used for the ship's main propulsion and power generation~~;

(2) boiler fronts;

(3) the fire hazard portions of incinerators; and

(4) purifiers for heated fuel oil.

Chapter 20 PROTECTION OF VEHICLE AND RO-RO SPACES

20.5 Fire-extinction

20.5.1 Fixed Fire-extinguishing Systems

Sub-paragraphs -1 and -2 have been amended as follows.

1 Vehicle spaces and ro-ro spaces which are capable of being sealed from a location outside of the cargo spaces are to be fitted with ~~a fixed gas fire-extinguishing system which is to comply with the provisions of **Chapter 25,** except that~~one of the following fixed fire-extinguishing systems:

(1) a fixed gas fire-extinguishing system complying with the provisions of **Chapter 25**;

(2) a fixed high-expansion foam fire-extinguishing system complying with the provisions of **Chapter 26**; or

(3) a fixed water-based fire-fighting system for ro-ro spaces complying with the provisions of **Chapter 27**.

~~(1) if a carbon dioxide system is fitted, the quantity of gas available is to be at least sufficient to give a minimum volume of free gas equal to 45% of the gross volume of the largest such cargo space which is capable of being sealed, and the arrangements are to be such as to ensure that at least two thirds of the gas required for the relevant space is to be introduced within 10 *minutes*;~~

~~(2) any other fixed inert gas fire-extinguishing system or fixed high expansion foam fire-extinguishing system may be fitted provided the Society is satisfied that a protection equivalent to the system specified in **(1)** above is achieved; and~~

~~(3) as an alternative, a system meeting the requirements of **-2** below may be fitted.~~

2 ~~Ro-ro and v~~Vehicle spaces and ro-ro spaces not capable of being sealed ~~and special category spaces~~ are to be fitted with ~~an approved fixed pressure water spraying, for manual operation~~a fixed water-based fire-fighting system for ro-ro spaces complying with the provisions of **Chapter 27** which is to protect all parts of any deck and vehicle platform in such spaces. Such ~~water spray systems~~a water-based fire-fighting system ~~are~~is to have:

(1) a pressure gauge on the valve manifold;

(2) clear marking on each manifold valve indicating the spaces served;

(3) instructions for maintenance and operation located in the valve room; and

(4) a sufficient number of drainage valves to ensure complete drainage of the system.

Chapter 25 FIXED GAS FIRE-EXTINGUISHING SYSTEMS

25.2 Engineering Specifications

25.2.1 General Requirements

1 Fire-extinguishing medium

Sub-paragraph (1) has been amended as follows.

(1) Where the quantity of the extinguishing medium is required to protect more than one space, the quantity of medium available need not be more than the largest quantity required for any one space so protected. The system is to be fitted with normally closed control valves arranged to direct agent into appropriate space. Adjacent spaces with independent ventilation systems not separated by at least "*A*-0" class divisions are to be considered as the same space.

Sub-paragraph (3) has been amended as follows.

(3) Means are to be provided for the crew to safely check the quantity of medium in the containers. It is not to be necessary to move the containers completely from their fixing position for this purpose. For carbon dioxide systems, hanging bars for a weighing device above each bottle row, or other means are to be provided. For other types of extinguishing media, suitable surface indicators may be used.

3 System control requirements

Sub-paragraph (2) has been amended as follows.

(2) Means are to be provided for automatically giving audible and visual warning of the release of fire-extinguishing medium into any ro-ro spaces, container holds equipped with integral reefer containers, spaces accessible by doors or hatches, and other spaces in which personnel normally work or to which they have access. The audible alarms is to be located so as to be audible throughout the protected space with all machinery operating, and such alarms are to be distinguished from other audible alarms by adjustment of sound pressure or sound patterns. The pre-discharge alarm is to be automatically activated, *e.g.* by opening of the release cabinet door. The alarm is to operate for the length of time needed to evacuate the space, but in no case less than 20 *seconds* before the medium is released. Conventional cargo spaces and small spaces (such as compressor rooms, paint lockers, etc.) with only a local release need not be provided with such an alarm.

25.2.2 Carbon Dioxide Systems

Sub-paragraph -1 has been amended as follows.

1 Quantity of fire extinguishing medium

(1) For cargo spaces the quantity of carbon dioxide available is, unless otherwise provided, to be sufficient to give a minimum volume of free gas equal to 30% of the gross volume of the largest cargo space so protected in the ship.

(2) For vehicle spaces and ro-ro spaces, the quantity of carbon dioxide available is to be at least sufficient to give a minimum volume of free gas equal to 45% of the gross volume of the largest such cargo space which is capable of being sealed, and the arrangements are to be such as to ensure that at least two thirds of the gas required for the relevant space is to be introduced within 10 *minutes*.

(~~2~~3) For machinery spaces the quantity of carbon dioxide carried is to be sufficient to give a minimum volume of free gas equal to the larger of the following volumes, either:

(a) 40% of the gross volume of the largest machinery space so protected, the volume to exclude that part of the casing above the level at which the horizontal area of the casing is 40% or less of the horizontal area of the space concerned taken midway between the tank top and the lowest part of the casing; or

(b) 35% of the gross volume of the largest machinery space protected, including the casing;

(~~3~~4) The percentages specified in **(~~2~~3)** above may be reduced to 35% and 30%, respectively, for ships of less than 2,000 *gross tonnage*.

(~~4~~5) For the purpose of this Chapter the volume of free carbon dioxide is to be calculated at 0.56 m^3/kg.

(~~5~~6) For machinery spaces the fixed piping system is to be such that 85% of the gas can be discharged into the space within 2 *minutes*.

(~~6~~7) For the purpose of this paragraph, in cases where two or more machinery spaces are not entirely separate, they are to be considered as forming one space.

(8) For container and general cargo spaces (primarily intended to carry a variety of cargoes separately secured or packed) the fixed piping system is to be such that at least two thirds of the gas can be discharged into the space within 10 *minutes*. For solid bulk cargo spaces the fixed piping system is to be such that at least two thirds of the gas can be discharged into the space within 20 *minutes*. The system controls are to be arranged to allow one third, two thirds or the entire quantity of gas to be discharged based on the loading condition of the hold.

Sub-paragraph -2 has been amended as follows.

2 ~~Controls of c~~Carbon dioxide systems ~~protecting~~for the protection of ro-ro spaces, container holds equipped with integral reefer containers, spaces accessible by doors or hatches, ~~or~~and other spaces ~~which are normally manned or where personnel can be expected to enter or access,~~in which personnel normally work or to which they have access are to comply with the following requirements:

(1) two separate controls are to be provided for releasing carbon dioxide into a protected space and to ensure the activities of the alarm. One control is to be used for opening the valve of the piping which conveys the gas into the protected space and a second control is to be used to discharge the gas from its storage containers. Positive means are to be provided so they that they can only be operated in that order; and

(2) the two controls are to be located inside a release box clearly identified for the particular space. If the box containing the controls is to be locked, a key to the box is to be in a break-glass-type enclosure conspicuously located adjacent to the box.

Paragraph 25.2.4 has been deleted, and Paragraph 25.2.5 has been renumbered to Paragraph 25.2.4.

~~**25.2.4 Systems using Gaseous Products of Fuel Combustion**~~

~~**1** General Requirements~~

~~Where gas other than carbon dioxide or steam, as permitted by **25.2.3**, is produced on the ship and is used as a fire-extinguishing medium, the system is to comply with the requirements in **2** below.~~

~~**2** Requirements of the systems~~

~~(1) Gas is to be a gaseous product of fuel combustion in which the oxygen content, the carbon monoxide content, the corrosive elements and any solid combustible elements in a gaseous product are to have been reduced to a permissible minimum.~~

~~(2) Capacity of fire-extinguishing systems~~

~~(a) Where such gas is used as the fire-extinguishing medium in a fixed fire-extinguishing system for the protection of machinery spaces, it is to afford protection equivalent to that provided by a fixed system using carbon dioxide as the medium.~~

~~(b) Where such gas is used as the fire-extinguishing medium in a fixed fire-extinguishing system for the protection of cargo spaces, a sufficient quantity of such gas is to be available to supply hourly a volume of free gas at least equal to 25% of the gross volume of the largest space protected in this way for a period of 72 *hours*.~~

Paragraph 25.2.4 has been amended as follows.

25.2.4~~5~~ Equivalent Fixed Gas Fire-extinguishing Systems for Machinery Spaces and Cargo Pump Rooms

Fixed gas fire-extinguishing systems equivalent to those specified in **25.2.2** ~~through~~and **25.2.3~~4~~** are to be approved by the Society.

Chapter 27 FIXED PRESSURE WATER-SPRAYING AND WATER-MIST FIRE-EXTINGUISHING SYSTEMS

27.2 Engineering Specifications

Paragraph 27.2.3 has been added as follows.

27.2.3 Fixed Water-based Fire-fighting Systems for Ro-ro Spaces and Vehicle Spaces

Fixed water-based fire-fighting systems for ro-ro spaces and vehicle spaces are to be approved by the Society.

Chapter 28 AUTOMATIC SPRINKLER, FIRE DETECTION AND FIRE ALARM SYSTEMS

28.2 Engineering Specifications

28.2.5 System Control Requirements

2 Alarm and indication

Sub-paragraph (3) has been amended as follows.

(3) Sprinklers are to be placed in an overhead position and spaced in a suitable pattern to maintain an average application rate of not less than 5 l/m^2 per minute over the nominal area covered by the sprinklers. For this purpose, nominal area is to be taken as the gross horizontal projection of the area to be covered. However, the Society may permit the use of sprinklers providing such an alternative amount of water suitably distributed as has been shown to the satisfaction of the Society to be not less effective.

Chapter 29 FIXED FIRE DETECTION AND FIRE ALARM SYSTEMS

29.2 Engineering Specifications

Paragraph 29.2.2 has been amended as follows.

29.2.2 Source of Power Supply

1 There are to be not less than two sources of power supply for the electrical equipment used in the operation of the fixed fire detection and fire alarm system, one of which is to be an emergency source of power. The supply is to be provided by separate feeders reserved solely for that purpose. Such feeders are to run to an automatic change-over switch situated in or adjacent to the control panel for the fire detection system. The change-over switch is to be arranged such a fault will not result in the loss of both power supplies. The main (respective emergency) feeder is to run from the main (respective emergency) switchboard to the change-over switch without passing through any other distributing switchboard.

2 The operation of the automatic change-over switch or a failure of one of the power supplies is not to result in loss of fire detection capability. Where a momentary loss of power would cause degradation of the system, a battery of adequate capacity is to be provided to ensure continuous operation during change-over.

~~**2**~~**3** There are to be sufficient power to permit the continued operation of the system with all detectors activated, but not more than 100 if the total exceeds this figure.

~~**3**~~**4** The emergency source of power specified in the preceding **-1** above may be supplied by accumulator batteries or from the emergency switchboard. The power source is to be sufficient to maintain the operation of the fire detection and fire alarm system for the periods required under by **3.3, Part H of the Rules**, and at the end of that period, is to be capable of operating all connected visual and audible fire alarm signals for a period of at least 30 *minutes*.

5 Where the system is supplied from accumulator batteries, they are to be located in or adjacent

to the control panel for the fire detection system, or in another location suitable for use in an emergency. The rating of the battery charge unit is to be sufficient to maintain the normal output power supply to the fire detection system while recharging the batteries from a fully discharged condition.

Paragraph 29.2.5 has been amended as follows.

29.2.5 System Control Requirements

1 Visual and audible fire signals

(1) The activation of any detector or manually operated call point is to initiate a visual and audible fire detection alarm signal at the control panel and indicating units. If the signals have not been acknowledged within 2 *minutes* an audible fire alarm is to be automatically sounded throughout the crew accommodation and service spaces, control stations and machinery spaces of category *A*. This alarm sounder system need not be an integral part of the detection system.

(2) The control panel is to be located on the navigation bridge or in the fire control station.

(3) An indicating unit is to be located on the navigation bridge if the control panel is located in the fire control station. With a cargo control room, an additional indicating unit is to be located in the cargo control room. Indicating units are, as a minimum, to denote the section in which a detector has activated or manually operated call point has operated.

((4) to (9) are omitted)

2 Testing

Suitable instructions and component spares for testing and maintenance are to be provided. Detectors are to be periodically tested using equipment suitable for the types of fires to which the detector is designed to respond. Detectors installed within cold spaces such as refrigerated compartments are to be tested using procedures having due regard for such locations. Ships with self-diagnostic systems that have in place a cleaning regime for areas where heads may be prone to contamination may carry out testing in accordance with the requirements of the Society.

Chapter 32 FIXED EMERGENCY FIRE PUMPS

32.2 Engineering Specifications

32.2.3 Diesel Engines and Fuel Tank

Sub-paragraph -1 has been amended as follows.

1 Starting of diesel engine

Any diesel driven power source for the pump is to be capable of being readily started in its cold condition down to the temperature of 0°C by hand (manual) cracking. ~~If~~Where ready starting cannot be assured, if this is impracticable, or if lower temperatures are likely to be encountered, ~~consideration is to be given to the provision and maintenance of heating arrangement, acceptable to the Society so that ready starting will be assured~~ and if the room for the diesel driven power source is not heated, electric heating of the diesel engine cooling water or lubricating oil system is to be fitted, to the satisfaction of the Society. If hand (manual) starting is impracticable, the Society may

permit ~~other means of starting~~ compressed air, electricity, or other sources of stored energy, including hydraulic power or starting cartridges to be used as a means of starting. These means are to be such as to enable the diesel driven power source to be started at least 6 *times* within a period of 30 *minutes* and at least twice within the first 10 *minutes*.

Chapter 34 FIXED DECK FOAM SYSTEMS

34.2 Engineering Specifications

34.2.1 General Requirements

Sub-paragraph -3 has been amended as follows.

3 Operation of a deck foam system at its required output is to permit the simultaneous use of the minimum required number of jets of water at the required pressure from the fire main. Where the deck foam system is supplied by a common line from the fire main, additional foam concentrate is to be provided for operation of two nozzles for the same period of time required for the foam system. The simultaneous use of the minimum required jets of water is to be possible on deck over the full length of the ship, in the accommodation, service spaces, control stations and machinery spaces.

Paragraph 34.2.2 has been amended as follows.

34.2.2 Component Requirements

1 Foam solution and foam concentrate

(1) Rate of supply of foam solution

(a) The requirements of **(1)** are to apply to tankers carrying any of the following **i)** to **iii)**:

i) crude oil or petroleum products having a flashpoint not exceeding 60°C (closed cup), as determined by an approved flashpoint apparatus, and a Reid vapour pressure which is below atmospheric pressure or other liquid products having a similar fire hazard, including cargoes in listed **Chapter 18, Part S**, having a flashpoint not exceeding 60°C (closed cup) for which a regular foam fire-fighting system is effective (refer to **1.2.1** and **10.8**);

ii) petroleum products with a flashpoint exceeding 60°C (closed cup), as determined by an approved flashpoint apparatus (refer to **1.2.3-2**); or

iii) products listed in **Chapter 17, Part S** with a flashpoint exceeding 60°C (closed cup) determined by an approved flashpoint apparatus (refer to **11.1.3, Part S** and **1.2.3-2**).

~~1~~ (b) The rate of supply of foam solution is to be not less than the greatest of the following:

~~(1)~~ i) 0.6 *litres/minute per square metre* of cargo tanks deck area, where cargo tanks deck area means the maximum breadth of the ship multiplied by the total longitudinal extent of the cargo tank spaces;

~~(2)~~ ii) 6 *litres/minute per square metre* of the horizontal sectional area of the single tank having the largest such area; or

~~(3)~~ iii) 3 *litres/minute per square metre* of the area protected by the largest monitor, such

area being entirely forward of the monitor, but ~~not~~in no case is the output of any monitor to be less than 1,250 *litres/minute*.

(2) For tankers carrying chemicals in bulk listed in **Chapter 17, Part S** having a flashpoint not exceeding 60°C (closed cup), the rate of supply of foam solution is to be as required by **11.3.5, Part S**.

(3)~~2~~ Sufficient foam concentrate is to be supplied to ensure at least 20 *minutes* of foam generation in tankers fitted with an inert gas installation or 30 *minutes* of foam generation in tankers not fitted with an inert gas installation or not required to use an inert gas system.~~when using solution rates stipulated in **(1)**, **(2)** and **(3)** of **-1** above, whichever is the greatest. The foam expansion ratio (*i.e.*, the ratio of the volume of foam produced to the volume of the mixture of water and foam-making concentrate supplied) is not generally to exceed 12 to 1. Where systems essentially produce low expansion foam but an expansion ratio slightly in excess of 12 to 1, the quantity of foam solution available is to be calculated as for 12 to 1 expansion ratio systems. When medium expansion ratio foam (between 50 to 1 and 150 to 1 expansion ratio) is employed, the application rate of the foam and the capacity of a monitor installation is to be to the satisfaction of the Society.~~

(4) The foam concentrate supplied on board is to be approved by the Society for the cargoes intended to be carried. Type *B* foam concentrates are to be supplied for the protection of crude oil, petroleum products and non-polar solvent cargoes. Type *A* foam concentrates are to be supplied for polar solvent cargoes, as listed in **Table S17.1** of **Chapter 17, Part S**. Only one type of foam concentrate is to be supplied, and it is to be effective for the maximum possible number of cargoes intended to be carried. For cargoes for which foam is not effective or is incompatible, additional arrangements to the satisfaction of the Society are to be provided.

(5) Liquid cargoes with a flashpoint not exceeding 60°C for which a regular foam fire-fighting system is not effective are to comply with the requirements of **1.2.2-2**.

2 Monitors and foam applicators

(1)~~3~~ Foam from the fixed foam system is to be supplied by means of monitors and foam applicators. Prototype tests of the monitors and foam applicators are to be performed to ensure the foam expansion and drainage time of the foam produced does not differ more than ±10% of that determined in the preceding **-1(4)**. When medium expansion ratio foam (between 21 to 1 and 200 to 1 expansion ratio) is employed, the application rate of the foam and the capacity of a monitor installation are to be to the satisfaction of the Society. At least 50% of the foam solution supply rate~~ required in **(1)** and **(2)** of **34.2.2-1** is to be delivered from each monitor. On tankers of less than 4,000 *tonnes deadweight*~~,~~ the Society may not require installation of monitors but only applicators ~~may not be required~~. However, in such a case the capacity of each applicator is to be at least 25% of the foam solution supply rate required ~~in **(1)** or **(2)** of **34.2.2-1**~~.

~~**4** The capacity of any monitor is to be at least 3 *litres/minute* of foam solution per square metre of deck area protected by that monitor, such area being entirely forward of the monitor. Such capacity is to be not less than 1,250 *litres/minute*.~~

(2)~~5~~ The capacity of any applicator is to be not less than 400 *litres/minute* and the applicator throw in still air conditions is to be not less than 15 *m*.

Paragraph 34.2.3 has been amended as follows.

34.2.3 Installation Requirements

1 Main control station

The main control station for the system is to be suitably located outside the cargo area, adjacent to the accommodation spaces and readily accessible and operable in the event of fire in the areas

protected.

2 Monitors

(1) The number and position of monitors is to be such as to comply with the requirements of **34.2.1-1**.

(2) The distance from the monitor to the farthest extremity of the protected area forward of that monitor is not to be more than 75% of the monitor throw in still air conditions.

(3) A monitor and hose connection for a foam applicator is to be situated both port and starboard at the front of the poop or accommodation spaces facing the cargo tanks deck. The monitors and hose connections are to be aft of any cargo tanks, but may be located in the cargo area above pump-rooms, cofferdams, ballast tanks and void spaces adjacent to cargo tanks if capable of protecting the deck below and aft of each other. On tankers of less than 4,000 *tonnes deadweight*~~,~~ a hose connection for a foam applicator is to be situated both port and starboard at the front of the poop or accommodation spaces facing the cargo tanks deck.

3 Applicators

(1) ~~The number of foam applicators provided is to be not less than four.~~At least four foam applicators are to be provided on all tankers. The number and disposition of foam main outlets are to be such that foam from at least two applicators can be directed on to any part of the cargo tanks deck area.

(2) Applicators are to be provided to ensure flexibility of action during fire-fighting operations and to cover areas screened from the monitors.

4 Isolation valves

Valves are to be provided in the foam main, and in the fire main when this is an integral part of the deck foam system, immediately forward of any monitor position to isolate damaged sections of those mains.

EFFECTIVE DATE AND APPLICATION (Amendment 1-2)

1. The effective date of the amendments is 1 July 2014.

2. Notwithstanding the amendments to the Rules, the current requirements may apply to ships the keels of which were laid or which were at *a similar stage of construction* before the effective date.

(Note) The term "*a similar stage of construction*" means the stage at which the construction identifiable with a specific ship begins and the assembly of that ship has commenced comprising at least 50 *tonnes* or 1%* of the estimated mass of all structural material, whichever is the less.

* For high speed craft, "1%" is to be read as "3%".

Amendment 1-3

Chapter 10 FIRE FIGHTING

10.10 Fire-fighter's Outfits

Paragraph 10.10.4 has been added as follows.

10.10.4 Fire-fighter's Communication

A minimum of two two-way portable radiotelephone apparatus for each fire party for fire-fighter's communication is to be carried on board. Those two-way portable radiotelephone apparatus are to be of an explosion-proof type or intrinsically safe.

EFFECTIVE DATE AND APPLICATION (Amendment 1-3)

1. The effective date of the amendments is 1 July 2014.

2. Notwithstanding the amendments to the Rules, the current requirements may apply to ships the keels of which were laid or which were at *a similar stage of construction* before the effective date except for in cases where the amendments are to be retroactively applied.

(Note) The term "*a similar stage of construction*" means the stage at which the construction identifiable with a specific ship begins and the assembly of that ship has commenced comprising at least 50 tonnes or 1% of the estimated mass of all structural material, whichever is the less.

Amendment 1-4

Chapter 15 TRAINING MANUAL AND FIRE CONTROL PLAN

15.2 General Requirements

Paragraph 15.2.3 has been added as follows.

15.2.3 Means of Recharging Breathing Apparatus Cylinders and Spare Cylinders

An onboard means of recharging breathing apparatus cylinders used during drills is to be provided or a suitable number of spare cylinders is to be carried on board to replace those used.

EFFECTIVE DATE AND APPLICATION (Amendment 1-4)

1. The effective date of the amendments is 1 July 2014.

Amendment 1-5

Chapter 23 PERSONNEL PROTECTION

23.2 Engineering Specifications

23.2.1 Fire-fighter's Outfit

Sub-paragraph -2 has been amended as follows.

2 Breathing apparatus

(1) Breathing apparatus is to be a self-contained compressed air~~-operated~~ breathing apparatus for which~~,~~ the volume of air contained in the cylinders is to be at least 1,200 *l*<u>*itres*</u>, or other self-contained breathing apparatus which is to be capable of functioning for at least 30 *minutes*. All air cylinders for breathing apparatus are to be interchangeable.

(2) <u>Compressed air breathing apparatus is to be fitted with an audible alarm and a visual or other device which will alert the user before the volume of the air in the cylinder has been reduced to no less than 200 *litres*.</u>

EFFECTIVE DATE AND APPLICATION (Amendment 1-5)

1. The effective date of the amendments is 1 July 2014.

2. Notwithstanding the amendments to the Rules, the current requirements may be applied until 30 June 2019 to ships the keels of which were laid or which were at *a similar stage of construction* before the effective date.
(Note) The term "*a similar stage of construction*" means the stage at which the construction identifiable with a specific ship begins and the assembly of that ship has commenced comprising at least 50 *tonnes* or 1% of the estimated mass of all structural material, whichever is the less.

GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

GUIDANCE

Part R Fire Protection, Detection and Extinction

2014 AMENDMENT NO.1

Notice No.10 26th February 2014

Resolved by Technical Committee on 4th February 2013 / 29th July 2013

Notice No.10 26th February 2014
AMENDMENT TO THE GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

"Guidance for the survey and construction of steel ships" has been partly amended as follows:

Part R FIRE PROTECTION, DETECTION AND EXTINCTION

Amendment 1-1

R18 HELICOPTER FACILITIES

R18.2 Application

Paragraph R18.2.1 has been amended as follows.

R18.2.1 Application

With respect to the requirements for ~~helicopter decks~~ areas where helicopters land or conduct winching operation in this Part, in principle, ~~helicopter decks~~ those areas are exemplified as **Fig. R18.2.1-1**, **Fig. R18.2.1-2**, **Fig. R18.2.1-3** and **Fig. R18.2.1-4**.

R18.3 Structure

Paragraph R18.3.1 has been amended as follows.

R18.3.1 Construction of Steel or Other Equivalent Material

For examination of the construction of the ~~helicopter decks~~ helidecks, reference is to be made to **17.3.1-4** and **-5, Part P of the Rules**.

R18.5 Fire-fighting

R18.5.1 Fire-fighting Appliances

Sub-paragraph -2 has been amended as follows.

2 Foam application systems specified in **18.5.1(3), Part R of the Rules** are to be stored to a safe space free from a fire of the ~~helicopter deck~~ helideck.

EFFECTIVE DATE AND APPLICATION (Amendment 1-1)

1. The effective date of the amendments is 26 February 2014.

Amendment 1-2

R10 FIRE FIGHTING

R10.8 Cargo Tank Protection

Paragraph R10.8.1 has been amended as follows.

R10.8.1 Fixed Deck Foam Systems

1 With respect to the requirements of **10.8.1, Part R of the Rules**, the fire pumps or the emergency fire pump required in **10.2, Part R of the Rules** may be utilized as pumps for fixed deck foam systems provided that those pumps have sufficient capacity for supplying both the deck foam systems and the water supply systems as required. A common line for fire main and deck foam line can only be accepted provided it can be demonstrated that the hose nozzles can be effectively controlled by one person when supplied from the common line at a pressure needed for operation for monitors.

~~**2** On tankers of less than 4,000 *tonnes deadweight* only foam applicators may be provided in lieu of the monitors specified in **10.8.1-3, Part R of the Rules**. However, in such case the capacity of each applicator is to be at least 25% of the foam solution supply rate specified in **Chapter 34, Part R of the Rules**~~

~~**3**~~**2** With respect to the provisions of **10.8.1, Part R of the Rules**, in cases where pipe trunks that enclose cargo pipes, etc. are situated on top of tank decks, the following are to be complied with:

(1) The pipe trunk is to be protected by a fixed fire-extinguishing system in accordance with **10.9, Part R of the Rules**. This extinguishing system is to be operable from a readily accessible position outside the pipe trunk;

(2) The pipe trunk is not considered part of the cargo tanks deck area;

(3) The area of the pipe trunk does not need to be included in the cargo tank deck area specified in **34.2.2-1(1), Part R of the Rules**;

(4) Lighting in the pipe trunk is to be in accordance with **4.5.10(2), Part R of the Rules**;

(5) The pipe trunk is to be provided with a system for the continuous monitoring of the concentration of hydrocarbon gases in accordance with **4.5.10(3), Part R of the Rules**; and

(6) If the pipe trunk contains valves, pumps or any other instruments that possibly may become a source of flammable gas, this area is to satisfy the other provisions that are applied to cargo pump-rooms in addition to **(1)** to **(5)**. However, pipes and flanges do not need to be considered as instruments that possibly may become a source of flammable gas.

R19 CARRIAGE OF DANGEROUS GOODS

R19.3 Special Requirements

Paragraph R19.3.9 has been amended as follows.

R19.3.9 Water Spray System

1 The wording "an approved fixed pressure water-spraying system" specified in **19.3.9, Part R of the Rules** means ~~a~~the system which complies with the requirements of **R27.2.3**~~**R20.5.1-4** and is approved by organizations authorized by the Administration or deemed appropriate by the Society~~.

2 The wording "other fixed fire-extinguishing system" specified in **19.3.9, Part R of the Rules** means ~~a~~the system which complies with the requirements of **R27.2.3**~~is approved by organizations authorized by the Administration or the Society~~.

(**3** is omitted.)

R20 PROTECTION OF VEHICLE AND RO-RO SPACES

R20.5 Fire-extinction

R20.5.1 Fixed Fire-extinguishing Systems

Sub-paragraphs -3 to -5 have been deleted, and Sub-paragraphs -6 to -10 have been renumbered to Sub-paragraphs -3 to -7.

~~**3** The fixed high-expansion foam fire-extinguishing system specified in **20.5.1-1(2), Part R of the Rules** is to be in accordance with the applicable provisions of **Chapter 26, Part R of the Rules.**~~

~~**4** The wording "an approved fixed pressure water-spraying system" specified in **20.5.1-2, Part R of the Rules** means the one complying with the requirements of sections 1, 2, 3 and 4 of "*Revised guidelines for the design and approval of fixed water-based fire-fighting systems for ro-ro spaces and special category spaces*" (*MSC*.1/*Circ*.1430).~~

~~**5** The wording "an approved fixed pressure water-spraying system" specified in **20.5.1-2, Part R of the Rules** means a system which is complying with the requirements in **-2** above and approved by organizations authorized by the Administration or deemed appropriate by the Society.~~

Sub-paragraph -3 has been amended as follows.

~~6~~3 The wording "other fixed fire-extinguishing system" specified in **20.5.1-3, Part R of the Rules** means the ~~one~~system complying with the requirements of sections 1, 2, 3 and 5 of "*Revised ~~g~~Guidelines for the ~~d~~Design and ~~a~~Approval of ~~f~~Fixed ~~w~~Water-based ~~f~~Fire-fighting ~~s~~Systems for ~~r~~Ro-ro ~~s~~Spaces and ~~s~~Special ~~c~~Category ~~s~~Spaces*" (*MSC*.1/*Circ*.1430).
Sub-paragraph -7 has been amended as follows.

~~10~~7 In lieu of the above **-4** and **-6**, the Administration, after having given consideration to ship arrangement and equipment, may accept other fixed installations if they afford equivalent protection. Any equivalent protection is to demonstrate the capability to rapidly drain fire-fighting water from affected decks and prevent the build-up of free surfaces under expected conditions of trim and list, for as long as the fire-extinguishing system is in operation.

R23 PERSONNEL PROTECTION

R23.2 Engineering Specifications

R23.2.1 Fire-fighter's Outfit

Sub-paragraphs -2 and -3 have been renumbered to Sub-paragraphs -3 and -4, and Sub-paragraph -2 has been added as follows.

2 With respect to the wording "explosion-proof type" specified in **23.2.1-1(4), Part R of the Rules**, reference is made to *IEC* 60079, *Electrical Apparatus for Explosive Gas Atmospheres*.

R25 FIXED GAS FIRE-EXTINGUISHING SYSTEMS

R25.2 Engineering Specifications

R25.2.1 General Requirements

Sub-paragraph -4 has been deleted, and Sub-paragraphs -5 to -8 have been renumbered to Sub-paragraphs -4 to -7.

~~**4** The wording "other spaces in which personnel normally work or to which they have access" specified in **25.2.1-3(2), Part R of the Rules** means refrigerated container spaces, vehicle spaces and other spaces where personnel can be expected to enter and where the access is therefore facilitated by doors or manholes.~~

R25.2.2 Carbon Dioxide Systems

Sub-paragraph -1(1) has been amended as follows.

1 For the carbon dioxide system specified in **25.2.2, Part R of the Rules**, the following requirements **(1)** to **(3)** are to be complied with:

(1) The pipe size and diameter of nozzle orifice are, except where pressure loss calculation is carried out for individual determination, to be in accordance with the following standards. Additionally, the arrangement is to be such that the carbon dioxide flows in a liquid state up to the nozzle and the pressure at the nozzle is 1 *MPa* or more.

~~(a) In cargo spaces (excluding ro-ro spaces), the pipe is to be equivalent to nominal diameter of 20 *mm*.~~

(~~b~~a) In machinery spaces of category *A*, pump rooms in oil tankers, and ro-ro spaces, etc., the size of the main is to be determined by **Table R25.2.2-1** according to the carbon dioxide gas supply.

The total area of orifice is not to exceed the smaller of the 85% value obtained by multiplying 0.0313 by the specified quantity (*kg*) or the cross sectional inside area (cm^2) of the main by **Table R25.2.2-1**, but not to be below the 40% value.

((2) and (3) are omitted)

Sub-paragraph -6 has been amended as follows.

6 The discharge time specified in **25.2.2-1(2),(~~5~~6)** and **(8), Part R of the Rules** may be checked by suitable calculations.

Paragraph R25.2.5 has been renumbered to Paragraph R25.2.4.

R25.2.4~~5~~ Equivalent Fixed Gas Fire-extinguishing Systems for Machinery Spaces and Cargo Pump Rooms

Sub-paragraph -1 has been amended as follows.

1 An equivalent system specified in **25.2.4~~5~~, Part R of the Rules** is to be in accordance with any of the following Guidelines.

((1) and (2) are omitted)

R27 FIXED PRESSURE WATER-SPRAYING AND WATER-MIST FIRE-EXTINGUISHING SYSTEMS

R27.2 Engineering Specifications

Paragraph R27.2.3 has been added as follows.

R27.2.3 Fixed Water-based Fire-fighting Systems for Ro-ro Spaces and Vehicle Spaces

"Approved system" specified in **27.2.3, Part R of the Rules** means a system which complies with the requirements of "*Revised Guidelines for the Design and Approval of Fixed Water-based Fire-fighting Systems for Ro-ro Spaces and Special Category Spaces*" (*MSC*.1/*Circ*.1430) and is approved by organizations authorized by the Administration or deemed appropriate by the Society.

R28 AUTOMATIC SPRINKLER, FIRE DETECTION AND FIRE ALARM SYSTEMS

R28.2 Engineering Specifications

Paragraph R28.2.5 has been deleted.

~~**R28.2.5 System Control Requirements**~~

~~The wording "nominal area covered by the sprinklers" referred in **28.2.5.2(3), Part R of the Rules** means the gross and horizontal projection of the area.~~

R29 FIXED FIRE DETECTION AND FIRE ALARM SYSTEMS

R29.2 Engineering Specifications

Paragraph R29.2.2 has been deleted.

~~**R29.2.2 Source of Power Supply**~~

~~With respect to the requirements specified in **29.2.2, Part R of the Rules**, the following requirements are to be considered.~~

~~(1) Continuity of power supply~~

~~(a) Operation of the automatic changeover switch or a failure of one of the power supplies is not to result in any permanent or temporary degradation of the fixed fire detection and fire alarm systems.~~

~~(b) In cases where fixed fire detection and fire alarm systems would be degraded by a momentary loss of power, a source of stored energy having adequate capacity is to be provided to ensure continuous operation during the changeover between power supplies.~~

~~(c) Circuits of electrical power supplies to an automatic changeover switch are to be arranged so that a fault will not result in the loss of all power supplies to the automatic changeover~~

~~switch.~~

~~(2) Emergency supply~~

~~(a) Fixed fire detection and fire alarm system emergency power may be supplied by accumulator batteries or from emergency switchboards. In cases where the systems are supplied from accumulator batteries, arrangements are to comply with the following requirements:~~

~~i) The accumulator batteries are to have the capacity to operate fire detection systems under normal and alarm conditions during the period specified in **3.3.2-2(4), Part H of the Rules**.~~

~~ii) The rating of the charge unit, on restoration of the input power, is to be sufficient to recharge the batteries while maintaining the output supply to the fire detection systems.~~

~~iii) The accumulator batteries are to be suitably located for use in an emergency.~~

Paragraph R29.2.5 has been amended as follows.

R29.2.5 System Control Requirements

1 For the audible alarm specified in **29.2.5-1, Part R of the Rules**, reference is made to the "*Code on Alerts and Indicators, 2009*" (*IMO Res. A.*1021(26))

2 "Tested using procedures having due regard for such locations" in **29.2.5-2, Part R of the Rules** reference is to be made to *IEC* 60068-2-1.

R32 FIXED EMERGENCY FIRE PUMPS

R32.2 Engineering Specifications

Paragraph R32.2.3 has been amended as follows.

R32.2.3 Diesel Engines and Fuel Tank

~~**1** The wording "consideration is to be given to the provision and maintenance of heating arrangements, acceptable to the Society" specified in **32.2.3-1, Part R of the Rules** means such a provision as listed in **(1)** or **(2)** below is fitted.~~

~~(1) Heating arrangement for the emergency fire pump room.~~

~~(2) Electric heating arrangement of cooling water or lubricating oil for diesel engines.~~

~~**2** Compressed air, accumulated batteries, hydraulic power, starting cartridge, etc. may be permitted as "other means of starting" specified in **32.2.3-1, Part R of the Rules**.~~

~~**3**~~ With respect to the requirements of **32.2.3-2, Part R of the Rules**, gasoline engine is not to be used as a driving engine of fire pumps other than the portable emergency fire pumps.

R34 FIXED DECK FOAM SYSTEMS

R34.2 Engineering Specifications

Paragraph R34.2.2 has been amended as follows.

R34.2.2 Component Requirements

~~**1** With respect to the provisions of **34.2.2, Part R of the Rules**, where a deck foam system is supplied from a common line for the fire main, additional foam concentrate is to be provided for operation of 2hose nozzles for the same period of time required for the foam system.~~

~~**2**~~**1** ~~The application rate of the foam and the capacity of a monitor installation to the satisfaction of the Society specified in **34.2.2-2, Part R of the Rules** are to comply with the following guidelines:~~The wording "approved foam concentrates" referred to in **34.2.2-1(4), Part R of the Rules** means those approved by organizations authorized by the Administration or deemed appropriate by the Society with reference to the "*Revised Guidelines for the Performance and Testing Criteria, and Surveys of Foam Concentrates for Fixed Fire-extinguishing Systems*" (MSC.1/Circ.1312).

~~(1) *Revised guidelines for the performance and testing criteria, and surveys of foam concentrates for fixed fire-extinguishing systems* (*MSC.1/Circ.*1312)~~

~~(2) *Guidelines for the performance and testing criteria, and surveys of middle expansion foam concentrates for fixed fire-extinguishing systems* (*MSC/Circ.*798)~~

R34.2.3 Installation Requirements

Sub-paragraph -4 has been deleted.

~~**4** Port and starboard monitors required by **34.2.3-2(3), Part R of the Rules** may be located in the cargo area, provided they are aft of cargo tanks and protect below and aft of each other.~~

EFFECTIVE DATE AND APPLICATION (Amendment 1-2)

1. The effective date of the amendments is 1 July 2014.

2. Notwithstanding the amendments to the Guidance, the current requirements may apply to ships the keels of which were laid or which were at *a similar stage of construction* before the effective date.

(Note) The term "*a similar stage of construction*" means the stage at which the construction identifiable with a specific ship begins and the assembly of that ship has commenced comprising at least 50 *tonnes* or 1%* of the estimated mass of all structural material, whichever is the less.

* For high speed craft, "1%" is to be read as "3%".

Amendment 1-3

R3 DEFINITIONS

R3.2 Definitions

Paragraph R3.2.14 has been amended as follows.

R3.2.14 Combination Carrier

Ore/oil carriers specified in **30.~~1.9~~7.1, Part C of the Rules** and B/O carriers specified in **31.8.1, Part C of the Rules** are regarded as "combination carriers" specified in **3.2.14, Part R of the Rules**.

R4 PROBABILITY OF IGNITION

R4.5 Cargo Areas of Tankers

R4.5.1 Separation of Cargo Tanks

Sub-paragraph -6 has been amended as follows.

6 With respect to the requirements of **4.5.1-4(1), Part R of the Rules**, the arrangements and isolation of divisions in combination carriers are to comply also with the requirements for bulk ore/oil carriers specified in **30.~~1.9~~7 ~~and 30.1.10~~, Part C of the Rules**, and the requirements for bulk/oil carriers specified in **31.8, Part C of the Rules**.

EFFECTIVE DATE AND APPLICATION (Amendment 1-3)

1. The effective date of the amendments is 26 August 2014.

2. Notwithstanding the amendments to the Guidance, the current requirements may apply to ships for which the date of contract for construction is before the effective date.