भारत सरकार / GOVERNMENT OF INDIA
पोत परिवहन मंत्रालय / MINISTRY OF SHIPPING
नौवहन महानिदेशालय / DIRECTORATE GENERAL OF SHIPPING
"जहाज भवन" / "JAHAZ BHAVAN"
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SS/MISC(42)/2003-Pt.

31.07.2013

DG Shipping Order No. 18 of 2013

Sub: Notification for Construction, Survey, Certification and Operation of Indian River-Sea Vessels - Type 1, 2, 3 & 4

Noting that seamless transition of goods from inland waters by River-Sea Crafts will integrate the sea segment of the supply chain and provide an additional means of hinterland connectivity for transport of goods into the country;

Recognizing that seamless integration of River-Sea Trade using Coastal Ships will play a major role in the growth of Indian economy and provide an alternative means of quick discharge and dispersal of cargo from mother ships at major ports and its carriage by the sea route to various ports along the sea board;

Considering the reservations expressed by the Coastal Shipping Industry with regard to the prevailing Merchant Shipping legislation applicable to coastal ships which makes coastal shipping uneconomical due to high cost of construction and operation;

Realizing that high construction and operating cost of ships is a major impediment for the expansion of coastal and inland shipping in India;

Recognizing that reduction in the operation and construction cost of coastal vessels by defining a distinct River-Sea vessel would encourage coastal shipping, inland water transport and trade as well as ship building and thus further the growth of the maritime sector.

Further recognizing that construction and safety standards, which are currently applicable to coastal ships under the M.S. Rules can be moderated without affecting the safety of the ship in order to reduce the cost of ships construction and operation and also allow up-gradation of existing inland vessels for coastal operation, keeping in view the restricted operation of River-Sea vessels;

Further realizing that the River-sea vessel Notification (DGS Order No 6 of 2010) issued on 15.11.2010 required further revision since certain operational and pollution prevention measures required further review.

Further recognizing that scope of River-Sea vessels are to be expanded in order to address varying needs of the trade and cover more vessels.

2. Now the Director General of Shipping, in exercise of the powers vested in him under the provisions of Section 456 of the M.S Act 1958, read together with S.O. 3144 dated 17.12.1960 hereby exempts Indian ships, other than passenger vessels, gas carriers and off shore

support/supply vessels, operating along the Indian coast and within the territorial limits of India from the following provisions of the M. S. Act, 1958 as amended, and dispenses with the requirements to observe the M.S. Act provisions contained in the Sections specifically listed here-to-below (Column 2) provided strict compliance is shown to the requirements and stipulations detailed in Annexes 1 to 15 (Column-4) of the table given below. (The Annexes can be downloaded from the DGS website www.dgshipping.gov.in)

(1)	(2)	(3)	(4)
Slno	*Exempted sections of the MS Act*	*Title*	*Alternate Provisions*
1		Preamble and General Provisions	Annex-1
2	Section-76	Safe Manning	Annex-2
3	Section-175	Accommodation Rules	Annex-3
4	Sections-284 & 311	Construction Rules	Annex-4
5	Section-285	Prevention of Collisions	Annex-5
6	Sections-288, 289 & 290	Life Saving Appliances	Annex-6
7	Section- 289 & 290	Fire Fighting Appliances	Annex-7
8	Section-291	Radio Communications	Annex-8
9	Section -356	Safety of Navigation	Annex-9
10	Sections-299A, 300, 303, 307(2), 307(3) & 318	Survey and Certification	Annex-10
11	Sections-356C, 356E & 356F	Prevention of Pollution	Annex-11
12		DSM Code	Annex-12
13	Section 344O, 344Q & 344R	Ship Security	Annex-13
14	Section 331, 332, R	Carriage of Cargoes	Annex-14
15	Section 99 & 100	CDC and Articles of Agreement	Annex -15

3. This order supersedes DGS Order No.6 of 2010.

(Gautam Chatterjee)
Director General of Shipping &
ex. officio Additional Secretary to the Govt. of India
31.07.2013

Enclosure: Annexes 1 to 15 (90 pages)

RIVER-SEA VESSEL(RSV) NOTIFICATION 2013

(Annex to DG Shipping Order 18 of 2013)

DIRECTORATE GENERAL OF SHIPPING

MUMBAI

31-JULY-2013

RSV2013

RIVER SEA VESSEL NOTIFICATION 2013

ANNEXES 1 TO 15

CONTENTS

ANNEX : 1 Preamble and General Provisions

1.1 Application

1.1.1 Unless expressly provided otherwise, the Notification for Construction, Survey, Certification and Operation of Indian River-Sea Vessels applies only to the following ships that are engaged exclusively in operations within Indian territorial waters:

- less than 6000 GT in the case of cargo ships;
- less than 10000 GT in the case of dredgers;
- less than 3000 GT in the case of RSV tankers;
- less than 8000 kW main propulsion power in the case of cargo ships and RSV tankers;
- less than 10000 kW main propulsion power in the case of dredgers;
- not passenger vessels;
- not carrying bulk chemicals or gas in any form (packaged or otherwise);
- not fishing vessels;

1.1.2 The gross tonnage (GT) and/or main propulsion power limitations prescribed in Para 1.1.1 may be relaxed by the Administration in the case of novel / innovative designs.

1.2 Definitions

For the purpose of this Notification for Construction, Survey, Certification and Operation of Indian River-Sea Vessels, unless expressly provided otherwise:

(a) *Administration* means the Directorate General of Shipping.

(b) *Approved* means approved by the Administration or a recognized organization acting on its behalf.

(c) *BIS* means the Bureau of Indian Standards.

(d) *Cargo ship* is any ship which is not a passenger ship. This includes vessels such as tugs, dredgers, etc.

(e) *Existing river-sea vessel* means a vessel registered as such and certified as a river-sea vessel as per the earlier RSV notification(s), as on the date of notification of the DG Shipping Order 18 of 2013 (i.e., 31.07.2013).

(f) *Fair weather* means wind force and sea state not exceeding that corresponding to Beaufort Scale 4.

(g) *Favourable weather forecast* means a weather forecast wherein fair weather is predicted for 24 hours from the commencement of a voyage.

(h) *Gross Tonnage (GT) and Net Tonnage (NT)* are the tonnages determined in accordance with the MS(Tonnage measurement of Ships) rules, 1987 as amended.

(i) *I.V. Act* means the Inland Vessels Act, 1917, as amended.

(j) *MARPOL* means the International Convention for Prevention of Pollution from Ships, 1973/78, as amended.

(k) *M.S. Act* means the Merchant Shipping Act, 1958,as amended.

(l) *New river-sea vessel* means a river-sea vessel the keel of which is laid or which is at a similar stage of construction on or after the date of this notification.

(m) *Notification* means the Notification for Construction, Survey, Certification and Operation of Indian River-Sea Vessels as issued vide DG Shipping Order No. 18 of 2013 dated 31.07.2013.

(n) *Passenger ship* is a ship which carries more than 12 passengers.

(o) *Recognised Organization (RO*) means any organization duly authorised by the Administration to perform statutory work on behalf of the Administration in terms of certification and survey functions connected with the issuance of the certificates envisaged under this Notification.

(p) *River-sea vessel under this Notification* means vessels that are registered under Merchant Shipping Act, adopting the provisions of this Notification and which operate from a port or place in India to any port or place in India, such that the vessel does not operate beyond the territorial waters of India.

(q) *River-sea vessel (RSV)* shall have the same meaning as river-sea vessel under this Notification.

(r) *RSV Tanker* is river-sea vessel constructed or adapted for the carriage in bulk of liquid cargoes with a flashpoint exceeding 60° C.

(s) *Ship* shall have the same meaning as river-sea vessel under this Notification

(t) *SOLAS* means the International Convention for the Safety of Life at Sea, 1974, as amended.

(u) *Vessel* shall have the same meaning as river-sea vessel under this Notification

(v) *Weather forecast* means the weather forecast applicable for the port(s) under consideration, given by the meteorological department of the Government of India or any other competent authority.

1.3 Types of river-sea vessels

For the purposes of this Notification, the following types of vessels operating along the Indian coast are considered:

1.3.1 Type 1: Ship-to-Shore Service

Vessels engaged in ship-to-shore operations at Indian ports beyond inland water limits of the said port, provided that such operation is carried out in fair weather and against a favourable weather forecast. Vessels falling under this Type, while engaged in ship-to-shore operations at an Indian port, shall operate within the territorial waters of India.

1.3.2 Type 2: Nearby Ports Service

Vessels engaged in operations between Indian ports in which the sea passage does not exceed that can be covered by a fully loaded vessel at the vessel's optimum speed in daylight hours, provided that such operation is carried out in fair weather and against a favourable weather

forecast. Vessels falling under this Type shall, at all times, operate within the territorial waters of India.

1.3.3 Type 3: Restricted Coastal Service

Vessels engaged in operations between Indian ports in which the maximum distance does not exceed that can be covered by a fully loaded vessel at the vessel's optimum speed in 48 hours, provided that such operation is carried out in fair weather and against a favourable weather forecast. Vessels falling under this Type shall, at all times, operate within the territorial waters of India.

1.3.4 Type 4: Unrestricted Coastal Service

Vessels engaged in operations between Indian ports during all-weather conditions. Vessels falling under this Type shall, at all times, operate within the territorial waters of India.

1.4 Notification Review

1.4.1 The Notification shall come into effect on the date of issuance of the DG Shipping Order 18 of 2013.

1.4.2 The Notification shall be periodically reviewed for its effectiveness and amendments that may be required from time to time.

1.5 Registration & Classification

1.5.1 River-sea vessels under this Notification are required to be registered under Merchant Shipping Act, 1958 (as amended).

1.5.2 Owners of vessels registered under Inland Vessels Act, 1917 (as amended), desiring to carry out river-sea operations as envisaged in para 1.3 above may, at their choice, register their vessels under M.S. Act expressly for the purpose of application of the Notification, while retaining their original registry under I.V. Act.

1.5.3 River-sea vessels are required to comply with the requirements of construction, stability, subdivision, machinery and electrical installations as prescribed in Annex IV of this Notification

ANNEX : 2 Safe Manning

2.1 Equivalence

Pursuant to the exemption of RSVs from provisions of Section 76 of the M.S. Act and rules made thereunder, the regulations contained in this Annex provide an alternative safety standard acceptable to the Administration.

2.2 Application

This Annex shall apply to all river-sea vessels

2.3 Definitions

For the purpose of this Annex:

a. *Harbour operations* means plying within port limits with occasional operation within six nautical miles of port jurisdiction.

2.4 Deck-side minimum safe manning requirements

2.4.1 Type-1 River Sea Vessels shall be manned by:

	Type-1, GT < 500		Type-1, 500<GT<3000		Type-1, GT>3000	
Capacity	*No*	*Min. Grade*	*No*	*Min. Grade*	*No*	*Min. Grade*
Master	1	Inland Master 1st Class OR Inland Master 2nd Class with 01 year experience	1	NWKO(NCV) or Inland Master 1st Class * [* - Either the Master or the Chief officer shall hold radio communication qualification]	1	Master (NCV)
Chief Officer	1	Inland Master 2nd Class OR Serang with 01 year experience	1	NWKO(NCV) or Inland Master 2nd Class *	**1**	NWKO (NCV) with 1 year experience
Second Officer	-		-		1	NWKO (NCV) **
AB Seaman	-		-		2	Rating forming part of navigation watch
OS	2	Basic STCW Courses	1	Basic STCW Courses	2	GP Rating
Cook	-		1		1	
Total	4		4		8	

2.4.2 Any RSV while engaged in harbour operations shall be manned by:

	GT < 500		**500 ≤ GT < 1600**		**1600 ≤ GT < 3000**		**3000 ≤ GT < 6000 (upto 10000 GT in case of dredgers) ***	
Capacity	**No**	**Min. Grade**	**No**	**Min. Grade**	No	**Min. Grade**	No	**Min. Grade**
Master	1	Inland Master 1st Class	1	Mate (NCV) **OR** NWKO (NCV) with 1 year experience	1	Master (NCV) **OR** Mate (NCV) with 1 year experience	1	Master (NCV)
Chief Officer	1	Inland Master 2nd Class	1	NWKO (NCV) **OR** Inland Master 1st Class **OR** Inland Master 2nd Class with 1 year experience	1	NWKO (NCV) **OR** Inland Master 1st Class with 1 year experience	1	NWKO (NCV) with 1 year experience
Second Officer	-		-		-		1	NWKO (NCV) **
AB Seaman	-		1	Rating forming part of navigation watch	1	Rating forming part of navigation watch	2	Rating forming part of navigation watch
OS	1	Basic STCW Courses	2	Basic STCW Courses	2	Basic STCW Courses	2	GP Rating
Cook	1	Basic STCW Courses	1	Basic STCW Courses	1	Basic STCW Courses	1	Basic STCW Courses
Total	**4**		**6**		**6**		**8**	

2.4.3 Type 2, 3 or 4 RSVs while engaged in daylight voyages between nearby ports shall be manned by:

	GT < 500		**500 ≤ GT < 1600**		**1600 ≤ GT < 3000**		**3000 ≤ GT < 6000 (upto 10000 GT in case of dredgers)**	
Capacity	**Nos.**	**Min. Grade**	**Nos.**	**Min. Grade**	**Nos.**	**Min. Grade**	**Nos.**	**Min. Grade**
Master	1	Master (NCV < 500 GT) **OR** NWKO (NCV) with 1 year experience	1	Master (NCV) **OR** NWKO (NCV) with 1 year experience	1	Master (NCV) **OR** Mate (NCV) with 1 year experience	1	Master (NCV)
Chief Officer	1	Inland Master 1st Class	1	NWKO (NCV) **OR** Inland Master 1st Class **OR** Inland Master 2nd Class with 1 year experience	1	NWKO (NCV) **OR** Inland Master 1st Class	1	Mate (NCV)
Second Officer	-		-		-		1	NWKO (NCV)
AB Seaman	1	Rating forming part of navigation watch	1	Rating forming part of navigation watch	1	Rating forming part of navigation watch	2	Rating forming part of navigation watch
OS	1	Basic STCW Courses	2	GP Rating	2	GP Rating	2	GP Rating
Cook	1	Basic STCW Courses	1	Basic STCW Courses	1	Basic STCW Courses	1	Basic STCW Courses
Total	**5**		**6**		**6**		**8**	

2.4.4 Type 3 and 4 RSVs while engaged in coastal voyages of less than 48 hours duration shall be manned by:

	GT < 500		500 ≤ GT < 1600		1600 ≤ GT < 3000		3000 ≤ GT < 6000 (upto 10000 GT in case of dredgers)	
Capacity	**Nos.**	**Min. Grade**	**Nos.**	**Min. Grade**	**Nos.**	**Min. Grade**	**Nos.**	**Min. Grade**
Master	1	Master (NCV < 500 GT) **OR** NWKO (NCV) with 2 years experience	1	Master (NCV) **OR** Mate (NCV) with 6 mos. experience	1	Master (NCV) **OR** Mate (NCV) with 1 year experience	1	Master (NCV)
Chief Officer	1	NWKO (NCV) **OR** Inland Master 1st Class	1	NWKO (NCV) **OR** Inland Master 1st Class	1	NWKO (NCV) with 1 year experience	1	Mate (NCV)
Second Officer	-		-		-		1	NWKO (NCV)
AB Seaman	1	Rating forming part of navigation watch	1	Rating forming part of navigation watch	2	Rating forming part of navigation watch	2	Rating forming part of navigation watch
OS	1	Basic STCW Courses	2	GP Rating	1	GP Rating	2	GP Rating
Cook	1	Basic STCW Courses	1	Basic STCW Courses	1	Basic STCW Courses	1	Basic STCW Courses
Total	**5**		**6**		**6**		**8**	

2.4.5 Type 4 RSVs while engaged in unrestricted coastal operations shall be manned by:

	GT < 500		500 ≤ GT < 1600		1600 ≤ GT < 3000		3000 ≤ GT < 6000 (upto 10000 GT in case of dredgers)	
Capacity	**Nos.**	**Min. Grade**	**Nos.**	**Min. Grade**	**Nos.**	**Min. Grade**	**Nos.**	**Min. Grade**
Master	1	Master (NCV < 500 GT) **OR** Mate (NCV) with 6 mos. experience	1	Master (NCV) **OR** Mate (NCV) with 1 year experience	1	Master (NCV)	1	Master (NCV)
Chief Officer	1	NWKO (NCV) **OR** Inland Master 1st Class	1	NWKO (NCV) with 1 year experience	1	NWKO (NCV) with 1 year experience	1	Mate (NCV)
Second Officer	-		1	NWKO (NCV) **OR** Inland Master 2nd Class	1	NWKO (NCV) **OR** Inland Master 2nd Class	1	NWKO (NCV)
AB Seaman	1	Rating forming part of navigation watch	2	Rating forming part of navigation watch	2	Rating forming part of navigation watch	2	Rating forming part of navigation watch
OS	1	Basic STCW Courses	1	GP Rating	1	GP Rating	2	GP Rating
Cook	1	Basic STCW Courses	1	Basic STCW Courses	1	Basic STCW Courses	1	Basic STCW Courses
Total	**5**		**7**		**7**		**8**	

* On dredgers,

- Master (NCV) may be substituted by Dredge Master Grade-I;
- Mate (NCV) may be substituted by Dredge Master Grade-II;
- NWKO (NCV) may be substituted by Dredge Mate Grade-I

** Where a dredger is engaged in continuous operations of 72 hours and above, an additional Watch-Keeping Officer holding, at a minimum, an Inland Master 1st Class certificate shall be required.

2.5 Engine-side minimum safe manning requirements

2.5.1 Type 1 RSVs shall be manned as per applicable rules under Inland Vessels Act, 1917 (as amended).

2.5.2 Any RSV, other than Type 1 RSV, while engaged in harbour operations or daylight voyages between nearby ports shall be manned by:

	kW < 750		**750 ≤ kW < 1500**		**1500 ≤ kW < 3000**		**3000 ≤ kW < 8000 * (upto 10000 kW in case of dredgers)**	
Capacity	**Nos.**	**Min. Grade**	**Nos.**	**Min. Grade**	**Nos.**	**Min. Grade**	**Nos.**	**Min. Grade**
Chief Engineer	1	Inland Driver 1st Class **OR** Inland Driver 2nd Class with 12 months experience **OR** SGED	1	MEO Cl IV (NCV) OR only for RSV Type-2 vessels, Inland Driver 1st Class with 12 months experience	1	MEO Cl III (NCV-SEO)	1	MEO Cl III (NCV-CEO)
Second Engineer	-		1	Inland Driver 1st Class **OR** Inland Driver 2nd Class with 24 months experience **OR** SGED	1	MEO Cl IV (NCV)	1	MEO Cl III (NCV-SEO)
Third Engineer	-		-		-		-	
Motorman	-		-		1	Rating Forming part of E/R watch	1	Rating forming part of E/R watch
Oilman	2	4 Basic STCW Courses	1	GP Rating	1	GP Rating	1	GP Rating
Total	**3**		**3**		**4**		**4**	

2.5.3 Type 3 and Type 4 RSVs while engaged in coastal voyages shall be manned by:

	kW < 750		**750 ≤ kW < 1500**		**1500 ≤ kW < 3000**		**3000 ≤ kW < 8000 * (upto 10000 kW in case of dredgers)**	
Capacity	**Nos.**	**Min. Grade**	**Nos.**	**Min. Grade**	**Nos.**	**Min. Grade**	**Nos.**	**Min. Grade**
Chief Engineer	1	MEO Cl IV (NCV) with 12 months experience	1	MEO Cl III (NCV – SEO) with 12 months experience	1	MEO Cl III (NCV-CEO)	1	MEO Cl III (NCV-CEO) with 12 months experience
Second Engineer	1	Inland (IV) Driver (1st Class) **OR** Marine Engineer Officer Class IV (NCV) Part A	1	MEO Cl IV (NCV) with 12 months experience	1	MEO Cl III (NCV-SEO)	1	MEO Cl III (NCV-SEO) with 12 months experience
Third Engineer	-		1	MEO Cl IV (NCV) Part A	1	MEO Cl IV (NCV) Part A	1	MEO Cl IV (NCV)
Motorman	-		-		1	Rating Forming part of E/R watch	1	Rating Forming part of E/R watch
Oilman	2	4 Basic STCW Courses	1	GP Rating	1	GP Rating	1	GP Rating
Total	**4**		**4**		**5**		**5**	

2.6 Additional requirements to serve on RSV Tankers

2.6.1 All crew serving on board any RSV Tankers shall have a valid Level 1 DC endorsement in compliance with STCW Chapter V – Regulation 1.1

2.6.2 Officers serving in the capacity of Master, Chief Officer, Chief Engineer and second engineer on board Type 2, Type 3 and Type 4 RSV Tankers shall have a valid Level 2 DC endorsement in compliance with STCW Chapter V – Regulation 1.2

2.6.3 (For a period of 18 months from the issuance of this Notification, the requirement of Level 2 DC endorsement for officers sailing in the capacity of Master, Chief officer, Chief Engineer and Second engineer on board Type 2, Type 3 & 4 RSVs shall be relaxed to require only compliance with shore-training requirements i.e. Advanced Tanker safety course as set out in STCW Chapter V – Regulation 1.2)

2.7 Medical Examination

2.7.1 All crew sailing on board River-Sea Vessels shall be required to possess a valid Medical Fitness Certificate issued by a medical examiner approved by the Administration.

2.8 Sea time

2.8.1 Officers and crew sailing on board river-sea vessels shall be entitled to receive full sea time in respect of eligibility and service requirements towards NCV certificates in line with applicable MS (STCW) Rules.

ANNEX : 3 Accommodation Rules

3.1 Equivalence

Pursuant to the exemption of RSVs from provisions of Section 175 of the M.S. Act and rules made thereunder, the regulations contained in this Annex provide an alternative safety standard acceptable to the Administration.

Part A
Type 1 and Type 2 RSVs

3.2 Application

This part shall apply to Type 1 and Type 2 RSVs of 200 GT and above

3.3 Accommodation Standards

3.3.1 All Type 1 RSVs shall comply with the provisions of applicable rules under the Inland Vessels Act, 1917 (as amended).

3.3.2 In addition, all Type 2 RSVs shall have following additional facilities:

- As far as practicable, separate toilets for officers and Ratings,
- At least one galley equipped with suitable cooking appliances,
- At least one rest room of suitable size, one each for officers and ratings, and
- At least one mess room of suitable size

Part B
Type 3 and Type 4 RSVs

3.4 Application

This part shall apply to Type 3 and Type 4 RSVs of 200 GT and above

3.5 Definitions

For the purpose of this Annex:

a. *Approved* means approved by the Administration or a Recognized Organization acting on its behalf as per BIS standards

b. *Overhead deck* means any deck which forms the crown of any part of the crew accommodation

c. *Watertight* means capable of preventing the passage in any direction of water under pressure or otherwise as the case may be having regard to the functional requirement of that part of the vessel.

3.6 Construction of bulkheads and paneling

3.6.1 All bulkheads enclosing or within any part of the crew accommodation shall be properly constructed of steel or other suitable material. If the bulkheads are exposed to the weather they shall be of watertight construction, and means of closure shall be provided for all openings in such bulkheads so as to enable them to be made weather tight.

3.6.2 If the partitions/bulkheads within the accommodation spaces are not constructed of steel then the paneling/ceiling used in the accommodation shall be made of non-combustible material of an approved quality.

3.6.3 Any bulkhead which separates any part of the crew accommodation (other than a recreation deck space) from a space used as --

- An oil fuel bunker;
- A cargo or machinery space;
- A lamp room or paint room;
- A store room not forming part of the crew accommodation (other than a dry provision store room);
- A chain locker; or
- A cofferdam;

shall be gastight, and shall be watertight where necessary to protect the crew accommodation.

3.6.4 Any inside paneling in the crew accommodation shall be constructed of a suitable material with a surface, which can be easily kept clean.

3.6.5 Neither bulkheads nor inside paneling shall be constructed with tongued and grooved boarding or in a manner or with material likely to harbor vermin.

3.7 Overhead decks and flooring

3.7.1 Every overhead deck exposed to the weather shall be constructed of steel or other metal.

3.7.2 Every deck which forms the floor in the crew accommodation shall be properly constructed and shall have a surface which provides a good foothold and is capable of being easily kept clean.

3.7.3 The floor covering shall be impervious to water and, if the deck is situated on the top of oil tank, impervious to oil.

3.8 Protection from Weather

3.8.1 The crew accommodation and the means of access thereto and egress there from shall be so arranged and constructed and situated in such a position as to ensure –

- The protection of the crew against injury to the greatest practicable extent,
- The protection of the crew accommodation against the weather and the sea,
- The insulation of the crew accommodation from heat and cold,
- The protection of the crew accommodation against moisture due to condensation,
- The exclusion from the crew accommodation of effluvia originating in other spaces in the vessel; and
- The exclusion from the crew accommodation, to the greatest practicable extent, of noise originating in other spaces in the vessel.

3.9 Lighting

3.9.1 Every part of the crew accommodation, other than pantries, laundries drying rooms, lockers, storerooms sanitary accommodation, passageways offices, shall be properly lighted by natural light.

3.9.2 Provided that if in any space in the vessel it is impracticable to provide proper natural lighting, such lighting shall not be required if adequate electric lighting is always available in that space.

3.10 Ventilation and Air Conditioning

3.10.1 In every new river-sea vessel the enclosed parts of the crew accommodation shall be ventilated by a system, which will maintain the air therein in a state of purity adequate for the health and comfort of the crew. Such system shall be capable of being so controlled as to ensure a sufficiency of air movement under all conditions of weather and climate to which the vessel is likely to be subjected during the voyages on which she is intended to be engaged and shall be additional to any side scuttles, skylights, companions, doors or other apertures not intended solely for ventilation.

3.10.2 In every existing river-sea vessel, as a minimum, adequate fans shall be provided in the enclosed spaces of the crew accommodation.

3.10.3 For all RSVs above 3000 GT, the accommodation spaces shall be air-conditioned in accordance with MS (Crew Accommodation) Rules.

3.11 Painting

3.11.1 The interior sides and ceilings of the crew accommodation shall be covered with enamel paint or other suitable material of an approved quality.

3.11.2 All paints, varnish, polish and other finishes in the crew accommodation shall be capable of being easily kept clean and shall be maintained in good condition.

3.12 Sleeping rooms

3.12.1 Unless the circumstances are such that no members of the crew are required to sleep on board, sleeping rooms shall be provided for the crew in accordance with the following provisions:

3.12.2 The maximum number of persons accommodated in sleeping rooms shall be as follows:

- Master and Chief Engineer – 1 person per room
- Other Officers – 2 persons per room
- Apprentices/Ratings – Not more than 4 persons per room on river-sea vessels of 500 GT and above
- Apprentices/Ratings – Not more than 8 persons per room on river-sea vessels of less than 500 GT

3.12.3 In every river-sea vessel of 500 GT and above, the minimum floor area provided for each person in a sleeping room forming part of crew accommodation shall be 2.75 m^2

3.13 Beds

3.13.1 Every sleeping room in the crew accommodation of a river-sea vessel under this Notification shall be fitted with bed for each person accommodated in the room.

3.14 Mess Rooms

3.14.1 Unless the circumstances are such as to require no member of crew to mess on board, at least one common mess room for officers and crew shall be provided. The floor area of the mess room shall be not less than 7.5 m^2.

3.14.2 Every mess room forming part of the crew accommodation shall be provided with sufficient tables and chairs for accommodating at least 75% of the crew at any given time.

3.14.3 All tables, lockers, dress and un-upholstered parts of chairs and settees in the mess room shall be made of hardwood, rustproof metal or other smooth and impervious material not likely to crack, warp or become corroded.

3.14.4 All furniture provided in the mess room shall be so made as not to be likely to harbour vermin.

3.15 Supply of fresh water and drinking water

3.15.1 There shall be available a supply of fresh water sufficient for the wash-basins, baths and showers fitted in compliance with this Notification.

3.15.2 The supply shall be provided from tanks of a capacity of at least 50 litres for each member of the crew for each day likely to elapse between successive replenishments of the water or by other equally efficient means.

3.15.3 If service tanks are fitted for that purpose they shall be directly connected with the vessel's main washing water or drinking water storage tanks.

3.15.4 There shall be a supply of drinking water shall be provided in the crew accommodation from tanks of an adequate capacity for the purpose having regard to the number of persons in the crew and the time likely to elapse between successive replenishments of the water or by other equally efficient means.

3.15.5 If service tanks are fitted for that purpose they shall be directly connected with the vessel's main drinking water storage tanks.

3.16 Water closets and baths

3.16.1 At a minimum, each of the following classes of persons shall be provided with water closets and baths separate from those provided for the other classes:

a) Officers;
b) Apprentices/Ratings.

3.17 Galley and provisions/cold store rooms

3.17.1 There shall be provided a galley for the preparation of food for the crew.

3.17.2 One or more storerooms shall be provided for the storage of dry provisions for the crew. Such rooms shall be fitted with sufficient shelves, cupboards and bins having regard to the maximum period likely to elapse between successive replenishments of stores and to the maximum number of persons for whom food is to be served.

3.17.3 Means shall be provided to store perishable provisions and box freezers of adequate capacity shall be provided for this purpose.

3.18 Medical Cabinet

3.18.1 A medical cabinet shall be provided in a suitable position suitable for storing the medicines, medical stores and book of instructions provided in the vessel for the benefit of the crew on board.

3.18.2 Every Type 3 and Type 4 RSV shall, as a minimum, carry the following medical appliances:

- 1 no. first aid box not less than that prescribed for a life boat;
- 1 no. stretcher of approved type for easy evacuation of casualties.

3.19 Protection from Mosquitoes

3.19.1 The crew accommodation, other than galleys, storerooms and recreation spaces on the open deck shall be provided with protection against the admission of mosquitoes.

3.19.2 Such protection shall be provided by means of screens of rust proof wire or other suitable material which shall be fitted to all side scuttles, natural ventilators, skylights and doors leading to the open deck.

ANNEX : 4 Construction Rules

(Stipulations in exemption of Section 284 and 311 of M.S. Act and rules made thereunder)

4.1 General

4.1.1 These requirements are applicable for river-sea vessels under this Notification with respect to Structural, Strength, Freeboard and Stability, Machinery, Bilge Systems, and Electrical Installations

4.2 Strength and structural arrangement

4.2.1 The structural strength of the Vessel shall at all times be adequate for the operation envisaged depending on the Type of Vessel. For Type 1 and Type 2 river-sea vessels such structural strength shall not be below that require for a sea environment where the maximum significant wave height ($H_{1/3}$) is 2 meters.

4.2.2 All river-sea vessels shall be designed and maintained in compliance with the structural, mechanical and electrical requirements of a recognized organization (RO) for the intended operation. River sea vessels shall be classed with a RO of the Government of India for the purposes of undertaking the operations envisaged under this notification.

4.2.3 The longitudinal strength of the Vessel shall not be less than that as specified in this Annex.

4.2.4 In the case of vessels with length 80 m and above, single long cargo holds are to be avoided and at least two cargo holds shall be provided.

4.3 Applicability

4.3.1 This chapter shall apply to all River-Sea vessels with length less than 150 m.

4.4 Requirements for Type 1 and Type 2 River Sea Vessels

4.4.1 Longitudinal strength

4.4.1.1 The section modulus 'Z' at deck or at bottom shall not to be less than:

At any transverse section, the hull section modulus Z, about the transverse neutral axis based on the total bending moment (Hogging or Sagging) is not to be less than:

$$Z = \left(\frac{M_s + M_w}{\sigma_L} \right) \text{ x } 10^3 \text{ [cm}^3\text{]}$$

Where,

σ_L = permissible bending stress

= 175/k [N/mm2] within 0.4L amidships

= 125/k [N/mm2] within 0.1L from A.P.and F.P. Between the specified regions, σL is to be obtained by linear interpolation.

k = material factor

= 1.0 for steel of normal strength of σ_Y = 235 N/mm^2

= 0.78 for higher tensile strength steel of σY = 315 N/mm2

= 0.72 for higher tensile strength steel of σY = 355 N/mm2

σY = minimum yield stress of the steel under consideration.

Ms = Maximum Still Water Bending Moment [kN-m] at the section under consideration, in all envisaged loading conditions.

Mw = Rule wave bending moment [kN-m] at the section under consideration.

$M_w = K_{wm} \times M_{wo}$

Where Kwm = 1.0 between 0.40L and 0.65L from A.P.

= 0.0 at A.P. and F.P.

Between the specified locations, Kwm is to be obtained by linear interpolation.

The Rule Wave Bending Moment Mwo, at amidships is to be taken as

Mwo = (-) 0.11 Cw L2 B (Cb + 0.7) Rwbm [kN-m] – for sagging condition

= (+) 0.19 Cw L2 B Cb Rwbm [kN-m] – for hogging condition

Where Cw = 0.0856 L for ships having length (L) less than or equal to 90 m

= 10.75- [(300-L)/100]3/2 for 90 < L < 150 m

Type of ship	**Reduction factor for WBM R_{wbm}**	**Reduction factor for Z_{min} R_z min**
Type 1	0.65	0.775
Type 2	0.70	0.800

4.4.1.2 At midship, the hull section modulus Z about the transverse neutral axis, is also not to be less than:

$$Z = C_1 L^2 B (C_b + 0.7) R_{z\,min} \ [cm^3]$$

Where, C_1 = (4 + 0.0412 L) for ships having L < 90 m

= 10.75- $[(300-L)/100]^{3/2}$ for 90 < L < 150 m

4.4.1.3 Scantlings of all continuous longitudinal members of hull girder based on the section modulus requirement are generally to be maintained within 0.4L amidships. In the region outside 0.4L amidships, the scantlings are to be gradually tapered to the local requirements at ends.

4.4.2 Moment of inertia requirement

The moment of inertia in of the hull section about the transverse neutral axis, at midship, is not to be less than:

$$I_n = 3\ C_1\ L^3\ B\ (C_b+0.7)\ R_{z\ min}\ [cm^4].$$

4.5 Load Line and Freeboard (Type 1 and 2)

4.5.1 These vessels shall be assigned applicable Load line as per requirements specified below:

4.5.2 The Load Line shall be assigned in accordance to Merchant Shipping (Load Line) Rules, 1979 as amended, except that for the computation of Freeboard, the following guidelines may be followed:

4.5.3 For **Type 1** Vessel

a) Second Schedule Part II Rule 14 (Bow Height Requirement) and

b) Second Schedule Part II Rule 4 (2) (8) (Correction for hatch covers) shall not be applicable.

4.5.4 For **Type 2** Vessels

a) Bow height requirements shall be in accordance to the Second Schedule Part II Rule 22 and

b) Second Schedule Part II Rule 4 (2) (8) (Correction for hatch covers) shall not be applicable.

4.5.5 Hatch coaming

4.5.5.1 Where such vessels are not provided with hatch covers, the minimum height of the hatchway coaming above load water line shall be as stipulated below:

4.5.5.2 Type 1 and Type 2 vessels where hatch covers are not fitted the minimum distance of top of hatch coaming above the assigned water line (h) shall be calculated by the following formula.

$$h = A \qquad \text{For } \frac{X}{L} < 0.8$$

$$h = A+B\alpha^2+C\alpha\ ,\ \text{For } 0.8 \le \frac{X}{L} \le 1.0$$

Where

$$A = 1.2 + 0.0065L$$

$$B = \frac{3L}{1000}(L-100)$$

$$C = \frac{L}{250}(90-L)$$

$$\alpha = \frac{X}{L} - 0.8$$

L = Length of the vessel

X = Distance from AP to the section under consideration

4.5.5.3 Vessels carrying cargoes of such nature that it would not be adversely affected by contact with sea water, may not be fitted with hatch covers, provided the distance of the top of hatch coaming above the assigned waterline is not less than that required by these rules.

4.5.6 Stability

4.5.6.1 The stability of the ship in all intended loading conditions shall be adequate at all drafts not submerging the appropriate freeboard marks. Unless otherwise required by the Government of India having regard to the special design features and the service conditions of a ship, the stability of the ship will be considered satisfactory upon compliance with the following criteria: -

4.5.6.2 Type 1 and Type 2 vessels shall comply with the following stability criteria:

- The GM value shall not be less than 0.3 m in any loading conditions.
- The area under GZ curve up to the angle at which the water line reaches the top of the hatch coaming shall not be less than 0.055 m-radians.

4.5.6.3 In addition to complying with the provisions of the above two paragraphs, the ship's master shall also exercise due precaution and discretion as regards navigation, cargo stowage and lashing, etc.

4.5.6.4 To assess if a ship complies with the stability criteria in paragraphs 4.5.6.1 and 4.5.6.2, the stability data shall be based on inclining experiment carried out on that ship or a sister ship, provided, lightship weight of the sister ship is within 2% and the centre of gravity is within 1 % of the ship under consideration.

4.5.6.5 The loading conditions for which stability characteristics required to be examined shall be governed by Part II of the Third Schedule of M.S (Load line) Rules 1979, as amended.

4.5.6.6 The method and form of stability calculations shall be in accordance to Part III of the Third Schedule of M.S (Load line) Rules 1979, as amended.

4.5.7 Additional requirements for Bilge pumps and generators

4.5.7.1 The cargo holds without hatch covers shall be provided with bilge pumping capacity not less than 150 % of the classification society's requirements for inland vessels.

4.5.7.2 Additionally, for Type 2 Vessels an electric generator of suitable capacity to provide power for accommodation spaces, galley and Navigation lights shall be provided.

4.6 Requirements for Type 3 and Type 4 River Sea Vessels

4.6.1 Longitudinal strength

4.6.1.1 General

a) Scantlings of hull members contributing to longitudinal strength are to comply with the requirements given in this Chapter.

b) For river-sea vessels with small block coefficient, high speed and large flare (in particular where L>120 [m] and speed V>17 knots), the section modulus in the fore body is to be specially considered based on the distribution of still water and vertical wave bending moments.

c) For river-sea vessels with narrow beams the combined effects of vertical and horizontal bending of hull girder may have to be specially considered.

d) For river-sea vessels with large deck openings the combined effects of hull girder bending and torsion related possible local bending and shear stresses would have to be considered. Calculations and plans substantiating that the above are within acceptable limits are to be submitted to RO for approval.

e) Ships of unusual type, design or proportions ($L/B \leq 5$, $B/D \geq 2.5$), will be specially considered.

4.6.1.2 Section modulus

The section modulus 'Z' at deck or at bottom shall not to be less than:

At any transverse section, the hull section modulus Z, about the transverse neutral axis based on the total bending moment (Hogging or Sagging) is not to be less than:

$$Z = \left(\frac{M_s + M_w}{\sigma_L} \right) \text{ x } 10^3 \text{ [cm}^3\text{]}$$

Where,

σL = permissible bending stress

= 175/k [N/mm2] within 0.4L amidships

= 125/k [N/mm2] within 0.1L from A.P. and F.P.

Between the specified regions, σL is to be obtained by linear interpolation.

k = material factor

= 1.0 for steel of normal strength of σY = 235 N/mm2

= 0.78 for higher tensile strength steel of σY = 315 N/mm2

= 0.72 for higher tensile strength steel of σY = 355 N/mm2

σY = minimum yield stress of the steel under consideration.

Ms = Maximum Still Water Bending Moment [kN-m] at the section under consideration, in all envisaged loading conditions.

Mw = Wave bending moment [kN-m] at the section under consideration.

Mw = Kwm x Mwo

Where Kwm = 1.0 between 0.40L and 0.65L from A.P.

= 0.0 at A.P. and F.P.

Between the specified locations, Kwm is to be obtained by linear interpolation.

The Wave Bending Moment Mwo, at amidshipss is to be taken as

Mwo = (-) 0.11 Cw L2 B (Cb + 0.7) 0.75 [kN-m] – for sagging condition

= (+) 0.19 Cw L2 B Cb 0.75 [kN-m] – for hogging condition

Cw = 0.0856L for L $\leq$ 90 [m]

= 10.75 - [(300-L)/100] 3/2 for 90 < L $\leq$ 150 [m]

4.6.1.3 Minimum Hull Section Modulus

At Midship, the hull section modulus Z about the transverse neutral axis is also not to be less than:

$$Z = C1\ L2\ B\ (Cb + 0.7)\ 0.875\ [cm3]$$

Where, C1 = (4 + 0.0412 L)

Scantlings of all continuous longitudinal members of hull girder based on the section modulus requirement as above are generally to be maintained within 0.4L amidships. In the region outside 0.4L amidships, the scantlings are to be gradually tapered to the local requirements at ends.

4.6.1.4 Moment of inertia requirement

The moment of inertia in of the hull section about the transverse neutral axis, at midship, is not to be less than:

In = 3 C1 L3 B (Cb+0.7) 0.875 [cm4].

4.6.1.5 Shear Strength

The shear stress 'τ' in ship sides and longitudinal bulkheads based on the total shear force (Qs+Qw) is not to exceed 110/k [N/mm2].

The vertical wave shear force Qw at any section along the length of the river-sea vessel is to be taken as:

Qw = 0.3 Kwq Cw LB (Cb+0.7) 0.75 [kN]

Where, the distribution of Kwq for +ve and -ve shear forces, is to be obtained as per Table below. Between the specified locations Kwq is to be obtained by linear interpolation.

Table		
Location from A.P.	Positive Shear Force K_{wq} (+)	Negative Shear Force K_{wq} (-)
A.P.	0.0	0.0
0.2L to 0.3L	$\frac{1.589 C_b}{(C_b + 0.7)}$	-0.92
0.4L to 0.6L	0.70	-0.70
0.7L to 0.85L	1.0	$\frac{-1.727 C_b}{(C_b + 0.7)}$
F.P.	0.0	0.0

4.6.1.6 Still water Bending Moment and Still water shear Force

Still water bending moments, Ms [kN-m], and still water shear forces, Qs [kN], are to be calculated at each section along the river-sea vessel length for loading conditions as specified below.

For these calculations, downward loads are assumed to be taken as positive values, and are to be integrated in the forward direction from the aft end of L.

4.6.1.7 Loading Conditions to be considered for the Stability data.

- Homogeneous loading conditions at maximum draught
- Ballast conditions
- Special loading conditions e.g. container or light load conditions at less than maximum draught, heavy cargo, empty holds or non-homogeneous cargo conditions, deck cargo conditions etc., where applicable
- Docking condition afloat
- Loading and unloading transitory conditions, where applicable

4.6.1.8 Openings in longitudinal strength members

The keel plate is normally not to have any openings.

In the bilge plate, within 0.6L amidships, openings are to be avoided as far as practicable. Any necessary openings in the bilge plate are to be kept well clear of the bilge keel.

Openings in the strength deck within 0.6L amidships (within the cargo hold region for river-sea vessels with large hatch openings) are as far as practicable to be located inside the line of large hatch openings. Necessary openings outside this line are to be kept well clear of the river-sea vessel's side and hatch corners.

Openings in lower decks are to be kept well clear of the main hatch corners and other areas of high stresses.

Openings in the side shell, longitudinal bulkheads and longitudinal girders are not to be located within twice the opening breadth below the strength deck.

Small openings are generally to be kept well clear of other openings in the longitudinal strength members. The transverse distance between any two adjacent non-reinforced openings is not to be less than four times the breadth of the larger opening.

Openings exceeding 2.5 m in length or 1.2 [m] in breadth and scallops, where scallop welding is applied, are to be deducted from the sectional areas used in the section modulus calculation.

All openings are to be adequately framed; attention is to be paid to structural continuity, and abrupt changes of shape, section or plate thickness are to be avoided. Arrangements in way of corners and openings are to be such as to minimize the creation of stress concentrations.

4.7 Loadline and Freeboard (Type 3 and 4)

4.7.1 Definitions:

Subdivision load line: Water line used to determine the sub division of the river-sea vessel.

Deepest sub division load line: Sub division load line corresponds to the summer draught to be assigned to the river-sea vessel.

Sub division length of the river-sea vessel (Ls) is the greatest projected moulded length of that part of the river-sea vessel at or below deck or decks limiting the vertical extent of flooding with the river-sea vessel at deepest subdivision load line

4.7.2 Freeboard

4.7.2.1 The Load Line shall be assigned in accordance to Merchant Shipping (Load Line) Rules, 1979 as amended, except that:

4.7.2.2 For Type 3 Vessels Second Schedule Part II Rule 4 (2) (8) (Correction for hatch covers) shall not be applicable.

4.7.2.3 For Type 3 vessels shall have a minimum bow height, which shall not be less than the aggregate of the tabular freeboard and the standard sheer at the forward perpendicular applicable to the river-sea vessel, in lieu of complying with the requirements of Second Schedule Part II Rule 14 (2) of Merchant Shipping (Load Line) Rules.

4.7.2.4 Type 3 Vessels having length less than 90 m, carrying cargoes of such nature that it would not be adversely affected by contact with sea water, may not be fitted with hatch covers, provided the distance of the top of hatch coaming above the assigned waterline is not less than that required by Annex 4 to this Notification for Indian river-sea vessels. For type 3 vessels having length more than 90 m the minimum distance of the top of hatch coaming above the assigned waterline shall be 2.3 m.

4.7.2.5 Vessels not provided with hatch covers, shall carry only such cargoes, which are suitable and safe for carriage in open hatch vessels without impairing the safety of the vessel and the crew and without any adverse impact on the vessel, or cargo.

4.7.2.6 Where such Type 3 river-sea vessels are not provided with hatch covers the minimum height of the hatchway coaming above load water line shall be as follows:

4.7.2.7 These vessels where hatch covers are not fitted the minimum distance of top of hatch coaming above the assigned water line (h) shall be calculated by the following formula.

$$h = A \qquad For\ \frac{X}{L} < 0.8$$

$$h = A + B\alpha^2 + C\alpha, \qquad For\ 0.8 \le \frac{X}{L} \le 1.0$$

Where

$$A = 1.2 + 0.0065L$$

$$B = \frac{3L}{1000}(L - 100)$$

$$C = \frac{L}{250}(90 - L)$$

$$\alpha = \frac{X}{L} - 0.8$$

L = Length of the vessel

X = Distance from AP to the section under consideration

4.7.2.8 Type 4 Vessels shall be provided with Hatch covers in accordance to MS (Load Line) Rules 1979, as amended.

4.7.2.9 Type 4 vessels having length Ls of 80 m and upwards shall also comply with the requirements of Part B-1, Chapter II-1 of SOLAS as amended.

4.7.3 Intact Stability

Subject to the provisions of paragraphs 4.6.2, 4.7.4.1 and 4.7.4.2, vessels shall comply with the intact stability requirements for cargo ships specified in the Intact Stability Code 2008 (2008 IS Code), adopted by

the International Maritime Organization by MSC Res. 267(85) as amended / M.S. (Load Line) Rules.

4.7.3.1 Existing river-sea vessels shall, as far as practical and reasonable in the opinion of the Administration, comply with the requirements of this section.

4.7.3.2 For Type 3 vessels considering to the nature of operation during fair weather, the vessel shall, as a minimum, comply with the following criteria:

1) The initial metacentric height (GM_0) shall not be less than 0.3 meters.
2) The righting lever (GZ) shall be at least 0.20 meters
3) The area under the righting lever (GZ) curve shall not be less than 0.090 meter-radians up to an angle of flooding (θ_f) or 40^0 , whichever is less.

The angle of flooding (θ_f) is the angle at which lower edge of any openings in the hull superstructures or deckhouses, being openings, which cannot be closed, watertight and which are likely to cause progressive flooding are immersed.

4.7.4 Inclining test

Every river-sea vessel shall undergo an inclining test upon its completion and the actual displacement and position of the center of gravity shall be determined for the lightship condition.

Where alterations are made to a river-sea vessel affecting its lightship condition and the position of the centre of gravity, the vessel shall, where the Administration considers this necessary, be re-inclined and the stability information amended.

The Administration may allow the inclining test of a river-sea vessel to be dispensed with provided basic stability data is available from the inclining test of a sister vessel and it is shown to the satisfaction of the Administration that reliable stability information for that vessel can be obtained from such basic data.

4.7.5 Stability information

Approved Stability information shall be supplied to all vessels to enable the master to assess with ease and certainty the stability of the vessel under various operating conditions. Such information shall include specific advice to the master warning him of those operating conditions, which could adversely affect either stability or the trim of the vessel. In particular, the information recommended in the relevant IMO Instruments referred above shall be included as appropriate. A copy of the stability information shall be submitted to the Administration or recognised organization for approval.

The approved stability information shall be kept on board, readily accessible at all times and inspected at the periodical surveys of the vessel to ensure that it has been approved.

Where alternations are made to a river-sea vessel affecting its stability, revised stability calculations shall be prepared and submitted to the recognised organisation or to the Administration for approval. Where the Administration or recognised organisation decides that the stability information must be revised, the new information shall be supplied to the master and the superseded information removed from the vessel.

4.8 Structural Fire Protection

4.8.1 Constructional fire safety measures

4.8.1.1 The hull, superstructure, structural bulkheads, decks and deckhouses of under this notification shall be constructed of steel or other equivalent material. Material other than steel, in case used, shall be insulated to the same fire retardant properties as steel. In case alternate arrangements are proposed, the same shall be submitted to the Administration for approval, along with details and calculation substantiating the equivalence of the material used.

4.8.1.2 For river-sea vessel under this notification of less than 1600 GT, the bulkheads and decks separating the engine room from the accommodation spaces and the wheelhouse and accommodation spaces shall be constructed of steel suitably insulated by fire retardant covering as per IRS / IS standards.

4.8.1.3 For river-sea vessel under this Notification of 1600 GT and above and less than 3000 GT, the bulkheads and decks separating the machinery spaces from control stations, corridors, accommodation spaces, stairways, service spaces and cargo spaces shall be so constructed as to be capable of preventing the spread of fire to the unexposed side. A general guidance as indicated in the table below shall be followed between adjacent bulkheads and decks:

	1	2	3	4	5
Control Stations (1)	A0	A60	A60	A60	A0
Accommodation spaces (2)		C	A0	A60	A0
Service Spaces (3)			A0	A60	*
Machinery Spaces (4)				*	A0
Other Spaces (5)					*

Where and * appears in the tables the division requires to be steel or other equivalent material but is not required to be of “A” class standard.

4.8.1.4 Interior stairways below the weather deck shall be of steel or other material having acceptable fire resisting properties.

4.8.2 Insulation materials

4.8.2.1 Insulation materials in accommodation spaces, service spaces (except domestic refrigeration compartments), control stations and machinery spaces shall be non-combustible. Vapour barriers and adhesive used in conjunction with insulation, as well as insulation of pipes fittings, for cold service systems, need not be non-combustible materials, but they shall be kept to the minimum quantity practicable and their exposed surfaces shall have qualities of resistance to the propagation of flame to the satisfaction of Administration.

4.8.3 Restricted use of combustible material

4.8.3.1 All exposed surfaces in corridors and stairway enclosures and surfaces including decks in concealed or inaccessible spaces in accommodation spaces, service spaces and control stations shall have low flame-spread characteristics. Exposed surfaces of ceilings in accommodation spaces, service spaces and control stations shall have low flame-spread characteristics.

4.8.3.2 Paints, varnishes and other finishes used on exposed interior surfaces shall not offer an undue fire hazard in the judgment of the Administration and shall not be capable of producing excessive quantities of smoke.

4.8.4 Means of escape

4.8.4.1 Stairways and ladders shall be so arranged as to provide, from accommodation spaces, service spaces, control stations, machinery spaces and other spaces in which the crew is normally employed, ready means of escape to the open deck and thence to the survival craft.

4.8.4.2 Two means of escape shall be provided from every machinery space that shall be as widely separated as possible. Vertical escapes shall be by means of steel ladders or other means acceptable to the Administration as suitable alternatives. Where the size of such machinery space makes it impracticable, one of these means of escape may be dispensed with provided that the means provided is to the satisfaction of the Administration.

4.8.5 Special arrangements in machinery spaces

4.8.5.1 The following provisions shall apply to machinery spaces.

1. Means shall be provided for opening and closure of skylights, opening and closure of windows in machinery space boundaries, closure of openings in funnels, which normally allow exhaust ventilation, and closure of ventilator dampers.
2. Means shall be provided for permitting the release of smoke.
3. The means required in 1 and 2 shall be located outside the space concerned where they will not be cut off in the event of fire in the space they serve.

4. Windows shall not be fitted in machinery space boundaries. This does not preclude the use of glass in control rooms within the machinery space.

5. Doors fitted in machinery space boundaries shall as far as practicable be equivalent in resisting fire to the divisions forming such boundaries. Where such doors are not weather tight or watertight doors, they shall be self-closing.

4.8.6 Ventilation systems

4.8.6.1 Ventilation systems of each of the following groups of spaces shall be entirely separated from each other:

1. machinery spaces;
2. galleys;
3. cargo spaces; and
4. accommodation spaces and control stations.

4.8.6.2 The arrangement of each ventilation system shall be such that fire in one space shall not readily spread to the other spaces.

4.8.6.3 The main inlets and outlets of all ventilation systems shall be capable of being closed from outside the spaces being ventilated.

4.8.7 Ventilation of tanks, cofferdams, etc.

4.8.7.1 All tanks carrying cargo, cofferdams and other enclosed spaces in all river-sea vessels shall be provided with effective means for ventilation and access to the satisfaction of the Administration, having regard to the intended services.

4.8.8 Miscellaneous items

4.8.8.1 Where bulkheads, decks, ceiling or linings are penetrated for the passage of electric cables, pipes, trunk, etc., or for the fitting of ventilation terminals, lighting fixtures and similar devices, or for girders, beams or other structural members, arrangements shall be made to ensure that the fire integrity is not impaired.

4.8.8.2 Where the Administration may permit the conveying of oil and combustible liquid through accommodation and service spaces, the pipes conveying oil or combustible liquids shall –

1. be of a material approved by the Administration, having regard to the fire risk;
2. not be concealed; and
3. carry only low-pressure liquids and not normally be used at sea.

4.8.8.3 Materials readily rendered ineffective by heat shall not be used for overboard scuppers, sanitary discharges and other outlets which are close to the waterline and where the failure of the material in the event of fire would give rise to danger of flooding.

4.8.9 Arrangement for oil fuel, lubricating oil and other flammable oils Limitations in the use of oil as fuel

4.8.9.1 The following limitations shall apply to the use of oil as fuel:

1. Except as otherwise permitted by this paragraph; no oil fuel with a flashpoint of less than 60°C shall be used.
2. For diesel engines in emergency applications oil fuel with a flashpoint of not less than 43°C is permitted to be used, provided the oil storage tank is outside the main machinery space and subject to such additional precautions as it may consider necessary and on condition that the ambient temperature of the space in which such oil fuel is stored or used shall not be allowed to rise to within 10°C below the flashpoint of the oil fuel. n emergency generators oil fuel with a flashpoint of not less than 43°C shall be used.

4.8.10 Oil fuel arrangements

4.8.10.1 In a river-sea vessel in which oil fuel is used, the arrangements for the storage distribution and utilization of the oil fuel shall be such as to ensure the safety of the river-sea vessel and persons on board and shall at least comply with the following provisions:

1. As far as practicable, parts of the oil fuel systems containing heated oil under pressure exceeding 0.18 N/mm^2 shall not be placed in a concealed position such that defects and leakage cannot readily be observed. The machinery spaces in way of such parts of the oil fuel systems shall be adequately illuminated.
2. As far as practicable, oil fuel tanks shall be part of the river-sea vessel's structure and shall be located outside machinery spaces of category A. Where oil fuel tanks, other than double bottom tanks, are necessarily located adjacent to, or with in, machinery spaces of category A, at least one of their vertical sides shall be contiguous to the machinery space boundaries, and shall preferably have a common boundary with the double bottom tanks, where fitted, and the area of the tank boundary common with the machinery spaces shall be kept to the minimum. Where such tanks are situated within the boundaries of machinery spaces of category A, they shall not contain oil fuel having a flashpoint of less than 60°C. In general, the use of freestanding oil fuel tanks shall be avoided. Where permitted, they shall be provided with an oil tight spill tray of suitable size having a drainpipe leading to a safe place to the satisfaction of the Administration.
3. Oil fuel storage, settling or daily service tanks situated above the double bottom shall be fitted with a cock or valve constructed of similar material to that of the tank, directly on the tank capable of being closed from a safe position outside the space concerned in the event of a fire occurring in the space in which such tanks are situated. Such tanks of not more than 250 L capacity need not comply with this paragraph.

4. Safe and efficient means of ascertaining the amount of oil fuel contained in any oil fuel tank shall be provided. Sounding pipes shall not terminate in any space where the risk of ignition of spillage from the sounding pipe might arise. In particular, they shall not terminate in accommodation spaces. Other means of ascertaining the amount of oil contained in any oil fuel tank shall be provided. Sounding pipes shall not terminate in any space where the risk of ignition of spillage from the sounding pipe might arise. In particular, they shall not terminate in accommodation spaces. Other means of ascertaining the amount of oil fuel contained in any fuel tank may be permitted, provided that the failure of such means or overfilling of the tanks will not permit release of fuel. The Administration may permit the use of oil level gauges with flat glasses and self-closing valves between the gauge glasses and the oil tanks. Cylindrical gauge glasses may also be permitted in freestanding oil fuel tanks provided that they are suitably protected and fitted with self-closing valves to the satisfaction of the Administration.
5. Provisions shall be made to prevent overpressure in any oil tank or in any part of the oil fuel system including the filling pipes. Relief valves and air or over-flow pipes shall discharge to a position, which in the opinion of the Administration is safe. The open ends of air pipes shall be fitted with wire mesh.
6. The ventilation of machinery spaces shall be sufficient under all normal conditions to prevent accumulation of oil vapour.
7. Auxiliary boiler need not be provided for heating of Fuel oils. Electrical heating arrangements along with exhaust gas economizer is acceptable for this purpose.

4.8.11 Lubricating oil arrangements

4.8.11.1 The arrangements for storage, distribution and utilisation of oil used in pressure lubricating systems shall be such as to ensure the safety of the river-sea vessel and persons on board, and such arrangements in machinery spaces shall at least comply with the provisions of 4. 8.10.1.1, .3, .4 and .5 except that this does not preclude the use of sight flow glasses in lubricating systems.

4.8.12 Arrangements for other flammable oils

4.8.12.1 The arrangements for storage, distribution and utilization of other flammable oils employed under pressure in power transmission systems, control and activation systems and heating systems shall be such as to ensure the safety of the river-sea vessel and persons on board. In locations where means of ignition are present, such arrangements shall at least comply with the provisions of 4.8.10.1.1

4.8.12.2 No oil fuel tank or lubricating oil tank or any other flammable oil tank shall be situated where spillage or leakage there from can constitute a hazard by falling on heating surfaces. Precautions shall be taken to

prevent any oil that may escape under pressure or oil leakage from any pump, filter, piping system or heat exchanger from coming into contact with heated surfaces or enter into machinery air intakes. Where necessary, a suitable spill tray or gutter screen or other suitable arrangement shall be provided to allow oil to drain to a safe place in the event of spillage or leakage of oil from such an oil tank, machinery, equipment or system. The number of joints in piping systems shall be kept to a minimum practicable.

4.8.12.3 Pipes, fittings and valves handling fuel oil, lubricating oil and other flammable oils shall be of the steel or other approved material, except that restricted use of flexible pipes shall be permissible in positions where the Administration is satisfied that they are necessary. Such flexible pipes and end attachments shall be of approved fire-resisting materials of adequate strength and shall be constructed to the satisfaction of the Administration.

4.8.12.4 Oil fuel, lubricating oil or other liquid substances flammable or harmful to the marine environment shall not be carried in forepeak tanks.

4.8.12.5 Any oil or other substances flammable or harmful to the marine environment shall not be carried in other tanks or spaces, which are not specially approved by the Administration for such purposes.

4.8.13 Carriage of oxygen and acetylene cylinders

4.8.13.1 Carriage of oxygen and acetylene cylinders of use on board while sailing shall not be permitted unless an approved “work permit” system is in place.

4.8.14 Cooking areas

4.8.14.1 In case of a small cooking area that is common with the accommodation, the structural fire protection shall be suitably made hazard proof by employing electric hot plate of maximum 3 kW capacity. The use of deep fat fryers, tandoors, barbeques shall not be permitted.

4.9 River Sea Vessels of 3000 GT and above

4.9.1 The requirements of fire protection of SOLAS Ch II-2 (other than fire detection and fire fighting which are covered in Annex 7 of this notification) shall be complied with.

4.10 Carriage of cargo

4.10.1 Bulk Cargo

4.10.1.1 River Sea Vessels shall comply with the requirements of Annex-14 of this notification as applicable to the cargo being carried.

4.11 Additional requirements for RSV Tankers

4.11.1 Basic structural configuration

These Rules apply to vessels which are intended to carry liquid cargoes having flash point above 60 degree Celsius, specified in Annex-14.

RSV tankers of 600 deadweight and above carrying petroleum oils are to be provided with a double bottom having height not less than B/15 (with minimum value 1.0 m and minimum distance from shell of 0.76m at the turn of bilge) and tankers above 5000 Dwt are to be provided with a double hull, according to the requirements of MARPOL Annex I Reg.19.

In RSV tankers of less than 5000 dwt, where the capacity of any cargo tank exceeds 700 m3, wing tanks or spaces are to be provided in accordance with MARPOL Annex I Reg 19.

RSV tankers of 600 dwt and above carrying heavy grade oil as cargo shall be provided with double hull according to the requirements of MARPOL Annex I Reg.21.

The machinery is to be arranged aft of the cargo tank and the slop tank / pump room.

4.11.2 Configuration of cargo tanks, longitudinal bulkheads

Where the tank breadth exceeds 70 % of B, cargo tanks are normally to be provided with centre longitudinal bulkheads. Where the tank breadth is greater than the figure mentioned and centre longitudinal bulkheads are not fitted, proof of sufficient stability need to be documented

4.11.3 Hull Scantlings, strength

The hull scantlings are to be determined as specified by a recognised classification society for the intended operation would be accepted as alternate to the requirements of these Rules.

4.11.4 Thermal stresses

When liquids carried in tanks require heating and the temperature is more than 90 degree Celsius, calculations of thermal stresses are required.

The calculations are to be carried out for temperatures; the actual carriage temperature and the limit temperature specified are to be considered.

The calculations are to give the resultant stresses in the hull structure based on a water temperature of 5°C and an air temperature of 10°C

4.11.5 Structural arrangement

All oil tankers are to be of longitudinally framed structure in way of cargo hold.

The vessel is to be provided with side transverses, for which the spacing does not exceed 3.0 m maximum, longitudinal are to be continuous over the transverse members.

It is recommended to provide ring structure of side shell webs, longitudinal bulkhead webs with bottom and deck web frames.

4.11.6 Access and Ventilation

All cargo zone areas are to be well ventilated and accessible for surveys and maintenance.

4.11.6.1 Access to double bottom

Manholes may be cut in the floors and side girders to provide convenient access to all parts of the double bottom. These manholes are to be cut smooth along a well rounded design and are not to be greater than that strictly necessary to provide the man access. Where manholes of greater sizes are needed, edge reinforcement by means of flat bar rings or other suitable stiffeners may be required.

As a rule, the manholes height is not to be more than 0,6 times the floor height or girder height.

Manholes in the floors are to be located at half the floor height and in a region extending on 0,2 B1 from the axis of the vessel, on both sides. When a central girder exists, its distance to the nearest side of cutting is not to be less than the double bottom height.

Manholes in the side girders are to be located at half the girder height and midway between two successive web frames. Their distance from the transverse bulkheads of the side tanks is not to be less than 1, 5 m, if there is no web frame. The above rule may be waived, subject to direct calculation of the shear stresses are submitted for approval, proving that the arrangement provided is equivalent.

4.11.6.2 Access to side tanks

Manholes are to be cut in the stringer plate and plate webs to provide convenient access to all parts of the side tanks.

Openings in the stringer plate are to be arranged clear of the hatch corners. They are to be cut smooth along a well rounded design and are to be strengthened by thick plates or by doubling plates.

4.11.6.3 Access to tanks

As far as practicable, permanent or movable means of access stored on board are to be provided to ensure proper survey and maintenance of cargo tanks.

4.11.7 Classification

All these vessels, to which these rules are applicable, shall be classed with a Recognized Organisation.

4.11.8 Load line

All RSV Tanker shall be assigned load line.

For RSV Tankers Type 1 and Type 2, the Load Line shall be assigned in accordance to Merchant Shipping (Load Line) Rules, 1979 as amended, except that, bow height requirements shall be in accordance to the Second Schedule Part II Rule 22

The RSV Tanker Type 3 and 4 shall be assigned load line in accordance to Merchant Shipping (load line) Rules 1979 as amended.

4.11.9 Intact and Damage Stability

All RSV tankers shall comply with the intact stability requirements for vessels specified in the Intact Stability Code 2008 (2008 IS Code), adopted by the International Maritime Organization by MSC Res. 267(85) as amended / M.S. (Load Line) Rules.

RSV tankers assigned freeboards less than type B of ILLC shall comply with the damage stability requirements of ILLC Reg.27.

Marpol Annex I damage stability to be applied for all river sea vessels carrying petroleum oils as cargo.

IBC Code Type 3 vessel damage stability is to be applied for vessels carrying vegetable oils specified in Annex 14.

4.11.10 MARPOL Annex I Requirements for tank arrangements and stability

The following MARPOL Annex I requirements with respect to the arrangement of the spaces within the cargo region and stability are to be applied to vessels carrying petroleum products

Feature	Regulation
a) Protection of cargo tank region with double bottom and wing ballast tank/spaces	19
b) Segregated ballast tank (SBT)	18
c) Protective location of SBT	18
d) Oil tankers carrying heavy grade oil as cargo	21
e) Segregation of fuel oil/ballast water	16
f) Slop tanks and oil/water interface detectors	29
g) Sludge tank for fuel oil	12
h) Minimization of retention of oil on board	30(4) & (5)
i) Tank size limitation / Accidental oil outflow performance	23
j) Subdivision and damage stability	Reg.19, Reg.24 and Reg.28
k) Intact stability	27
l) Pump room bottom protection	22

4.11.11 Structural Fire Protection

4.11.11.1 For RSV tankers of 500 GT and above and less than 1600 GT, the requirements of RSV Type 3 and 4 vessels of 1600-3000 GT in Section 4.8 of this Annex are to be complied with.

4.11.11.2 For RSV tankers of 1600 GT and above, the requirements for structural fire protection as given in SOLAS Ch II-2 are to be complied with as applicable to cargo ships.

4.11.12 Cargo pump rooms

4.11.12.1 Separate pump rooms are not required for cargo pumps. But, if provided, they shall have direct access from open deck and be adequately ventilated to prevent accumulation of oil vapour.

4.11.12.2 In cargo pump rooms any drain pipes from steam or exhaust pipes or from the steam cylinders of the pumps are to terminate well above the level of the bilges.

4.11.12.3 Renewable flame screens are to be provided in ventilation ducts,

4.11.12.4 Cargo pump rooms are to have a drainage system connected to pumps or bilge ejectors. The cargo pumps may be used for this purpose provided each bilge suction pipe is fitted with a screw-down non-return valve and an additional valve/cock is fitted to the pipe connection between the pump and the non-return valve

4.11.12.5 On tankers of less than 500 GT, the pump rooms may be drained by means of hand pumps with a suction diameter of not less than 50 mm.

4.11.12.6 All pump rooms are to be provided with bilge level monitoring devices together with audio-visual alarms in the wheel house, pump control station and other appropriate locations.

4.11.12.7 Machinery and systems are to be generally in accordance with requirements for cargo ships as given in this Annex.

4.11.13 Piping systems for bilge, ballast, oil fuel etc.

4.11.13.1 Cofferdams and void spaces located within the cargo area and not intended to be filled with water ballast are to be fitted with suitable means of drainage.

4.11.13.2 Ballast piping is not to pass through cargo tanks as far as possible and is not to be connected to cargo oil piping. Provision may, however, be made for emergency discharge of water ballast by means of a portable spool connection to a cargo oil pump and where this is arranged, a non-return valve is to be fitted in the ballast suction to the cargo oil pump. The portable spool piece is to be mounted in a conspicuous position in the pump room and a permanent notice restricting its use is to be prominently displayed adjacent to it. Shut-off valves shall be provided to shut-off the cargo and ballast lines before the spool piece is removed.

4.11.13.3 Ballast piping passing through cargo tanks and cargo oil pipes passing through segregated ballast tanks, where permitted by MARPOL Annex I Reg. 19, are to be of heavy gauge steel with welded or heavy flanged joints the number of which is to be kept to a minimum. Only expansion bends (not glands) are permitted in these lines within cargo tanks for serving the ballast tanks and within the ballast tanks for serving the cargo tanks.

4.11.14 Separation of fuel oil and cargo systems

4.11.14.1 The system of storage, transfer, combustion and air pipes for fuel oil for ship's use shall be entirely separate from system of loading, un-loading and air pipes for cargo oil.

4.11.15 Cargo Handling Systems

4.11.15.1 A complete system of piping and pumps is to be fitted for dealing with the cargo.

4.11.15.2 Standby means for pumping out each cargo tank are to be provided.

4.11.15.3 Where cargo tanks are provided with single deep well pumps, or submerged pumps, it will be necessary to provide alternative means for emptying the tanks in the event of failure of a pump. Portable submersible pumps may be provided on board for this purpose, but the arrangements are to be such that a portable pump could be safely introduced in to a full or part full tank. Details of the arrangements are to be submitted for approval.

4.11.15.4 A stop valve and a relief valve of adequate capacity are to be fitted on the delivery side of each pump. Relief valves are to be fitted in close-circuit, i.e. discharging to the suction side of the pumps. Relief valve may be omitted in case of centrifugal pumps, which are so designed that the discharge pressure cannot exceed the design pressure.

4.11.15.5 A pressure gauge is to be fitted on the delivery side of each pump. Where the pump is driven by a prime mover, which is installed in a space other than the pump room, an additional pressure gauge is to be fitted at a suitable position visible from the controlling position of the prime mover.

4.11.15.6 Where cargo pumps are driven by hydraulic motors which are located inside cargo tanks, the design is to be such that the contamination of the operating media and cargo oil cannot take place under normal operating conditions.

4.11.15.7 Means are to be provided for stopping the cargo oil pumps from a position outside the pump rooms, as well as at the pumps.

4.11.15.8 Terminal pipes, valves and other fittings in the cargo loading and discharge lines to which shore installation hoses are directly connected, are to be of steel or approved ductile material. They are to be strongly supported. A manually operated shut-off valve is to be fitted to each shore loading/discharging connection.

4.11.15.9 Where cargo suction and/or filling lines are led through cargo tanks, or through other spaces situated below the weather deck, the connection to each tank is to be provided with a valve situated inside the tank, and capable of being operated from the deck

4.11.15.10 Provision is to be made to ensure that the liquid head in any tank does not exceed the test head of the tank; suitable high level alarms,

together with gauging devices and tank filling procedures, may be accepted for this purpose

4.11.16 Special Requirements for vessels carrying vegetable oil

4.11.16.1 Vessels carrying vegetable oils listed in Annex-14 are to comply with the requirements of the classification society for this vessel type.

4.11.16.2 The entire cargo length shall be protected by ballast tanks or spaces other than that for carrying oil as follows:

a) Wing tanks or spaces shall be arranged such that cargo tanks are located inboard of the moulded line of the side shell plating nowhere less than 760 mm.

b) Double bottom tanks or spaces shall be arranged such that the distance between the bottom of the cargo tanks and the moulded line of the bottom shell plating measured at right angles to the bottom shell plating is not less than B/15 [m] or 2.0 m at the centerline , whichever is the lesser. The minimum distance shall be 1.0 m.

4.11.16.3 Cargo tanks are to be fitted with a visual and audible high level alarm which indicates indicates when the liquid level in the cargo tank approaches the normal full condition. The alarm is to be capable of being tested prior to loading.

ANNEX : 5 Prevention of Collisions

5.1 Equivalence

Pursuant to the exemption of RSVs from provisions of Section 285 of the M.S. Act and M.S (Prevention of Collisions) Rules, 1987 (as amended), the regulations contained in this Annex provide an alternative safety standard acceptable to the Administration.

5.2 Application

This Annex shall apply to all river-sea vessels

5.3 Prevention of Collisions

5.3.1 River-sea vessels of 1600 GT and above shall comply with the requirements of the International Regulation for Prevention of Collisions at Sea (COLREG), 1972, as amended.

5.3.2 River-sea vessels of less than 1600 GT shall comply with the requirements of the International Regulation for Prevention of Collisions at Sea (COLREG), 1972, as amended, save and except the positioning of lights shall be as follows:

- Forward mast light shall be at a maximum height of 6 m
- All other lights shall be positioned accordingly (as a function of the height of the forward mast light or beam, whichever is higher)
- All vertical spacing between forward and aft mast head lights for Type 1 RSVs of 50 m or more in length may be reduced to 2.0 m
- Vertical spacing between two or more lights to be carried in vertical line for Type 1 RSVs may be reduced to 1.0 m
- River-sea vessels of less than 3000 GT need not have a separate Lights & Sound Signals (L&SS) Plan. Light arrangements may be shown on the GA Plan or any other suitable plan.

ANNEX : 6 Life Saving Appliances

6.1 Equivalence

Pursuant to the exemption of RSVs from provisions of Section 288, 289 and 290 of the M.S. Act and M.S. (Life Saving Appliances Rules) 1991 (as amended), the regulations contained in this Annex provide an alternative safety standard acceptable to the Administration.

6.2 Application

This Annex shall apply to all river-sea vessels

6.3 Definitions

For the purpose of this Annex:

b. ***Approved*** means approved by RO as per BIS or equivalent ISO standards
c. ***Length*** shall be defined as 96% of the total length on the waterline at 85% of the least moulded depth measured from the top of the keel, or the length from the fore-side of the stem to the axis of the rudder stock on that waterline, if that be greater. In ships designed with a rake of keel the waterline on which this is measured shall be parallel to the designed waterline.

6.4 Survival craft

6.4.1 Every Type 1 and Type 2 river-sea vessel shall carry at least one inflatable life raft (SOLAS Pack B) of such aggregate capacity as will accommodate the total number of persons the river-sea vessel is certified to carry. If such Life raft is not capable of being launched from either side, then one such life raft shall be carried on each side of the vessel.

6.4.2 Every Type 3 and Type 4 river-sea vessel of less than 85 m length shall carry on each side of the vessel one or more inflatable life rafts (SOLAS Pack B) capable of being launched on either side of the river-sea vessel and of such aggregate capacity as will accommodate the total number of persons the vessel is certified to carry. However, one or more of such life rafts of such aggregate capacity as will accommodate at least the total number of persons the river-sea vessel is certified to carry shall be capable of being readily transferred from their stowage positions to both sides or from one side to the other side of the river-sea vessel at open deck level for launching.

6.4.3 Every Type 3 and Type 4 river-sea vessel of 85 m and above and every RSV Tanker of 35 m length and above shall carry:

6.4.3.1 one or more lifeboats complying with the requirements of applicable M.S. (Life Saving Appliances) Rules in force of such aggregate capacity on each side of the vessel as will accommodate total number of persons on board; and

6.4.3.2 in addition, one or more inflatable life rafts (SOLAS Pack B) capable of being launched on either side of the river-sea vessel and of such aggregate capacity as will accommodate the total number of persons the vessel is certified to carry. However, one or more of such life rafts

of such aggregate capacity as will accommodate at least the total number of persons the river-sea vessel is certified to carry shall be capable of being readily transferred from their stowage positions to both sides or from one side to the other side of the river-sea vessel at open deck level for launching.

6.4.4 One of the lifeboats as specified in para 6.4.3.1 may be designated as a rescue boat together with its launching and recovery arrangements and such rescue boat shall be deemed to satisfy the requirements of para 6.5.1 of this Annex

6.4.5 Type 3 and Type 4 river-sea vessels where the horizontal distance from the extreme end of the stem or stern of the ship to the nearest end of the closest survival craft is more than 100 m shall carry, in addition to the liferafts required by clause 6.4.3.2 above, a liferaft stowed as far forward or aft, or one as forward and another as aft, as is reasonable and practicable. Such liferaft or liferafts may be securely fastened so as to permit manual release and need not be of the type which can be launched from an approved launching device.

6.4.6 Every inflatable life raft and hydrostatic release unit shall be serviced:

6.4.6.1 at intervals not exceeding twelve months; however, in cases where it appears proper and reasonable, the Administration or recognised organisation acting on its behalf may extend this period up to a maximum of seventeen months;

6.4.6.2 at an approved service station, which is competent to service them, maintains proper servicing facilities and uses only properly trained personnel.

6.5 Rescue Boats

6.5.1 Type 3 and Type 4 River-Sea Vessels shall be required to carry a rescue boat or equivalent as per the following table:

Length of River-Sea Vessel	Type of Boat
Less than 24 m	---
24 m – 35 m *	1 no. work boat of suitable type that can be lowered and hoisted manually onto the vessel by 2 persons
35 m – 85 m	1 no. work boat/zodiac/rescue boat of minimum 3 persons capacity with a davit**.
Above 85 m	01 no rescue boat complying with LSA Code requirements

***** River-sea vessels of upto 35 m length may be exempted from the requirement of carriage of a rescue boat or equivalent provided they are engaged in harbour operations at ports where patrol boats/rescue crafts are available for operations. Provided that such vessels shall not be required to comply with the requirement of carriage of a rescue boat or equivalent merely by reason of the fact that they undertake occasional port-to-port voyages for the purposes of mobilization, dry-docking etc.

** The boat and davit shall be exempted from annual load testing requirements. Only operational test to satisfaction of surveyor need be carried out towards periodical surveys. Load test for two + one (injured person) (total 3 persons of 75Kg each) shall be carried out towards renewal survey.

6.6 Lifejackets

6.6.1 Lifejackets of approved type shall be provided for every person on board the river-sea vessel.

6.6.2 In addition, lifejackets shall be carried for persons on watch or duty and for use at remotely located survival craft stations in unlocked and clearly marked dry stowage positions in accordance with the following table:

The number of persons that the vessel is certified to carry	**Minimum number of additional lifejackets**
More than 16 persons	Not less than 25% of the total number of persons the vessel is certified to carry
16 persons or less	Not less than 4

6.6.3 Each lifejacket shall be fitted with a whistle firmly secured by a cord and a light and fitted with retro-reflective material.

6.7 Lifebuoys

6.7.1 River-sea vessels shall carry not less than the number of lifebuoys determined according to the following table:

Length of river-sea vessel in metres	**Minimum number of lifebuoys**
Under 50	6
50 and under 100	8
100 and under 150	10

6.7.2 At least half of the number of lifebuoys referred to in 6.7.1 shall be fitted with self-igniting lights.

6.7.3 At least one lifebuoy on each side of the river-sea vessel shall be fitted with a buoyant lifeline of at least 30 m in length.

6.8 Distress signals

6.8.1 Every river-sea vessel shall be provided, with not less than 6 Rocket Parachute, 4 Red Hand Flares and 1 Orange Smoke Float Signals.

6.8.2 They shall be stowed on or near the place at which the river-sea vessel is normally navigated.

6.8.3 They shall be so placed as to be readily accessible and their position shall be plainly indicated.

6.9 Radio life-saving appliances

6.9.1 All river-sea vessels shall comply with carriage of distress and safety radio communication (DSRC) equipment as stipulated in Annex 8 of this Notification.

6.9.2 Type 3 and Type 4 RSVs of less than 3000 GT shall be provided with at least one (1) two-way VHF radiotelephone apparatus.

6.9.3 Type 3 and Type 4 RSVs of 3000 GT and above shall be provided with at least three (3) two-way VHF radiotelephone apparatus. A minimum of three spare batteries in sealed condition shall be maintained on-board.

6.9.4 Type 3 and Type 4 RSVs of 3000 GT and above shall be provided with at least two (2) radio transponders (SART) which may be those carried in compliance of Annex 8 of this Notification.

6.10 General emergency alarm system

6.10.1 Every river-sea vessel shall be provided with a general emergency alarm system capable of sounding the general emergency alarm signal consisting of seven or more short blasts followed by one long blast on the river-sea vessel's whistle or siren.

6.10.2 The system shall be capable of operation from the navigation bridge or control station as appropriate and shall be audible throughout all accommodation and normal working spaces.

6.11 Embarkation Ladders

6.11.1 Type 3 and Type 4 RSVs of 3000 GT and above shall be provided with an embarkation ladder on each side of the ship at embarkation stations.

6.12 Line Throwing Appliances (LTA)

6.12.1 Type 3 and Type 4 RSVs of 3000 GT and above shall be provided with a Line throwing appliance.

6.13 Emergency instructions

6.13.1 Clear instructions to be followed in the event of an emergency, including a Muster List, shall be provided and exhibited in conspicuous places throughout the river-sea vessel including the navigation bridge, machinery spaces and accommodation spaces.

6.13.2 Posters or signs clearly depicting the operating instructions of survival craft and their launching controls shall be provided in the vicinity of survival crafts. These shall be easily seen under emergency lighting conditions.

6.13.3 Type 3 and Type 4 RSVs of 3000 GT and above shall be provided with a Training Manual which, at a minimum, shall cover the following:

- Identification of the Muster Area
- Survival craft / rescue boat embarkation, launching and recovery arrangements
- Emergency training and drills
- Operational readiness, maintenance and inspection of lifeboats
- Instructions for on-board maintenance

ANNEX : 7 Fire Fighting Appliances

7.1 Equivalence

Pursuant to the exemption of RSVs from provisions of Section 289 and 290 of the M.S. Act and M.S. (Fire Fighting Appliances) Rules, 1991 (as amended), the regulations contained in this Annex provide an alternative safety standard acceptable to the Administration.

Part A
Type 1 RSVs

7.2 Application

This part shall apply to Type 1 RSVs

7.3 Fire fighting appliances

All Type 1 RSVs shall be provided with fire fighting appliances in compliance with the provisions of applicable rules under the Inland Vessels Act, 1917 (as amended)

Part B
Type 2, Type 3 and Type 4 RSVs of less than 3000 GT

7.4 Application

This part shall apply to all Type 2, Type 3 and Type 4 RSVs of less than 3000 GT

7.5 Definitions

For the purpose of this Annex:

a. ***Approved*** means approved by RO as per BIS or equivalent ISO standards and suitable for marine use.

7.6 Fire pumps

7.6.1 Every river-sea vessel shall be provided with at least two fire pumps having a total capacity of not less than 70 m^3/hour, of which each pump shall be of minimum capacity of 25 m^3/hour.

7.6.2 One of the pumps complying with the requirements of para 7.6.1 shall be independently driven.

7.6.3 Every fire pump shall be arranged to draw water directly from sea and discharge into a fixed fire main.

7.6.4 Centrifugal pumps or other pumps connected to the fire main through which back flow could occur shall be fitted with non-return valves.

7.6.5 In river-sea vessels, if a fire in any one compartment could put all the fire pumps out of action, there shall be provided in a position outside such spaces an independently driven emergency fire pump which shall comply with the requirements of para 7.6.1 for minimum capacity.

7.6.6 The emergency fire pump shall be capable of producing at least a jet of water of not less than 6 m from one hydrant and hose through a nozzle complying with the requirements of para 7.8.3.

7.6.7 Where the fire pumps are capable of developing a pressure exceeding the design pressure of the fire mains, water service pipes, hydrants and hoses, relief valves shall be fitted. Such valves shall be so placed and adjusted as to prevent excessive pressure in the fire main system.

7.6.8 The pumps required for the provision of water for other fire extinguishing systems required by this Annex, their sources of power and their controls shall be installed outside the space or spaces protected by such systems and shall be so arranged that a fire in the space or spaces protected will not put any such system out of action.

7.7 Fire main, water service pipes, fire hydrants and fire mains

7.7.1 In every river-sea vessel, a fire main of 65 mm size shall be laid with isolating valve on the weather deck for feeding any or all fire hydrants.

7.7.2 In every river-sea vessel under this Notification, the number and position of hydrants shall be such that at least one jet of water from a single length of hose can reach any part of the river-sea vessel normally accessible to the crew while the river-sea vessel is being navigated and any part of any cargo space when empty. Furthermore, such hydrants shall be positioned near the accesses to the protected spaces.

7.7.3 Material readily rendered ineffective by heat shall not be used for fire main and hydrants unless adequately protected. The pipes and hydrants shall be so placed that the fire hoses may be easily coupled to them.

7.7.4 In river-sea vessels where deck cargo may be carried, the position of the hydrants shall be such that they are always accessible and the pipes shall be arranged as far as practicable to avoid risk of damage by such cargo.

7.7.5 A valve shall be fitted to serve each fire hose so that any fire hose may be removed while the fire pumps are at work.

7.7.6 The fire mains shall be provided with isolating valves located so as to permit optimum utilization in the event of physical damage to any part of the main.

7.7.7 Fire mains shall have no connections other than those required for fire-fighting, except for the purposes of washing the deck and anchor chains or operating the chain locker bilge ejector.

7.8 Fire hoses and nozzles

7.8.1 Every river-sea vessel shall be provided with a minimum of 2 fire hoses.

7.8.2 Where hydrants are required in any machinery spaces, each hydrant shall be provided with a fire hose. Where practicable fire hoses shall be connected to the hydrants in such machinery spaces.

7.8.3 A single length of fire hose shall not exceed 18 m.

7.8.4 Fire hoses shall be oil-resistant and approved for marine use.

7.8.5 Fire hoses of unlined canvas shall have a diameter of not less than 64 mm. Hoses of at least 45 mm internal diameter having a throughput comparable to that of 64 mm internal diameter unlined canvas at corresponding pressure may be used. Fire hoses of an internal diameter not less than 32 mm may be accepted in the accommodation spaces of all river-sea vessels.

7.8.6 Fire hoses provided in compliance with these requirements shall not be used for any purpose other than fire fighting or testing of the fire appliances.

7.8.7 Every fire hose shall be provided with an approved nozzle and the necessary couplings.

7.8.8 Standard nozzle size shall be 12 mm.

7.9 Fire extinguishers

7.9.1 Fire extinguishers shall be of approved types and designs.

7.9.2 The capacity of required portable fluid fire extinguishers shall be not more than 13.5 L and not less than 9 L. Other extinguishers shall have a fire extinguishing capability at least equivalent to that of a 9 L fluid fire extinguisher.

7.9.3 The capacity of required portable carbon dioxide fire extinguishers shall not be less than 3 kg.

7.9.4 The capacity of required portable dry powder fire extinguishers shall not be less than 4.5 kg.

7.9.5 All required portable fire extinguishers shall not exceed 23 kg. in weight in a fully charged condition and shall be at least as portable as 13.5 litre fluid fire extinguisher.

7.9.6 A spare charge shall be provided for every portable fire extinguisher provided in compliance with this Notification, except that for each such fire extinguisher which is of a type that cannot readily be recharged while the vessel is at sea an additional fire extinguisher of the same type, or its equivalent, shall be provided in lieu of a spare charge.

7.9.7 Fire extinguishers shall be periodically examined and subjected to such tests as follows:

7.9.7.1 The condition of the charges of extinguishers other than carbon dioxide extinguishers, shall be checked annually. If on checking there is any indication of deterioration, the charges shall be renewed and, in any case, at least every four years. A record of the annual check shall be fixed to each fire extinguisher.

7.9.7.2 Carbon dioxide extinguishers and gas propellant cartridges of other extinguishers shall be examined externally for corrosion and for loss of content annually. They shall be recharged or renewed if the loss of gas by weight exceeds 10% of the original charge as stamped on the bottles or cartridge, or have corroded excessively externally.

7.9.7.3 All portable fire extinguishers, other than carbon dioxide extinguishers, shall be tested by hydraulic pressure once every four years and the date of such test legibly marked on the extinguisher.

7.9.7.4 New carbon dioxide extinguishers, which do not require to be recharged, shall be tested by hydraulic pressure 10 and 20 years after manufacture and thereafter every five years.

7.9.7.5 Carbon dioxide extinguishers, which require recharging, shall be pressure tested before being recharged if four years have elapsed since the last hydraulic test was carried out.

7.9.8 One of the portable fire extinguishers intended for use in any space shall be stowed near an entrance to that space.

7.9.9 HALON fire extinguishers shall not be used.

7.9.10 Each fire extinguisher shall as far as is practicable be clearly marked on the front with a label of durable material with at least the following information in English:

1. name of manufacturer;
2. type of fire for which the extinguisher is suitable;
3. type and quantity of extinguishing medium;
4. approval details;
5. operating instruction supplemented by diagrams;
6. intervals for recharging;
7. temperature range over which the extinguisher will operate satisfactorily; and
8. test pressure.

In addition, the year of manufacture, test pressure and any serial number shall be stamped on the outside of the container.

7.10 Fire buckets

7.10.1 Fire buckets shall be of material, which is not readily flammable. They shall be painted red, clearly marked with the word "FIRE" and provided with lanyards of sufficient length, having regard to the size of the river-sea vessel.

7.10.2 The capacity of each of the fire buckets referred to in this part shall be at least 9 L.

7.10.3 Fire buckets provided in compliance to this part shall not be used for any purpose other than extinguishing fires.

7.11 Portable fire extinguishers in accommodation spaces, service spaces & control stations

7.11.1 In every river-sea vessel there shall be provided a sufficient number of approved portable fire extinguishers to ensure that at least one extinguisher will be readily available for use in any part of accommodation spaces, service space and control stations. The minimum number of fire extinguishers to be provided in such river-sea vessels shall be 3. The

arrangement of such fire extinguishers shall be to the satisfaction of the Administration.

7.12 Fire extinguishing systems and appliances in the machinery spaces

7.12.1 In every river-sea vessel, there shall be provided for the protection of any space containing internal combustion type machinery having a total power output of 1500 kW and above:

7.12.1.1 one of the following fixed fire-extinguishing systems:

- a gas system;
- a high expansion foam system or
- a pressure water-spraying system

7.12.1.2 at least one portable extinguisher suitable for extinguishing oil fires for each 750 kW of engine power output or part thereof, but the total number of such fire extinguishers so supplied shall be not less than two and not exceed six.

7.12.2 In every river-sea vessel, there shall be provided for the protection of any space containing internal combustion type machinery having a total power output less than 1500 kW:

7.12.2.1 at least two portable fire extinguishers suitable for extinguishing oil fires, and

7.12.2.2 at least one non-portable foam fire extinguisher of least 45 litres capacity or a carbon dioxide extinguisher of 15 kg capacity.

7.12.2.3 In river-sea vessels of less than 500 GT, the requirements prescribed in para 7.12.2.2 may be substituted by two additional portable fire extinguishers suitable for extinguishing oil fires.

7.13 Fireman's outfit

7.13.1 Every river-sea vessel under this Notification shall be provided with at least one fireman's outfit.

7.13.2 A fireman's outfit shall consist of:

7.13.2.1 personnel equipment comprising:

1. protective clothing of material to protect the skin from the heat radiating from the fire and from burns and scalding by steam. The outer surface of protective clothing shall be water-resistant;
2. boots and gloves of rubber or other electrically no conducting material;
3. a rigid helmet providing effective protection against impact;
4. an electric safety lamp (hand lantern) of an approved type with a minimum burning period of three hours; and
5. an axe to the satisfaction of the Administration; and

7.13.2.2 breathing apparatus of an approved type, which may be either:

a. a smoke helmet or smoke mask which shall be provided with a suitable air pump and a length of air hose sufficient to reach from the open deck, well clear of hatch or doorway, to any part of the holds or machinery spaces. Where in order to comply with this paragraph, an air

hose exceeding 36 m in length would be necessary, a self-contained breathing apparatus shall be substituted or provided, in addition, as determined by the Administration; or

b. a self-contained compressed-air operated breathing apparatus, the volume of air contained in the cylinders of which shall be at least 1,200 L, or other self-contained breathing apparatus which shall be capable of functioning for at least 30 minutes. A number of spare charges, suitable for use with the apparatus provided, shall be available on board to the satisfaction of the Administration.

7.13.3 For each breathing apparatus a fireproof lifeline of sufficient length and strength shall be provided capable of being attached by means of a snap hook to the harness of the apparatus or to a separate belt in order to prevent the breathing apparatus becoming detached when the lifeline is operated.

7.13.4 The Administration may require additional sets of personal equipment and breathing apparatus, having due regard to the size and type of the river-sea vessel.

7.13.5 The fireman's outfits or sets of personal equipment shall be so stored as to be easily accessible and ready for use and where more than one fireman's outfit or more than one set of personnel equipment is carried, they shall be stored in widely separated positions.

7.14 Fireman’s Axe

7.14.1 Every river-sea vessel under this Notification shall be provided with at least one fireman’s axe in an easily accessible location outside the machinery, accommodation and service spaces.

7.15 Fire control plan

7.15.1 In every river-sea vessel, there shall be provided a permanently exhibited fire plan displayed conspicuously for use. The fire plan is to be in English or in the language of the vessel, if not English

Part C
Type 2, Type 3 and Type 4 RSVs of 3000 GT and above

7.16 Application

7.16.1 This part shall apply to all Type 2, Type 3 and Type 4 RSVs of 3000 GT and RSV Tankers of 1600 GT and above

7.17 Definitions

7.17.1 For the purpose of this Annex:

a. ***Approved*** means approved as per BIS or equivalent ISO standards and suitable for marine use.

7.18 Detection and alarm

7.18.1 General requirements

7.18.1.1 All ships shall be provided a fixed fire detection and fire alarm system appropriate for the space with manually operated call points for readily accessible means of notification and fire patrols as effective means of detecting, locating and alerting the navigation bridge.

7.18.2 Protection of machinery spaces

7.18.2.1 A fixed fire detection and fire alarm system shall be installed in periodically unattended machinery spaces and other machinery spaces where automatic or remote control systems have been approved in lieu of continuous manning.

7.18.2.2 The detection system so prescribed shall not be based only on thermal detectors and be capable of audible and visual alarms distinct in both respects from the alarms of any other system not indicating fire.

7.18.3 Protection of accommodation spaces

7.18.3.1 Smoke detectors of an approved type shall be installed in stairways, corridors and escape routes within accommodation spaces.

7.19 Containment of fire

7.19.1 See Annex IV, Chapter 7 of this Notification

7.20 Fire fighting

7.20.1 Fire mains and hydrants

7.20.1.1 General

Materials readily rendered ineffective by heat shall not be used for fire mains and hydrants. Isolation valves are to be fitted for all open deck fire main branches used for purposes other than fire fighting

In ships where deck cargo may be carried, the position of hydrants shall be such that they are always readily accessible and the pipes shall be arranged as far as practicable to avoid risk of damage by such cargo.

The arrangements for ready availability of water supply shall be to the satisfaction of the Administration or a recognised organisation acting on its behalf

7.20.1.2 Diameter of fire mains

The diameter of the fire main and water service pipes shall be sufficient for the discharge of 140 m^3/h

7.20.1.3 Isolating valves and relief valves

Isolating valves shall be so arranged so that the fire main is not disabled due to fire in the machinery space and such valves are fitted in an easily accessible and tenable position outside machinery spaces.

A valve shall be fitted to serve each fire hydrant so that any fire hose may be removed while the fire pumps are in operation

Relief valves shall be provided in conjunction with fire pumps if the pumps are capable of developing pressure exceeding the design pressure of the fire main system

7.20.1.4 Number and position of hydrants

The number and position of hydrants shall be such that at least two jets of water not emanating from the same hydrant, one of which shall be from a single length of hose, may reach any part of the ship normally accessible to the crew while the ship is being navigated and any part of any cargo space when empty.

Such hydrants shall be positioned near the access to the protected spaces

7.20.1.5 Pressure at hydrants

With the two pumps simultaneously delivering a quantity of water as specified in 19.2.4 a) through any adjacent hydrants, a minimum pressure of 0.25 N/mm2 shall be maintained at all hydrants, and

The maximum pressure at any hydrant shall not exceed that at which the effective control of a fire hose can be demonstrated

7.20.1.6 International shore connection

Ships shall be provided with at least one international shore connection usable of either side of the ship.

7.21 Fire pumps

7.21.1 Number of fire pumps

Ships shall be provided with at least two independently driven approved fire pumps

7.21.2 Arrangement of fire pumps and fire mains

If a fire in any one compartment could put all the pumps out of action, there shall be an alternative means consisting of an approved emergency fire pump with its source of power and sea connection located outside the space where the main fire pumps or their sources of power are located.

The space containing the emergency fire pump shall not be contiguous to the boundaries of the machinery spaces or those spaces containing the two main fire pumps

No direct access shall be permitted between the machinery space and the space containing the emergency fire pump and its source of power. Alternatively, the access may be through a watertight door capable of being operated from a space remote from the machinery space and the space containing the emergency fire pump unlikely to be cut-off in the event of fire in those spaces. In such cases a second means of access to the space containing the emergency fire pump and its source of power is to be provided.

Ventilation arrangement to the space containing the independent source of power for the emergency fire pump shall be such as to preclude the possibility of smoke from machinery space fire entering or being drawn into that space

7.21.3 Additional pumps accepted as fire pumps

Sanitary, ballast, bilge or general service pumps may be accepted as one of the two fire pumps provided that they are not normally used for transfer or pumping oil, and

Provided such pumps are capable of providing water to the fire mains

7.21.4 Capacity of fire pumps

7.21.4.1 Total capacity of fire pumps

The two fire pumps, other than the emergency fire pump, shall deliver a quantity of water not less than 140 m^3/h

7.21.4.2 Capacity of each fire pump

Each of the two fire pumps, other than the emergency fire pump, shall have a minimum capacity of 25 m^3/h, and Capable of delivering at least the two required jets of water as prescribed in 7.20.1.4

7.22 Fire hoses and nozzles

7.22.1 General specifications

7.22.1.1 Approved fire hoses shall be of non-perishable material and shall be sufficient in length to project a jet of water to any of the spaces in which they may be required to be used.

7.22.1.2 Each hose shall be provided with a nozzle and the necessary couplings.

7.22.1.3 Hoses specified in this Annex as “fire hoses” shall, together with any necessary fittings and tools, be kept ready for use in conspicuous positions near the water service hydrants or connections

7.22.1.4 Fire hoses shall have a length of at least 10 m, but not more than

a) 15 m in machinery spaces
b) 20 m in other spaces and open decks, and
c) 25 m for open decks on ships with a maximum breadth in excess of 30 m

7.22.1.5 Unless one hose and nozzle is provided for each hydrant in the ship, there shall be complete interchangeability of hose couplings and nozzles.

7.22.2 Number and diameter of fire hoses

7.22.2.1 Ships shall be provided with fire hoses, the number and diameter of which, shall be to the satisfaction of the Administration or recognized organization acting on its behalf.

7.22.2.2 As a guideline, ships shall be provided with one fire hose for each 30 m in length of the ship and one spare, but in no case less than five in all.

7.22.3 Size and types of nozzles

7.22.3.1 Standard nozzle sizes shall be 12 mm, 16 mm and 19 mm or as near thereto as possible.

7.22.3.2 Larger diameter nozzles may be permitted at the discretion of the Administration or recognized organization acting on its behalf.

7.22.3.3 Nozzles shall be of a dual-purpose type (i.e. spray/jet type) approved for marine use incorporating a shutoff

7.23 Portable fire extinguishers

7.23.1 Arrangement of fire extinguishers

7.23.1.1 Ships shall carry at least five approved portable fire extinguishers to be used in accommodation spaces, service spaces and control stations.

7.23.1.2 One of the portable fire extinguishers intended for use in any space shall be stowed near the entrance to that space.

7.23.1.3 Carbon dioxide fire extinguishers shall not be placed in accommodation spaces.

7.23.1.4 Fire extinguishers shall be situated ready for use at easily visible places, which can be reached quickly and easily at any time in the event of fire.

7.23.1.5 Portable fire extinguishers shall be provided with devices which indicate whether they have been used.

7.23.1.6 Spare charges shall be provided for 100% of the first ten extinguishers and 50% of the remaining fire extinguishers capable of being recharged on board.

7.24 Fixed fire fighting systems

7.24.1 Types of fixed fire-extinguishing systems

7.24.1.1 A fixed fire fighting system required in Part C of this Annex may be any of the following:

a) A fixed gas fire-extinguishing system,
b) A fixed high-expansion foam fire-extinguishing system,
c) A fixed pressure water-spraying fire-extinguishing system

7.24.1.2 Fire extinguishing systems using Halon 1211, 1301 and 2402 and perfluorocarbons shall be prohibited.

7.24.2 Closing appliances for fixed fire-extinguishing systems

7.24.2.1 Where a fixed gas fire-extinguishing system is used, openings which may admit air to, or allow gas to escape from, a protected space shall be capable of being closed from outside the protected space.

7.24.3 Storage rooms of fire-extinguishing medium

7.24.3.1 When a fire-extinguishing medium is stored outside a protected space, it shall be stored in a room which is located behind the forward collision bulkhead, and is used for no other purposes.

7.24.3.2 Any entrance to such a storage room should preferably be from the open deck and should be independent of the protected space.

7.24.3.3 If the storage space is located below deck, it shall be located no more than one deck below the open deck and shall be directly accessible by a stairway or ladder from the open deck.

7.24.3.4 Spaces which are located below deck shall be fitted with mechanical ventilation system designed to take exhaust air from the bottom of the space and shall be sized to provide at least 6 air changes per hour.

7.25 Fire extinguishing systems in machinery spaces

7.25.1 Fixed fire-extinguishing arrangements

7.25.1.1 Machinery spaces containing oil-fired boilers, oil fuel units or internal combustion engines having aggregate total output of not less than 375 kW shall be provided with one of the fixed fire-extinguishing systems in 7.24.1.1.

7.25.1.2 In addition to the above, for machinery spaces of 500 m^3 and above, a fixed water based or equivalent local application fire extinguishing system shall be provided to protect areas such as the following without the need of engine shutdown, personnel evacuation or sealing of spaces:

i) Fire hazard portion of internal combustion machinery used for main propulsion and power generation
ii) Boiler fronts
iii) Fire hazard portions of incinerators
iv) Purifiers for heated fuel oil

7.25.1.3 Activation of local application system shall give a visual and distinct audible alarm in the protected space and continuously manned stations.

7.26 Additional fire-extinguishing systems

7.26.1 There shall be at least one approved portable foam applicator unit

7.26.2 There shall be minimum two foam-type fire extinguishers, each of at least 45 litre capacity or equivalent in spaces containing internal combustion machinery. In the case of boiler rooms containing boilers of 175 kW and above, one foam extinguisher of at least 135 litre capacity is to be provided.

7.26.3 There shall be sufficient number of portable foam extinguishers which should be so located that, as far as practicable, no point in the space is more than 10 m from an extinguisher.

7.27 Fire extinguishing arrangements in control stations, accommodation & service spaces

7.27.1 Sprinkler systems

7.27.1.1 A fixed fire detection and fire alarm system shall be so installed and arranged as to provide smoke detection in all corridors, stairways and escape routes within accommodation spaces.

7.27.1.2 Where fire protection method IIC of SOLAS Ch II-2 is adopted, an approved automatic sprinkler, fire detection and fire alarm system shall be so installed and arranged as to protect accommodation spaces, galleys and other service spaces, except spaces which afford no substantial fire risk such as void spaces, sanitary spaces etc.

7.27.2 Spaces containing flammable liquid

7.27.2.1 Paint lockers and flammable liquid lockers, at a minimum, shall be protected by a portable carbon dioxide fire extinguisher of adequate size. A discharge port shall be arranged in the locker to allow the discharge of the extinguisher without having to enter the protected space. Alternatively, paint lockers may be protected by a dry powder system designed for 0.5 [Kg powder/ m3] or a water spraying or sprinkler system designed for 5 [l/m2.min].

7.27.3 Deep-fat cooking equipment

7.27.3.1 Deep-fat cooking equipment shall be fitted with the following:

a) An approved fire-extinguishing system,
b) A primary and backup thermostat with an alarm to alert the operator in the event of failure of either thermostat
c) Arrangements for automatically shutting off the electrical power upon activation of the fire-extinguishing system
d) An alarm for indicating operation of the fire-extinguishing system in the galley where the equipment is installed.
e) Controls for manual operation of the fire-extinguishing system which are clearly labeled for ready use by the crew.

7.28 Fire Fixed gas fire-extinguishing systems for cargo spaces

7.28.1 Any vessel engaged in the carriage of dangerous goods or cargoes of other than low fire risk shall be provided with an approved fixed carbon dioxide or inert gas fire-extinguishing system

7.29 Fire-fighter's outfits

7.29.1 Vessels shall carry at least two fire-fighter's outfits. RSV Tankers shall be provided with 2 additional fire fighter's outfits.

7.29.2 The fire-fighter's outfits shall be kept ready for use in an easily accessible location that is permanently and clearly marked.

7.30 Notification of crew

7.30.1 A general emergency alarm system shall be used for notifying the crew of a fire.

7.31 Operational requirements

7.31.1 Operational readiness and maintenance

7.31.1.1 At all times while a ship is in service,

a) fire protection systems and fire fighting systems and appliances shall be maintained ready for use; and
b) fire protection systems and fire fighting systems and appliances shall be properly tested and inspected

7.31.1.2 A ship is not in service when:

a) it is in for repairs or lay-up (either at anchor or in port) or in dry-dock; and
b) it is declared not in service by the owner or the owner's representative.

7.31.1.3 Portable extinguishers which have been discharged shall be immediately recharged or replaced with an equivalent unit.

7.31.1.4 A maintenance plan shall be developed and implemented for ensuring reliability of fire-fighting systems and appliances, in accordance with the circulars/orders/notices issued by the Directorate on this matter from time to time.

7.31.1.5 The maintenance plan should be kept on board and should be available for inspection whenever required by the Administration or recognised organisation acting on its behalf.

7.31.1.6 The maintenance plan shall include at least the following fire-fighting systems and appliances, where installed:

a) fire mains, fire pumps and hydrants, including hoses, nozzles and international shore connections;
b) fixed fire detection and fire alarm systems;
c) fixed fire-extinguishing systems and other fire-extinguishing appliances;
d) automatic sprinkler, fire detection and fire alarm systems;
e) ventilation systems, including fire and smoke dampers, fans and their controls;
f) emergency shutdown of fuel supply;
g) fire doors including their controls;
h) general emergency alarm systems;
i) emergency escape breathing devices;
j) portable fire extinguishers, including spare charges; and
k) fire-fighter's outfits.

7.31.1.7 The maintenance plan may be computer-based.

7.31.2 Instructions, on-board training and drills

7.31.2.1 Crew members shall receive instruction on fire safety on board the ship.

7.31.2.2 Crew members shall receive instructions on their assigned duties**.**

7.31.2.3 Parties responsible for fire extinguishing shall be organised. These parties shall have the capability to complete their duties at all times while the ship is in service.

7.31.2.4 Crew members shall be trained to be familiar with the arrangements of the ship as well as the location and operation of any fire-fighting systems and appliances that they may be called upon to use.

7.31.2.5 Training in the use of emergency escape breathing devices shall be considered as part of on-board training.

7.31.2.6 Performance of crew members assigned fire-fighting duties shall be periodically evaluated by conducting on-board training and drills to identify areas in need of improvement, to ensure competency in fire-fighting skills is maintained, and to ensure the operational readiness of the fire-fighting organisation.

7.31.2.7 A training manual, written in the working language of the ship, shall be provided in each crew mess room and recreation room or in each crew cabin and shall explain the following:

a) general fire safety practice and precautions related to the dangers of smoking, electrical hazards, flammable liquids and similar common shipboard hazards;
b) general instructions on fire-fighting activities and fire-fighting procedures, including procedures for notification of a fire and use of manually operated call points;
c) meanings of the ship's alarms;
d) operation and use of fire-fighting systems and appliances;
e) operation and use of fire doors;
f) operation and use of fire and smoke dampers; and
g) escape systems and appliances.

7.31.3 Fire control plan

7.31.3.1 General arrangement plans should be permanently exhibited for the guidance of the ship's officers, showing clearly for each deck the control stations, the various fire sections enclosed by "A" class divisions, the sections enclosed by "B" class divisions together with particulars of the fire-detection and fire alarm systems, the sprinkler installation, the fire extinguishing appliances, means of access to different compartments, decks, etc. and the ventilating system, including particulars of the fan control positions, the position of dampers and identification numbers of the ventilating fans serving each section. Alternatively, at the discretion of the Administration or the recognised organisation acting on its behalf, the aforementioned details may be set out in a booklet, a copy of which should be supplied to each officer, and one copy shall at all times be available on board in an accessible position. Plans and booklets shall be kept up to date; any alterations thereto should be recorded as soon as practicable. Description in such plans and booklets shall be in English, or in the working language of the ship, if not English.

7.31.3.2 A duplicate set of the fire control plan or a booklet containing such plans shall be permanently stored in a prominently marked weathertight enclosure outside the deckhouse for the assistance of shore-side fire-fighting personnel.

7.31.4 Operations

7.31.4.1 All ships shall be provided with a fire safety operational booklet that shall contain the necessary information and instructions for the safe operation of the ship and cargo handling operations in relation to fire safety.

7.31.4.2 The booklet shall include information concerning the crew's responsibilities for the general fire safety of the ship while loading and discharging of cargo and while under way. Necessary fire safety precautions for handling general cargoes shall be explained.

7.31.4.3 For ships carrying dangerous goods and flammable bulk cargoes, the fire safety operational booklet shall provide pertinent fire-fighting and emergency cargo handling instructions.

7.31.4.4 The fire safety operational booklet shall be provided in each crew mess room and recreation room or in each crew cabin.

7.31.4.5 The fire safety operational booklet shall be written in English or the working language of the ship, if not English.

7.31.4.6 The fire safety operational booklet may be combined with the training manuals required by para 7.32.2.7.

ANNEX : 8 Radio Communications

8.1 Equivalence

Pursuant to the exemption of RSVs from provisions of Section 291 of the M.S. Act, M.S (Radio) Rules, 1983 (as amended) and M.S. (Distress and Safety Radio Communication) Rules 1995 (as amended), the regulations contained in this Annex provide an alternative safety standard acceptable to the Administration.

8.2 Application

This Annex shall apply to all river-sea vessels

8.3 Radio communication equipment

8.3.1 All Type 1 River-Sea Vessels shall be provided with:

8.3.1.1 two (2) VHF radio installations capable of transmitting and receiving radiotelephony on Channel 6, Channel 13 and Channel 16, one of which could be a portable/hand-held VHF

8.3.1.2 a Class B automatic identification system (AIS)

8.3.2 All Type 2 River-Sea Vessels shall be provided with:

8.3.2.1 a VHF radio installation capable of transmitting and receiving radiotelephony on Channel 6, Channel 13 and Channel 16

DSC on Channel 70

8.3.2.2 an additional VHF radio installation, which could be a portable/hand-held VHF, capable of transmitting and receiving radiotelephony on Channel 6, Channel 13 and Channel 16

8.3.2.3 a Class B automatic identification system (AIS)

8.3.2.4 a radio transponder (SART) capable of operating in the 9 GHz band, which shall be so stowed that it can be easily utilized

8.3.2.5 a satellite emergency position-indicating radio beacon (EPIRB) or DAT

8.3.3 All Type 3 and Type 4 River-Sea Vessels of less than 500 GT shall be provided with:

8.3.3.1 a VHF radio installation capable of transmitting and receiving radiotelephony on Channel 6, Channel 13 and Channel 16

DSC on Channel 70

8.3.3.2 An additional VHF radio installation, which could be a portable/hand-held VHF, capable of transmitting and receiving radiotelephony on Channel 6, Channel 13 and Channel 16

8.3.3.3 a Class B automatic identification system (AIS)

8.3.3.4 a radio transponder (SART) capable of operating in the 9 GHz band, which shall be so stowed that it can be easily utilized

8.3.3.5 a satellite emergency position-indicating radio beacon (EPIRB) or DAT

8.3.3.6 a receiver capable of receiving NAVTEX service broadcasts

8.3.3.7 an MF/HF radio installation capable of transmitting and receiving using radiotelephony

8.3.4 All Type 3 and Type 4 River-Sea Vessels of 500 GT and above but less than 1600 GT shall be provided with:

8.3.4.1 a VHF radio installation capable of transmitting and receiving radiotelephony on Channel 6, Channel 13 and Channel 16

DSC on Channel 70

8.3.4.2 An additional VHF radio installation, which could be a portable/hand-held VHF, capable of transmitting and receiving radiotelephony on Channel 6, Channel 13 and Channel 16

8.3.4.3 a Class A automatic identification system (AIS)

8.3.4.4 a radio transponder (SART) capable of operating in the 9 GHz band, which shall be so stowed that it can be easily utilized

8.3.4.5 a satellite emergency position-indicating radio beacon (EPIRB) or DAT

8.3.4.6 a receiver capable of receiving NAVTEX service broadcasts

8.3.4.7 an MF/HF radio installation capable of transmitting and receiving using radiotelephony

8.3.5 All Type 3 and Type 4 River-Sea Vessels of 1600 GT and above but less than 6000 GT shall be provided with:

8.3.5.1 a VHF radio installation capable of transmitting and receiving radiotelephony on Channel 6, Channel 13 and Channel 16

DSC on Channel 70

8.3.5.2 An additional VHF radio installation, which could be a portable/hand-held VHF, capable of transmitting and receiving radiotelephony on Channel 6, Channel 13 and Channel 16

8.3.5.3 a Class A automatic identification system (AIS)

8.3.5.4 a radio transponder (SART) capable of operating in the 9 GHz band, which shall be so stowed that it can be easily utilized

8.3.5.5 a satellite emergency position-indicating radio beacon (EPIRB) or DAT

8.3.5.6 a receiver capable of receiving NAVTEX service broadcasts

8.3.5.7 an Inmarsat ship earth station capable of:

transmitting and receiving distress and safety communications using direct-printing telegraphy

initiating and receiving distress priority calls

maintaining watch for shore-to-ship distress alerts, including those directed to specifically defined geographical areas

transmitting and receiving general radiocommunications, using either radiotelephony or direct-printing telegraphy

8.3.5.8 an MF/HF radio installation capable of transmitting and receiving using radiotelephony

8.4 Operator

8.4.1 All River-Sea Vessels shall be required to have a Mobile Station Licence issued by the WPC Wing, Ministry of Communications & IT.

8.4.2 All Type 3 and Type 4 RSVs shall be required to have at least one operator holding a general or restricted operator's certificate for radiocommunication equipment on board that shall be acceptable to the Ministry of Communications, Government of India

ANNEX : 9 Safety of Navigation

9.1 Equivalence

Pursuant to the exemption of RSVs from provisions of Section 356 of the M.S. Act and M.S. (Safety of Navigation) Rules 1997 (as amended), the regulations contained in this Annex provide an alternative safety standard acceptable to the Administration.

9.2 Application

This Annex shall apply to all river-sea vessels

9.3 Approval and performance standards of navigational equipment

All navigational equipment provided onboard Type 3 and Type 4 RSVs shall be of approved type as per BIS or equivalent ISO standards acceptable to the Administration

9.4 Navigational equipment

River-sea Vessels shall be provided with the following navigational equipment:

Equipment *	**Type 1**	**Type 2**	**Type 3 & Type 4**			
	Any GT	Any GT	GT < 500	500 ≤ GT < 1600	1600 ≤ GT < 3000	3000 ≤ GT < 10000
Magnetic Compass (with Azimuth Mirror for Terrestrial Navigation)	1	1	1	1	1	1
Spare Magnetic Compass	-	-	1	1	1	1
Gyro-Compass [1]	-	-	-	1	1	1
Gyro-Compass Heading and Bearing Repeater	-	-	-	-	-	1
Radar [2]	-	1	1	1	2	2
GPS [3]	-	1	1	1	2	2
Rudder Angle Indicator	-	1	1	1	1	1
Aneroid Barometer	-	-	1	1	1	1
Echo Sounder with Recordable Data	-	-	-	-	1	1
Simplified Voyage Data Recorder (S-VDR) with float free capsule [4]	-	-	-	-	-	1
Aldis Lamp OR Searchlight	1	1	1	1	1	1
Passage Charts	Yes	Yes	Yes	Yes	Yes	Yes
Nautical Almanac	-	-	1	1	1	1
Tide Tables	Yes	Yes	Yes	Yes	Yes	Yes
Sound signal – Horn & Bell [5]	1 each	1 each	1 each	1 each	1 each	1 each

* Please see Notes below for equipment specification and equivalencies

Notes

1 For RSVs of 500 GT and above but less than 1600 GT, a transmission heading device may be provided in lieu of a gyro-compass

2 (i) All Type 2, Type 3 and Type 4 RSVs shall, at a minimum, be provided with a 9 GHz radar having following minimum specifications:

- X-band
- 180 mm display and
- 24 NM range.

(iii) All Type 3 & 4 RSVs of 3000 GT and above and Type 3 & 4 RSV Tankers of 1600 GT and above shall be provided with a 3 GHz radar, or where considered appropriate by the Administration, a second X-band radar having minimum specifications as prescribed in (i) above and an electronic plotting aid, or other means, to plot electronically the range and bearing of targets to determine collision risk.

3 RSVs of 1600 GT and above but less than 3000 GT shall be provided with two GPS, of which one may be portable/hand-held

4 The requirement of S-VDR shall only be applicable to new Type 4 RSVs of 3000 GT and above.

5 The arrangements for giving sound signals for Type 3 and Type 4 RSVs shall meet the requirements of COLREGS 1972 (as amended)

ANNEX : 10 Survey and certification

10.1 Equivalence

Pursuant to the exemption of RSVs from provisions of Section 299A, 300, 303, 307(2) and 318 of the M.S. Act and M.S. (Safety Convention Certificates) Rules 1995 (as amended), the regulations contained in this Annex provide an alternative safety standard acceptable to the Administration.

10.2 Application

This Annex shall apply to all river-sea vessels

10.3 Inspection and survey

10.3.1 The inspection and survey of river-sea vessels, for the enforcement of the provisions of this Notification, shall be carried out by officers of the Administration. The Administration may, however, entrust the inspections and surveys either to surveyors nominated for the purpose or to organisations recognised by it.

10.3.2 When a nominated surveyor or recognised organisation determines that the condition of the river-sea vessel or its equipment does not correspond substantially with the particulars of the certificate or is such that the river-sea vessel is not fit to proceed to sea without danger to the river-sea vessel, or persons on board, such surveyor or organisation shall ensure that corrective action is taken and shall in due course notify the Administration.

10.3.3 In the event as set forth in para 10.3.2, the nominated surveyor or recognised organisation may allow the river-sea vessel to proceed to sea provided that the corrective actions as prescribed during the survey are undertaken to be carried out by the owner or manager within a stipulated period.

10.4 Surveys

10.4.1 The structure, machinery, life-saving appliances, radio installations and other equipment shall be subject to the surveys specified below:

a) an initial survey before the river-sea vessel is put in service;
b) a renewal survey at intervals specified by the Administration not exceeding five years;
c) an intermediate survey within three months before or after the 2nd or 3rd anniversary date of the Indian River-Sea Vessel Safety Certificate;
d) An annual survey within three months before or after each anniversary date of the Indian River-Sea Vessel Safety Certificate.
e) A minimum of two inspections of the outside of the river-sea vessel's bottom shall be carried out during the five year period of validity of the Indian River-Sea Vessel Safety Certificate provided the interval between any two such inspections shall not exceed thirty-six months. For river-sea vessels less than 15 years of age, the intermediate drydocking survey can be an in-water survey using CCTV, provided there is no damage, repairs etc which needs docking of the vessel.

10.4.2 These surveys shall include surveys required under the provisions of the applicable Load Line rules (as amended).

10.4.3 The surveys referred to in para 10.4.1 shall include the following:

10.4.3.1 The structure, machinery and equipment, other than those items surveyed with the life-saving appliances and installations;

10.4.3.2 The fire safety systems and appliances, life-saving appliances and arrangements, the river-sea vessel borne navigational equipment, means of embarkation for pilots and other equipment;

10.4.3.3 The fire control plans, nautical publications, lights, shapes, means of making sound signals and distress signals; and

10.4.3.4 The radio installations of the river-sea vessel.

10.4.4 The initial or renewal survey shall include the following:

10.4.4.1 the initial survey of a new river-sea vessel[1] shall include a complete inspection of the items referred to in para 10.4.3 to ensure that the arrangements, materials, scantling and workmanship of the structure, boilers, and other pressure vessels, their appurtenances, main and auxiliary machinery including steering gear and associated control systems, electrical installations and other equipment comply with the requirements of this Notification, are in satisfactory condition and are fit for the service for which the is intended;

10.4.4.2 OR

10.4.4.3 the initial survey of an existing vessel shall include a complete inspection of the items referred to in para 10.4.3 which had to be modified or added in order to comply with the requirements of this Notification to ensure that the arrangements, materials, scantling and workmanship of the structure, boilers, and other pressure vessels, their appurtenances, main and auxiliary machinery including steering gear and associated control systems, electrical installations and other equipment which had to be modified or added comply with the requirements of this Notification, are in satisfactory condition and are fit for the service for which the vessel is intended.

10.4.5 For existing vessels, the outside of the vessel's bottom shall be required to have been inspected within twelve months preceding the issuance of the Indian River-Sea Vessel Safety Certificate.

10.4.6 the intermediate survey shall include an inspection of the structure, machinery and equipment referred to in paragraph 4.2 to ensure that they

[1] For the purposes of initial survey, an existing vessel not in possession of a valid Certificate of Class for the intended operation at the time of adoption of the Notification for Indian River-Sea Vessels shall be treated as a new river-sea vessel

have been maintained satisfactorily for the service for which the vessel is intended;

10.4.7 the inspection of the outside of the river-sea vessel's bottom and survey of related items inspected at the same time shall be such as to ensure that they remain satisfactory for the service for which the vessel is intended.

10.5 Maintenance of conditions after survey

10.5.1 The owner or master of every river-sea vessel shall ensure that:

10.5.1.1 the condition of the vessel and its equipment is maintained to conform with the provisions of this Notification to ensure that the vessel in all respects will remain fit to proceed to sea without danger to the vessel, persons on board or the environment;

10.5.1.2 after any survey of the vessel under para 10.4 has been completed, no significant change shall be made in the structural arrangement, machinery, equipment and other items covered by the survey, without the permission of the Administration or a recognised organisation acting on its behalf; and

10.5.1.3 whenever an accident occurs to the vessel or a defect is discovered, either of which affects the safety of the vessel or the efficiency or completeness of its life-saving appliances or other equipment, a request be made immediately to the Administration or a recognised organisation acting on its behalf for a survey, as may be required by para 10.4, to be carried out as soon as practicable.

10.6 Issue or endorsement of certificates

10.6.1 A certificate called an Indian River-Sea Vessel Safety Certificate shall be issued after an initial or renewal survey of a vessel which complies with the requirements of this Notification.

10.6.2 The certificate referred to in para 10.6.1 shall be supplemented by a Record of Equipment and Ship Information which shall be permanently attached thereto and which shall contain the following:

10.6.3 A record of equipment and operations information in compliance with all the relevant Annexes of this Notification for Indian River-Sea Vessels;

10.6.4 The certificate referred to in this section shall be issued or endorsed by the Administration or by a recognised organisation acting on its behalf.

10.7 Duration and validity of certificates

10.7.1 An Indian River-Sea Vessel Safety Certificate shall be issued for a period specified by the Administration or a recognised organisation acting on its behalf which shall not exceed five years.

10.7.2 The renewal survey is completed within three months before the expiry date of the existing certificate, the new certificate shall be valid from the

date of completion of renewal survey to a date not exceeding five years from the date of expiry of the existing certificate.

10.7.3 When the renewal survey is completed after the expiry date of the existing certificate, the new certificate shall be valid from the date of completion of the renewal survey to a date not exceeding five years from the date expiry of the existing certificate.

10.7.4 When the renewal survey is completed more than three months before or after the expiry date of the existing certificate, the new certificate shall be valid from the date of completion of the renewal survey to a date not exceeding five years from the date of completion of the renewal survey.

10.7.5 Where a certificate is issued for a period of less than five years, the Administration or a recognised organisation acting on its behalf may extend the validity of the certificate beyond the expiry date to the maximum period specified in 10.7.1, provided that the surveys referred to in 10.4, which are applicable when a certificate is issued for a period of five years are carried out as appropriate.

10.7.6 Where a renewal survey has been completed and new certificate cannot be issued or placed on board the river-sea vessel before the expiry date of the existing certificate, the Administration or a recognised organisation acting on its behalf shall endorse the existing certificate and such a certificate shall be accepted as valid for a further period which shall not exceed five months from the expiry date.

10.7.7 Where a river-sea vessel at the time when a certificate expires is not in a position to be surveyed, the Administration or a recognised organisation acting on its behalf may extend the period of validity of the certificate but this extension shall be granted only in cases where it appears proper and reasonable to do so. No certificate shall be extended for a period longer than three months.

10.7.8 A certificate issued under para 10.7 shall cease to be valid in any of the following cases:

10.7.8.1 where the relevant surveys and inspections are not completed within the periods specified under para 10.4.1; or

10.7.8.2 where the certificate is not endorsed in accordance with the requirements of this Notification; or

10.7.8.3 where the river-sea vessel is withdrawn from the Indian Registry.

10.8 Availability of certificates

10.8.1 The certificates issued under para 10.7 shall be readily available on board for examination at all times.

10.9 Form of certificates

10.9.1 The certificates and the record of equipment and information shall be drawn up in the form corresponding to the models given below:

Form of Indian River-Sea Vessel Safety Certificate

INDIAN RIVER-SEA VESSEL SAFETY CERTIFICATE

This Certificate should be supplemented by a Record of Equipment and Ship Information

Issued under the provisions of the

NOTIFICATION FOR INDIAN RIVER-SEA VESSELS, 2013

under the authority of
The Government of India

By

(Recognised Organisation acting on behalf of the Government of India)

Name of Ship	Official No. & Call Sign	Port of Registry	Date of Build (dd/mm/yy)	Gross Tonnage	Propulsion Power(kW)	Deadweight (tons)	IMO Number

Type of Ship*: **Type 1**
Type 2
Type 3
Type 4

This is to certify:

1. **That the river-sea vessel has been surveyed in accordance with the applicable provisions of the Notification for Indian River-Sea Vessels, 2013**
2. **That the survey showed that the river-sea vessel complied with the requirements of the Notification for Indian River-Sea Vessels 2013 as regards :**

.1 the structure, stability, machinery and electrical installations as defined in Annex 4 of the Notification for Indian River-Sea Vessels, 2013.
.2 the safety equipment, safety navigation and radio communication equipment as defined in Annexes 5,6,7,8 and 9 of the Notification for Indian River-Sea Vessels, 2013
.3 all relevant requirements of prevention of marine pollution as defined in Annex 11 of the Notification for Indian River-Sea Vessels, 2013
.4 all relevant requirements of the Domestic Safety Management Code as defined in Annex 12 of the Notification for Indian River-Sea Vessels, 2013
.5 all relevant requirements of the Ship Security measures as defined in Annex 13 of the Notification for Indian River-Sea Vessels, 2013
.6 all relevant requirements of the Carriage of Cargo as defined in Annex 14 of the Notification for Indian River-Sea Vessels, 2013
.7 a freeboard of _____mm was assigned and marked on the river-sea vessel's side at amidship.
.8 in all other respects the river-sea vessel complied with the relevant requirements of the Notification for Indian River-Sea Vessels, 2013.

Completion date of the survey on which this certificate is based……..

This certificate is valid until ..... subject to the annual surveys, intermediate survey and inspections of the outside of the ship's bottom in accordance with Annex 10 of the Notification for Indian River-Sea Vessels 2013.

* Delete as appropriate

Issued at .....
(Place of issue of certificate)

....
(Date of Issue) (Signature of authorised official issuing the certificate)

(Seal or stamp of the issuing authority, as appropriate).

Endorsement for intermediate survey relating to condition of structure, machinery and equipment as required by Annex 10 of the Notification for Indian River-Sea Vessels 2013:

THIS IS TO CERTIFY that, at an intermediate survey required by Annex 10 of the Notification for Indian River-Sea Vessels,2013 the vessel was found to comply with the relevant requirements of the said Notification

Annual survey

Signed: .....
(Signature of authorised official)

Place: .....
Date: .....

(Seal or stamp of the authority, as appropriate)

Annual/Intermediate Survey

Signed: .....
(Signature of authorised official)

Place: .....
Date: .....

(Seal or stamp of the authority, as appropriate)

Intermediate/Annual Survey

Signed: .....
(Signature of authorised official)

Place: .....
Date: .....

(Seal or stamp of the authority, as appropriate)

Annual survey

Signed: .....
(Signature of authorised official)

Place: .....
Date: .....

(Seal or stamp of the authority, as appropriate)

Endorsement for inspection of the outside of the ship's bottom

THIS IS TO CERTIFY that at an inspection of the outside of the ship's bottom as required by Annex 10 of the Notification for Indian River-Sea Vessels,2013, the vessel was found to comply with the relevant requirements of the said Notification.

First Inspection: Signed: .....
(Signature of authorised official)

Place: .....
Date: .....
(Seal or stamp of the authority, as appropriate)

Second Inspection: Signed: .....
(Signature of authorised official)

Place: .....
Date: .....
(Seal or stamp of the authority, as appropriate)

Endorsement where the renewal survey of the river-sea vessel has been extended

THIS IS TO CERTIFY that the validity of this certificate is hereby extended until ..... as the river-sea vessel was considered to comply with the relevant provision of the Notification for Indian River-Sea Vessels 2013 for the period of extension.

Signed: .....
(Signature of authorised official)

Place: .....
Date: .....
(Seal or stamp of the authority, as appropriate)

Endorsement where the renewal survey of the river-sea vessel has been completed

THIS IS TO CERTIFY that the validity of this certificate is hereby extended until ..... as the river-sea vessel was considered to comply with the relevant provision of the Notification for Indian River-Sea Vessels 2013 for the period of extension.

Signed: .....
(Signature of authorised official)

Place: .....
Date: .....
(Seal or stamp of the authority, as appropriate)

ANNEX : 11 Prevention of Pollution

11.1 Equivalence

Pursuant to the exemption of RSVs from provisions of Section 356 C(2), 356 E and 356 F of the M.S. Act and Rules made thereunder, the regulations contained in this Annex provide an alternative safety standard acceptable to the Administration.

11.2 Application

This Annex shall apply to all river-sea vessels

11.3 For the purpose of prevention of pollution of sea by oil:

11.3.1 Any discharge into the sea of oil or oily mixtures from river-sea vessels of 400 GT and above shall be prohibited except when the following conditions are satisfied:

11.3.1.1 The vessel is proceeding *en route*

11.3.1.2 The oily mixture is processed through a type approved oily water separator

11.3.1.3 The oil content of the effluent without dilution does not exceed 15 parts per million

11.3.1.4 The oily mixture does not originate from cargo pump-room bilges of RSV tankers; and

11.3.1.5 The oily mixture, in case of RSV Tankers, is not mixed with oil cargo residues.

11.3.2 Type 3 and Type 4 River-sea vessels of 400 GT and above but less than 3000 GT, that do not comply with the requirements prescribed in para 11.3.1, may be provided with a holding tank of sufficient capacity, for oily bilge water. The oily bilge generated in the machinery spaces shall be collected in the holding tank and periodically discharged to shore reception facilities. Suitable permanent arrangement with a standard discharge connection is to be provided for this purpose. The minimum capacity of aforementioned holding tank shall be 1 m3.

11.3.3 Type 1 and Type 2 river-sea vessels (irrespective of size) and every Type 3 and Type 4 river-sea vessel below 400 GT, that do not comply with requirements prescribed in para 11.3.1 or 11.3.2, may be provided with suitable fixed or portable holding tank(s) with compatible pumping arrangement for discharging to shore reception facilities.

11.4 Standard Discharge Connection

11.4.1 To enable pipes of reception facilities to be connected with the ship's discharge pipeline for residues from machinery bilges and from the holding tank, as specified in para 11.3.2 above, both lines shall be fitted with a standard discharge connection in accordance with the following table, namely:-

Standard dimensions of flanges for discharge connections :

Description	Dimension
Outside diameter	215 mm
Inner diameter	According to pipe outside diameter
Bolt circle diameter	183 mm
Slots in flange	6 holes 22 mm in diameter equidistantly placed on a bolt circle of the above diameter, slotted to the flange periphery. The slot width to be 22 mm
Flange thickness	20 mm
Bolts and nuts: quantity, diameter	6, each of 20 mm in diameter and of suitable length
The flange shall be designed to accept pipes up to a maximum internal diameter of 125 mm and shall be of steel or other equivalent material having a flat face. This flange, together with a gasket of oil-proof material, shall be suitable for a service pressure of 600 kPa	

11.5 Control of discharge of oil and tank washings from RSV tankers

11.5.1 All the cargo tank washing may be discharged to appropriate shore reception facilities.

11.6 Shipboard oil pollution emergency plan

11.6.1 Every RSV tanker of 150 GT and above shall carry on board a shipboard oil pollution emergency plan approved by the Administration or Recognized organization.

11.6.2 All RSV tankers of 5000 tons deadweight and above shall have prompt access to computerized shore based damage stability and residual structural strength calculation programs.

11.7 Ship to ship transfer (STS) operations

11.7.1 Any RSV oil tanker involved in STS operations shall carry on board a Plan prescribing how to conduct STS operations (STS operations Plan)

11.8 For the purpose of prevention of pollution of sea by sewage:

11.8.1 Every Type 3 & 4 River-Sea Vessel of 400 GT and above and Type 3 & 4 Vessels of less than 400 GT which are certified to carry more than 15 persons shall be equipped with one of the following sewage systems, namely:-

11.8.1.1 a sewage treatment plant, of the type approved by the Central Government, after taking into consideration the standards and test methods developed by the International Maritime Organization; or

11.8.1.2 a sewage comminuting and disinfecting system, approved by the Central Government, provided that such system shall be fitted with such facilities for temporary storage of sewage when the ship is less than three nautical miles from the nearest land; or

11.8.1.3 a holding tank of such capacity as may be specified by the Central Government, for the retention of all sewage, having regard to the

operation of the ship, number of persons on board and relevant factors. The minimum size of the holding tank may be obtained by following formula:-

Minimum capacity of the holding tank = 60 Ltrs x No. of persons x 1 day

Provided that such holding tank shall be constructed in such a manner as may be specified by the Central Government and shall have means to indicate visually the amount of its contents.

11.8.2 Every Type 1 & 2 River-Sea vessel irrespective of size, when vessel inside the break waters of port, all toilets shall required to be locked and log entry be made in ships official log book. All ships crew shall use shore toilets during the said period. Alternatively, these vessels may be provided with arrangements as prescribed under para 11.8.1 of this Annex.

11.8.3 Standard discharge connection for Type 3 & 4 River-Sea Vessel of 400 GT and above and Type 3 & 4 Vessels of less than 400 GT which are certified to carry more than 15 persons – To enable pipes of reception facilities to be connected with the ship's discharge pipeline, the line shall be fitted with a standard discharge connection, in accordance with the following table, namely:-

Standard dimensions of flanges for discharge connections:.

Description	**Dimension**
Outside diameter	210 mm
Inner diameter	According to pipe outside diameter
Bolt circle diameter	170 mm
Slots in flange	4 holes 18 mm in diameter, equidistantly placed on a bolt circle of the above diameter, slotted to the flange periphery with the slot width of 18 mm
Flange thickness	16 mm
Bolts and nuts: quantity and diameter	4, each of 16 mm in diameter and of suitable length
The flange shall be designed to accept pipes up to a maximum internal diameter of 100 mm and shall be of steel or other equivalent material having a flat face and this flange, together with a suitable gasket, shall be suitable for a service pressure of 600 kPa.	
For ships having a moulded depth of 5 m and less, the inner diameter of the discharge connection may be 38 mm.	

11.8.4 Discharge of sewage – Subject to the provisions of clause 11.3.1 above, the discharge of sewage into the sea is prohibited, except under the following circumstances, namely:-

11.8.4.1 the river-sea vessel has in operation a sewage treatment plant, which has been type approved by the Central Government; or

11.8.4.2 the river-sea vessel is discharging comminuted and disinfected sewage using such system as specified in clause 11.8.1.2 above, at a distance of more than three nautical miles from the nearest land, provided that the sewage that has been stored in holding tank shall

not be discharged instantaneously but at a moderate rate when the ship is en route and proceeding at not less than four knots; or

11.8.4.3 the river-sea vessel is discharging sewage that has been stored in the holding tank as specified in clause 11.8.1.3 above, to appropriate shore reception facilities.

11.9 For the purpose of prevention of pollution of sea by garbage:

11.9.1 All river-sea vessels shall comply with the respective Merchant Shipping Rules and other notices, circulars or orders issued by the Directorate General of Shipping from time to time to the extent applicable to such vessels.

11.10 For the purpose of prevention of pollution of sea by air:

11.10.1 All river-sea vessels shall comply with the respective Merchant Shipping Rules and other notices, circulars or orders issued by the Directorate General of Shipping from time to time to the extent applicable to such vessels.

11.11 Pollution Prevention Record Book

11.11.1 Every river-sea vessel, irrespective of size, shall be provided with a Pollution Prevention Record Book for recording the transfer/discharge of oil/oily water, sewage and garbage in line with 11.3 to 11.9 of this Annex.

11.11.2 The Pollution Prevention Record Book as a minimum shall record disposal of following:

a. Port/Location of transfer/discharge
b. Date & Time of transfer/discharge
c. Quantity of transfer/discharge

11.11.3 River-sea vessels provided with a separate Oil Record Book, Garbage Record Book and Sewage Record Book shall be deemed to satisfy the requirements set out in para 11.11.1.

11.11.4 Whenever any oil/oily water, sewage or garbage is transferred to a shore reception facility, the receipt from the receiver is to be kept on board at least until the next survey.

ANNEX : 12 Domestic Safety Management (DSM) Code

12.1 Equivalence

Pursuant to the exemption of RSVs from provisions of Section 356 C(2), 356 E and 356 F of the M.S. Act and Rules made thereunder, the regulations contained in this Annex provide an alternative safety standard acceptable to the Administration.

12.2 Application

This Annex shall apply to all river-sea vessels of 500 GT and above.

12.3 Introduction

12.3.1 The Domestic Safety Management Code (DSM Code), hereinafter referred to as the "Code", is a code that is based on general principles and objectives of ship safety management, and expressed in such terms that it can be applied to vessels plying exclusively under River-sea vessel rules.

12.3.2 Considering the "Company" operating Indian River-Sea vessels may consist of single owners/operators, it is not anticipated that their documented safety management systems may not be as extensive in coverage or detail as would be expected from a company operating ships certificated under the International Safety Management (ISM) Code.

12.3.3 In view of the above, all such companies operating Indian River-Sea vessels are required to comply with following requirements for development and implementation of Safety Management System.

12.4 Objectives

12.4.1 The purpose of developing the Code is to establish a common standard for safe operation of River-sea vessels engaged exclusively in the domestic trade.

12.4.2 It is recognised that no two shipping companies or ship owners are the same, so also the operations, size and nature of the ships and that ships operate under a wide range of different conditions and locations. For these reasons, the Code is based upon general safety principles and the objectives of the Code are to:

- Ensure safety in the operation of ship
- Prevent injury, loss of life, damage to property and environment
- Comply with applicable rules and guidelines

12.5 The Safety Management System

In order to meet with the objectives of the Code, owners/operators/managers who has assumed the responsibility for operation of the ship and discharge the duties and responsibility of the Code (hereinafter referred to as "Company") of Type 1 & Type 2 River-sea vessels shall develop "Safety and environmental protection policy" and suitable check list for daily reporting of the vessel covering with elements of the DSM code.

For Type 3 & 4 River-sea vessels Company shall develop a Safety Management System meeting the requirements of the Code.

12.6 Safety and environment protection policy

12.6.1 The Company shall develop and implement a policy to address the issues of safety and the protection of environment to fulfill the objectives of the Code.

12.6.2 The Company shall ensure that the policy is implemented and maintained at all levels of the organization, both ship-based and shore-based.

12.7 Responsibilities and Authority

12.7.1 Company Responsibilities and Authority: Incase the Company who is responsible for the operation of the River-sea vessel is other than the owner must report the full name and details of such Company to the administration.

12.7.2 The Company shall define & document the responsibility, authority and interrelation of personnel who manage, perform and verifying work relating to and effecting safety and the protection of environment.

12.7.3 The Company is responsible for ensuring that adequate resources and shore-based support is provided to designated person and master to carry out his functions.

12.8 Designated Person:

12.8.1 The Company shall nominate an employee as Designated Person ashore, who is having appropriate knowledge on River-sea vessel operation and having direct access to top management. The designated person shall be responsible for the safe operation of each River-sea vessel and he should provide link between company and those on board ship.

12.9 Master's Responsibility and Authority:

12.9.1 Master shall be responsible for the safe operation of ship and he shall ensure safety and environmental protection policy of the company implemented on board ship.

12.9.2 The Company shall establish in the safety management system that the master has the overriding authority to make decisions regarding the safety and to request the company's assistance as and when required.

12.10 Resources and Personnel

12.10.1 The Company shall ensure that each river-sea vessel is manned with qualified, certified and medically fit personnel at all times and that these personnel have received appropriate training for their designated duties;

12.10.2 Prior to the first occasion of working on the river-sea vessel, each employee must receive appropriate familiarisation training and proper instruction of onboard procedures. This could include but not necessarily limited to:

a) Mooring and unmooring;

b) Launching and recovery of survival craft;

c) Evacuation from all areas of the river-sea vessel;

d) Donning of lifejackets;

e) Use and handling of firefighting equipment; and

f) Safe operation of ship.

12.11 Shipboard Operations

12.11.1 The Company shall identify key shipboard operations with regards to safety of the personnel, ship and protection of environment.

12.11.2 The Company shall develop simple procedures for the key shipboard operation of the river-sea vessel. These shall include, but not limited to:

a) Testing of equipment, including steering gear, prior to commencement of passage;

b) Navigation and handling of the river-sea vessel;

c) Maintenance routines;

d) Bunkering operations;

e) Cargo operations;

12.12 Preparation for emergencies

12.12.1 Potential emergencies likely to be encountered by the river-sea vessel must be considered;

12.12.2 Exercises/drills must be carried out in handling of all the emergencies and evacuation from the river-sea vessel;

12.12.3 Where possible, all personnel shall be involved in these exercises/drills, both ashore and on board ship;

12.12.4 The exercises/drills must be recorded. The names of those who participated shall also be recorded. Attempt to be made that all ship board personnel are involved while carrying out drill/exercises.

12.13 Reporting of accidents

12.13.1 All accidents and near accidents shall be recorded and reported to the Company, who shall implement corrective action, with the aim of improving safety and protection of environment.

12.14 Certification & review

12.14.1 Every Company responsible for operations & management of Type 3 or Type 4 river-sea vessels shall be required to be in possession of a valid Domestic Document of Compliance (DDOC).

12.14.2 Assessment of the Company's safety management arrangements and related documentation ashore shall be carried out twice in five years by means of an audit carried out by the Administration or a Recognised Organisation acting on it's behalf at the Company's office premises;

12.14.3 Assessment of the Company's safety management arrangements and related documentation onboard the river-sea vessels shall be carried out annually by the Administration or a Recognised Organisation acting on it's behalf during the annual survey as set out in para 10.4.1. No separate audit shall be required to be carried out for assessment of safety management arrangements or related documentation on board the Company's river-sea vessels;

12.14.4 Compliance with the shore-based requirements of the Code shall be demonstrated by way of possession of a "Domestic Document of Compliance" (DDOC);

12.14.5 Compliance with the Code onboard river-sea vessels shall be recorded in sub-clause 2.1 on the Indian River-Sea Vessel Safety Certificate, as setout in Para 10.9.1. Satisfactory implementation of the system onboard shall be verified during the annual survey of RSV safety certificate.

12.14.6 The river-sea vessel shall not be required to carry any separate certificate demonstrating compliance with the Code.

12.14.7 Every Company shall undertake a review of its safety management system at least once every 5 years.

12.15 Guidelines on Implementation of the Code

12.15.1 Document Review & Planning

12.15.1.1 The purpose of the document review is to verify that the Company has a documented Safety Management System that complies with the requirements of the Code**.**

12.15.1.2 The document review shall be conducted prior to the application for the DDOC in order to provide sufficient time to draft and implement any major revisions that the audit/assessment may require.

12.15.1.3 The draft SMS may be sent to the Administration or Recognised Organisation acting on its behalf for the document review.

12.15.1.4 The SMS shall not be burdensome. The system shall cover the requirements of the Code in terms of the procedures etc. necessary to safeguard safety and environmental protection without imposing an excess of paperwork.

12.15.2 Assessment for Compliance

12.15.2.1 Every company responsible for management and operations of Type 3 & 4 River-Sea Vessels shall submit their SMS to the Administration or Recognised Organisation acting on its behalf for document review.

12.15.2.2 Upon satisfactory completion of the document review, an initial audit of the Company's safety management arrangements and related documentation ashore shall be carried out by the Administration or Recognised Organisation acting on its behalf in line with para 12.14.2.

12.15.2.3 Upon satisfactory completion of the initial audit, the Company may be issued a full-term “Domestic Document of Compliance” (DDOC) valid for a maximum period of 5 years.

12.15.2.4 A mid-term audit of the Company’s safety management arrangements and related documentation ashore shall be carried out by the Administration or Recognised Organisation acting on its behalf 2 ½ years (+/- 6 months) after the issuance of a full-term DDOC.

12.15.2.5 A renewal audit of the Company’s safety management arrangements and related documentation ashore shall be carried out by the Administration or Recognised Organisation acting on its behalf upon the expiry of the full-term DDOC. Upon satisfactory completion of the renewal audit, a fresh full-term DDOC, valid for a maximum period of 5 years, may be issued to the Company.

12.15.2.6 The first assessment of the Company’s safety management arrangements and related documentation onboard the river-sea vessels shall be carried out by the Administration or a Recognised Organisation acting on its behalf during the first annual survey immediately following the issuance of the full-term DDOC.

12.15.2.7 Thereafter, the assessment of the Company’s safety management arrangements and related documentation onboard the river-sea vessels shall be carried out by the Administration or a Recognised Organisation acting on its behalf in line with para 12.14.3 above.

12.15.2.8 It is to be expected that a considerable variance in methodology, practice and record keeping will prevail across the various domestic operators. For this reason, surveyors/auditors are expected to adopt a non-prescriptive and flexible approach to the assessments/audits.

12.15.3 Non-conformities and Corrective Actions

12.15.3.1 Non-conformities shall fall into 3 categories:

a) *Major Non-Conformity* means an identifiable deviation that poses a serious threat to personnel or ship safety, and requires immediate corrective action

b) *Non-Conformity* means an observed situation where objective evidence indicates a non-fulfillment of a specified requirement of the Code.

c) *Observation* means a statement of fact made during an audit/survey that can be substantiated by objective evidence.

12.15.3.2 Closing out of non-conformities

a) If a major non-conformity is raised, arrangements shall be made for the issue to be addressed immediately. The Company must take immediate remedial action that will allow the major non-conformity to be closed out or downgraded to a non-conformity before the close of audit.

b) If a non-conformity is raised, a time-scale for the implementation of corrective action, not exceeding 3 months, shall be agreed to by the auditor and the Company.

c) Observations require no corrective action date but the Company shall be advised that, if not addressed by the next assessment, the observation may become a non-conformity in future.

12.15.3.3 Corrective Action

a) The auditor and the Company shall agree to a suitable corrective action, within a realistic time-scale, at the time of the assessment.

b) The Company shall be responsible for carrying out the corrective actions and reporting to the Administration or Recognised Organisation acting on its behalf prior to the agreed action date.

c) The close out of non-conformities other major non-conformity will not necessarily require a re-visit by the auditor. The presentation of suitable objective evidence will be sufficient for closing out non-conformities.

ANNEX : 13 Ship Security

13.1 Equivalence

Pursuant to the exemption of RSVs from provisions of Section 344 O, 344 Q and 344 R of the M.S. Act and Rules made thereunder, the regulations contained in this Annex provide an alternative safety standard acceptable to the Administration.

13.2 Application

This Annex shall apply to all river-sea vessels

13.3 General

River-Sea Vessels shall comply with requirements stipulated in the following security matrix:

Type of Vessel	SSP	SSO	CSO	SSAS *	Sec. Equip	Audit of system and verification of equipment
Type 1	Y	N	Y	N	As stipulated in para 3 of this Annex	Port facility
Type 2	Y	N	Y	N		Port facility
Type 3 GT < 500	Y	N	Y	N		IRS
Type 3 GT > 500	Y	Y (need not be certified but to be trained by CSO)	Y	N		IRS
Type 4 GT < 500	Y	Y (need not be certified but to be trained by CSO)	Y	N		IRS
Type 4 GT > 500	Y	Y	Y	**Y** (without web display)		IRS

13.4 Ship Security Plan

The SSP referred to in the above matrix shall be a basic Ship Security Plan that shall at a minimum include policies & procedures covering points detailed in Appendix I to this Annex. The SSP shall be user-friendly and contain practical security measures to ensure the security readiness of the River-Sea vessels when operating in and around Indian port and in Indian territorial waters.

13.5 Compliance and verification

13.5.1 Audit of system and verification of equipment of the vessel's security arrangements and related documentation onboard the river-sea vessels shall be carried out annually by the Administration or a Recognised Organisation acting on its behalf during the annual survey as set out in para 10.4.1.

13.5.2 Compliance with the security measures onboard river-sea vessels as required by this Annex shall be verified under clause 2.5 of the Indian River-Sea Vessel Safety Certificate, as set out in Para 10.9.1. The compliance with the requirement of security equipment onboard river-sea vessels as stipulated in para 13.6 shall be recorded in the Record of Equipment and Ship Information,

as set out in para 10.9.1. River-sea vessels shall not be required to carry any separate certificate demonstrating compliance with this Annex.

13.6 Security Equipment

The Security Equipment referred to in the above matrix shall, at a minimum, include:

Security Equipment	**Type 1**	**Type 2**	**Type 3**	**Type 4**
General Alarm	1 no.	1 no.	1 no.	1 no.
High Beam Torch	1 no.	2 no.	2 no.	2 nos.
Batons	2 nos.	2 nos.	2 nos.	2 nos.
Photo ID for Crew	All Crew	All Crew	All Crew	All Crew
Flood Light (Fixed or Portable)	NR	NR	2 nos.	2 nos.
Walkie Talkies	NR	2 no.	2 nos.	2 nos.
Whistles	3 nos.	3 nos.	3 nos.	3 nos.
Dog Leg Mirror	1 no.	2 no.	2 no.	2 no.
Hand Held Metal Detector	1 no.	2 no.	2 no.	2 no.
Cable ties	Adequate	Adequate	Adequate	Adequate
Different code colour passes for visitors	NR	Adequate	Adequate	Adequate
Night vision binoculars	NR	NR	1 no.	1 no.
Automatic Identification System	As Stipulated in Annex VIII			

NR indicates "Not Required"

Appendix 1

Access Control Security Measures

- Maintain a 24-hour watch when in operations
- Positively identify anyone accessing the vessel
- Limit physical access to the vessel and its sensitive areas (e.g. wheelhouse & engine room)
- Screen and check packages, supplies and stores
- Adequate lighting at access points of the vessel

Activity Security Measures

- Secure all unused exit/entrance doors
- Ensure seaward side / quay side surveillance is maintained
- Check for evidence of tampering regularly (e.g. damaged locks, vandalism, open doors, etc.)
- Deny access to unauthorised persons to come onboard
- Report any unattended or suspicious packages, baggage or stores found on board to the relevant Authorities

Security Measures while Navigating in Port and coastal waters

- Maintain appropriate security level
- Keep a sharp look out for small unlit crafts
- Maintain situational awareness for any suspicious activity/craft
- Report any suspicious activity/craft to the appropriate Authorities

Communication, Security Measures & Contact Information

- Keep communication equipment readily available for reporting of incidents or suspicious activity to relevant authorities
- To report any suspicious activity/craft or person or to seek security advice, please contact:

  CSO (contact details) …….

  PFSO (contact details)……..

  MRCC (contact details)…….

  DG Comm. Centre Tel 1: +91 22 2261 0606

  Tel 2: +91 22 2261 4646

  Tel 3: +91 22 3295 9320

  Email: dgcommcentre@satyammail.net

ANNEX : 14 Carriage of Cargoes

14.1 Equivalence

14.1.1 Pursuant to the exemption of RSVs from provisions of Section 330, 331, 331A & 332 of the M.S. Act and the rules made thereunder and M.S (Carriage of cargo Rules), 1995 (as amended), the regulations contained in this Annex provide an alternative safety standard acceptable to the Administration.

14.2 Application

14.2.1 This Annex shall apply to all Type 3 (where specified) and Type 4 river-sea vessels. The provisions of this Annex shall also be extended to Type I & II vessels as the case may to the extent possible and if practicable and necessary.

14.3 Cargo information

14.3.1 The shipper shall provide the Master or his representative with appropriate information on the cargo sufficiently in advance of loading to enable the precautions which may be necessary for proper stowage and safe carriage of the cargo to be put into effect.

14.3.2 In the case of general cargo, the cargo information shall include a general description of the cargo, the gross mass of the cargo or of the cargo units, and any relevant special properties of the cargo.

14.3.3 In the case of solid bulk cargo in vessels other than Type 4 RSVs of 1600 GT and above, the information shall include description of cargo, mass, stowage factor, need for trimming and trimming procedures, angle of repose and moisture content.

14.3.4 In the case of Oil/Chemical a copy of MSDS issued either by the manufacturer or shipper, as the case may be, to be available on boa

14.4 Stowage and securing of cargo

14.4.1 Cargo carried on or under deck shall be so loaded, stowed and secured as to prevent as far as is practicable, throughout the voyage, damage or hazard to the ship and the persons on board, and loss of cargo overboard. The stowage and securing of the cargo shall confirm to the provision of applicable code or the provision of M.S. Act and relevant rules framed there under for the carriage of cargo. Applicable codes namely IMDG, IMSBC, Grain, Timber & Cargo stowage and securing code.

14.4.2 For Type 4 RSVs of 1600 GT and above, all cargoes, other than solid and liquid bulk cargoes, shall be loaded, stowed and secured throughout the voyage in accordance with the Cargo Securing Manual approved by the Administration or Recognized Organization acting on its behalf.

14.5 Dangerous goods

14.5.1 Type 3 RSVs of 1600 GT and above and Type 4 RSVs while carrying dangerous cargoes in packaged form or in bulk, other than Type 4 RSVs of less than 1600 GT carrying coal or sulphur in bulk,are required to comply with the requirements of the International Maritime Dangerous Goods Code (IMDG Code), Marpol Annex III and the International Maritime Solid Bulk cargo Code (IMSBC Code) as appropriate.

14.5.2 Compliance with the requirements of para 14.5.1 of this Annex shall be demonstrated by means of a certificate issued by the Administration or Recognised Organisation acting on its behalf.

14.5.3 Type 4 RSVs of less than 1600 GT, while carrying coal, shall comply with the following requirements:

14.5.3.1 Electrical equipment and cables in the cargo spaces (if applicable) are to be in good condition and positively isolated via removal of circuit breakers

14.5.3.2 Workspaces (stores, workshops etc.) adjacent to the cargo spaces are to be adequately ventilated.

14.5.3.3 Direct blowing of air into the body of the cargo is to be avoided

14.5.3.4 Cargo spaces ventilation fans, where fitted, are to be of a certified safe type for use in explosive atmospheres

14.5.3.5 Good surface ventilation shall be provided for the cargo

14.5.3.6 Means are to be provided for measuring the temperature of the cargo in the range 0º C to 100º C and pH values of bilge water samples. Such arrangements shall enable the temperature of the coal and the pH values to be measured while being loaded and during the voyage without requiring entry to the cargo space

14.5.3.7 All sources of ignition shall be eliminated. Prohibition Notices for welding, burning, cutting or other operations involving the use of fire, smoking, chipping and use of naked lights, or the introduction of other sources of ignition including the use of spark or arc-producing equipment, are to be posted in the vicinity of cargo spaces

14.5.3.8 Cargo spaces containing this cargo may become oxygen-depleted. Notices to this effect, warning that precautions shall be taken prior to entry, shall be prominently displayed in the cargo area.

14.5.3.9 Calibrated instruments suitable for use from outside the cargo spaces for measuring (a) Methane concentration, (b) Oxygen concentration (c) Carbon Monoxide concentration, are to be provided. The instrument shall be fitted with an aspirator, flexible connection and a length of tubing to enable a representative sample to be obtained from within the square of the hatch. The tubing shall be stainless steel approximately 0.5 meters in length and 6 mm nominal internal diameter with an integral stainless steel threaded collar

14.5.4 Type 4 RSVs of less than 1600 GT, while carrying sulphur (crushed, lump and coarse grain), shall comply with the following requirements:

14.5.4.1 Calibrated Electrical fuses in cargo spaces shall be extracted.

14.5.4.2 Spark-arresting screens (wire mesh guards) shall be fitted over inlet and outlet ventilation openings.

14.5.4.3 All sources of ignition shall be eliminated. Prohibition Notices for welding, burning, cutting or other operations involving the use of fire, smoking, chipping and use of naked lights, or the introduction of other sources of ignition including the use of spark or arc-producing equipment, are to be posted in the vicinity of cargo spaces

14.6 Grain

14.6.1 Type 3 & 4 RSVs while carrying grain are required to comply with the requirements of the International Code for the Safe Carriage of Grain in Bulk adopted by resolution MSC.23(59) and the relevant provision of M.S. Act including the rules framed there under.

14.6.2 Compliance with the requirements of Para 14.6.1 of this Annex shall be demonstrated by means of a certificate issued by the Administration or Recognised Organisation acting on its behalf

14.7 Liquid cargoes

14.7.1 RSV Tankers shall only carry the following cargoes:

14.7.1.1 Non-petroleum, non-hazardous liquid cargoes having flash point of above 60 degrees Celsius

14.7.1.2 Petroleum products having flash point of above 60 degrees Celsius

14.7.1.3 Vegetable oils of the following types:

- Castor oil
- Coconut oil
- Corn oil
- Cotton seed oil
- Groundnut oil
- Illipe oil
- Linseed oil
- Mango kernel oil
- Palm kernel oil
- Palm kernel olein
- Palm mid fraction
- Palm oil
- Palmolein
- Palm stearin
- Rapeseed oil
- Rice bran oil
- Safflower oil
- Soyabean oil

- Sunflower seed oil
- Tallow
- Tung oil

14.8 Emergency/Pollution/Response

14.8.1 All River Sea Vessels while carrying dangerous cargoes or cargoes hazardous in nature in bulk or in packaged form as determined by IMSBC Code, IMDG Code and MARPOL, Annex-III as the case may be shall be guided by emergency response measures to be adopted during operational and accidental pollution as prescribed in the contingency documents maintained on board such vessels in accordance with the provisions of domestic safety management system referred to in Annex 12. Such response measures shall highlight the reporting procedures, responsibility and authority of master & crew, response procedures in respect of navigational & seamen-ship aspect, training / drills / exercises to the extent practicable and minimum maintenance of response equipments for the said purpose

14.9 Civil liability for oil pollution damage

14.9.1 All RSV tankers carrying more than 2000 tons of oil in bulk as cargo shall maintain appropriate insurance cover or other financial security available in Indian insurance market as on date conforming to the relevant provisions of Merchant Shipping Act, 1958.

14.9.2 All RSV tankers carrying less than 2000 tons of oil in bulk as cargo involved in pollution incident shall be covered by the Fund, established under Fund, 1992 Convention to which India is party.

14.10 Oil / HNS pollution damage including wreck removal for RSV cargo ships

14.10.1 All RSV vessels other than RSV tankers shall maintain in Insurance cover or other financial security available in Indian insurance market as on date conforming to the provisions of M.S. Act, 1958 as against oil / HNS pollution damage /damage to property and wreck removal.

ANNEX : 15 CDC and Articles of Agreement

15.1 Equivalence

15.1.1 Pursuant to the exemption of RSVs from the provisions of Section 99 and 100 of MS Act and Rules made thereunder.

15.2 Application

15.2.1 This Annexure shall apply to IV crew engaged on all the RSVs.

15.3 Continuous Discharge Certificate-cum-Seafarers Identity Document (CDC-cum-SID)

15.3.1 The IV crew engaged on RSVs are exempted from possession of a CDC-cum-SID, provided, they are in possession of any photo identity card issued by a State or Central Government.

15.4 Articles of Agreement

15.4.1 The IV crew engaged on RSVs are exempted from entering into an article of Agreement as prescribed under the Act, provided there exists an Agreement, in a form acceptable to both the IV crew and the employer.