

RULES FOR CLASSIFICATION

High speed and light craft

Edition December 2015

Part 5 Ship types

Chapter 6 Small service craft

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FOREWORD

DNV GL rules for classification contain procedural and technical requirements related to obtaining and retaining a class certificate. The rules represent all requirements adopted by the Society as basis for classification.

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CURRENT – CHANGES

This is a new document.

The rules enter into force 1 July 2016.

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SECTION 1 GENERAL

1 Introduction

1.1 Objective

The objective of this chapter is to define service craft design requirements. As domestic requirements for service vessels vary between nations and are not harmonized, this chapter also includes safety requirements normally covered by flag administrations.

Guidance note:

It is recommended to contact the flag administration early in the process, as the individual flag administrations may have additional or alternative requirements.

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1.2 Scope

[Sec.1](#) of this chapter describes the scope, interaction with national requirements, relation to other society documents and relevant procedural requirements. [Sec.2](#) describes class requirements regarding arrangement, hull strength and equipment, machinery, electrical systems, control and monitoring systems. [Sec.3](#) describes safety requirements regarding navigation and radio, stability, watertight and weathertight integrity, fire safety and life-saving arrangements.

1.3 Applications

1.3.1 The rules in this chapter apply to small service crafts having a load line length less than 24 metres that are engaged in domestic or regional trade transporting cargo and up to 12 workers or passengers to offshore installations.

1.3.2 Vessels constructed and equipped, surveyed and tested in accordance with the rules of this chapter will be assigned the class notation **Service**.

1.3.3 For craft certified by the flag Administration to carry more than a total of 15 persons onboard, MARPOL 73/78 Annex IV (sewage certificate) applies.

1.3.4 The rules do not apply to craft carrying passengers or cargo as defined under the 2000 HSC Code, nor do they apply to ships covered by the SOLAS convention.

1.4 Relation to other Society documents

For service crafts operating on windfarms the additional class notation **Windfarm** may be applied, see [Pt.6 Ch.4 Sec.3](#).

2 Procedural requirements

2.1 Service area restriction notations

2.1.1 Service craft shall be built in accordance with one of the service restrictions **R1**, **R2**, or **R3**.

2.1.2 With reference to [Pt.1 Ch.2 Sec.5](#), service restrictions are amended for the purposes of this chapter as follows in [Table 1](#).

Table 1 Service restrictions for service craft, nautical miles

Condition	Notation	Winter	Summer	Tropical
Ocean	R1	150	300	300
Offshore	R2	75	125	250
Coastal	R3	30	50	100

2.2 Operation Limitation

2.2.1 Limitations of speed versus sea state (significant wave height) will be given corresponding to the design vertical acceleration at longitudinal centre of gravity LCG.

2.2.2 The approved maximum number of persons for which the craft is designed and equipped for normal operation at sea, will be stated in the *Appendix to the Classification Certificate*.

2.3 Documentation requirements

2.3.1 Documentation requirements applicable for small service craft are given by [Table 2](#) and [Table 3](#). [Table 2](#) gives document requirements related to core class requirements and [Table 3](#) gives document requirements related to safety requirements. These requirements substitute the requirements given by [Pt.2](#), [Pt.3](#) and [Pt.4](#).

2.3.2 Documentation shall be submitted as required by [Table 2](#) and [Table 3](#).

Table 2 Documentation requirements

Object	Documentation type	Additional description / Required data	Info
Operation	Z222 – Vessel operation manual		FI
Structural materials	M010 – Material specification, metals		FI; L
Structural materials, composite	M030 - Material specification, non-metallic materials		FI
	Z110 – Data sheet	Details of all laminates and panels, stacking sequence and the mechanical properties used for the design.	FI
	Z120 – Test procedure at manufacturer	Qualification testing.	AP; L
	Z130 - Report from test at manufacturer	Production testing of materials	AP
Structural fabrication	H131 – Non-destructive testing (NDT) plan		AP; L
Welding	H140 - Welding tables		AP
	M060 – Welding procedures		AP; L
	M061 – Welding procedures qualification record		AP; L
Ship hull structure	H030 – Tank and capacity plan		FI

Object	Documentation type	Additional description / Required data	Info
	H052 – Midship section drawing	<ul style="list-style-type: none"> – Beam waterline, B_{WL} – Full displacement, Δ – Deadrise at LCG, β_{CG} – Maximum vertical acceleration, a_{CG} – Frame spacing – Material specs incl. welding consumables – Operational envelope as required in Sec.2 [1.3.2] 	AP
	H060 – Shell expansion drawing		AP
	H081 – Design analyses - longitudinal strength	If $L/D > 12$ or $L > 50$ m.	FI
Decks	H050 – Structural drawing	including: <ul style="list-style-type: none"> – Cargo loads as required in Sec.2 [1.6] – Foundations for all deck fittings and equipment – Foundations for resilient mounts as required in Sec.2 [1.7]. 	AP
	H190 - Container stowage and securing manual	<ul style="list-style-type: none"> – Container stowage arrangements as required in Sec.2 [1.6] – Details of maximum forces in container supports, adjoining hull structures, lashings, containers. 	FI
Transverse bulkheads	H050 – Structural drawing	Including scantlings, openings and their closing appliances.	AP
Longitudinal bulkheads	H050 – Structural drawing	Watertight bulkheads	AP
Superstructure	H050 – Structural drawing	Including (as applicable): <ul style="list-style-type: none"> – Details of resilient mounts (type and technical specification including capacity) and the expected loads – Details of flexible skirts (material properties, longevity and durability) 	AP
Anchoring, mooring and towing arrangements	Z030 – Arrangement plan	Including loads.	FI
Anchoring arrangement	H100 – Equipment number calculation		AP
	Z090 – Equipment list	Including type of anchor, grade of anchor chain and type and breaking load of steel and fibre ropes.	AP
Anchor winch supporting structure	H050 – Structural drawing		AP

<i>Object</i>	<i>Documentation type</i>	<i>Additional description / Required data</i>	<i>Info</i>
Mooring equipment supporting structure	H050 – Structural drawing		AP
Shipboard crane supporting structure	H050 – Structural drawing	Including the location of the cranes during operation and in parked position, including: <ul style="list-style-type: none"> – crane model – self-weight – maximum lifting moment or SWL and corresponding arm – dynamic coefficient – maximum Hs for crane operations 	AP
Propeller shaft bracket	H050 – Structural drawing		AP
Conventional steering arrangements	Z030 – Arrangement plan		FI
	H050 – Structural drawing	Rudder including details of bearings, pintles rudder lock arrangement, rudder stock including details for couplings, bolts and keys	AP
	H050 – Structural drawing	Steering gear supporting structure	AP
Active motion and trim control arrangement	H050 – Structural drawing	Trim flaps or foils.	AP
Waterjet duct	H050 – Structural drawing		AP
Stability	B010 – Lines plan and offset tables		FI
	B030 – Internal watertight integrity plan		FI
	B050 – Preliminary stability manual		AP
	B070 – Preliminary damage stability calculation		AP
	B100 – Inclining test and lightweight survey procedure		AP
	B110 - Inclining test or lightweight survey report		AP
	B120 – Final stability manual		AP
	B130 – Final damage stability calculation		AP
	B200 – Freeboard plan		AP
Windows and side scuttles	C030 – Detail drawing	Including window specifications, e.g. type of glass, method of attachment and storm shutters.	AP
External watertight and weathertight integrity	C030 – Detail drawing	Including hatch and door arrangement, scantlings, supporting structures, securing devices and locking devices.	AP

<i>Object</i>	<i>Documentation type</i>	<i>Additional description / Required data</i>	<i>Info</i>
Electric power system, general	E010 – Overall single line diagram	Including list of consumers and information about circuit protection and cable dimensions for all alternating current (AC) and direct current (DC) distribution systems.	AP
	E040 – Electrical power consumption balance	Direct current (DC) systems. Uninterruptible power supply systems.	AP
	E040 – Electrical power consumption balance	Alternating current (AC) systems.	AP
	E080 – Discrimination analysis		AP
	E170 – Electrical schematic drawing	Emergency stop of electrical propulsion motors, oil pumps and ventilation fans, showing fail to safe functionality.	AP
	E200 – Short circuit calculations		FI
	E220 – Electrical system philosophy	Not required if the 'Overall single line diagram' is sufficient to give necessary understanding of the operation and relevant operation modes of the system.	FI
Bilge water system	S010 – Piping diagram (PD)		AP
Fuel oil system	S010 – Piping diagram (PD)		AP
Lubrication oil system	S010 – Piping diagram (PD)		AP
Sea water system	S010 – Piping diagram (PD)		AP
Sea chests	H050 – Structural drawing	Arrangement of sea water inlets and discharges.	AP
	S050 – Connections to the shell and to sea chests		
Exhaust gas systems	S010 – Piping diagram (PD)		AP
Air, sounding and overflow systems	S010 – Piping diagram (PD)		AP
Scuppers	S010 – Piping diagram (PD)		AP
Anchor windlass hydraulic system	S010 - Piping diagram (PD)		AP
Valve control hydraulic system	S010 - Piping diagram (PD)		AP
Internal watertight doors / ramps hydraulic system	S010 – Piping diagram (PD)		AP
Propulsion control and monitoring system	I030 - System block diagram (topology)		AP
	I050 - Power supply arrangement		AP
Steering control and monitoring system	I030 - System block diagram (topology)		AP

Object	Documentation type	Additional description / Required data	Info
	I050 - Power supply arrangement		AP
Vessel arrangement	Z010 – General arrangement plan	Including engine room arrangement	FI
Emergency lights	Z030 – Arrangement plan		AP
AP = For approval; FI = For information ACO = As carried out; L = Local handling; R = On request; TA = Covered by type approval; VS = Vessel specific			

Table 3 Documentation requirements – Safety requirements

Object	Documentation type	Additional description	Info
Navigation systems	Z090 – Equipment list		AP
Navigation bridge	N020 – Vertical field of vision drawing		AP
	N030 – Horizontal field of vision drawing		AP
Navigation lights and shapes, and sound signal appliances	Z030 – Arrangement plan	Including details of lanterns and their horizontal and vertical locations.	AP
External communication systems	Z090 – Equipment list		AP
Safety, general	G040 – Fire control plan		AP
	G050 – Safety plan	An arrangement drawing showing location of all the safety equipment described in Pt.5 Ch.9 Sec.3 [3]	AP
Emergency escape	G120 – Escape route drawing		AP
Structural fire protection arrangements	G060 – Structural fire protection drawing		AP
Fire detection and alarm system	I200 – Control and monitoring system documentation		AP
	Z030 – Arrangement plan		AP
Fire water system	G200 – Fixed fire extinguishing system documentation		AP
Machinery spaces fixed gas fire extinguishing system	G200 – Fixed fire extinguishing system documentation		AP
Accommodation fixed water spraying fire extinguishing system	G200 – Fixed fire extinguishing system documentation	Only required where the hull is constructed of combustible materials	AP
Ventilation system	S012 – Ducting diagram (DD)		AP

Object	Documentation type	Additional description	Info
AP = For approval; FI = For information ACO = As carried out; L = Local handling; R = On request; TA = Covered by type approval; VS = Vessel specific			

For general requirements to documentation, including definition of the info codes, see [SHIP Pt.1 Ch.3 Sec.2](#).
For a full definition of the documentation types, see [SHIP Pt.1 Ch.3 Sec.3](#).

2.4 Certification requirements

2.4.1 Products shall be certified as required by [Table 4](#) and [Table 5](#).

Table 4 Certification requirements

<i>Structure and Equipment</i>				
<i>Object</i>	<i>Certificate type</i>	<i>Issued by</i>	<i>Certification standard*</i>	<i>Additional description</i>
Structural materials	MC	Society		Including hull plating forming part of a waterjet insert.
Rudder and rudder stock	PC	Society		Rudder stock and blade
Anchoring and mooring equipment				
<i>Object</i>	<i>Certificate type</i>			<i>Additional description</i>
Anchors	W	Manufacturer		Materials and shackles
Anchor chain cables				
Anchor chain joining shackles				
Windlass				
Anchor fibre ropes	TR	Manufacturer		
Water- and weathertight integrity				
<i>Object</i>	<i>Certificate type</i>	<i>Issued by</i>	<i>Certification standard*</i>	<i>Additional description</i>
Watertight doors and hatches	TA	Society		Can, as an alternative, be approved and tested on an individual basis
Weathertight doors and hatches				
Adhesives for windows				See Pt.3 Ch.6 Sec.3 [7.3]
Arrangement				
<i>Object</i>	<i>Certificate type</i>	<i>Issued by</i>	<i>Certification standard*</i>	<i>Additional description</i>
Permanent seats	TA	Society		
Machinery¹⁾				
<i>Object</i>	<i>Certificate type</i>	<i>Issued by</i>	<i>Certification standard*</i>	<i>Additional description</i>

Diesel engines	TA	Society		In addition, a TR issued by the manufacturer.
Reduction gears				
Flexible couplings				
Water jet				
Propellers				
Shafting				
Steering gear				
Podded and geared thrusters ²⁾				
Piping systems				
<i>Object</i>	<i>Certificate type</i>	<i>Issued by</i>	<i>Certification standard*</i>	<i>Additional description</i>
Bilge pump	PC	Society		
Fire pump				
Ballast water pump				
Flexible hoses with couplings	TA	Society		
Detachable connections				
Level gauge				
Plastic pipes				
Electrical systems				
<i>Object</i>	<i>Certificate type</i>	<i>Issued by</i>	<i>Certification standard*</i>	<i>Additional description</i>
Main switchboards	PC	Society		
Cables	TA	Society		
*Unless otherwise specified the certification standard is the rules. 1) Machinery components which are not type approved by the Society shall be case by case approved and certified, see Sec.2 [5.2.2] 2) Auxiliary thrusters, e.g. bow thrusters, below 300 kW have simplified certification requirements, see SHIP Pt.4 Ch.5 Sec.3 [1.1.1]				

Table 5 Certification requirements – Safety requirements (Continued)

Fire safety				
<i>Object</i>	<i>Certificate type</i>	<i>Issued by</i>	<i>Certification standard*</i>	<i>Additional description</i>

Fire resisting division	TC ¹	Society		In lieu of existing TA systems and equipment may also be accepted on the basis of successful testing in accordance with IMO Fire Test Procedure Code or IMO Fire Safety Systems Code
Fire doors				
Fire dampers				
Penetrations				
Fire Detection System	TC ¹	Society		All components shall be certified
Fixed Fire Extinguishing System	TC ¹	Society		
Fire hose nozzle	TC ¹	Society		Dual purpose type (spray/jet)
Fire Pump	PC	Society		
Life saving appliances				
<i>Object</i>	<i>Certificate type</i>	<i>Issued by</i>	<i>Certification standard*</i>	<i>Additional description</i>
Rocket parachute flares	TC ¹	Society		
Life buoys				
Lifejackets				
Immersion suits				
Thermal protective aids				
Life rafts				
Safety of navigation				
<i>Object</i>	<i>Certificate type</i>	<i>Issued by</i>	<i>Certification standard*</i>	<i>Additional description</i>
Compasses	TC	The Administration or their Recognized Organization		As applicable
Speed and distance measuring device				
Echo sounder				
Radars				
Receiver for global navigation satellite system				
Rudder angle indicator				
Direction of steering thrust				
Propeller RPM indicator				
Thrust indicator				
ECDIS or ECS				
Automatic identifications system (AIS)				
Radiocommunications				

<i>Object</i>	<i>Certificate type</i>	<i>Issued by</i>	<i>Certification standard*</i>	<i>Additional description</i>
Radiocommunications equipment	TC	The Administration or their Recognized Organization		
<p>*Unless otherwise specified the certification standard is the rules. 1) For EU/EEA flagged vessels TC shall be EC Type-Examination Certificate in accordance with the Council Directive 96/98/EC as amended issued by a notified body.</p>				

For general certification requirements, see [SHIP Pt.1 Ch.3 Sec.4](#).

For a definition of the certification types, see [SHIP Pt.1 Ch.1 Sec.4](#) and [SHIP Pt.1 Ch.3 Sec.5](#)

SECTION 2 CLASS REQUIREMENTS

1 Structure and equipment

1.1 General

Service craft shall comply with the requirements of Pt.2, Pt.3 Ch.1 and Pt.3 Ch.5, and Pt.3 Ch.2, Pt.3 Ch.3 or/and Pt.3 Ch.4 (as applicable), with the modifications specified in this Section and in the documentation requirements given in Sec.1 [2.3].

1.2 Design vertical acceleration

The designer shall specify an operational envelope regarding wave heights and speed such that the design vertical acceleration is not exceeded according to Pt.3 Ch.1 Sec.2 [2.2]. Signboards showing the above details are to be mounted in an easily visible position in the vessel's wheelhouse, and will be included in the *Appendix to the Classification Certificate*.

Guidance note:

The operational envelope is to be presented in a tabular form with values covering the expected sea states for the vessel.

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1.3 Cargo decks

1.3.1 Decks intended to carry cargo of any type (including containers), shall be marked with signboards stating the maximum load in tonnes per square metre.

1.3.2 The deck shall have scantlings based on specified design cargo load, with a minimum cargo load of 1 t/m², in combination with 80% of the design sea pressure as specified for the main class.

1.3.3 Scantlings of flush hatch covers in the cargo deck area shall be based on a load not less than specified in [1.5.2].

1.3.4 The design cargo load in t/m² will be given in the *Appendix to the Classification Certificate*.

1.4 Containers

1.4.1 Details of maximum forces in container supports, adjoining hull structures, lashings, containers shall be submitted in accordance with Sec.1 [2.3] Table 2.

1.4.2 Containers may be stowed longitudinally or transversely with no stacking. The supporting structure shall be designed so that the rule allowable stresses are not exceeded.

1.4.3 The containers shall be prevented from sliding, lifting or tilting by a system of fixed supports or detachable lashing equipment.

1.4.4 The supporting and lashing equipment shall be arranged and dimensioned in such a way that the supporting forces and internal forces in the containers are within the minimum capabilities of the containers to be used.

1.5 Resilient mounting of superstructures

1.5.1 Areas of the deck and superstructure shall be strengthened in way of mounts for the loads given in [1.7.1].

1.5.2 Arrangements shall be made to limit excessive relative movement between hull and superstructure, both in the vertical and the horizontal directions. In addition, means shall be provided to prevent the superstructure from excessive forward movement due to failure of the mounts in a collision.

1.5.3 Arrangements shall be made to prevent large quantities of sea water and loose objects from entering the gap between the hull and the superstructure.

1.6 Foundations and supporting structures for cranes and lifting appliances

1.6.1 The crane including pedestal flange and bolts or the lifting gear itself is not subject to approval, unless class notation **CRANE** is requested.

Guidance note:

If certification of lifting appliances is requested and the Society shall issue the certificate, approval of documentation will be required. See DNV GL [CG 0378](#) *Standard for Certification of Offshore & Platform Lifting Appliances*.

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1.6.2 The structural strength of foundations and supporting structures shall be based on the safe working load (SWL) multiplied by the design dynamic coefficient " ψ " plus the self-weight. The designer shall specify:

- Crane model
- Self weight
- Maximum lifting moment or SWL and corresponding arm
- the dynamic coefficient " ψ " (minimum 1.5)
- the maximum significant wave height for crane operations.

Guidance note:

Maximum significant wave height for crane operations should normally not exceed 1.5 m.

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1.6.3 The allowable stresses shall be as given in [Pt.3 Ch.2](#), [Pt.3 Ch.3](#), or [Pt.3 Ch.4](#), as applicable. The allowable stress shall be taken from the relevant chapters for plate, stiffeners or girders using allowable stresses as for decks.

1.6.4 In way of structures subject to global bending stresses, the allowable stresses will be especially considered.

1.7 Testing

Upon completion, load test shall be carried out in the presence of a Society surveyor based on a 125% overload dynamic test.

2 Anchoring, mooring and emergency towing arrangement

2.1 General

Service craft shall comply with the requirements of Pt.3 Ch.5 Sec.3, with the modifications specified in this Section.

2.2 Certification

Anchoring and mooring equipment shall be certified in accordance with Sec.1 Table 4.

2.3 Structural arrangement

2.3.1 The general requirements for structural arrangement for anchoring equipment, mooring and towing shall be according to Pt.3 Ch.5 Sec.3 [2.1].

2.3.2 Foundations for anchoring, mooring and towing equipment shall be designed to withstand the minimum breaking strength of the attached chain or line given in Table 1 below.

2.4 Equipment number

The equipment number is calculated according to Pt.3 Ch.5 Sec.3 [3.1].

2.5 Equipment tables

2.5.1 The equipment shall be in accordance with the requirements given in Table 1 reduced as per Table 2.

2.5.2 The required anchoring equipment is suitable for use in reasonably sheltered waters only.

Table 1 Equipment table, R1, R2 and R3

Equipment No.	Equipment letter	Anchors			Stud-link chain cables ⁴⁾				Mooring lines		
		Number ¹⁾	Mass per anchor kg		Total length m	Diameter and steel grade			Minimum breaking Strength kN	Steel or fibre ropes	
			HHP ²⁾	SHHP ³⁾		NV K1 mm	NV K2 mm	NV K3 mm		Minimum number and length m	Minimum breaking Strength kN
30 to 40	a0y1	1	70	46	82	11			51	4 × 40	32
40 to 50	a0y2	1	88	58	82	11	11		51	4 × 40	32
50 to 60	ay1	1	106	70	82	12.5	11		66	4 × 40	34
60 to 70	ay2	1	123	81	82	12.5			66	4 × 40	34

70 to 80	by1	1	141	93	109	14	12.5		82	4 × 50	37
80 to 90	by2	1	158	104	109	14	12.5		82	4 × 50	37
90 to 100	cy1	1	185	122	109	16	14		107	4 × 55	39
100 to 110	cy2	1	211	139	109	16	14		107	4 × 55	39
110 to 120	dy1	1	238	157	137	17.5	16		127	4 × 55	44
120 to 130	dy2	1	264	174	137	17.5	16		127	4 × 55	44
130 to 140	ey1	1	282	186	137	19	16		150	4 × 60	49
140 to 150	ey2	1	300	198	137	19	16		150	4 × 60	49
150 to 160	fy1	1	326	215	164	20.5	17.5		175	4 × 60	54
160 to 175	fy2	1	352	232	164	20.5	17.5		175	4 × 60	54
170 to 190	gy1	1	378	249	164	22	19		200	4 × 60	59
190 to 205	gy2	1	414	273	164	22	19		200	4 × 60	59
205 to 220	hy1	1	449	296	192	24.5	20.5		237	6 × 60	64
220 to 240	hy2	1	484	319	192	24.5	20.5	20.5	237	6 × 60	64
240 to 260	iy1	1	528	348	192	26	22	20.5	278	6 × 60	69
260 to 280	iy2	1	572	378	192	26	22		278	6 × 60	69
280 to 300	iy1	1	616	407	219	28	24	22	321	6 × 70	74
300 to 320	iy2	1	660	436	219	28	24	22	321	6 × 70	74
320 to 340	ky1	1	704	465	219	30	26	22	368	6 × 70	78
340 to 360	ky2	1	748	494	219	30	26	22	368	6 × 70	78
360 to 380	ly1	1	792	523	246	32	28	24	417	6 × 70	88
380 to 400	ly2	1	845	558	246	32	28	24	417	6 × 70	88
400 to 425	my1	1	880	581	246	34	30	26	468	6 × 70	98
425 to 450	my2	1	933	616	246	34	30	26	468	6 × 70	98
450 to 475	ny1	1	986	651	246	36	32	28	523	6 × 70	108
475 to 500	ny2	1	1047	691	246	36	32	28	523	6 × 70	108

1) Two anchors may be accepted.
 2) HHP = ordinary high holding power anchors.
 3) SHHP = super high holding power anchors.
 4) Chain cable may be substituted by synthetic fibre rope.

Table 2 Equipment reductions for service restriction notations (see Table 1)

Service restriction notation	Anchors		Stud-link chain cables	
	Number	Mass change per anchor	Length change	Diameter
R1, R2, R3	Alternative 1			
	1 1	No reduction No reduction	No reduction -30%	No reduction No reduction
R1, R2, R3	Alternative 2			
	2 2	No reduction -30%	+60% +60%	No reduction No reduction

2.6 Anchors

2.6.1 Anchor types normally dealt with are:

- H.H.P. (“High Holding Power”) anchor
- S.H.H.P. (“Super High Holding Power”) anchor, ordinary stockless bow anchors or other types of anchors may be specially considered
- Kedge anchors with a mass as per SHHP are acceptable provided 2 anchors are fitted.

2.6.2 When two anchors are chosen, the mass of individual anchors may vary by $\pm 7\%$ of the table value in [Table 1](#) as reduced in [Table 2](#), provided that the total mass of anchors is not less than would have been required for anchors of equal mass.

2.6.3 For anchors, the notation in the Register of Ships need not be included.

2.6.4 The anchor materials and shackles shall be provided with a Works Certificate (W) documenting compliance with the requirements of [Pt.3 Ch.5 Sec.3 \[4\]](#).

2.7 Anchor Chain Cables

2.7.1 Chain cables shall be stud link chains made in accordance with recognised international standards.

2.7.2 Synthetic fibre ropes will be specially considered with respect to size, material and testing. Test Reports (TR) shall be provided.

2.7.3 The anchor chain cables shall be provided with a Works Certificate (W) documenting compliance with the requirements of [Pt.3 Ch.5 Sec.3 \[5\]](#). Anchor chain cables made from stainless steel will be permitted provided the material strength is not less than for steel.

2.8 Windlass

The windlass shall be provided with a Works Certificate (W) documenting compliance with the requirements of [Pt.3 Ch.5 Sec.3 \[6\]](#).

3 Stability, water- and weathertight integrity

3.1 General

The requirements of main class [Pt.3 Ch.6 Sec.2](#) apply with the amendments as specified in this Section.

3.2 Intact stability

Service craft shall comply with the intact stability requirements for cargo craft of the 2000 HSC Code Ch.2. Intact stability criteria are given in Annex 7 for multihulls and in Annex 8 for monohulls.

3.3 Damage stability

Damage stability requirements are given in [Sec.3 \[2\]](#).

3.4 Cranes

The crane stability criteria, as defined for class notation **Crane**, shall be applied when the maximum heeling arm created by the crane and its load exceeds 0.10 m at any operational displacement.

3.5 Watertight bulkheads

At least 3 separate watertight compartments are to be arranged. As a minimum there shall be a collision bulkhead and a bulkhead at the forward end of the engine room.

3.6 Watertight doors

3.6.1 Watertight doors shall be fitted in all watertight bulkhead access openings.

3.6.2 Watertight doors are to be either type approved or approved and tested on an individual basis.

3.6.3 Watertight doors shall be of equivalent strength as the surrounding structure and hydraulically tested from the side which is most prone to leakage. Test pressure should, as a minimum, be equal to design pressure for the bulkhead.

3.6.4 Watertight doors shall have open/closed indication fitted on the bridge.

3.7 Weathertight doors and hatches

3.7.1 Weathertight doors or hatches shall be fitted in all external access openings in the weather deck and superstructure.

3.7.2 Weathertight doors and hatches shall be either type approved or approved and tested on an individual basis.

3.7.3 Weathertight doors and hatches shall be of equivalent strength as the surrounding structure and hose tested after installation.

3.7.4 All doors shall open the same way as the escape route out of the craft.

3.7.5 Weathertight doors and access hatches shall be so arranged that they are operable from both sides.

Guidance note:

Bolted or similar permanently fitted hatches, for example hatches used for equipment installation and removal, are not considered access hatches.

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3.7.6 The use of flush hatches, except for escape hatches from below the weather deck, will be accepted provided:

- they are either type approved or approved and tested on an individual basis
- the hatch shall be permanently marked "To be kept closed at sea".

3.7.7 For accommodation spaces below the weather deck which are only used in port, the use of flush escape hatches may be accepted provided:

- they are either type approved or approved and tested on an individual basis
- the escape hatch shall be permanently marked "To be kept closed at sea"
- the primary access shall be permanently marked "No access while at sea".

3.8 Air intakes and ventilation openings

3.8.1 The lower edge of air intakes and ventilation openings above the waterline shall be located at a height H_v , but not less than that given in [Table 3](#).

Table 3 Air intakes and ventilation openings

<i>Service restriction notation</i>	<i>H_v (m)</i>
R1	minimum 2.00 m
R2	minimum 1.70 m
R3	minimum 1.50 m

3.8.2 For openings which are not necessary for the operation of the craft at sea, a reduced H_v may be considered. In that case permanently fitted closing devices shall be available.

3.8.3 Ventilators which need to be open during operation of the vessel at sea are to be arranged with a minimum coaming height of 380 mm above the deck where it is located. In addition, the minimum requirements given in [Table 3](#) shall also be met.

3.9 Storm Shutters

3.9.1 Storm shutters shall be provided for temporary replacement of damaged windows to protect the crew and passengers from sea spray and wind.

3.9.2 The number of storm shutters in relation to number of windows shall at least be as given in [Table 4](#), depending on the service restriction notations (**R**).

Table 4 Storm shutters in relation to windows and portholes

<i>Location</i>	R1	R2	R3
Hull	100%, Type A	100%, Type A	100%, Type B
Superstructure front	100%, Type B	Type B	Type C
Superstructure sides	Type C	Type C	None

3.9.3 Type A storm shutters are to be permanently mounted and have the same strength as the surrounding structure.

3.9.4 Type B storm shutters are to have the same strength as the surrounding structure. Mounting arrangements shall be permanently attached to the window frame and capable of withstanding the loads transferred from the storm shutter. When the requirement in [Table 4](#) is less than 100% there shall, as a minimum, be one storm shutter for each window shape.

3.9.5 Type C storm shutters shall limit the ingress of wind and sea spray and may be made from wood or canvas. Mounting arrangement shall be attached to the window frame.

3.9.6 Storm shutters of Type B and C are to be stowed in such a way as to enable quick mounting.

4 Arrangement

4.1 Accommodation

4.1.1 The accommodation shall be designed and arranged so as to protect the occupants from unfavourable environmental conditions and to minimise the risk of injury during normal and emergency conditions.

4.1.2 Operating controls in the accommodation shall be located and protected so that their operation is unlikely to be impeded by others than the crew operating the craft.

4.2 Seats, design and installations

4.2.1 Permanent seats are to be provided for all persons onboard in accordance with the maximum number of persons stated in the "Appendix to the Class Certificate".

4.2.2 All seats and furniture are to be permanently attached to the structure of the craft.

4.2.3 In high speed craft safety belts are to be provided for all seats.

4.2.4 Permanent seats in high speed craft shall be Type Approved (TA) according to the requirements of the 2000 HSC Code Annex 10.

4.3 Baggage and store compartments

4.3.1 Provisions shall be made to store baggage in a way which does not affect the escape ways from the craft.

4.3.2 Controls, electric equipment or other items, the damage or failure of which could affect the safe operation of the craft, shall not be located in baggage or store compartments unless such items are adequately protected so that they cannot be damaged or inadvertently operated by movement of the contents of the compartment.

4.4 Galley and toilet

4.4.1 A galley should be fitted with a means for cooking and a sink, with adequate working surfaces for the preparation of food. However no deep fat frying equipment or open flame appliances are permitted (see [Sec.3 \[2.3.1\]](#)).

4.4.2 Adequate toilet facilities, separated from the rest of the accommodation, should be provided. In general, there should be at least one flushing marine toilet and one wash basin.

4.5 Deck coverings

External deck coverings and stairs shall be of a non-skid type.

5 Machinery

5.1 General

5.1.1 Service craft shall comply with the requirements of [SHIP Pt.4 Ch.1](#) to [SHIP Pt.4 Ch.5](#) and [SHIP Pt.4 Ch.10](#) with the modifications specified in this section.

5.2 Certification

5.2.1 Machinery components shall be certified in accordance with [Sec.1 Table 4](#).

5.2.2 Machinery components which are not type approved by the Society shall be case by case approved and certified according to relevant rules given in [SHIP Pt.4 Ch.1](#) to [SHIP Pt.4 Ch.5](#) and [SHIP Pt.4 Ch.10](#).

5.3 Redundancy requirements

Craft shall be provided with at least two completely independent means of propulsion so that the failure of one engine or its support systems would not cause the failure of the other engine or engine systems (e.g. Control System).

Guidance note:

One main engine with an additional take-me-home engine is not considered to be an equivalent arrangement.

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5.4 Indicators and alarms

As a minimum, the following indicators and alarms shall be visible and audible at the helm position:

- speed of revolutions (may be omitted for auxiliary engines) indicator
- lubrication oil pressure indicator
- cooling water temperature indicator
- alarms for cooling water temperature, loss of exhaust cooling and lube oil pressure shall be provided.
- alarm for leakage from jacketed high pressure pipes
- a separate overspeed protective device is required, with alarm and automatic shutdown. See [SHIP Pt.4 Ch.3 Sec.1 \[5.3\]](#).

5.5 Shipboard testing

Engines shall be tested according to [SHIP Pt.4 Ch.3 Sec.1 \[9.2\]](#).

6 Piping systems

6.1 General

Service craft shall comply with the requirements of [Pt.4 Ch.6 Sec.2](#), with the modifications specified in this sub-section.

6.2 Bilge pumping and drainage system

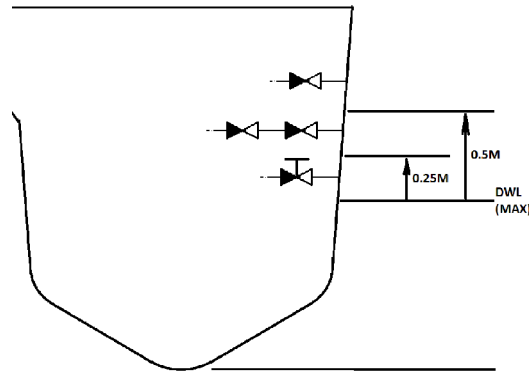
6.2.1 At least two power-operated pumps connected to the main bilge system shall be provided, one of which may be driven by the propulsion machinery.

6.2.2 On multihull craft each hull shall be provided with at least two power-operated pumps, unless a bilge pump in one hull is capable of pumping bilge in the other hull. At least one pump in each hull shall be an independent power-operated pump.

6.3 Scuppers and discharges

6.3.1 In connection with requirements in Pt.4 Ch.6 Sec.4 [1.3], discharges shall be fitted with non-return valves as follows:

- within 0.25 m of the deepest load waterline; a single automatic non-return valve with positive means of closure, operable from a readily accessible position and provided with an indicator showing whether the valve is open or closed
- between 0.25 m and 0.5 m above the deepest load waterline; two automatic non-return valves in series
- 0.5 m or more above the deepest load waterline; one automatic non-return valve without positive means of closure may be accepted.



7 Electrical systems

7.1 General

7.1.1 Service craft shall comply with the requirements of SHIP Pt.4 Ch.8 with the modifications specified in this Section.

7.1.2 The requirements related to the availability of the electrical power supply given in SHIP Pt.4 Ch.8 apply only to functions / systems serving propulsion and steering of the craft. This includes electrically powered auxiliary systems necessary for propulsion and steering.

7.1.3 Duplicated consumers serving the same function where only one of them is electrically driven (e.g. one engine driven cooling pump and an electrically driven standby pump) will waive the requirement to redundancy for the electrical power supply system, provided the arrangement is so that no single mechanical failure can set both consumers out of operation.

7.1.4 The requirements given in SHIP Pt.4 Ch.8 Sec.2 [9.1.2] *Arrangement of power generation and distribution systems* are replaced with the following requirements:

- The main generating station shall be situated within the engine room.
- The main switchboard shall be located as close as is practicable to the main generating station. A location outside the engine room may be accepted, provided the switchboard is located in a location with no major fire hazard and that the generator cables are not routed through any spaces of major fire hazard.
- Equipment for the main and the emergency electrical power supply system shall be placed in different switchboard (panels).

7.2 Certification

7.2.1 Electrical systems shall be certified in accordance with Sec.1 Table 4.

7.2.2 Certification is not required for main switchboards serving only non-essential consumers.

7.2.3 Main switchboards less than 50 kVA, or with voltage level less than 50 V may be inspected and tested on board the vessel.

7.3 Emergency source of power

7.3.1 Service craft shall be provided with an emergency source of electrical power in addition to the principal source of electrical power. The emergency source of electrical power shall be located outside the machinery casings.

7.3.2 Where the main source of electrical power is located in two or more compartments which are not contiguous, each of which has its own self-contained systems, including power distribution and control systems, completely independent of each other and such that a fire or other casualty in any one of the spaces will not affect the power distribution from the others, or to the services required by [7.3.4] the requirements of [7.3.1] may be considered satisfied without an additional emergency source of electrical power, provided that:

- 1) there is at least one generating set, meeting the requirements of SHIP Pt.4 Ch.8 with sufficient capacity to meet the requirements of [7.3.4], in each of at least two non-contiguous spaces

- 2) the arrangements required by (1) in each such space are equivalent to those required by SHIP Pt.4 Ch.8 so that a source of electrical power is available at all times to the services required by [7.3.4]
- 3) the generator sets referred to in (1) and their self-contained systems are installed in accordance with SHIP Pt.4 Ch.8.

7.3.3 This emergency source of electrical power may be a generator or an accumulator (storage) battery, if a generator is used it shall be provided with an emergency switchboard installed as near to the emergency generator as possible or in the case of the accumulator battery in a different but nearby space.

7.3.4 The capacity of the emergency source of power shall be such that the following consumers will be simultaneously provided for a minimum period as stated in the Table 5:

- emergency lighting at stowage positions of life-saving appliances, at all escape routes, in machinery spaces and the main and emergency generating spaces including their control positions, at control stations, at steering gears
- main navigation lights and "not under command" lights
- daylight signalling lamp (intermittent operation)
- electrical internal communication equipment
- craft radio facilities (GMDSS)
- craft's whistle (intermittent operation)
- fire detection system. Fire alarm to have capacity for 0.5 hour
- general alarm system (0.5 hour capacity for alarm)
- remote control devices of fire-extinguishing systems
- emergency fire pump (if fitted) when electrically driven.
- portable bilge pump (if electrically driven).

Table 5 Period required for Emergency Consumers

<i>Service restriction notation</i>	<i>Required Period (hrs)</i>
R1	6
R2	4
R3	3

8 Control and monitoring systems

8.1 General

8.1.1 Service craft shall comply with the requirements of this section in lieu of the requirements given in SHIP Pt.4. Ch.9 and requirements given in control and monitoring subsections in other parts of SHIP Pt.4.

8.1.2 The requirements of this chapter apply to:

- propulsion control and monitoring
- directional control and monitoring
- other control and monitoring systems required by SHIP Pt.4 Ch.9

to ensure safe operation of the craft from the control station in the operating compartment.

8.2 Procedural requirements

Upon completion the installation shall be subject to final tests. The tests shall at least include the following:

- Functional test of the propulsion control system to demonstrate stable performance over the entire control range.
- Functional test of the directional control system to demonstrate stable performance over the entire control range.
- If the propulsion and directional control system include different modes of operation, the functional tests described above shall cover all different modes.
- Testing to verify independency between the control/monitoring systems for the two propulsion lines.
- Testing to verify independency between the two directional control/monitoring systems.
- Testing of shutdown functions, both automatic shutdowns and manual shutdowns.
- Failure testing of the manual emergency stop function.
- Failure testing (as a minimum power failure and wire break) of propulsion and directional control system loops / circuits to verify that the systems fail to a safe state.

8.3 Design principles

8.3.1 Instrumentation equipment shall be suitable for marine use, and is normally to be designed to operate under environmental conditions as described in [SHIP Pt.4 Ch.9 Sec.5 \[2\]](#).

8.3.2 All indicators, alarm functions and means of control needed to allow safe operation of the craft shall be installed at the control station.

8.3.3 All machinery conditions and all control system conditions requiring operator attention shall be alarmed at the control station.

8.3.4 In the event of failure the systems are to enter the least hazardous of the possible new conditions / states.

Guidance note:

The safe state for each propulsion line will normally be stopping or stopped state as it is assumed that the other propulsion line is still operative. The safe state for the directional control system is normally to freeze the position.

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8.4 Propulsion control

8.4.1 For the two independent means of propulsion required by [\[5.3.1\]](#), the control and monitoring system for one propulsion line shall be independent of the control and monitoring system for the other propulsion line. The two propulsion control/monitoring system units shall not be located in the same enclosures.

8.4.2 Mechanical levers for the two propulsion control systems may be implemented in a common mechanical unit provided that the systems are electrically independent.

8.4.3 The alarm panel may be combined for the two propulsion control systems.

8.4.4 The two propulsion control and monitoring systems required by [\[8.4.1\]](#) shall be supplied by independent power supplies.

8.4.5 Emergency stop of propulsion shall be arranged individually for each propulsion line. The emergency stop function shall be independent of the remote propulsion control system. If the emergency stop is based on normally open (NO) circuits alarm shall be initiated upon loop failure.

8.5 Directional control

8.5.1 Two independent control and monitoring systems shall be arranged for direction of thrust. The control system units for the two systems shall not be located in the same enclosures.

8.5.2 Mechanical levers for the two propulsion control systems may be implemented in a common mechanical unit provided that the systems are electrically independent.

8.5.3 The alarm panel may be combined for the two propulsion control systems.

8.5.4 The two directional control and monitoring systems required by [8.5.1] shall be supplied by independent power supplies.

SECTION 3 SAFETY REQUIREMENTS

1 General

1.1 General requirements

The yard or builder may, as an alternative to comply with the requirements given in this section, submit evidence that the topics in this section are accepted by the respective Administration, e.g. by compliance with relevant domestic standard. If so the Society will accept the use of this domestic standard according to SHIP Pt.1 Ch.1 Sec.2 [1.3.5].

Guidance note:

Flag states might have requirements in addition to the requirements stipulated in this section. Compliance with the requirements in this section will not automatically result in compliance with requirements stipulated by the flag state.

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2 Damaged stability

2.1 General

Service craft shall comply with the damage stability requirements for cargo craft of the 2000 HSC Code, as amended, Ch.2.6, Ch.2.15 and Annex 7 or Annex 8 as applicable, with the modifications given in this subsection.

2.2 Extent of damage

2.2.1 The damage stability shall be calculated with any one compartment flooded.

2.2.2 When the distance between two transverse bulkheads forming the boundary of a compartment is less than the damage length given in [2.1.1], one or more bulkheads shall be disregarded in the damage stability calculations so that the compartment length becomes equal to or greater than the damage length.

Guidance note:

The damage length given in [2.1.1] need not be applied within the forepeak and aftpeak compartments.

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2.2.3 The bottom raking damage criteria given in the 2000 HSC Code Ch.2.6.9 need not be applied.

2.2.4 For multihull craft, the bottom damage extent may be limited to one hull at any one time except for the most forward compartment in each hull which shall be considered damaged simultaneously.

2.3 Stability and floatability requirements

2.3.1 For the damages specified in [2.2.1] and [2.2.4] the final waterline after flooding; taking into account sinkage, heel and trim; shall be at least 0.30 m below the lower edge of any opening through which progressive flooding may take place.

2.3.2 For the damage cases specified in [2.2.2] the maximum heel of the craft shall not exceed 20°. The range of the positive part of the GZ curve shall not be less than 7° and within this range the maximum GZ shall not be less than 0.05m. Non-watertight openings shall not be submerged during the final stages of flooding.

3 Fire safety

3.1 General

Service craft shall comply with the requirements of this section in lieu of the requirements given in Pt.3 and Pt.4 of main class.

3.2 Application/limitations

3.2.1 No deep fat frying equipment or open flame appliances shall be fitted on board.

3.2.2 Petrol for auxiliary purposes may be stored in limited volume. Petrol is only to be stored on open deck or in compartments effectively ventilated to open deck. The storage position shall be so arranged that under no circumstances can inflammable or explosive fluids or gases accumulate, for example, in lower parts of the hull.

3.3 Definitions

3.3.1 *Auxiliary machinery spaces* are spaces containing internal combustion engines of power output up to and including 110 kW, pumps and electric motors, oil filling stations, ventilation and air conditioning machinery, similar spaces and trunks to such spaces.

3.3.2 *Accommodation* are those spaces allocated for the use of the persons onboard, and include cabins, sick bays, offices, lavatories, lounges and similar spaces.

3.3.3 *Galleys* are those enclosed spaces containing cooking facilities with exposed heating surfaces, or which have any cooking or heating appliances each having a power of more than 5 kW.

3.3.4 *Machinery spaces of major fire hazard* are spaces containing internal combustion engines with aggregate total power output of more than 110 kW, generators, oil fuel units, propulsion machinery, major electrical machinery and similar spaces and trunks to such spaces.

3.3.5 *Fire resisting divisions* are those divisions formed by bulkheads and decks which comply with the IMO Fire Test Procedures Code(FTP Code) Part 11. These can have 30 or 60 minutes rating.

3.3.6 For other definitions the 2000 HSC Code, as amended, shall be applied.

3.4 Structural fire protection and arrangement

3.4.1 Machinery spaces of major fire hazard and galleys above 10 m² shall be enclosed with fire resistant division of minimum 30 minutes rating. The fire protection shall cover the entire boundaries of the galleys and machinery spaces of major fire hazard except that structures in contact with seawater (ship sides 300 mm below lightweight waterline) can be left un-insulated.

3.4.2 Fuel oil tanks may be located contiguous to machinery spaces of major fire hazard provided the boundary between such spaces and fuel oil tanks are protected with a fire resisting division of minimum 60 minutes rating. Independent tank may be accepted inside machinery spaces of major fire hazard if of limited volume and made of steel.

3.4.3 The construction of all doors, and door frames in fire resisting divisions, with the means of securing them when closed, shall provide resistance to fire as well as to the passage of smoke and flame equivalent to

that of the bulkheads in which they are situated. Watertight doors of steel need not be insulated. Special care shall be put into fastening arrangement of door frames, hatches, ventilation ducts and dampers in aluminium and composite bulkheads to avoid heat bridges that may threaten the integrity of the division in a fire.

Guidance note:

An example of an acceptable design will be door frames, hatches, ducts or damper spool pieces made of steel and provided with steel tabs or extended frames which provide a 100 mm overlap between these tabs or extended frames and the aluminium or FRP structure. The overlap shall be protected by structural fire protection and a heat insulating, fire resistant gasket. Bolts shall be provided both close to the opening and at locations being protected in case of a fire (typically 25 mm and 75 mm along the overlap)

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3.4.4 Fire insulated doors and hatches of aluminium or composites are not accepted in fire-resisting divisions unless successfully tested in their bulkhead in accordance with IMO Res. A.754 (18).

3.4.5 Fire doors bounding galleys above 10 m² and machinery space shall be normally shut and fitted with indicators to provide warning in the control station when the doors are not completely closed.

3.4.6 Where a fire resisting division is penetrated by pipes, ducts, electrical cables, etc., arrangements shall be made to ensure that the fire resisting integrity of the division is not impaired, and necessary testing shall be carried out in accordance with the FTP Code.

3.4.7 Fire resisting divisions, fire doors, fire dampers and penetrations required to be tested according to the FTP Code shall be provided with either:

- type approval (TA) certificates by the Society or
- Marine Equipment Directive (MED) certificate, or
- fire test reports, issued by a recognised test laboratory (this shall be submitted for plan approval).

3.5 Ventilation

3.5.1 Openings for ventilation of the machinery spaces of major fire hazard shall be equipped with closing appliances readily operable from the outside of the engine space. Steel dampers of robust design will be accepted for ventilation outlets from areas of major fire hazard to open decks in lieu of fire dampers. Dampers made of 3 mm stainless steel or steel and provided with adequate stiffeners or insulation on exposed side will be accepted as a dampers of robust design.

3.5.2 Machinery spaces of major fire hazard shall have independent ventilation systems and ventilation ducts. Ventilation ducts for machinery spaces of major fire hazard shall not pass through other spaces, unless they are contained within a trunk having same fire rating as the boundary of the machinery space. Ventilation ducts of other spaces shall not pass through machinery spaces of major fire hazard.

3.5.3 Ducts serving machinery spaces of major fire hazard shall be made of non-combustible material.

3.5.4 All ventilation fans shall be capable of being stopped from outside the spaces which they serve, and from outside the spaces in which they are installed.

3.6 Fire detection

3.6.1 An automatic fire detection and alarm system shall be installed, to indicate, at the craft's control station, the location of outbreak of a fire.

3.6.2 The components of the detection system shall be TA by the Society or delivered with a MED certificate.

3.6.3 Design of the system shall comply with FSS Code Ch.9.

3.6.4 All machinery spaces of major fire hazard, auxiliary machinery spaces, stores, lockers, public spaces, accommodation, and escape routes shall be covered by smoke detectors and manually operated call points.

3.6.5 Detectors operated by heat instead of smoke may be installed in pantries and galleys. Areas of no fire risk such as void spaces and areas of minor fire risk and limited volume such as public toilets and bathrooms within cabins need not be provided with fire detectors.

3.6.6 In the event that the control station is unmanned, an audible alarm shall be automatically sounded throughout the crew compartments.

3.7 Portable fire extinguishers

3.7.1 The number and type of extinguishers shall be according to IMO MSC/Circ 1275, but in no case less than one for each deck in addition to one or at the entrance to each machinery space.

3.7.2 The capacity shall be according to FSS Code Ch. 4.3.1.1.

3.8 Fixed fire extinguishing systems

3.8.1 Machinery spaces of major fire hazard and galleys above 10 m² shall be protected by a fixed fire-fighting system that is TA or delivered with a MED certificate.

3.8.2 Any of the following systems will be accepted:

- CO₂ system as specified in FSS Code Ch.5 and [DNV GL Statutory Interpretations](#), FSS Code Ch.5
- a gaseous agent according to FSS Code Ch.5, IMO MSC/Circ.848, as amended by IMO MSC/Circ. 1267 and [DNV GL Statutory Interpretations](#), FSS Code Ch.5
- water based system according to IMO MSC/Circ. 1165, as amended by MSC.1/Circ.1269 and MSC.1/Circ.1386
- an inside air foam system according to FSS Code Ch.6 and IMO MSC/Circ. 1384.

3.8.3 A minimum capacity of 40% of the gross volume of the complete machinery spaces of major fire hazard shall be provided for when a CO₂ system is installed.

3.8.4 Cylinders for the CO₂ or gaseous agent shall be stored in a dedicated locker in a safe position outside protected spaces with entrance directly from open deck. Gaseous agent can however be stored inside protected spaces when arranged in accordance with IMO MSC/Circ. 848 as amended by 1267.

3.8.5 Time delays devices are not required for CO₂ or gaseous agent systems.

3.8.6 Water based systems requiring fresh water shall be connected to dedicated water tanks with capacity for minimum 5 minutes operation for the largest space to be protected and automatic switch-over to sea-water supply. Such systems can alternatively be provided with a manual switchover and fresh water supply tanks design for 15 minutes operation. Utility service tanks with low-level alarms can be considered as equivalent to dedicated tanks.

3.9 Accommodation sprinkler

3.9.1 Service craft where the hull is constructed of combustible materials, such as fibre-reinforced polymers, shall be protected by a fixed sprinkler system based on the standards described in IMO Resolution MSC.44(65) with the modification defined below.

3.9.2 The sprinkler system shall cover all stores, lockers, public spaces and accommodation areas.

3.9.3 Automatic or manual sprinkler systems are accepted. The system shall cover the largest area of the following:

- 50 m² in case of wet pipe automatic system
- 100 m² in case of other systems.

3.9.4 The coverage area need in no case exceed the total area of spaces that needs protection on a single deck.

3.9.5 The system need not be designed with redundancy in pumps or back-up pressure tank. Supply from emergency power is not required provided that all components (except piping, section valves and sprinklers) are located outside the protected area.

3.9.6 Water based systems requiring fresh water shall be connected to dedicated water tanks with capacity for minimum 5 minutes operation for the largest space to be protected and automatic switch-over to sea-water supply. Such systems can alternatively be provided with a manual switchover and fresh water supply tanks design for 15 minutes operation. Utility service tanks with low-level alarms can be considered as equivalent to dedicated tanks.

3.9.7 System plans shall be displayed at each operating station. Suitable arrangements shall be made for the drainage of water discharged when the system is activated. Alternatively, documentation shall be submitted to confirm that the sprinkler system can be operated for 30 minutes (with full pump capacity) without impairing the stability of the vessel.

3.10 Fire pumps and fire main

3.10.1 At least one main fire pump shall be provided, located in a space fitted with a fixed fire extinguishing system. The capacity shall be at least 25 m³/h. The pressure at hydrants shall be minimum 2.7 bars with any two hydrants in simultaneous operation.

3.10.2 Hydrants shall be so arranged so that any location on the craft can be reached by the water jets from two fire hoses from two different hydrants, one of the jets being from a single length of hose. A minimum of two hydrants shall be provided.

3.10.3 Each fire hose shall be of non-perishable material and have a maximum length of 20 m. Each fire hose shall be provided with a nozzle of an approved dual purpose type (i.e. spray/jet type) incorporating a shutoff.

3.11 Escape

3.11.1 All spaces shall be provided with satisfactory means of escape through corridors, stairways or other spaces independent of the space considered, all with a minimum free opening of 700 mm in all directions. Where a secondary means of escape is required, this can be provided by a permanent ladder and hatch arrangement with a free opening of minimum 500 mm in all directions. Doors and hatches not capable of being unlocked from both sides shall not be regarded as an escape way.

3.11.2 For accommodation spaces, two means of escape from every restricted space or group of spaces shall be provided.

3.11.3 Machinery spaces of major fire hazard shall be provided with two means of escape leading to a position with safe access to open deck.

3.11.4 Machinery spaces of major fire hazard having a length of less than 5 m and not being routinely entered or continuously manned, may be provided with a single means of escape.

3.11.5 At least one means of escape from a machinery space of major fire hazard shall lead either to open deck or to a door located in the lower part of the space giving access to an adjacent compartment from which a safe means of escape is provided.

3.12 Fireman's axe

A rescue or fireman's axe shall be provided, so stored as to be easily accessible and ready for use.

3.13 Fire control and safety plan

A fire control and safety plan shall be displayed on board.

4 Life saving appliances

4.1 General

4.1.1 Service craft shall comply with the requirements of this section in lieu of the requirements given in Pt.3 of main class.

4.1.2 All items addressed by this section shall be identified on the safety plan.

4.1.3 The craft shall be fitted with a general alarm.

Guidance note:

This may be the vessel's typhoon/whistle if this can be clearly heard in all parts of the vessel.

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4.2 Certification

4.2.1 Life-saving appliances shall be certified in accordance with [Sec.1 Table 4](#).

4.3 Personal life saving appliances

4.3.1 The craft shall be provided with at least one life buoy with 18 m line on one side and one life buoy with light on the other.

4.3.2 A lifejacket with light shall be provided for every person on board. In addition, 2 spare lifejackets shall be provided.

4.3.3 An immersion suit of appropriate size shall be provided for all persons onboard.

Guidance note:

It is assumed that immersion suits are kept readily accessible for all persons onboard when the craft is in operation and that the persons onboard have been instructed in their use.

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4.3.4 Two thermal protective aids (TPA) shall be provided for the purpose of warming up persons recovered from the water after an accident.

4.4 Survival craft

4.4.1 The craft shall carry life rafts on both sides with sufficient capacity to accommodate not less than 100% of the total number of persons the craft is certified to carry.

Guidance note:

The total capacity will then be 200%.

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4.4.2 Life rafts shall be stowed on deck and fitted with hydrostatic float free arrangement capable of floating free if the craft sinks.

4.4.3 One suitable embarkation ladder for use on either side or other means of embarking the life rafts (steps integrated in hull structure) shall be provided for all craft where the embarkation height exceeds 1.5 m.

4.5 Survival equipment

4.5.1 The craft shall be provided with a two-way VHF radiotelephone apparatuses and a 9 GHz radar transponder (SART) as specified in [5.3].

4.5.2 The craft shall be provided with not less than 12 rocket parachute flares in addition to those carried in the survival craft

4.6 Rescue arrangement

4.6.1 The craft shall be arranged to allow a helpless person to be recovered from the water. The arrangement shall be suitable for operation by the minimum number of crew provided on board and shall not require the bridge to be left unmanned or affect the safe navigation and manoeuvring of the craft.

Guidance note:

This may include a low freeboard and a rescue net.

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4.6.2 The craft shall be arranged so that recovery of a helpless person can be observed from the navigation bridge. Alternatives with VHF communication and CCTV system may be considered if the vessel has sufficient manning.

4.6.3 If an ordinary rescue boat is provided, [4.6.1] and [4.6.2] may be omitted.

4.7 Search lights

As an aid for operations in darkness, at least one fixed adjustable searchlight and one portable searchlight shall be fitted.

5 Safety of Navigation

5.1 General

5.1.1 The craft shall comply with COLREG 1972 as amended.

5.2 Certification

5.2.1 Navigation equipment shall be certified in accordance with [Sec.1 Table 4](#).

Guidance note:

The approval standard should conform to performance standards not inferior to those adopted by 2000 High-Speed Craft Code (2000 HSC Code Ch. 13.17.4).

Any non-type approved equipment is subject to certification in accordance with the systematics of [Pt.4 Ch.9](#) for verification of compliance with applicable IMO performance standards.

For ECS the verification standard should not be inferior to IEC 62376 as amended.

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5.2.2 Equipment of category not listed in [\[5.3\]](#) installed in excess of the carriage requirements shall have been EMC-tested.

5.3 Carriage requirements

5.3.1 The craft shall as a minimum carry the following equipment:

- compass providing true heading
- speed and distance measuring device capable of measuring speed through water
- echo sounding device
- 9 GHz Radar
- receiver for global navigation satellite system
- rudder angle indicator (or direction of steering thrust)
- propeller RPM or thrust indicator (if thruster is provided)
- ECDIS or ECS
- Automatic Identification System (AIS).

5.4 Arrangement

5.4.1 The operating compartment shall be arranged such that it is possible to segregate it from the space where the other persons on board are located.

5.4.2 The operating compartment shall be placed above all other superstructures so the operating crew are able to gain a view all-round the horizon from the operating station.

5.4.3 Lighting in the operating compartment shall be adjustable for operation in all light conditions during day-, dusk- and night time.

5.5 Field of vision from the bridge

5.5.1 The view of the sea surface from the navigating workstation, shall not be obscured by more than one ship length forward of the bow to 90° on either side under all conditions of draught, trim and deck cargo.

5.5.2 The total arc of blind sectors from right ahead to 22.5° abaft the beam on either side shall not exceed 30°. Each individual blind sector shall not exceed 5°. The clear sector between two blind sectors shall not be less than 10°.

5.5.3 Divisions between windows as well as obstructions outside the wheelhouse shall be included in the calculations of the blind sectors. No division between windows shall be located directly in front of the navigating workstation.

5.5.4 The field of vision from the navigating workstation shall permit the navigators from this position to utilize leading marks astern of the craft for track monitoring.

5.5.5 The field of vision from the workstation used for docking shall permit the navigator to safely manoeuvre the craft to berth. Further, the navigator shall be able to visually monitor the embarkation area for personnel transfer.

5.5.6 Window wipers and fresh water wash shall be provided for forward windows.

5.5.7 Neither polarized nor tinted windows shall be fitted within the field of vision as described in [5.5.2] and [5.5.4].

5.5.8 A de-misting arrangement shall be provided for the windows within the field of vision as described in [5.5.2] and [5.5.4].

Guidance note:

An acceptable demisting arrangement in terms of this requirement may be either heated glass panes or hot air. Other alternatives will be considered by the Society

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6 Radiocommunications

6.1 General

6.1.1 The builder of the craft shall inform the Society of the intended sea areas as defined in 2000 HSC Code Ch. 14.2 (A1, A2, A3 or A4) in which the craft shall be operated.

6.1.2 Radiocommunications equipment shall be located in the operating compartment.

6.2 Certification

6.2.1 Radiocommunications equipment shall be certified in accordance with [Sec.1 Table 4](#).

6.2.2 The approval standard for certification of radiocommunications equipment shall be as described in 2000 HSC Code Ch. 14.14.

6.3 Carriage requirements

6.3.1 The craft shall carry radiocommunications equipment that meet the functional requirements given in 2000 HSC Code Ch. 14.5.

Guidance note:

Reference is made to 2000 HSC Code Ch. 14.7, 14.8 14.9, 14.10, 14.11 and 14.12.

Note that the maintenance requirements contained in Ch. 14.15 are not applicable to these rules, implying that the equipment duplication requirement is not applicable even for craft engaged on voyages in sea areas A3 and A4.

Note also that compliance with the above carriage requirements does not automatically qualify for the issue of CRC and/or HSC certificates, as additional Flag requirements may be applicable.

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7 Miscellaneous

7.1 Marking of the design water line

The design water line should be clearly and permanently marked on the craft's outer sides by a load line mark in accordance with 2000 HSC Code Ch. 2.9.2.

DNV GL

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