5. ANNEX I: SUMMARY OF MAR RELATED REGULATIONS

This Annex provides a summary of the main regulations and guidelines addressing the mustering, abandonment and rescue of cruise and passenger ferry ships. We chose to group them into four categories:

- Emergency/Evacuation plans/procedures
- Design of the evacuation system
- Stability, manoeuvrability
- Search and rescue

5.1 Emergency/evacuation procedures/plans

Regulations		Link with other regulations	Summary or quotation
ISM Code (Section 7 and section 8 in particular)		Made mandatory by SOLAS Chapter IX: Management for the Safe Operation of Ships	▪ There should be procedures, drills, exercises and a Safety Management System allowing the management of any emergency situation onboard at anytime
SOLAS Convention Chapter III	Reg. 27: Information on passengers		▪ Passengers should be identified (gender, age, disabilities, etc.) and counted prior to departure ▪ The information goes to the master and the company (ashore)
	Reg. 21.1.4 (survival crafts and rescue boats)		▪ All survival craft required to provide for abandonment by the total number of persons on board shall be capable of being launched with their full complement of persons and equipment within a period of 30 min from the time the abandon ship signal is given
	Reg. 29: Decision support system for masters of passenger ships	The Decision Support System for emergency management should be based on the "Guidelines for a structure of an integrated system of contingency planning for shipboard emergencies" Resolution A.852(20)	▪ There should be on the bridge/safety centre a decision support system for the Master ▪ The DSS helps for managing any combination of hazards* ▪ It should AT LEAST consist of a printed emergency plan or plans
	Reg. 37: Muster list and emergency instructions	LSA Code Section 7.2: General alarm and public address system	▪ The muster list shall specify details of the general emergency alarm and public address system prescribed by section 7.2 of the Code and also action to be taken by crew and passengers when this alarm is sounded. The muster list shall also specify how the order to abandon ship will be given. ▪ Each passenger ship shall have procedures in place for locating and rescuing passengers trapped in their staterooms. ▪ The muster list shall show the duties assigned to the different members of the crew

	Reg. 19: Emergency training and drills	SOLAS III Reg. 8.2 and 8.4 require safety briefing of passengers (Reg 3: muster list and emergency instructions)	▪ Crewmembers with emergency duties shall be familiar with them before voyage begins ▪ Every crewmember participate in at least 1 abandon ship drill and one fire drill every month ▪ For voyages with passengers more than 24h onboard, musters of pax shall take place within 24h after embarkation and instructed on use of lifejackets and emergency actions ▪ Safety briefing whenever new passengers embark ▪ Every crew member shall participate in at least one abandon ship drill and one fire drill every month. The drills of the crew shall take place within 24 h of the ship leaving a port if more than 25% of the crew have not participated in abandon ship and fire drills on board that particular ship in the previous month. When a ship enters service for the first time, after modification of a major character or when a new crew is engaged, these drills shall be held before sailing. The Administration may accept other arrangements that are at least equivalent for those classes of ships for which this is impracticable. ▪ Each abandon ship drill shall include: -summoning of passengers and crew to muster stations with the alarm required by regulation 6.4.2 followed by drill announcement on the public address or other communication system and ensuring that they are made aware of the order to abandon ship; -reporting to stations and preparing for the duties described in the muster list; -checking that passengers and crew are suitably dressed; -checking that lifejackets are correctly donned; -lowering of at least one lifeboat after any necessary preparation for launching; -starting and operating the lifeboat engine; -operation of davits used for launching liferafts -a mock search and rescue of passengers trapped in their staterooms; and instruction in the use of radio life-saving appliances.
	Reg. 30: Drills	Reg. 19: Emergency training and drills	▪ On passenger ships, abandon ship drill and fire drill shall take place weekly
	Reg. 35 Training manual and on board training aids		-
SOLAS II-1	Reg. 23: Damage control plans in passenger ships	MSC/Circ. 919: Guidelines for damage control plans	There shall be permanently exhibited, for the guidance of the officer in charge of the ship, plans showing clearly for each deck and hold the boundaries of the watertight compartments, the openings therein with the means of closure and position of any controls thereof, and the arrangements for the corrections of any list due to flooding. In the addition, booklets containing the aforementioned information shall be made available

	Reg. 23 Stability management – Special requirements for ro-ro pax ships	Ref to reg. 22.13: Record of the closing and opening time of the openings	-
IMO resolutions or circulars	Resolution A.852(20): Guidelines for a structure of an integrated system of contingency planning for shipboard emergencies	ISM Code chapter 8: Emergency preparedness	▪ Emergency plans should distinguish 'initial action' (to be taken immediately in case of any emergency) and 'subsequent response' depending on the ship and event's characteristics ▪ There should be procedures to ensure that all personnel are trained and aware of the emergency plans ▪ The detailed response actions should be formulated so as to set in motion the necessary steps to limit the consequence of the emergency and the escalation of damage following, for example, collision or grounding ▪ The plans should indicate, which authorities or organisations to contact, when and how ▪ The document contains an example of an emergency preparedness plan
	MSC.1/Circ 1238: Guidelines for evacuation analysis for new and existing passenger ships	Implementation of SOLAS reg. II-2/28-1.3, and SOLAS II-2/13.7.4	Performance standards for evacuation simulations: evacuation time

	MSC.1/Circ.1184: Enhanced contingency plan for passenger ships operating in areas remote from SAR facilities	SOLAS and SAR conventions, ISM Code	▪ SAR co-operation planning arrangements should be enhanced for ships operating in areas emote from SAR facilities as follows: -the Company should give reasonable notice of the arrival of its ship in the remote area to the relevant RCC; -if not already doing so, the Company should arrange direct exchange of the ship.s SAR co-operation plan with the relevant SAR services; -the relevant SAR services may request a copy of the relevant part of the Company.s emergency plan, in addition to the basic SAR co-operation plan, in order to assist their own contingency planning; and -the Company should keep the RCC informed as to the ship.s position and intentions while the ship is operating in the remote area. ▪ The risks of remote area operation should be assessed and planned for. The following enhancements should be among those considered: -voyage .pairing., i.e., mutual exchange of information that may be available to the SAR Authority or the vessel operator with reference to other passenger ships operating in the same area, so that, if two or more passenger ships are operating in the same general area at the same time, each can be used as a SAR facility in case of accident to another; -the carriage of enhanced life-saving appliances; -the provision of additional life-saving resources; and -other sources of assistance that may be available in the area. ▪ The following criteria are considered relevant in determining what constitutes an area remote from SAR facilities: -the number of people at risk; -the nature of the risk and whether containment strategies can mitigate its effects, in particular whether the effects of the incident can be so contained as to enable those at risk to remain on board until rescued, or for a period prior to eventual evacuation, thus extending the time to recover; -the availability of SAR facilities and other resources which may be deployed in order to contain the incident and keep those at risk on board until rescued, or for a period prior to eventual evacuation, thus extending the time to recover; -the total recovery capacity of SAR facilities available to reach the scene and recover those who have taken to survival craft within the five day .time to recover. parameter and/or within survival times; -any shortfall between the number to be recovered and the capacity of those SAR facilities available; -the distance (in time) between individual SAR facilities. start points and the scene of the emergency; -the prevailing sea conditions, both on scene and encountered by SAR facilities proceeding; -the prevailing weather conditions, both on scene and encountered by SAR facilities proceeding; -any restrictions on SAR facility deployment which limit or remove their ability to respond even if

			theoretically within reach of the scene of the emergency; -the ability of those at risk to survive in the prevailing weather and sea conditions until they can be recovered (that is, for a maximum of five days according to the time to recover. parameter); -the ability of available SAR facilities to recover those at risk in the prevailing weather and sea conditions; -any shortfall between the time taken to recover those at risk and the five day time to recover. parameter and/or survival times in the prevailing conditions; -availability and quality of communications; and -effective co-ordination of search and rescue response.

	MSC/Circ.919: Guidelines for damage control plans	Should be used as guidance when applying SOLAS Reg. II-1/23: Damage control plans in passenger ships,II-1/25-8: Stability information	▪ A damage control plan and a damage control booklet provide ship's watertight compartmentation to help preventing from progressive flooding and the resulting stability issues etc. ▪ Damage control booklet includes general instructions for controlling the effects of damage e.g.: -Close all watertight and weathertight closing appliances -Establish location and safety of persons onboard – Sound tanks and compartments to ascertain the extent of damage -Cautionary advice regarding the cause of any list and of liquid transfer operations to lessen list or trim, and the resulting effects of creating additional free surfaces and of initiating pumping operations to control the ingress of water ▪ Visual guidance such as damage consequence diagrams can provide the master with a rapid means to evaluate the consequence of damage to the ship ▪ For passenger ships, the damage control plan should be permanently exhibited on the navigation bridge, as well as in the ship's control station or equivalent
	MSC.1/Circ.1245 "Guidelines for damage control plans and information to the master"	For applying SOLAS II-1/19 Damage control information (Part B-4 stability management)	▪ Same requirements as MSC/Circ.919 ▪ Damage control plan and booklet should be in printed form. ▪ The use of onboard computers, with damage stability software developed for the specific ship, and familiar to properly trained ship's officers can provide a rapid means to supplement the information in the plan booklet for effective damage control.
	A.691(17): Safety instructions to passengers	SOLAS III/8.2 and III/8.4 requires emergency instructions for passengers after departure	▪ An announcement, in appropriate languages, on the ship's public address system or by another suitable means should be made after departure (in case there were no muster)

	MSC/Circ.699: Guidelines for passenger safety instructions	A.760(8): Symbols related to life-saving appliances and arrangements	▪ Example of emergency instruction notice for passengers: General emergency alarm signal Actions on hearing the general emergency alarm (proceed to the nearest muster station, if possible collect lifejacket, assist people who need help, follow crew, do not use lifts, if the nearest exit is blocked, use the alternative exit as marked in the plan) Definition of a muster station Action on arrival in muster station (put lifejacket given by crewmember if needed…) ▪ Verbal speech intensity of broadcasts on public address system should be at least 20dB above the speech interference level at the location for the intended receiver, audible in all operating conditions in all public accommodation and service spaces, including open decks to which passengers have access ▪ Means of drawing passengers' attention to emergency instruction notices for passengers (safety briefing on departure, emergency instruction notices given) ▪ Example of emergency instruction broadcast
	MSC/Circ.1079: Preparing plans for co-operation between search and rescue services and passenger ships	In accordance with SOLAS reg. V/7.3 and with the ISM Code	▪ The regulation requires that the co-operation plan includes provisions for periodic exercises to be undertaken to test its effectiveness. ▪ A wide variety of scenarios should be employed; different SAR services should be involved if appropriate; and exercises should be so arranged as to allow all relevant staff (including relief staff) to participate over time.
UNCLOS	Article 98: Duty to render assistance		▪ Every State shall require the master of a ship flying its flag, in so far as he can do so without serious danger to the ship, the crew or the passengers: -to render assistance to any person found at sea in danger of being lost; -to proceed with all possible speed to the rescue of persons in distress, if informed of their need of assistance, in so far as such action may reasonably be expected of him; -after a collision, to render assistance to the other ship, its crew and its passengers and, where possible, to inform the other ship of the name of his own ship, its port of registry and the nearest port at which it will call.

STCW Code	Section A-II-1 (officers): Mandatory minimum requirements for certification of officers in charge of a navigational watch on ships of 500 gross tonnage or more	MERSAR (replaced by IAMSAR)	▪ Act according to contingency plan in case of emergency ▪ Initial actions, damage assessment in case of collision or grounding ▪ Appreciation of the procedures to be followed for rescuing persons from the sea, assisting a ship in distress, responding to emergencies which arise in port ▪ Ability to organize abandon ship drills and knowledge of the operation of survival craft and rescue boats, their launching appliances and arrangements, ▪ Knowledge of survival at sea techniques ▪ Apply medical first aid on board ship
	A II-2 (masters and chief mates): Mandatory minimum requirements for certification of masters and chief mates on ships of 500 gross tonnage or more	MERSAR (replaced by IAMSAR in reality)	▪ Action to be taken if grounding is imminent, and after grounding ▪ Refloating a grounded ship with and without assistance ▪ Action to be taken if collision is imminent and following a collision or impairment of the watertight integrity of the hull by any cause ▪ Assessment of damage control ▪ Decisions and actions to maximize safety of persons on board ▪ Actions to be taken to protect and safeguard all persons on board in emergencies ▪ Actions to limit damage and salve the ship following a fire, explosion, collision or grounding ▪ Preparation of contingency plans for response to emergencies ▪ Ship construction, including damage control ▪ Methods and aids for fire prevention, detection and extinction ▪ Functions and use of life-saving appliances ▪ Organize and manage the provision of medical care on board ▪ Understanding of fundamental principles of ship construction and the theories and factors affecting trim and stability and measures necessary to preserve trim and stability ▪ Knowledge of the effect on trim and stability of a ship in the event of damage to and consequent flooding of a compartment and counter measures to be taken ▪ Knowledge of IMO recommendations concerning ship stability
	A II-3 (watch officer)	MERSAR (replaced by IAMSAR in reality)	▪ Emergency procedures including: -precautions for the protection and safety of passengers in emergency situations -initial assessment of damage and damage control -action to be taken following a collision -action to be taken following a Grounding
	A II-4 (ratings forming part of the navigational watch)		▪ Operate emergency equipment and apply emergency procedures

	A III-1 (officers in charge of engineering watch)		▪ Operate LSA ▪ Apply medical 1st aid onboard
	A III-2 (chief engineer officers and 2nd engineer officers)		▪ A thorough knowledge of life-saving appliance regulations (International Convention for the Safety of Life at Sea) Organization of fire and abandon ship drills ▪ Maintenance of operational condition of life-saving, fire-fighting and other safety systems ▪ Actions to be taken to protect and safeguard all persons on board I emergencies ▪ Actions to limit damage and salve the ship following fire, explosion, collision or grounding ▪ Develop emergency and damage control plans and handle emergency situations ▪ Understanding of fundamental principles of ship construction and the theories and factors affecting trim and stability and measures necessary to preserve trim and stability ▪ Knowledge of the effect on trim and stability of a ship in the event of damage to and consequent flooding of a compartment and counter measures to be taken ▪ Knowledge of IMO recommendations concerning ship stability
	A V-2 (masters, officers, ratings and other personnel on ro-ro passenger ships)		▪ Crisis management and human behaviour training ▪ Crowd management training: ▪ .Awareness of life-saving appliance and control plans including: -knowledge of muster lists and emergency instructions, -knowledge of the emergency exits, and -the ability to assist passengers en route to muster and embarkation stations including: -the ability to give clear reassuring orders, -the control of passengers in corridors, staircases and passage ways, -maintaining escape routes clear of obstructions, -methods available for evacuation of disabled persons and persons needing special assistance, and -search of accommodation spaces; ▪ mustering procedures including: -the importance of keeping order, -the ability to use procedures for reducing and avoiding panic, -the ability to use, where appropriate, passenger lists for evacuation counts, and -the ability to ensure that the passengers are suitably clothed and have donned their lifejackets correctly. ▪ Ability to take proper account of stress limitations for sensitive parts of the ship such as bow doors and other closing devices that maintain watertight integrity and of special stability considerations which may affect the safety of ro-ro passenger ships. ▪ Ability to ensure proper application of any special procedures to prevent or reduce the ingress of water on vehicle decks, remove water from vehicle decks, and minimize effects of water on vehicle decks.

	A V-2 (masters, officers, ratings and other personnel on ro-ro passenger ships) Personnel providing direct service to passengers in passenger spaces		▪ Ability to communicate with passengers during an emergency, taking into account: -the language or languages appropriate to the principal nationalities of passengers carried on the particular route, -the likelihood that an ability to use an elementary English vocabulary for basic instructions can provide a means of communicating with a passenger in need of assistance whether or not the passenger and crew member share a common language, -the possible need to communicate during an emergency by some other means such as by demonstration, or hand signals, or calling attention to the location of instructions, muster stations, life-saving devices or evacuation routes, when oral communication is impractical, -the extent to which complete safety instructions have been provided to passengers in their native language or languages, and -the languages in which emergency announcements may be broadcast during an emergency or drill to convey critical guidance to passengers and to facilitate crew members in assisting passengers. ▪ Ability to demonstrate to passengers the use of personal life-saving appliances.
	A VI – 1 (personal survival techniques)		-
	A VI – 2.1 (survival crafts and rescue boats)		-
	A VI – 2.2 (fast rescue boats)		-
	A VI – 2.3 (advanced fire fighting)		-
	A VI – 2.2 (medical first aid and medical aid)		-
	B V-3 guidance regarding training of seafarers on large passenger ships		-
	SC 156 Doors in watertight bulkheads of cargo ships and passenger ships	Arrangements for passenger ships shall be in accordance with SOLAS Reg. II-1/15.6.2	-

5.2 Design of the evacuation/abandonment system

Regulations		Link with other regulations	Summary or quotation
SOLAS III	Reg. 11 Survival craft muster and embarkation arrangements		-
	Reg. 16: Survival craft launching and recovery arrangements		
	Reg. 21.1 Survival crafts		-
	Reg. 21.2 Rescue boats		-
	Reg. 22 Personal LSA		-
	Reg. 26.4 Means of rescue		-
	Reg. 25 Muster stations		-
	Reg. 26.2.4 (Ro-ro pax liferafts)		-
	Reg. 26.2.5 (Ro-ro pax liferafts)		-
	Reg. 26.2.1 (Ro-ro pax liferafts)		-
	Reg. 26.3.1 (Fast rescue boats)		-
SOLAS II-1	Reg. 23: Damage control plans in passenger ships		-
	Reg. 22-1: Flooding detection on passenger ships	MSC.1/Circ.1291: Guidelines for flooding detection systems on passenger ships	-
	Reg. 8: Stability of passenger ships in damaged condition		-
	Reg. 23: Stability management – Special requirements for ro-ro pax ships	Ref to reg. 22.13: Record of the closing and opening time of the openings	-

SOLAS II-2	Reg 13.3.2: Means of escape in passenger ships		-
	Reg. 21: Casualty threshold, safe return to port and safe areas		-
	Reg. 23 Safety centre on pax ships		-
	Reg. II-2/28-1.3: Escape routes on ro-ro passenger ships		
	Reg. II-2/13.7.4: Evacuation analysis		
	Reg. 21: Casualty threshold, safe return to port		
	Reg. 23: Safety centre on passenger ships		
IMO circulars and resolutions	MSC.1/Circ 1238: Guidelines for evacuation analysis for new and existing passenger ships	Implementation of SOLAS reg. II-2/28-1.3, and SOLAS II-2/13.7.4	Performance standards for evacuation simulations: evacuation time
	MSC.1/Circ 1291: Guidelines for flooding detection systems on passenger ships	SOLAS II-1/22-1: flooding detection systems for passenger ships	

	MSC 86/26/Add.2 Chapter 11 of Annex Adoption of the guidelines for ships operating in polar waters		▪ Ships operating in polar waters should carry life-saving appliances and survival equipment according to their environmental conditions of operation. ▪ Personal survival kits (PSKs) as described in section 11.3 should be carried whenever a voyage is anticipated to encounter mean daily temperatures below 0°C. ▪ Group survival kits (GSKs) as described in section 11.4 should be carried whenever a voyage is anticipated to encounter ice conditions which may prevent the lowering and operation of survival craft. ▪ Sufficient PSKs and GSKs (as applicable) should be carried to cover at least 110% of the persons on board the ship. ▪ Any ice accretion should be regularly removed from the lifeboats and launching ▪ equipment to ensure ease of launching when required. An icing removal mallet should be available in the vicinity of the lifeboats. ▪ Any ice accretion should be regularly removed from the liferafts, cradles and launching equipment to ensure ease of launching and inflation when required. An icing removal mallet should be available in the vicinity of the liferafts. ▪ Ships should carry in a warm space in the vicinity of the liferafts manual inflation pumps that are proven to be effective in the anticipated air temperatures. ▪ Air or other proven cold temperature gas should be used for the inflation of life-saving equipment according to their environmental conditions of operation.
	MSC/Circ.810: Recommendations on means of rescue on roro passenger ships	SOLAS III/24-1.4: Stowage of survival craft	-
	Res. A.855(20) : Standards for onboard helicopter facilities	SOLAS II-2/18.8: Operations manual and fire-fighting arrangements	-
	MSC/Circ.985 Recommendation on helicopter landing areas on ro-ro passenger ships		-
LSA Code	IV - 4.1.1.4 (Construction of liferafts)		▪ The liferaft and its fittings shall be so constructed as to enable it to be towed at a speed of 3 knots in calm water when loaded with its full complement of persons and equipment and with one of its sea-anchors streamed
	IV - 4.1.4.2 (Davit-launched liferafts)		▪ Every passenger ship davit-launched liferaft shall be so arranged that it can be rapidly boarded by its full complement of persons

	IV - 4.2.5.3 (Inflatable liferafts)		▪ The stability of the liferaft when loaded with its full complement of persons and equipment shall be such that it can be towed at speeds up to 3 knots in calm water
	IV - 4.2.4.1 (access into inflatable liferafts)		-
	IV - 4.2.4.2 (Inflatable liferafts)		▪ There shall be means inside the liferaft to assist persons to pull themselves into the liferaft from the ladder
	IV - 4.4.1.3 (Construction of lifeboats)		▪ All lifeboats shall be of sufficient strength to be capable of being launched and towed when the ship is making headway at a speed of 5 knots in calm water
	IV - 4.4.2.1 (Construction of lifeboats)		▪ No lifeboat shall be approved to accommodate more than 150 persons
	IV - 4.4.3.1 (Construction of lifeboats)		▪ Every passenger ship lifeboat shall be so arranged that it can be rapidly boarded by its full complement of persons. Rapid disembarkation shall be also possible
	IV - 4.4.3.3 (Construction of lifeboats)		▪ Lifeboats shall have a boarding ladder that can be used at any boarding entrance of the lifeboat to enable persons in the water to board the lifeboat. The lower step of the ladder shall be not less than 0.4 m below he lifeboat's light waterline
	IV - 4.4.6.8 (lifeboats propulsion)		▪ The speed of a lifeboat when proceeding ahead in calm water, when loaded with its full complement of persons and equipment and with all engine-powered auxiliary equipment in operation, shall be at least 6 knots and at least 2 knots when towing a 25-person liferaft loaded with its full complement of persons and equipment or its equivalent…

5.3 Stability, manoeuvrability

Regulations		Link with other regulations	Summary or quotation
SOLAS III	Reg. 29: Decision support system for masters of passenger ships	Resolution A.852(20): The DSS should be based on the "Guidelines for a structure of an integrated system of contingency planning for shipboard emergencies"	▪ The loading condition as calculated for the passenger ship's voyage stability shall be used for damage control
SOLAS II-1	Reg. 22-1: Flooding detection on pax ships	MSC.1/Circ.1291: Guidelines for flooding detection systems on passenger ships	A flooding detection system for watertight spaces below the bulkhead deck shall be provided for all pax ships carrying 36 or more pax constructed after 1 July 2010. This system should be based on the IMO guidelines (to be developed)
	Reg. 8: Special requirements concerning passenger ship stability		-
	Reg. 8 – 1 System capabilities after a flooding casualty on passenger ships	Applies to pax ships under Reg. 21 Systems are those defined in Reg 21.4 Refers to the performance standards for SRTP (MSC.1/Circ. 1214)	The systems should remain operational when the ship is subject to flooding of any single watertight compartment

	Reg. 23 Stability management – Special requirements for ro-ro pax ships	Ref to reg. 22.13: Record of the closing and opening time of the openings	-
IMO regulations and circulars	MSC/Circ.919 "Guidelines for damage control plans"	Should be used as guidance when applying SOLAS Reg. II-1/23: Damage control plans in passenger ships, and II-1/25-8: Stability information	▪ A damage control plan ▪ and a damage control booklet provide ship's watertight compartmentation to help preventing from progressive flooding and the resulting stability issues etc. ▪ If the results of the subdivision and damage stability analyses are included in the damage control booklet, additional guidance should be provided to ensure that the ship's officers referring to that information are aware that the results are included only to assist them in estimating the ship's relative survavibility ▪ The guidance should identify the criteria on which the analyses were based and clearly indicate that the initial conditions of the ship's loading extents and locations of damage, permeabilities, assumed for the analyses may have no correlation with the actual damaged condition of the ship
IACS SC	SC 155 Lightweight check in lieu of inclining test SOLAS II-1-22	SOLAS II-1-22 MSC/Circ.1158 shall be applied unless advised otherwise by Flag States	▪ Where any alterations are made to a ship so as to materially affect the stability information supplied to the master, amended stability information shall be provided. If necessary the ship shall be re-inclined.
	SC 226.5 Part B Subdivision and stability and Part B-1 Stability	SOLAS II-1	-
BV rules	Pt B Chpt 3 Stability Section 2 Intact stability		▪ Stability booklet Operating booklet - Ships with innovative design are to be provided with additional information in the stability booklet such as design limitations, maximum speed, worst intended weather conditions or other information regarding the handling of the craft that the Master needs to operate the ship.
	Pt B Chpt 3 Stability Section 3 Damage stability		▪ Damage stability calculations are required in order to assess the attitude and stability of the ship after flooding. ▪ In order to assess the behaviour of the ship after damage, two approaches have been developed: the deterministic and the probabilistic, which are to be applied depending on the ship type

	Pt B Chpt 3 Stability Appendix 2 – Trim and stability booklet		▪ A trim and stability booklet is a stability manual, to be approved by the Society, which is to contain information to enable the Master to operate the ship in compliance with the applicable requirements contained in the Rules. ▪ The following information is to be included in the trim and stability booklet: a general description of the ship instructions on the use of the booklet: general arrangement and capacity plans indicating the assigned use of compartments and spaces (cargo, passenger, stores, accommodation, etc.), hydrostatic curves or tables corresponding to the design trim, cross curves (or tables) of stability calculated on a free trimming basis, for the ranges of displacement and trim anticipated in normal operating conditions, lightship data from the inclining test, , standard loading conditions, intact stability results, GM curve or table which can be used to determine compliance with the applicable intact and damage stability criteria when applicable, information about openings (location, tightness, means of closure), pipes or other progressive flooding sources, information concerning the use of any special cross-flooding fittings with descriptions of damage conditions which may require cross-flooding , when applicable
	Pt C Chpt 1 Machinery Section 10 Piping systems		▪ In order to comply with the subdivision and damage stability requirements of Pt B, Ch 3, Sec 3, provision is to be made to prevent any progressive flooding of a dry compartment served by any open-ended pipe, in the event that such pipe is damaged or broken in any other compartment by collision or grounding. ▪ For this purpose, if pipes are situated within assumed flooded compartments, arrangements are to be made to ensure that progressive flooding cannot thereby extend to compartments other than those assumed to be flooded for each case of damage. However, the Society may permit minor progressive flooding if it is demonstrated that its effects can be easily controlled and the safety of the ship is not impaired. Refer to Pt B, Ch 3, Sec 3

	Pt D Cpt 11 Passenger ships Section 3 Hull and stability		▪ The master is to be supplied with such information satisfactory to the Society as is necessary to enable him by rapid and simple processes to obtain accurate guidance as to the stability of the ship under varying conditions of service. ▪ The information should include: ▪ curves or tables of minimum operational metacentric height (GM) versus draught which assures compliance with the relevant intact and damage stability requirements, alternatively corresponding curves or tables of the maximum allowable vertical centre of gravity (KG) versus draught, or with the equivalents of either of these curves ▪ instructions concerning the operation of cross-flooding arrangements ▪ all other data and aids which might be necessary to maintain the required intact stability and stability after damage. ▪ The stability information is to show the influence of various trims in cases where the operational trim range exceeds +/- 0.5% of Ls. ▪ Plans showing clearly for each deck and hold the boundaries of the watertight compartments, the openings therein with the means of closure and position of any controls thereof, and the arrangements for the correction of any list due to flooding are to be permanently exhibited for the guidance of the officer in charge of the ship. In addition, booklets containing the aforementioned information are to be made available to the officers of the ship.
	Pt D Chpt 11 Pax ships Appendix 1 Calculation Method for Cross-Flooding Arrangements		-

	Pt D Chpt 12 Ro-Ro Pax ships Section 3 hull and stabiliy		The Master is to be supplied with such information satisfactory to the Society as is necessary to enable him by rapid and simple processes to obtain accurate guidance as to the stability of the ship under varying conditions of service Where any alterations are made to a ship so as to materially affect the stability information supplied to the Master, amended stability information is to be provided. If necessary the ship is to be re-inclined. The stability booklet of ro-ro ships is to contain information concerning the importance of securing and maintaining all closure watertight integrity, due to the rapid loss of stability which may result when water enters the vehicle deck and the fact capsize can rapidly occur. The information should include: curves or tables of minimum operational metacentric height (GM) versus draught which assures compliance with the relevant intact and damage stability requirements, alternatively corresponding curves or tables of the maximum allowable vertical centre of gravity (KG) versus draught, or with the equivalents of either of these curves instructions concerning the operation of cross-flooding arrangements all other data and aids which might be necessary to maintain the required intact stability and stability after damage. ▪ The stability information is to show the influence of various trims in cases where the operational trim range exceeds +/- 0.5% of Ls. ▪ Plans showing clearly for each deck and hold the boundaries of the watertight compartments, the openings therein with the means of closure and position of any controls thereof, and the arrangements for the correction of any list due to flooding are to be permanently exhibited for the guidance of the officer in charge of the ship. In addition, booklets containing the aforementioned information are to be made available to the officers of the ship.

5.4 Search and rescue

Regulations		Link with other regulations	SAR
SOLAS III	Reg. 27: Information on passengers		▪ Information on passengers should be made readily available to SAR services in case of an undesirable event
	Reg. 29: Decision support system for masters of passenger ships	The DSS should be based on the "Guidelines for a structure of an integrated system of contingency planning for shipboard emergencies" Resolution A.852(20)	▪ The DSS is used for emergency assistance to other ships as well
Revised International convention on Maritime Search and Rescue SAR Convention		IAMSAR Manual	▪ Parties to the Convention are required to establish ship reporting systems, under which ships report their position to a coast radio station. This enables the interval between the loss of contact with a vessel and the initiation of search operations to be reduced. It also helps to permit the rapid determination of vessels which may be called upon to provide assistance including medical help when required. Following the adoption of the 1979 SAR Convention, IMO's Maritime Safety Committee divided the world's oceans into 13 search and rescue areas, in each of which the countries concerned have delimited search and rescue regions for which they are responsible. ▪ Each RCC (Rescue Co-ordination Centre) and RSC (Rescue Sub-Centre) should have up-to-date information on search and rescue facilities and communications in the area and should have detailed plans for conduct of search and rescue operations. ▪ Recommendations on establishing ship reporting systems for search and rescue purposes, noting that existing ship reporting systems could provide adequate information for search and rescue purposes in a given area
IMO resolutions and circulars	Res. A.855(20) (onboard helicopter facilities)		-
	MSC/Circ.895 (~~helicopter~~ landing areas		-

	onboard ro-ro pax ships)		
	Res. A.999(25) Voyage planning for pax ships in remote areas	Guidance on voyage planning in A.893(21)	▪ When developing a plan for voyages to remote areas, special consideration should be given to the environmental nature of the area of operation, the limited resources, and navigational information.
	MSC/Circ.892 Alerting SAR authorities		▪ Factors to be considered for alerting SAR authorities include position (in relation to hazards and to shore-based or other SAR units); time of day; weather conditions (actual & forecast); the number of persons at risk or potentially at risk; specific assistance required, etc. ▪ Standard procedures for distress message routeing (transmit distress call if immediate help is needed or ship going to be abandoned, communicate with RCC and SRUs, switch on EPIRB and SART) ▪ Suggested procedures for reporting concerns about safety of another vessel
	MSC/Circ.1043 Ship's daily reporting of their position to their company	SOLAS Chapter IX: Management for the safe operation of ships defines at least one position reporting per day	-

	MSC/Circ.1079 Preparing plans for co-operation between search and rescue services and passenger ships	In accordance with SOLAS reg. V/7.3: Search and rescue services (paragraph on plan for cooperation) and with the ISM Code	▪ The aim of SAR co-operation planning is to enhance mutual understanding between a ship, a company and SAR services so that, in the event of an emergency, all three parties will be able to work together efficiently. This is best achieved by the prior exchange of information and by conducting joint emergency response exercises. ▪ The administrative difficulties can be overcome by use of the SAR data provider system, which permits the use of contact points between the global SAR service and cruise ship operators. ▪ Under this system, the SAR data provider holds the ship's SAR co-operation plan on behalf of the SAR services. SAR services contact the SAR data provider to obtain the co-operation plan when it is required. ▪ The company or the ship should select a suitable SAR data provider. A shipping company, RCC, or other suitable entity may act as an SAR data provider. However, the ship cannot be her own SAR data provider, as this would negate the fundamental concept of easing the load on ship's staff during an emergency. ▪ The SAR data provider should be able to provide essential information rapidly to the parties concerned. ▪ A passenger ship such as a ferry, which trades on fixed routes, should not use the SAR data provider system, but should compile a co-operation plan incorporating details of all the SAR services along her route, in accordance with appendix 1 of these Guidelines. Other passenger ships transiting many different SAR regions, perhaps on a seasonal basis, such as some cruise ships, may choose to use the SAR data provider system. Such ships are not required to include in the co-operation plan information beyond that set out in appendix 2 to these Guidelines. ▪ Copies of the completed co-operation plan should be distributed to each of the three parties to emergency response the ship, the company and the relevant SAR services. A controlled distribution system should be used to ensure that all parties maintain an up-to-date copy. ▪ SAR co-operation plans, once they have been agreed for a particular ship, should be recognised by the SAR services of all Administrations. ▪ Example of plan for co-operation between SAR services and passenger ships Information, contact details of the shipping company -Chartlet(s) showing service routes and delimitation of SAR zones -Liaison arrangements between Company and relevant RCCs (type of information exchanges, …) -Information on the ship -Information on the RCCs (SAR regions, SAR mission coordinator) -SAR facilities description ▪ Example of simplifier plan if the ship uses a SAR data provider -Company info -Ship info -Data provider info
	COMSAR/Circ.		-

	25 Procedure for responding to DSC (Digital Selective Calling) distress alerts by ships		
	COMSAR/Circ. 31 Guidance for Mass Rescue Operations (MROs)		-
IAMSAR manual	Res. A.894(21) International Aeronautical and Maritime Search and Rescue Manual – MSC/Circ 1249 Adoption of amendments to the IAMSAR manual		▪ For those who, during emergencies at sea, may require assistance from others or who may be able to provide assistance themselves. In particular, it was designed to aid the master of any vessel who might be called upon to conduct SAR operations at sea for persons in distress ▪ Volume II, Mission Co-ordination, assists personnel who plan and co- ordinate SAR operations and exercises. ▪ Volume III, Mobile Facilities, is intended to be carried aboard rescue units, aircraft and vessels to help with performance of a search, rescue or on-scene co-ordinator function, and with aspects of SAR that pertain to their own emergencies.
UNCLOS			▪ Every coastal State shall promote the establishment, operation and maintenance of an adequate and effective search and rescue service regarding safety on and over the sea and, where circumstances so require, by way of mutual regional arrangements cooperate with neighbouring States for this purpose.
STCW Code	Section A-II-1 (officers)	MERSAR (replaced by IAMSAR in reality)	▪ Knowledge of MERSAR manual (replaced by IAMSAR)
	A II-2 (masters and chief mates)	MERSAR (replaced by IAMSAR in reality)	▪ Knowledge and ability to apply procedures of MERSAR manual (replaced by IAMSAR) ▪ Emergency towing arrangements and towing procedures
	A II-3 (watch officer)	MERSAR (replaced by IAMSAR in reality)	▪ Knowledge of MERSAR manual (replaced by IAMSAR) ▪ rescuing persons from the sea ▪ assisting a vessel in distress