AUSTRALIAN MARITIME COLLEGE

A specialist Institute of UTAS

Masters and Mates Orals Examination Questions and Answers As Supplied By Australian Maritime College Students in 2007

[compiled by Rishiraj, in 2007]

Part 1 of 3

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MASTERS AND MATES ORAL EXAM QUESTIONS

PREAPRED BY RISHIRAJ

STCW Reg II/2.....SYLLABUS
DECK - A
MASTER - UNLIMITED

Candidates should demonstrate the ability to apply the knowledge outlined in this oral syllabus and oral examination syllabus DECK - B and DECK - C, by the appropriate responses, anticipations and reactions to a range of routine, non-routine and contingency scenarios as presented by the examiner, from the perspective of MASTER.

TOPIC
1.....NAVIGATION

1. Plan and Conduct a Safe Passage.

(a) Voyage planning and navigation of all conditions including ships routeing and reporting systems.
(b) IALA systems of maritime buoyage.
(c) Understand and interpret a synoptic chart and use of weather routing services.
(d) Knowledge of characteristics of various weather systems, including tropical revolving storms, the avoidance of storm centres and dangerous quadrants.
(e) Practical measures to be taken when navigating in or near ice and dealing with ice accumulation on board.
(f) Danger messages and obligatory reporting requirements.

2. Establishing Safe Navigational Watch keeping Arrangements and Procedures.

(a) A thorough knowledge of the principles of navigational watch keeping at sea, including under pilotage, and watch keeping at anchor and in port.
(b) A thorough knowledge of the content, applications and intent of the International Regulations for Preventing Collisions at Sea.
(c) Knowledge and application of the ICS Bridge Procedure Guide.
(d) Limitations and risks involved with the use of ECDIS and RCDS; inter-relationship and optimum use of all navigational information available.
(e) A knowledge of principles of establishing a safe engineering watch at sea, anchor and in port.

3. Compasses.

(a) The operation and care of various types of compasses.
(b) Care and maintenance of the magnetic compass and binnacle.
(c) Knowledge of the purpose and use of compass correctors (candidates will not be required to demonstrate a compass card procedure)
(d) knowledge of how to find the magnetic bearing of a distant object and subsequent construction of a deviation card.

4. Manoeuvre the Ship.

(a) Knowledge of manoeuvring and propulsion chacteristics of ships, with special reference to stopping distances and turning circles at various draughts and speeds, squat and inter-actions.
(b) Importance of navigating at reduced speed to avoid damage caused by own ships bow wave and sternwave.
(c) Demonstrate and understanding of ship manoeuvres commonly undertaken under all weather conditions including: berthing and unberthing, approaching pilot stations, restricted waters and shallow water.
(d) Management and handling of ships in heavy weather.
(e) Choice of anchorage and working anchors in all circumstances.
(f) Precautions when manoeuvring to launch rescue boats or survival craft in bad weather.

TOPIC 2.....CARGO HANDLING AND STOWAGE.

1. Plan and Ensure Safe Loading, Stowage, Securing, Care During Voyage and Unloading of Cargoes.

(a) knowledge and ability to apply relevant international regulations, codes and guidelines concerning the safe handling, stowage, securing and transport of cargoes.

TOPIC 3.....RESPONSE TO EMERGENCIES.

1. Response to Navigational Emergencies.

(a) Precautions when beaching a ship.
(b) grounding: action to be taken when imminent, after grounding and re-floating, and subsequent surveys.
(c) Measures to be taken following exceptional circumstances including loss of rudder and / or propeller and impairment of watertight integrity of the ship through any cause.
(d) Emergency towing arrangements and towing procedures.
(e) Plan and co-ordinate SAR operations, including establishing and maintaining effective communications.

2. Response to other emergencies.

(a) Preparation of contingency plans for response to emergencies.
(b) Actions to be taken when disabled and in distress.
(c) Organization of fire and abandon ship exercises.
(d) Methods and aids for fire prevention, detection and extinction.
(e) Functions and use of life-saving appliances.
(f) Abandoning ship and survival procedure.
(g) SAR plans for passenger ships.
(h) Maintenance of operational conditions of life-saving appliances, fire-fighting appliances and other safety systems.
(i) 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.

(j) Action to limit damage and salve the ship following a fire, explosion, collision or grounding, including protection of the marine environment.
(k) Action to safe guard all persons on board in emergencies.
(l) Assisting a ship or aircraft in distress.

TOPIC 4.....ONBOARD SHIP OPERATIONS

1. Compliance with Pollution Prevention Requirements.

(a) Responsibilities under International Convention for Prevention of Pollution including master's duties, obligations and liabilities, including the keeping of records.
(b) Methods and equipment to prevent pollution.

2. Seaworthiness of the Ship.

(a) Effect of heavy weather on the ship's structure.
(b) Effect upon ship behavior of lists, stiff and tender stability conditions, large angles of heel and associated righting precautions: the effect upon different cargoes.
(c) The importance of free surface effects and the identification and correction of an angle of loll.
(d) Specific effects on stability and stress caused by ship type or nature or trade.

3. Crew Management.

(a) Knowledge of personnel management, organization and training including disciplinary procedures.
(b) Application of hours of work and rest legislation.

4. Maintain Safety of Ships Crew and Passengers.

(a) Master's responsibility with respect to stowaways and prevention of smuggling.
(b) Precautions to safeguard against terrorism, piracy and armed robbery.
(c) Methods of pest control - fumigation of holds and living spaces; safeguards in applying various methods.

5. Legislative Requirements.

(a) Knowledge and application of current Merchant Shipping Health and Safety legislation including the Code of Safe Working Practices for Merchant Seamen and the main elements of Risk Assessment.
(b) Safe manning, crew agreements, conditions of employment, official log book and the law relating to entries.
(c) Knowledge of international conventions relevant to the operation of ships, including certificates and other documents required to be carried on board ships.
(d) Requirements for statutory and classification surveys.
(e) Reports required by the Marine Accident Investigation Branch (MAIB).
(f) Putting into port with damage to ship and / or cargo, both from business and technical points of view, safeguarding of cargo.

(g) Towage and salvage agreements.
(h) Obligations with respect to pilotage.
(i) Marine declarations of health and requirements of the international health regulations.
(j) Purpose and applications of the International Safety Management (ISM) Code.

What are the Four Elements to a Passage Plan?

Appraisal
Planning
Execution
Monitoring

It you remember the word "PEAM" this will help you think about the 4 stages

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Appraisal, what is this?

When you gather as much safety and navigation information to give you a safe voyage

What type of information does this involve?
The tides
Tidal streams
Under-keel allowances
Information from pilot books/sailing directions
Chart dangers (rocks, shallow water oil-rigs etc.)
Traffic schemes
Weather information (shipping forecasts)
Possible areas of restricted visibility
Any areas, which would involve an area of high traffic density

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Planning, what is this?

Planning out the intended voyage, using all the information from Appraisal

What have you to do to make a plan of your voyage?
Plot the intended voyage making sure it is safe, and that the plan has been checked out by the master of the vessel, use way points, parallel indexing, courses, distance to steam on each leg, and by using all the information that you Appraised

Execution, what is this?

The master should find out how long his intended voyage should take, making sure he has enough water and fuel for the voyage
He should take into account any weather conditions expected on the voyage
Any areas of high traffic density that would make him deviate from his course (he should if possible make a plan to keep well clear of these areas)

Monitoring, what is this?

This is the act of checking your position often on a chart and that you remain in a safe distance from any danger areas (land)
Parallel Indexing should be used when you are alongside any hazards to maintain a safe distance

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What is Parallel Indexing?

This is done by using your radar and V.R.M. (Variable Range Marker) and putting a distance on to it, as long as this distance is not breached, then your vessel should be in safe water

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What is the purpose of Parallel Indexing?

To make sure your vessel is a safe distance away from any navigation hazards

How do you parallel index-using radar?

By using your heading marker and slide it over towards the side that has the obstruction and using your V.R.M. and measuring the distance you need and put the heading marker onto the V.R.M.

What would you do if you had to parallel index off a point of land at 2 miles but the radar says your 1.7 miles from the point of land?

Alter off the land until you where 2 miles from the point of land, never breech what distance you had to keep off an obstruction

(Q) How would you make the actual passage plan going from Aberdeen to the west side of Shetland?

(a) By putting way points so you can parallel index off the points of lands before and when joining a new course taking into account the strong tides at the Pentland Firth and the chances of meeting small inshore traffic

(Q) What distance would you parallel index off the land or any obstacles that's in your passage plan?
(a) At least 2 miles depending on the depth of water at that obstacle and any dangers to the ship

(Q) You've made a passage plan up for a voyage from Aberdeen to Egypt, how will you find out the state of the tide in the area your going too?
(a) By using the tidal diamonds that's on the chart of the area your going too

(Q) Why is it important to keep your charts up to date?
(a) Incase any new obstructions endanger your vessel, sunk vessel with her masts above the water, well-heads, new approaches to a harbor, oil-rig shifted position Etc.

(Q) How do you correct your charts up to date?
(a) By using the Cumulative Notices to Mariners and cross-referencing them against the numbers of past corrections on the bottom left hand side of your chart.

(Q) What would you do if there was a correction missing?
(a) Find out the correction number and what issue of the Weekly Notices to Mariners it was contained in and enter it and put the correction number in at the bottom left hand side of the chart then sign it and date it.

(Q) What is Position fixing?
(a) By using your GPS and taking the lat/long and placing this onto a chart

(Q) How can you Position fix your position on a chart if you only have a radar, charts and a magnetic compass 2 miles from a point of land?
(a) By taking a compass bearing of the point of land and changing this to a true bearing then reversing the true bearing, now draw a line with the true reversed bearing from the point of land and measure off 2 miles this will give you an approximate fix

(Q) What publication would you find all the charts of the world?
(a) Admiralty World Charts

Rule 2 Responsibilities

(Q) Define Rule 2-Responsibilities?
(a) That everybody is responsible for any action taken aboard a vessel, and if involved in a collision then both parties are at fault, because the stand-on vessel did not use rule 7 risk of collision and rule 8 Action to avoid collision.

(Q) What are the responsibilities of a skipper on the vessel?
(a) To make sure the vessel is a safe and healthy working environment

(Q) what are the responsibilities of individuals aboard your vessel?
(a) To make sure their health is good and if they see any dangers then to report them to the skipper

Rule 3 General Definitions

(Q) Describe the term "not under command"?
(a) Means a vessel through some exceptional circumstances is unable to deviate from the course she is following.

(Q) Describe the term" vessel restricted in her ability to manoeuvre"?
(a) Is a vessel through the nature of her work; she is unable to deviate from her course she is following.

(Q) Describe a "vessel constrained by her draught"?
(a) Is a power-driven vessel, because of her draught in relation to the depth of water she is in, cannot deviate from the course she is following

(Q) Describe the word "Underway"?
(a) When a vessel is not at anchor, aground or made fast to the shore, and is only going through the water by tide and/or wind.

(Q) Describe the word "Making way"?
(a) When a vessel is being propelled through the water by engine propulsion, sails or oars.

(Q) In the Rules of the road, in some rules the word "vessel" comes up, but what would you say a vessel is?
(a) Any type of watercraft than can carry personnel.

(Q) Describe a power-driven vessel?
(a) Any vessel that has an engine to propel herself through the water

(Q) Describe a sailing vessel?
(a) A vessel using sails and not using engine propulsion to push her through the sea.

(Q) Describe the word "seaplane"?
(a) Any aircraft that can land on water.

(Q) Your asked about the "Length and Breadth" of your vessel, what is this?
(a) The longest length of your vessel and the widest part of the vessel, you'll get this from your "Stability book" and the "Record of particulars"

(Q) the term "when vessels are in sight of one another" what does this mean?
(a) When you can see the vessel visually by the naked eye during daylight or at night, Rule 34 explains the sound signals used "When vessels are in sight of one another"

Rule 5 Lookout.

(Q) Describe rule 5 lookout?
(a) By keeping a good lookout using eyes, ears and by using all navigation aids including radios for listening out for navigation warnings, so you can appraise any situation ahead of you.

Rule 6 Safe Speed.

(Q) Describe a safe speed by all vessels?
(a) Every vessel shall go at a safe speed so that you can stop your vessel in half the distance you can see and use the other half to manoeuvre away from danger, taking the following factors into account: -

By all vessels:-
(i) the state of visibility
(ii) density of traffic
(iii) how manoeuvrable your vessel is, and how quick you can stop your vessel
(iv) the glare of your lights or light from the shore, you might not see the harbor entrance
(v) weather, sea state and any navigation hazards
(vi) the draught of your own vessel

(Q) Describe a safe speed by vessels with operational radar?

(i) The limitations of your radar
(ii) the scale in use (too small a scale could be hiding targets)
(iii) weather, sea and rain clutter (target could be hiding in clutter)
(iv) ice, small vessels not detected by radar
(v) vessels detected by radar
(vi) determine the range of other vessels

Rule 7 Risk of Collision.

(Q) What would you use to determine a risk of collision?
(a) Compass, radar and visual bearings (visual bearings being the most reliable)

(Q) what scale is your radar(s) on?
(a) 6 and 12 miles.

(Q) Why is your radar on the 12 miles scale?
(a) For early detection of targets.

(Q) You've taken 1 radar plot of a target, would you alter with this plot?
(a) No.

(Q) You've taken a 2nd radar plot of a target, would you alter with this plot?
(a) No.

(Q) Why would you not alter with 1 and 2 plots?
(a) Rule 7 part (c) says not to rely on scanty information, especially scanty radar information.

(Q) What are the dangers with radar plotting?
(a) Time is being wasted and could put your vessel into a collision course

(Q) If the bearings are steady, is there a risk of collision?
(a) Yes.

(Q) If the bearings are not steady, could there still be a risk of collision?
(a) Yes.

(Q) What situations?
(a) With a large vessel, a long tow or a close quarter situation.

(Q) If plotting a vessel towing a vessel towing another vessel with the length of tow being 2 miles long, what are you going to take bearings of?
(a) The stem of the towing vessel and the stern of the vessel being towed, everything in between is a risk of collision.

Rule 8 Action to avoid collision.

(Q) What 4 actions can you take to avoid a collision?
(i) an early and bold alteration of course, as long as you do not put your vessel into another close quarter situation/risk of collision with another vessel
(ii) slow your vessel down
(iii) stop your vessel
(iv) come astern with your vessel

(Q) Why are you always making an alteration of course, why do you not stop your vessel?
(a) To make sure the risk of collision/close quarter situation is taken out, also the other vessel ill see the change of aspect of your vessel (Visually and by radar)

(Q) If you make an alteration of course, what have you to watch out for?
(a) That you don not put yourself into a close quarter situation with another vessel.

(Q) If you make an alteration of course, why is it dangerous to make a series of small alterations?
(a) Because you could go into a close quarters situation/risk of collision

(Q) If you're unsure about what to do in a situation, what's the best thing to do?
(a) Slow your vessel down, best to stop your vessel altogether.

Rule 9 Narrow Channels.

(Q) What side of the narrow channel would you keep?
(a) The starboard side of the narrow channel as long as your vessel is in safe water.

(Q) What would you sound to overtake a vessels starboard side?
(a) (Morse "G") (2 prolonged blasts followed by 1 short blast on the whistle

(Q) What would you sound to overtake a vessels port side?
(a) (Morse "Z")(2 prolonged blasts followed by 2 short blasts on the whistle)

(Q) What would you sound if you agree to be overtaken in a narrow channel?
(a) (Morse "C")(1 prolonged, 1 short, 1 prolonged, 1 short blast on the whistle)

(Q) What would you sound if you disagree to be overtaken in a narrow channel?
(a) (5 or more short and rapid blasts on the whistle)

(Q) What would you sound coming up to a bend in a narrow channel?
(a) (1 prolonged blast on the whistle)

(Q) If there is another vessel coming around the bend and he heard your warning signal, what would he sound?
(a) (1 prolonged blast on the whistle to let you know he is there)

(Q) What 3 vessels do not impede any other vessels using a narrow channel?
(a) A fishing vessel, sailing vessel and vessels under 20 metres

(Q) Are you allowed to cross a narrow channel?
(a) Yes, as long as you do not impede any vessel using the narrow channel

(Q) If you where in a narrow channel, and there is a vessel crossing a narrow channel, what would you sound to get him to stop and let you pass?
(a) Five or more short and rapid blasts on the whistle to indicate that your unsure of his intentions.

Rule 10 Traffic Separation Schemes.

(Q) How do you join a lane?
(a) At the start of a lane or at a small an angle as possible to the lane.

(Q) How do you leave a lane?
(a) At the end of a lane or at a small an angle as possible to the lane.

(Q) How do you cross the lanes?
(a) At 90 degrees to the general flow of traffic (DO NOT SAY TO THE LANE)

(Q) Why 90 degrees?
(a) Because it's the quickest way across, and vessels in the lane can see the aspect of your vessel.

(Q) If crossing a lane, what 3 vessels do not impede any vessel using a lane?
(a) A fishing vessel, a sailing vessel and a power-driven vessel under 20metres.

(Q) What vessels can use the inshore zone?
(a) A power-driven vessel under 20 metres, sailing vessels, fishing vessels, vessels going to or from a port, going from port to port in the scheme, going into anchor to do emergency repairs, to avoid immediate danger, to lay submarine cables or to do repairs to buoys within the scheme.

(Q) What vessels can use the traffic separation zone?
(a) Fishing vessels, anchor for emergency repairs, crossing vessels, to avoid immediate danger, to lay submarine cables or to do repairs to buoys within the scheme.

(Q) Where can you anchor in a scheme?
(a) Anywhere, as long as it's to do emergency repairs, try and avoid anchoring in the lanes and at the terminations.

(Q) What would you do if you had to stop your main engine to do emergency repairs in a lane and had to anchor?
(a) Call up the port and advise them, also put out a security warning other vessels that you're at anchor, put up anchor lights and daytime signal.

(Q) Where can you fish in the scheme?
(a) Anywhere, but if fishing in a lane then go with the flow of traffic, and try and avoid fishing at the terminations.

(Q) Would you fish in a traffic separation scheme?
(a) This is a personnel question, there is a lot of large traffic there; you would be putting your crew and vessel into dangerous situations.

(Q) Could a supertanker leave a lane at 90 degrees come into the inshore zone to a pilot station, pick up a pilot and then cross to the opposite inshore zone at 90 degrees?
(a) No, he would have to leave the lane at a small an angle as possible to the lanes.

(Q) If you're in a power-driven vessel, crossing a scheme and on your port bow is another power-driven vessel in a lane, the bearing are steady and the distance is closing, what are you going to do?
(a) First find out length of vessel you are in.

(Q) Does it matter what size the power-driven vessel is that you're in?
(a) Yes, if under 20 metres and crossing a lane, then you would have to give way to every vessel in the lane.

(Q) Your in a 30 metres power-driven vessel crossing a lane, and there is a power-driven vessel on your port bow in a lane, the bearings are steady and the distance is closing, what are you going to do?
(a) Stand-on with caution, maintaining your course and speed.

(Q) How would the power-driven vessel leave the lane?
(a) He would make an early and bold alteration to starboard sounding 1 short blast on the whistle indicating he is altering to starboard.

(Q) Would he line up your stern and go around it?
(a) No, this would be a close quarter situation and could make you alter your course and put into a collision course with another vessel.

(Q) After the vessel came around your stern, how would he get back into the lane?
(a) At a small angle as possible to the general flow of traffic.

(Q) If you where in any vessel, just outside the scheme, would you manoeuvre here?
(a) No, it says if not using the scheme, then to give it a wide a margin as possible.

(Q) If you're fishing in a lane, and there is a power-driven vessel overtaking you, what are you going to do?
(a) Stand-on with caution, you have to use rule 13 Overtaking.

(Q) If you're crossing a lane in a fishing vessel and any vessel is on your port bow in a lane, the bearings are steady and the distance is closing, what are you going to do?
(a) If you're crossing and the bearings are steady, then you have to give-way to all vessels in a lane.

Short cut to remember which vessels use the inshore zone and the separation zone

Vessels that can use Inshore Zone	**Vessels that can use the Separation Zone**
3 boats + P.P.AID	**FACID**
Fishing **Sailing** **PDV under 20 metres** Boats going from **P**ort to **P**ort Boats **a**nchoring Boats leaving the lane to avoid **i**mmediate **d**anger Also Vessels restricted in her ability to manoeuvre laying cables/buoys	**F**ishing Vessels Vessels going into **A**nchor **C**rossing vessels Boats leaving the lane to avoid **i**mmediate **d**anger Also Vessels restricted in her ability to manoeuvre laying cables/buoys

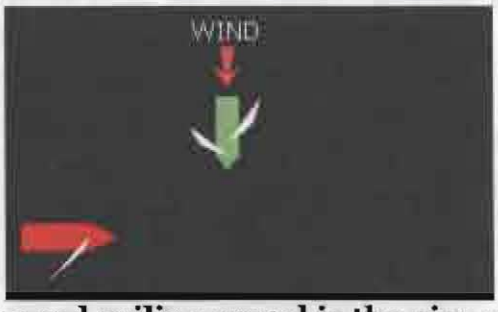
Rule 12 Sailing vessels

(Q) In the following sketches which sailing vessel is the Give way vessel?

(Above image) The red sailing vessel is the Give way vessel as he has the wind on his port side

(Above image) The green sailing vessel is the give way vessel as he is to windward of the other vessel

(Above image) The red sailing vessel is the give way vessel as he is to windward of the other vessel



(Above image) The red sailing vessel is the give way vessel, if he is unsure if the sailing vessel to windward has the wind on his port or starboard side

(Q) On a sailing vessel, what is deemed as the windward side?
(a) Opposite side to which the main sail is carried, windward side is usually the port side of the vessel.

Rule 13 Overtaking.

(Q) What's classed as an overtaking vessel?
(a) When you're coming up on another vessel MORE than 22.5 degrees abaft the beam.

(Q) What light will you see at night if you're overtaking another vessel?
(a) The sternlight of the other vessel.

(Q) What are your priorities when overtaking another vessel?
(a) To keep well clear of the vessel being overtaken until well past and clear.

(Q) What distance would you say is well past and clear?
(a) At least 4 miles.

(Q) If you're overtaking another vessel and now you're abeam of the other vessel are you overtaking or crossing?
(a) You're still an overtaking vessel until well past and clear

(Q) If you're in any vessel and any vessel is overtaking you what would you do?
(a) Stand-on with caution keeping your course and speed.

(Q) If you're coming up on a vessel at 22.5 degrees abaft the beam, are you a crossing vessel or overtaking vessel?
(a) You're a crossing vessel, the word MORE is missing.

(Q) If you're overtaking a vessel, you're on his starboard quarter and the other vessel is on your stem, what action will you take?
(a) Take the shortest course, sound 2 short blasts on the whistle and make an early and bold alteration to port and go around the other vessel's stern.

(Q) If you're overtaking a vessel, you're on his port quarter and the other vessel is on your stem, what action will you take?
(a) Take the shortest course, sound 1 short blast on the whistle and make an early and bold alteration to starboard and go around the other vessel's stern.

(Q) If you're coming up on a vessel, and one minute you're seeing his sternlight, then his sidelight, then his sternlight, is this a crossing situation or an overtaking situation?
(a) This is an overtaking situation.

Rule 14 Head-on Situations.

(Q) According to the rule, what types of vessels do you need?
(a) 2 power-driven vessels.

(Q) In a head-on situation between 2 power-driven vessels, how do you know it's a head-on situation at night?
(a) Because you would see his masthead light in between his sidelights.

(Q) What action will you take with 2 power-driven vessels in a head-on situation?
(a) Both vessels will sound 1 short blast on the whistle and make an early and bold alteration to starboard.

(Q) What action will you take if you're in a power-driven vessel, and in a head-on situation with a fishing vessel, also what action would the fishing vessel take?
(a) You will sound 1 short blast on the whistle and make an early and bold alteration to starboard, the fishing vessel will stand-on with caution because he is most hampered.

Rule 15 Crossing Situations.

(Q) What type of vessels do you need for this rule?
(a) 2 power-driven vessels.

(Q) How do you know who is the give way vessel in a crossing situation?
(a) You're the give way vessel if you have another power-driven vessel on your starboard side.

Rule 16. Action by Give way Vessels.

(Q) If you were the Give way vessel, what action would you take?
(a) Make an early and bold alteration of course, you could slow down, stop your vessel or come astern, but if plenty of distance, an alteration is the best means to avoid a collision.

Rule 17. Action by Stand-on Vessels.

(Q) If you're the stand-on vessel, what action will you take?
(a) Stand-on with caution, keeping your course and speed.

(Q) If the Give way vessel were standing on, what warning signal would you give him?
(a) 5 or more short and rapid blasts on the whistle, to indicate that you are unsure of his intentions.

(Q) If you're in a power-driven vessel, and on your port bow there is another power-driven vessel, who is standing-on, collision course, you've gave him 5 or more short and rapid blasts on the whistle, you got no response from him, what action will you take now?
(a) Make an early and bold alteration away from him, in this case, 1 short blast on the whistle and an early and bold alteration to starboard and show him your sternlight.

(Q) If you're in a fishing vessel, and on your starboard bow is a sailing vessel, who is standing-on, collision course, you've gave him 5 or more short and rapid blasts on the whistle, you got no response from him, what action will you take now?
(a) Make an early and bold alteration away from him, in this case, 2 short blasts on the whistle and make an early and bold alteration to port.

(Q) What actions for the stand-on vessel if the give way vessel stands-on?
(a) If the give way vessel stands on; the stand-on vessel may alter course (outside 4 miles - Rule of thumb distance)
(inside 4 miles - Rule of thumb distance)If in a close quarter situation and the give way vessel stands on; the stand-on vessel shall alter course

Rule 18. Responsibilities between vessels.

(Q) If you are in a power-driven vessel, there are 6 vessels that you should give way to, name them?
(a) A power-driven vessel on your starboard bow.
(b) A sailing vessel
(c) A fishing vessel
(d) A vessel not under command
(e) A vessel restricted in her ability to manoeuvre
(f) If the circumstances of the case admit, a vessel constrained by her draught.

(Q) If you are in a fishing vessel, then you have to give way to 4 vessels, name them?
(a) A fishing vessel on your starboard bow
(b) A vessel not under command
(c) A vessel restricted in her ability to manoeuvre
(d) If the circumstances of the case admit, a vessel constrained by her draught.

(Q) If you're in a power-driven vessel, or fishing vessel, would you stand-on or give way to a vessel constrained by her draught?
(a) Your best to Give way to a vessel constrained by her draught.

(Q) Is there any rule that says you should try to avoid impeding the safe passage of a vessel constrained by her draught?
(a) Yes, Rule 18d part (1) says any vessel other than a vessel not under command or a vessel restricted in her ability to manoeuvre, shall if the circumstances of the case admit avoid impeding the safe passage of a vessel constrained by her draught.

(Q) Usually what type of vessel would a vessel constrained by her draught be?
(a) Very large supertanker carrying crude oil.

(Q) So what would happen if you stood-on to a vessel constrained by her draught?
(a) She could easily go aground and tear the bottom out of her hull, causing a major ecological disaster, killing all seabirds, covering the coastline with oil, pollution at its worst.

power-driven vessel gives way to.....		A fishing vessel gives way to.....	
Big	Restricted in her ability to manoeuvre	3 Big	Restricted in her ability to manoeuvre
	Not under command		Not under command
	Constrained by her draught		Constrained by her draught
small	Sailing		
kward	Fishing		
	A power-driven vessel on your own starboard side	1 awkward	A fishing vessel on your own starboard side

Rule 19. Conduct of vessels in Restricted Visibility.

(Q) What does Rule 19 mean to you?
(a) This Rule applies to all vessels in or near an area of Restricted Visibility.
IN OTHER WORDS: -
(THERE ARE NO STAND_ON VESSELS IN RESTRICTED VISIBILITY)

(Q) What would you say a safe speed was in Restricted visibility?
(a) A speed that you could stop your vessel in half the visible distance you could see, so you could alter using Rule 19 (d) parts (i) and (ii)

(Q) What does part (a) say?
(a) This Rule Applies to all vessels in or near an area of restricted visibility

(Q) What does part (b) say?
(a) Go at a safe speed and have your engines ready for immediate manoeuvre's

(Q) What does part (c) say?
(a) Have Due regards to the prevailing condition

(Q) What does Rule 19 (d) say?
(a) A vessel which detects by radar alone the presence of another vessel shall determine if a close-quarter situation is developing and/or risk of collision exists. if so she shall take avoiding action in ample time, providing that when such action consists of an alteration of course, so far as possible the following shall be avoided

(Q) What does Rule 19 (d) Part (i) say?
(a) Avoid an alteration to port for a vessel forward of the beam, other than for a vessel being overtaken

(Q) What does Rule 19 (d) Part (ii) say?
(a) Avoid an alteration towards a vessel abeam or abaft the beam

(Q) What does Rule 19 (e) say?
(a) Except where it has been determined that a risk of collision does not exist, every vessel which hears apparently forward of her beam, the fog signal of another vessel, or which cannot avoid a close-quarters situation with another vessel forward of her beam, shall reduce her speed to a minimum at which she can be kept on her course. Shall if necessary take all her way off and in any event navigate with extreme caution until danger of collision is over.

Rule 23. Power-Driven Vessels

(Q) A Power-driven Vessel - UNDERWAY, what Navigation Lights does he switch off if he is stopped and making no-way through the water?
(a) None, he is not entitled to switch off any Navigation Lights

(Q) What is classed as Navigation Lights?
(a) Sidelights (Port & Starboard), Sternlight, and if entitled to them Masthead light(s)

(Q) What vessels are not entitled to masthead lights if the vessel is Underway?
(a) Three vessels;
(i) Fishing vessel other than Trawling (Red Light over a White Light - 2 metres apart)
(ii) Not Under Command (Red light over a Red Light - 2 metres apart)
(iii) A Vessel engaged in Pilotage duties (White light over a Red Light - 2 metres apart)

(Q) How can you tell a Power-driven vessel is Makingway?
(a) By taking a series of Compass, Radar & Visual Bearings (visual Bearings being most accurate)

Rule 34. Manoeuvring and Warning Signals

(Q) 1,2,3 & 5 Short and Rapid blasts on the ships whistle, what condition of visibility are these sound signals used?
(a) When vessels are in sight of one another

(Q) Does that mean clear visibility?
(a) No, you can still see a vessel when it is hazy, when you can see the vessel visually then you use this Rule and not Rule 35. Sound Signals in Restricted Visibility

(Q) In a Narrow Channel, a vessel sounds 2 Prolonged Blasts followed by 1 short blast (Morse "G" - Golf), what does he intend to do?
(a) He wants to Overtake your Starboard side and he is awaiting your answer for you to agree for him to pass

(Q) In a Narrow Channel, a vessel sounds 2 Prolonged Blasts followed by 2 short blast (Morse "Z" - Zulu), what does he intend to do?
(a) He wants to Overtake your Port side and he is awaiting your answer for you to agree for him to pass

(Q) What sound signal would you reply with if you agreed with the overtaking manoeuvre?
(a) (Morse "C" - Charlie) 1 Prolonged blast followed by 1 short blast followed by 1 prolonged blast followed by 1 short blast on the ships whistle

(Q) What would you sound if you disagreed to be overtaken in a narrow channel?
(a) You'd sound 5 or more short and rapid blasts on the ships whistle, you can also flash a light 5 or more times

(Q) In a Narrow channel, your coming towards a bend in the channel, what warning signal will you sound?
(a) One prolonged blast on the ships whistle

(Q) If I was coming around the bend towards you, what warning signal would I sound?
(a) One prolonged blast on the ships whistle

(Q) You're on a collison course with another vessel, you're the stand-on vessel, the giveway vessel is standing-on, what warning signal will you sound?
(a) You'll sound 5 or more short and rapid blasts on the ships whistle

Rule 35. Sound signals in Restricted Visibility

(Q) A vessel engaged in Pilotage duties, what is his identity signal?
(a) He may sound 4 short and rapid blasts on the ships whistle

(Q) May he sound the identity signal when vessels are in sight of one another?
(a) No, this is only to be sounded in Restricted Visibility

(Q) Is there a time length for the Pilots identity signal (I.E. not exceeding 2 minutes)?
(a) No, there is no time limit, he may sound the identity signal as and when he wants

(Q) Name the vessels with a hampered fog signal (1 Prolonged and 2 short)?
(a)
(i) Sailing Vessel (ii) Fishing vessels (Trawler & Fishing other than Trawling)
(iii) Not Under command (iv) Restricted in her ability to manoeuvre
(v) Constrained by her Draught (vi) Minesweeper
(vii) Vessel engaged in towing
(viii) Restricted in her ability to manoeuvre engaged in towing
(ix) A vessel engaged in pushing another vessel ahead
(x) A Fishing vessel other than trawling fishing while at anchor (Anchor Seine-net)
(xi) Restricted in her ability to manoeuvre while at anchor

(Q) A Power-driven vessel has 2 different Fog signals, what are they?
(a)
If Underway - Two Prolonged blasts on the ships whistle at intervals not exceeding two minutes
If Makingway - One Prolonged blast on the ships whistle at intervals not exceeding two minutes

(Q) A Short Blast - How long does it last for?
(a) One second

(Q) A Prolonged Blast - How long does it last for?
(a) Between 4 - 6 Seconds

(Q) What is the complete sound signal for a vessel engaged in towing another vessel that is manned?
(a) The towing vessel will sound 1 prolonged blast followed by 2 short blasts on the ships whistle, the vessel being towed will immediately sound 1 prolonged blast followed by 3 short blasts on the ships whistle, all within 2 minutes

(Q) A vessel at anchor (under 100 metres), what is his fog signal?
(a)
A rapid ringing on the bell (forward) for 5 seconds
at intervals not exceeding 1 minute

(Q) A vessel at anchor (Over 100 metres), what is his fog signal?
(a)
A rapid ringing on the bell for 5 (forward) seconds, then
A rapid ringing on the gong (aft) for 5 seconds
at intervals not exceeding 1 minute

(Q) A vessel at anchor has a warning signal he may use to alert you of a possible collision, what is it?
(a) He may sound (Morse "R" - Romeo) 1 short blast followed by 1 prolonged blast followed by 1 short blast

(Q) A vessel aground (Under 100 metres), what is his fog signal?
(a)
3 distinct strokes on the bell, followed by
a rapid ringing on the bell for 5 seconds, followed by
3 distinct strokes on the bell (bell is forward in the ship)
at intervals not exceeding 1 minute

(Q) A vessel aground (Over 100 metres), what is his fog signal?
(a)
3 distinct strokes on the bell, followed by
a rapid ringing on the bell for 5 seconds, followed by
3 distinct strokes on the bell followed by (bell is forward in the ship)
a rapid ringing on the gong (gong is aft in the ship) for 5 seconds
at intervals not exceeding 1 minute

Life Rafts

Life raft's
(Serviced every year)

The life raft is the most important piece of apparatus aboard a vessel, it is you're last hope of survival if your vessel goes down.

Decide for yourself the best side to board a Life raft the painter line's length is long enough to launch a Life raft with the vessel upside down think on this,

Positive
if you launch the Life raft on the leeside, the Life raft is going to cling to the vessel

Negative
The vessel could roll over on top of the life raft

Negative
If you launch on the windward side, the life raft is going to be hard to keep alongside the vessel, personnel might fall into the water, life rafts have been lost because they where launched on the windward side

Positive
The chances of the vessel rolling over on top of the Life raft should be minimal

Once you've launched the Life raft and boarded it, then do the following;

(1) Use the paddles to paddle away from the sinking vessel, you could also take the sea-anchor and roll it into a ball and throw it in the direction you want to go and then pull it towards you

(2) Look for survivors in the water

(3) If 2 or more Life rafts are launched from the vessel, paddle over to them and make your Life raft fast to it (double rations and you're now a bigger target too)

(3) Stream the both drogues, this will improve the Life rafts stability

(4) inflate the floor to prevent hypothermia

(5) If you took it with you, place the E.P.I.R.B. into the water and attach the lanyard to the Life raft

(6) issue sea-sickness tablets

(7) Set the watch, save your flares until you see a vessel/plane (never fire a distress rocket with any aircraft in the area)

(8) Check the sponsons for air, there is a bellows to pump them up with

(9) in poor weather close the doors

(10) DO NOT ISSUE WATER for the first 24 hours, unless the person has been sick

(11) Tend to injured personnel, there is a first aid kit in your Life raft, also a thermal insulation blanket

(12) Dry the floor with the bailer and sponges

If the Life raft capsizes, do the following;

Have a man stand on the gas cylinder and pull on the straps (make sure he is downwind)

Care of Life raft on the vessel

The Life raft is serviced every year (take note of when its due to be serviced)

When taking the Life raft onboard NEVER roll it into place

Never use a power-hose on a lifraft, it has breather holes in the bottom of it, you might force water into the holes and perish the Life raft

Wash it down with fresh water and a hand scrubbing brush

How To launch a Life raft manually

This is important and could save your life and also your crews lives

(1) Have two men undo the SENHOUSE Slip
(2) Lift the Life raft to the ships rail (Do not undo the painter line from the hydrostatic release)
(3) Drop the Life raft into the water
(4) Pull the painter line till it can come no more and then give it a sharp pull
(5) The Life raft should now inflate
(6) Pull the Life raft close to the pilot ladder
(7) Put the strongest man into the Life raft first
(8) Pass him the tail of the painter line leading back to the hydrostatic release, he will be pulling the Life raft closer too
(9) Every person that enters the Life raft helps him to keep the Life raft close to the ship
(10) The second last person will get the safety knife attached to the sponsons inside the Life raft
(11) Once the last person boards the Life raft, the painter line gets cut at the hydrostatic release side

(12) It is important to try and not loose your Life raft's, this has been done before, the reason for launching Life raft's is there is no hope for the vessel, loose these Life raft's and there is no hope for you, take care!

Contents of a Life raft (SOLAS pack "A")

SOLAS pack "A" first aid kit
Sea anchor and spare sea anchor
1.5 litres of water per person

Tin opener
Food
Fishing line and hook

Thermal Protection Sheet
Anti-Seasickness Tablets
Paddles

6 Hand held distress flares
4 red distress parachute flares
2 smoke/dye markers (Optional)

Sponges (to dry floor)
Pump (to pump up the floor)
Bailer

Puncture repair kit
Core Plugs
2 safety knifes (stored in the sponsons)

Whistle
Heliograph
Torch with spare batteries and bulbs
Plastic bags

Life jackets

The life jacket in the photograph has an extra feature normal life jackets don't have and that's the face protector, if unconscious in the water, the life jacket will place you face upwards towards the sky, this one also prevents heat loss (90% of the body heat is lost through the head) also it will prevent you from swallowing water which could choke you.

(1) Every life jacket must be foolproof so it cannot be put on back to front

(2) It has to turn an unconscious person face up and keep their mouth 6 inches (150mm) above the water

(3) It must have high coloured reflective tape

(4) It must have a strap at the top so the person can be pulled from the water

(5) it must be made of a low inflammable material

(6) It must have rot proof straps

(7) It must have a whistle

(8) New life jackets have a light that flashes every second

(9) Every life jacket used for a person over 32 kilograms must have at least 15.8 kilograms of buoyancy in fresh water for at least 24 hours

(10) It must be stamped "For persons over 32 kilograms"

(11) Every life jacket must have two seperate compartments

(12) At least 1 kilogram of kapok must be inside each life jacket to provide the buoyancy of each life jacket

Crewsaver Inflatable Lifejackets

Crewsaver inflatable lifejackets are common place amongst seafarers nowadays, I recommend them to be worn before stepping onboard any vessel, I cannot emphasis how important it is to use them

Aboard fishing vessels, while carry out duties on deck, fishing skippers will make crew unemployed if caught working on deck without them, you might think this is pretty hard on the crewmembers, but it's the skippers responsibility to make sure the crew are safe.

It is important that Crewsaver lifejackets are worn on the outside of every piece of waterproof clothing, the following will show you why;

An M.C.A. Captain asked the following question;

A man came back to his fishing vessel, his vessel was away from the pier because of the wind, so he decided to jump onto the stem of his vessel, he slipped and fell into the harbour, at the time he was wearing crewsaver Lifejackets below a NYLON Waterproof jacket.

The Crewsaver Lifejackets inflated and came up by his neck, the size of the Lifejackets inflated broke the man's neck.

NEVER WEAR ANY INFLATABLE LIFEJACKETS BELOW ANY ITEM OF CLOTHING.

The Crewsaver lifejackets should be serviced every 6 months to make sure you've not cut any holes in them, put them up to Cosalt for servicing

They will inflate the Lifejackets and check for any holes and also insert a new canister and new seals for the canister.

Speedlines

Speedlines like the one above comes in two sizes (230 & 250)
The 230 can fire a line a minimum distance of 230 metres
The 250 can fire a line a minimum distance of 250 metres
They have to be in a water-tight casing
Serviced every 3 years

Check to see how many of these you have in your vessel.

To operate the speedline use the following instructions;

(1) Take of the top lid

(2) Take the Manilla (Brown Hairy Rope) and make it fast to a strong point on the vessel, (You can attach it to another rope if required and attach the other end of this rope to a strong point on the vessel)

(3) Rest the Speedline on the sea side of the ships rail and aim the Speedline in the direction that you intend to fire it

(4) There is a red Arrow on the handle of the speedline, this arrow should point to the horizon, the speedline will be at the correct angle to get the maximum distance for the line inside the speedline

(5) Pull out the safety pin

(6) Pull the trigger

(Caution, before pulling the trigger, make sure there is no personnel in the direct line of where the rocket is going to go)

E.P.I.R.B

Emergency Position Indicating Radio Beacon

E.P.I.R.B. stands for Emergency Position Indicating Radio Beacon, it's purpose is alert other vessels that a vessel is in distress, before E.P.I.R.B. came on the go, lots of vessel where disappearing without trace, no-one knew where the vessel

had sank at, the E.P.I.R.B. has also a second function, if you have time when launching a Life raft and taking it with you, you and your crew will be picked up quicker as the resource services can home on your position quicker.

False alerts have been caused because of an E.P.I.R.B. breaking free from it's cradle and activating a distress on 406Mhz, if this happens, contact the Coastguard, under no circumstances do you go and switch the E.P.I.R.B. off until the Coastguard tell you to do so.

The E.P.I.R.B. has a test and a activation switch on it, the test should be carried out every muster drill and this should also be logged.

In the U.K. every E.P.I.R.B. has to be registered to the M.R.C.C. in Falmouth, if you buy a second-hand vessel then re-register it.

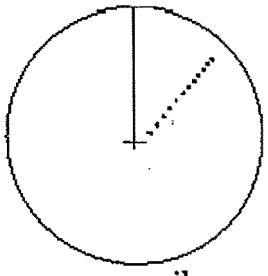
Every vessel over 300Grt and every registered fishing vessel must carry an E.P.I.R.B.

E.P.I.R.B. should be serviced every year and the Lithium battery replaced every 5 years.

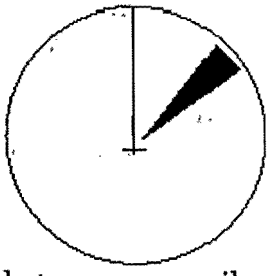
S.A.R.T.

Search And Rescue Transponder

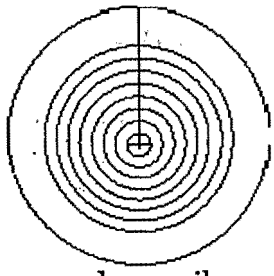
S.A.R.T. stands for Search And rescue Transponder, when activated, and vessel with a radar that is operating in the 9Ghz bandwidth will be able to home on your vessel (or Life raft).



over 5 miles



between 1 - 5 miles



under 1 mile

Over 5 miles will give the above effect on radar once the SART has been activatedBetween 1-5 miles will give the above effect on radar once the SART has been activatedUnder 1 mile will give the above effect on radar once the SART has been activated

To activate a S.A.R.T;

(1) Remove the S.A.R.T. from it's container
(2) Pull the safety pin from the S.A.R.T.
(3) Check the RED light is on
(4) In onboard the vessel, try and get it as high as possible
(5) If in a Life raft, mount it on top of the Life raft

Technical Information;

Battery Renewal - 4 years
Type of battery - Lithium
Operating life span - 100 hours in stand-by mode and 8 hours when continuously sending a signal
Serviced every 2 years

Monthly tests - turn the switch on the S.A.R.T. to test mode, hold for a few seconds, an audible alarm will sound and the light will flash
(As soon as you see the light and hear the sound you should switch it off, leaving it on will activate the S.A.R.T.

Tips of the day

When overtaking another vessel, whether in sight of one another or when in restricted visibility, take the shortest possible route to get back onto your original track and go around his stern.

Masthead lights, if its a length light for a vessel towing or a length light for the vessel then the arcs of visibility is 225 degrees most candidate think towing masthead lights are 360 degrees

---

When doing alterations in an Oral Exam make sure what type of visibility you are in as they can have different answers, for example a vessel 40 degrees abaft your starboard beam in good visibility means you have to stand-on if he is overtaking, but if its restricted visibility and the bearings are steady in both situations then you have to make an early and bold alteration to port

---

Most Rules are worked through Lights and Alterations

Rule 13 is a common mistake, Listen to the amount of degrees abaft the beam the captain gives you, 22.5 degrees or less abaft the beam is a crossing situation you have to be MORE than 22.5 degrees abaft the beam to be overtaking.

Rule 18d part (i) explains what should be done to stop the vessel constrained by her draught going aground and causing a major ecological disaster.

If you're the give way vessel, then alter towards the stand-on vessel But if you're the stand-on vessel, NEVER alter towards the give way vessel.

When thinking about a risk assessment, think what you would feel like if any of your crew got injured or died under your responsibility, it's your responsibility to make sure they get home to their loved ones.

Inflatable life jackets are great for personnel working on deck, make them use them, it's for their safety, either they use them or you put the person ashore, your responsible for their safety.

Safety equipment are bought for the crews safety, make them use it
(1) Hard hats
(2) Survival suits
(3) Safety harnesses
(4) Steel toe cap rubber boots
(5) Waterproof oilskins
(6) Rubber Gloves
(7) Warm clothing

The Captain is assessing you to see if your fit to skipper a vessel, would he feel comfortable to go to his cabin if you where the skipper.

To minimize accidents happening on watch its preferred to have two watch keepers, what happens if you cannot afford to pay for two watch keepers, how will you know if he is asleep or has taken ill?, fit a second watch keeping alarm with a 3 minute delay into the accommodation.
How to prevent loosing your vessel through flooding!, fit CCTV into your engine room and aim the camera at the bilge, bilge sensors are one main cause for vessels sinking, the camera will alert you for fire and ingress of water in the engine room

---

During an Oral exam the captain takes you through the lights like this
(1) What vessel are you looking at?
(2) Is this vessel Underway or What?
(3) What is the vessels fog signal?
(4) What is the vessels daytime signal?
(5) What are the arc of visibility of the lights?
(6) What are the vertical and horizontal distance between the lights?

Search and Rescue

Search and Rescue is important to know if you're involved in a manoverboard or search for a vessel/aircraft that has went down.

In any situation, think about this while doing a search

(1) what are you looking for? --> ship --> Life raft --> man in the water

With all of the above you must then take the following into consideration;

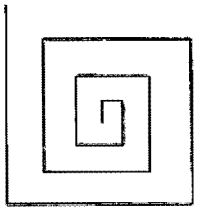
(a) The weather
(b) The strength of the tide
(c) The wave height
(d) The temperature of the water

with the above information and regarding the following, then think about this

Sea is like a mirror, then the searches can be pretty wide
Storms, large waves and strong tides, then the searches must be very tight

There are various searches that can be carried out, the following searches are recognised in the IMASAR Manual.

Expanded Square Search



Downwind for 1 miles, alter to starboard 90 degrees, go down this course for 1 mile;
Then
Alter 90 degrees to starboard and go down this course for 2 miles
Then
Alter 90 degrees to starboard and go down this course for 2 miles
Keep adding 1 mile ever time you alter to starboard

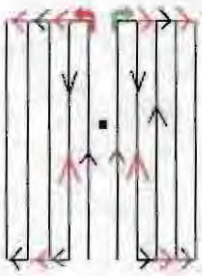
All distances are just for examples

Sector Search Pattern

Go Downwind for 1 mile,
***** alter 120 degrees to starboard, this course for 1 mile**
then
Alter to starboard 120 degrees and go on this course for 2 miles going through datum
then
Alter to starboard 120 degrees for 1 mile
then
Alter to starboard 120 degrees for 2 miles going through datum
then
Alter to starboard 120 degrees for 1 mile
then
Alter 120 degrees to starboard for 1 mile back to datum
then go down the Blue track as follows
Alter 30 degrees to starboard for 1 mile
then go to the * above and do the same again**
then go down the Black tracks as follows
Alter 30 degrees to starboard for 1 mile
then go down the * above and do the same again**

All distances are just for examples

Parallel Search Pattern



With this search it can be done with 1 or more vessels
The main vessels starting the search are the two back arrows next to datum (Black square)
They will go up past datum and after a certain distance will turn away from each other at 90 degrees
then at very short distances on this track will turn and go parallel to each other on reciptical courses
they will do this until told to stop

Other vessels (Red arrows) will take the next berth alongside the main 2 search vessels and also turn away from each other

---

Williamson Turn

For this demonstration, assume your going Due North

Turn towards the side that the man fell overboard, (in this case he's fell over the starboard side)

Alter till you see 060 degrees on your compass

Alter hard to port till you see 200 degrees on your compass

Square up your helm to amidships, this will take you down on a reciptical course

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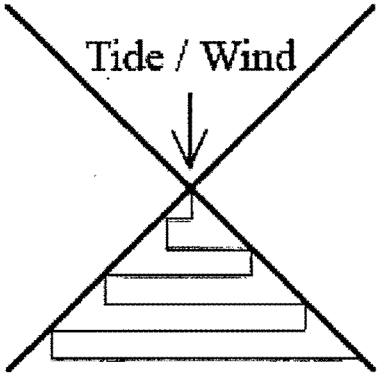
Oil-Rig Search



Onboard an oil-rig they're the search sectors placed into 4 quadrants At any one time, they'll know the direction of the wind and tide

They launch the FRC's and start an expanding square search (as above)

You have put your vessel aground, what are you going to do?

(1) Stop your vessel.

(2) Sound the general alarm of 7 short blasts and one prolonged blast to alert the crew.

(3) Get everyone to their muster stations.

(4) At the same time the skipper should be putting out a Mayday. The reason for this is you don't know how much damage you have to your vessel.

(5) Get the Life raft's ready to launch, don't launch them until the last possible moment, your vessel is your best Life raft just now.

(6) Get the mate and engineer to check each compartment for ingress of water.

(7) They make a report to the skipper once they have finished to alert the Coastguard to the state of your vessel.

(8) If a leak is found, I have no faith in shoring up a vessel until I know for sure that there is no danger to life, your insurance will pay for loosing your vessel, don't take chances!!!! your crew comes before the vessel.

(9) Get a collision mat ready incase you get a chance to use it.

(10) Get a rope ready incase there is a vessel coming to your assistance for towing you off.

(11) Make sure all crew have survival suits on if they have them and life jackets.

(12) NEVER take chances with you crews lives, if in doubt about your vessel and you think she is going to capsize launch the Life raft's now and get all the crew into it.

Reasons for a vessel going aground

(1) Watch-keeper falling asleep
(2) Watch-keeper taken ill
(3) Leaving the wheelhouse unattended
(4) Main Engine Failure
(5) Over reliance on Navigation Equipment (Especially the video plotter)
(6) Echo Sounder not switched on
(7) Restricted visibility with radar switched off or no radar on vessel
(8) Extreme Rip Tides forcing the vessel ashore
(9) Debris caught in the propeller
(10) Watch high on drugs or drunk
(11) Intentional placing the vessel onto the shore
(12) In restricted visibility with the radar on too large a scale (This is a very common mistake - keep lowering the scale and tune it again)

BILGE PUMPING PROCEDURE

(1) Open up the overboard valve (discharge valve) (Full Open)

(2) Open up the main sea-cock for the pump (Full open) This will prime the bilge pump

(3) Start the bilge pump

(4) Open the valve (Full open) that is used for the compartment you want to pump

(5) Slowly close the main sea-cock (closing it slowly will help prevent air-locking the system)

(6) Check the overboard to make sure you are pumping bilge water over the side

(7) If you're not pumping bilge water, check the following;

(a) You've air locked the bilge pumping system

(b) You have a hole in a pipe drawing air into the system

(c) The bilge pump impeller is worn or broken

(d) The bilge pump is broken

(e) The main intake is choked with some debris

(Q) What are you going to do with any oil in your bilges?

(a) Pump it into a sludge tank

(Q) What if you had no sludge tank, what will you do with the oil in the bilges now?

(a) Pump the bilges until there is a trace of oil being pumped overboard, as soon as this happens stop your bilge pump, then manually pump the oil in the bilges into 5 gallon oil drums, then when you get ashore inform the port authorities and they will dispose of it for you

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(Q) What is an oil/water separator?

(a) A system that separates water from oil, so that no more that 15 P.P.M. (Parts Per Million) of oil is being discharged overboard

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(Q) How does an oil/water separator work?

(a) By using thousands of ball bearings spinning centrifugal pushing the water out and letting the oil sink into a holding tank

---

(Q) How often would you empty your sludge tank?

(a) You should empty your sludge tank at the first chance you get

How to Prevent Flooding in your vessel

(1) Fit C.C.T.V. (Close Circuit Television) to all compartments so you can see if any water or fire in that area

(2) Maintain Bilge pumps

(3) Fit Bilge sensors as low as possible in the bilges

(4) Clean Bilge strainers and filters often

(5) Have portable pumps on the vessel (if a diesel or petrol pump; only use these in a well ventilated area)

(6) Inspect the hull of your vessel for any damage before proceeding to sea

(7) Inspect the hull of your vessel for any damage while in Dry-dock

(8) Withdraw Non-Return valves and check them out (only possible in dry-dock)

(9) Make sure bilge alarms can be heard throughout the vessel

(10) Check the bilges several times a day (visually)

(11) Remove any debris from the bilges (this will eventually get to the pumps and choke it

(12) Sea-cocks should be placed as high as possible in the engine-room

(13) NEVER EVER remove a Non-return valve while the vessel is in water

(14) If the bilge pumps are not coping with the amount of water in the bilges, close all bilge pumps down as it could be the bilge pumping system that is to blame for the ingress of water

(15) Make sure all water-tight doors and hatches are closed when not in use (place a placard on every door saying so) E.G.(DOORS MUST BE KEPT CLOSED AT ALL TIMES)

(16) Fit Grids over slush wells (Strainers in the hold)

(17) While at anchor or before leaving the vessel, close all sea-cocks that are not being used

(18) Have extra bilge pumps fitted, (electric and belt driven)

(19) Have whale pumps fitted

(20) As part of a muster drill, have the whole crew accustomed to the bilge pumping system

Manoverboard and Search Patterns

I was asked "What is the purpose of the Mersar/Imasar manual?"

I replied that it gave information to get hold of a person in the water in any condition of visibility
I told this person it's not the ship your after or the Life raft but the man inside it, you can always get another ship

A friend of mine was asked this question during an M.C.A. oral exam, what would you do if you saw a man fall overboard?

He answered - you want me to tell you about all the technique of retrieving a man from the water, he then told the captain I would do all in my physical power to retrieve this man from the water as if it was my own brother that was in the water

He then told the captain, until I was in that position of trying to get a man out of the water, I couldn't tell you what techniques I would use, I would need to take the following into consideration - the height of the waves, wind strength, tide and most important the condition of the man in the water

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Manoverboard

Turn your vessel towards the side the man fell over, so your taking your propeller away from him

Take the man alongside your boat so the man is on the weather side of your boat

If you stop your boat, you will drift away from the man and not run over him

Taking a man on the leeside is not advisable - in saying that and under extreme circumstances you might have too, if you see the man is going under, you then have no choice but to take him on what ever side is nearest him

Remember to have heaving lines ready and if you get a chance throw anything that floats towards the man in the water

Have an old tyre with a long rope attached to it ready to lower into the water - have the other end of the rope into a power-block with a responsible man operating it to take the man out of the water

---

Williamson turn

Depending on which side the man fell overboard, we will use your starboard side for learning purposes just now and assume that your going Due North (000 degrees)

Turn your vessel hard to starboard until you see 060 degrees on your compassThen alter hard to port until you see 200 degrees on your compass (20 degrees short of your reciprocal course)

Then square your helm to amidships

The man should be on your stem

Keep a good look out and slow your vessel down to minimum speed as you could run over him

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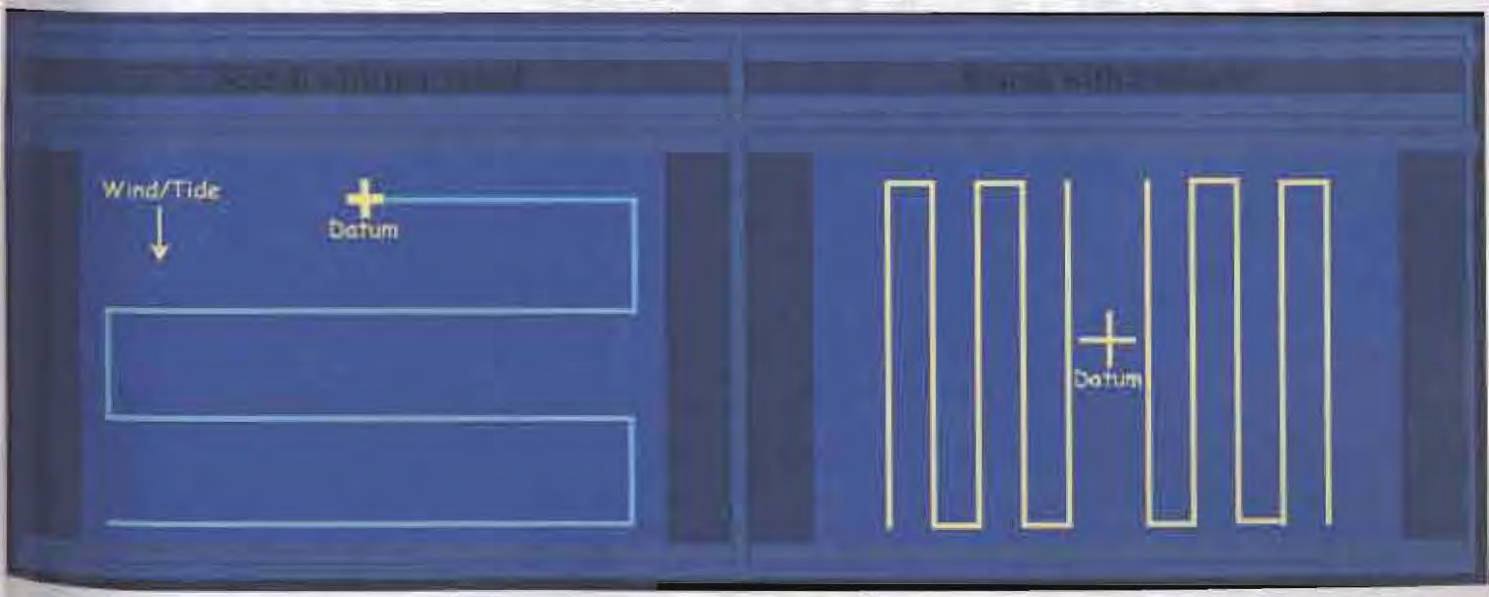
Parallel Search with 1 or more boats



How can do you do a parallel search with 1 boat you may ask? - easy you do the same as you would do with 2 or more boats

Switch on your quad computer or your video plotter, when you arrive at datum, stop your vessel, put in an event mark using your manoverboard button on the screen, now start your tracking on the screen and watch the way your vessel is drifting due to the wind and/or tide (This is where you should start to look for the casualty) he will also drift the same way as the wind/tide

Watch for any E.P.I.R.B. distress beacons in the area as well as S.A.R.T.'s if its a vessel that has went down

As long as you know where datum is (datum is where all the relevant information from where the vessel/manoverboard was)

Start your search upwind of datum and start a parallel search going downwind towards datum

If using 2 or more vessels then you can both open the search and search a wider area

if more than 2 boats, the other vessels will do the same search your doing and carry on the next available track on the outside of the last vessel

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Sector Search

This is another search to find a casualty at sea

We will assume that your still going due North (000 degrees)

Work out what distances you will be going according to the weather conditions (We are going to use 1 mile)

Start at Datum and always go to starboard

Go North for 1 mile

Alter 120 degrees to starboard, go down this track for 1 mile

1	[illegible]	No work to be carried out
2	[illegible]	Keep an eye on the danger, be cautious
3	[illegible]	You have to try and reduce the risk
4	[illegible]	Work should not start until the risk has been Reduced
5	[illegible]	Work should not start until the risk has been Reduced
6	[illegible]	Work should not start until the risk has been Reduced

Dangers on your vessel, there are several dangers on a vessel, I'm going to concentrate on three main ones

Flooding

(1) Flooding in vessels, this is the main cause of vessels being lost, what risk factor is it?(a) The Risk factor will vary from ship to ship, depending on how well maintained your vessel is, lets take a vessel that has an engineer who does not do maintenance work on his vessel.
This engineer is looking for serious trouble, bilge pumping systems must be maintained to the highest degree to make sure the vessel does not sink with the loss of life, they must also know how to operate bilge pumping systems and have back up systems for emergencies, portable pumping systems are a must too

Overhead Dangers

(2) Anything overhead, what risk factor is it?(a) At least a Substantial risk, even if the object that is overhead is well maintained, it can still come crashing down and kill who is below it, overhead objects including hanging blocks and lifting derricks are to handled with extreme caution, any metal that has a fracture in it could easily be hidden below paint, never over-rely on machinery.

Manoverboard

(3) A person falling overboard, what risk factor is this?(a) At least a Substantial risk if not an intolerable risk, if a man falls overboard there is three main factors that could kill him

Hypothermia

(4) Hypothermia - Most cases of hypothermia occur because of shipwrecks.
Most survivors that are taken aboard are paralyzed and are numb.
Immersing a body into very cold water usually below 12 degrees Celsius will cause hypothermia where the body looses heat rapidly if the skin falls below 33 degrees Celsius then the person will suffer hypothermia.
(If its you who is in the sea then try and conserved your energy and don't swim as

this will cause heat loss)
(If you have to abandon your vessel wear as much clothes as possible; also put rubber gloves onto your hands as well as your life jacket)
(If there are survival suits aboard put them on and fasten up the cuffs at the ankles wrists and neck, if there are divers suits then they're the best, put them on)

Shock

(5) Shock - If you have every entered the sea to have a swim and then ran back onto the sand because the water is freezing then this is a mild form of shock. However, what would happen if it is your vessel that is sinking, and you did not have time to launch your Life raft.
You have to jump into the sea the shock you will get when first entering the sea will make you hyperventilate and if you've a weak heart or are prone to heart problems then you could and probably will take a heart-attack.
Shock can kill people because of a lot of different reasons as stated below, with an amputated limb and the loss of massive amounts of blood the patient is going to haemorrhage and probably have a heart attack.

Secondary Drowning

(6) Secondary Drowning - Secondary drowning is another name for Salt-water aspiration syndrome; this is where water enters the lungs, which creates irritation, which causes air passages to swell up.
Even when a person had drowned for a lengthy period, (up to 40minutes has been recorded) and has drowned, it has been known to bring these persons around to a full recovery so never give up.
A big factor whether the casualty lives or dies, is because the temperature of the water and whether it fresh or saltwater.

The chance's of recovery from a person who has been immersed in salt water has a better chance of recovery.
Factors that usually lead to secondary drowning are: -
(a) Panic, especially when the cold water first strikes you.
(b) Hyperventilation. (c) Body function seizures.
(d) Cardiac arrest. (e) The inability to swim.
(f) Trauma, if the person has been knocked unconscious, and lying face down in the Water. (g) Exhaustion. (h) Hypothermia.

Food Poisoning

(8) Food poisoning can be a major factor in a risk assessment
Imagine you all ate the same meal and the whole crew is down with food poisoning and your the last one standing, your in the wheelhouse making way for shore, what risk factor are you in?The risk factor has to be Intolerable
You should take food poisoning too

Stop your vessel, put out a Mayday and put up your Not Under Command lights, this is exceptional circumstances and await for help.

White Light;

One of four flashes

- Isophase
- Occulting
- Morse A
- Long flash every 10 seconds

You can pass either side of this buoy, preferable altering to starboard and take the buoy down your port side

Long Flash is between 4 6 seconds

White Light;

Group Flash 2;

You can pass either side of this buoy, preferable altering to starboard and take the buoy down your port side

Magenta Arrow

This will be on every chart and lets you know the

direction of Buoyage

Caution !!!

During the Oral Exam, the captain will test your knowledge on the buoys, it's common for them to place the wrong top marks on the buoys

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North up the North Sea, North up the Irish Sea, North up the west coast of Ireland, East to West in the Pentland Firth and English Channel, and also going into every harbour unless there is two channels going into that harbour then direction of buoyage is going in the South entrance

MGN 20 Health and Risk Assessment

MGN 20 is health and risk assessment, it's main priority is maintain the well being of crew on your vessel
Food hygiene - to stop food poisoning
Clean ship - to stop germs and also to stop you slipping
Safe ship - to minimise accidents happening onboard your vessel

To check the risk factors you have to know the following:-

(1) What harm can come to your crew?
(2) What is the chance of your crew being injured?

Now you have to work out the harms your crew can get in the following list:-

(1) No Harm
(2) Slight Harm
(3) Major Harm - includes death and major disabilities

Now you have to work out what chance you crew can be harmed in the following list:-

(1) No chance of getting hurt
(2) Some chance of getting hurt
(3) Big chance of being hurt

Now multiply the harm by the chance to work out the risk

Risk Number

This lets you know there is a new danger that may not be in the weekly notices to mariners;

The second cardinal buoy will have a racon beacon that you will see on your radar display, usually Morse D

You still keep to the North side of the buoy's

Red Light: Any Rhythm except 2 + 1: Going with direction of Buoyage, alter to starboard and take the buoy down your port side		Green Light: Flashing 2 + 1: Going with direction of Buoyage, alter to port and take the buoy down your starboard side, you can go up the wrong side of the buoy if you have a shallow drafted vessel and have local knowledge of the area	

Green Light;

Any Rhythm except 2 +1;

Going with direction of Buoyage, alter to starboard and take the buoy down your port side

Red Light;

Flashing 2 + 1

Going with direction of Buoyage, alter to port and take the buoy down your starboard side, you can go up the wrong side of the buoy if you have a shallow drafted vessel and have local knowledge of the area

Going with direction of Buoyage, alter to starboard and take the buoy down your port side

Pass either side, preferable alter to starboard and take the buoy down your port side

Information about weather, tides, swell etc (ONLY IF TIME ALLOWS)

Over

If you remember a saying (M.I.P.D.A.N.I.O.) this is the order of distress

M = Mayday

I = Identification of vessel (Name of boat)

P = Your vessels Position

D = Nature of Distress

A = Assistance Required

N = Number of Crew

I = Information (extra info)

O = Over

(Q) What is a Mayday?
(a) A distress signal

(Q) What is a Pan or Pan-Pan?
(a) An Urgency Signal

(Q) What is a Pan-Pan Medico?
(a) A person seeking medical information or aid

(Q) What is a security message?
(a) A Navigation Warning (alerting other ships about some danger to navigation) (including Ice-accretion that has not been forecasted)

(Q) What does S.O.L.A.S. mean?
(a) Safety of Life at Sea

(Q) What does G.M.D.S.S. stand for?
(a) Global Maritime Distress Safety Systems

(Q) What does D.S.C. stand for?
(a) Digital Selective Calling

(Q) A vessel is sounding a continious sounding of the ships whistle, what's wrong with this vessel?
(a) This vessel is in Distress

What frequencies can you put a distress out on?

D.S.C. 2187.5Khz VHF 70
R. T. 2182 Khz VHF channel 16 (156.8Mhz)
E.P.I.R.B. 406 Mhz 121.5Mhz 243 Mhz
S.A.R.T. 9 GHz

(Q) In the bridge you have Tables of Radiotelephony Procedures, it is split into 3 tables what are the 3 tables?

Table 1 Phonetic Alphabet and Figure Spelling Tables (Alpha, Bravo, Charlie, Delta etc)
Table 2 Position in Code from the International Code of Signals

(A + 3 Numbers = True Course)

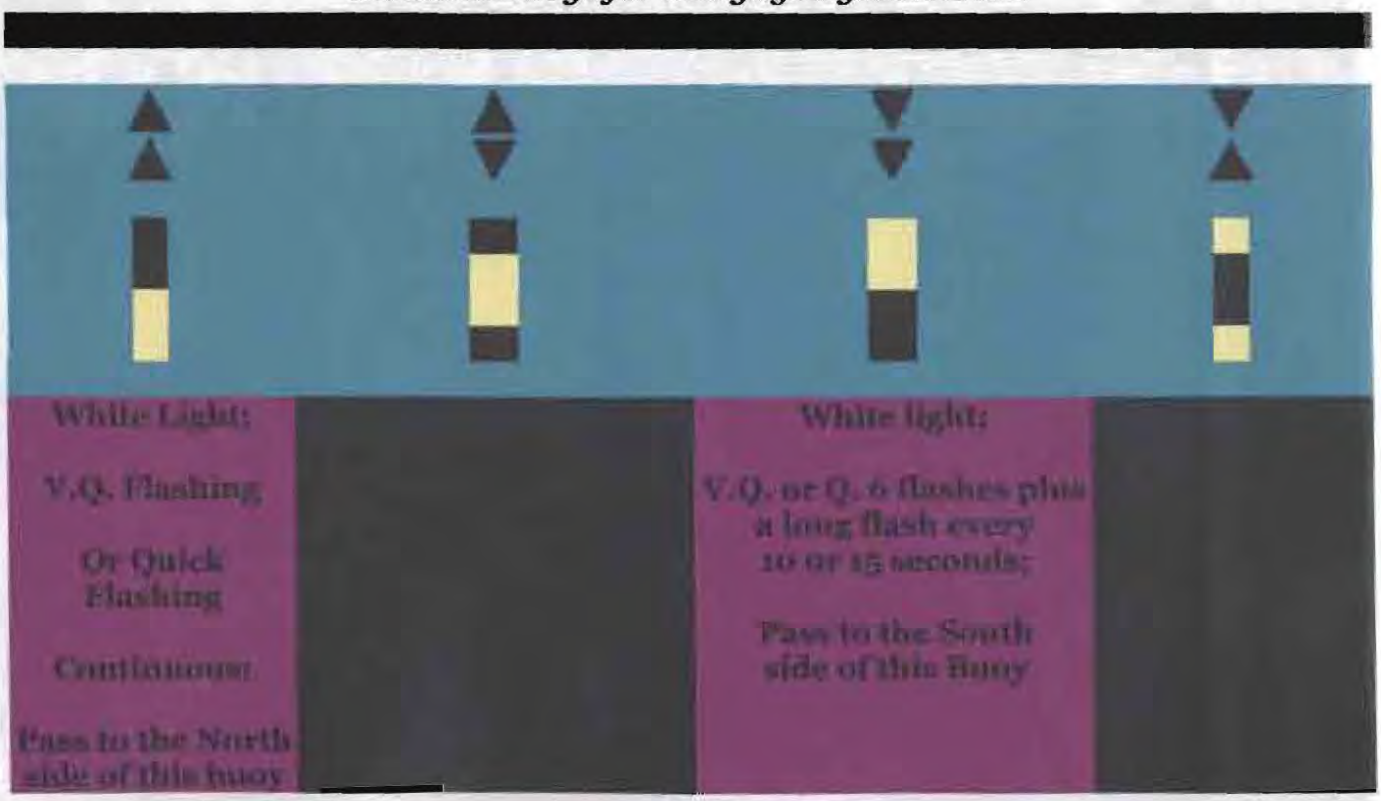
(LIMA + 4 Numbers = Latitude and Degrees)

(GOLF + 5 numbers = Longitude and Degrees)

Table 3 Nature of Distress in Code from the International Code of Signals (N.C. = Distress)

Buoyage system (Questions and Answers)

Cardinal Buoys for Buoyage System A & B



(Q)What do you do with your oily bilge water?
(a)Pump it into a sludge tank then once ashore pump it into a holding tank on the pier

(Q)What would you do if there was no holding tank on the pier?
(a)Contact the port authorities

(Q)They say they have no holding tanks to give you to put your sludge into, what are you going to do now?
(a)Make a report and send it to the M.C.A. in Southampton and they will contact the Port Authorites to make sure they have facilities for this situation

(Q)If your bilges are full of oily bilge water, what danger's do you have with going to sea in this vessel?
(a)Main danger is capsize with this amount of F.S.E. (Free Surface Effect) (Your vessel will be really unstable) another is fire, if the oil on top of the water gets near any electical sorce you will start a major fire and you'll have a hard time to put this one out

(Q)What are you going to do with your old ropes/wires/old oil/filters or any garbage?
(a)Ropes/wires/garbage (As long as the garbage is safe) into a skip on the pier, inform the port authorites for the oil and filters

(Q)What are you going to do with an old starter battery?
(a)Contact the port authorites and they will dispose of it safely (don't you dare leave this on the pier unguarded, some child might put their hand into the acid)

(Q)What would you do with any other chemicals you had to dispose of?
(a)Contact the Port Authorities and they will dispose of it safely (They will need to know what kind of chemicals it is so it does not re-act against other chemicals

(Q)What is the procedure if you've had an oil spill at sea?
(a)Get in contact with the Coastguard who have an oil spill emergency vessels (They patrol the seas around Britain test for oil spills and they have the technology to clean it up)

(Q)What do you have to display in your vessel for your crew regarding pollution?
(a)Placards displaying what can and cannot be disposed of into the sea, it also shows what distance off the coast (M.C.A. calls them SEA - SENSE Placards)

(Q)What is the name of the documents to fill out for oil-spills/for the amount of sludge you have in your sludge tank/last time you emptied your sludge tank/when you clean out any fuel tanks/the cleaning water you disposed of from your fuel tank/every time you pump your bilges?
(a)Oil Record book for vessels over 400grt, vessels below this weight can use a notepad

(Q)Every vessel over 400grt must carry a GARBAGE MANAGEMENT PLAN, and a GARBAGE RECORD BOOK, but when would you use these?
(a)The GARBAGE MANAGEMENT PLAN is so that the crew know what garbage is

to be placed into which container (Sugar Bags) Certain garbages have to be able to breathe such as food waste, it can build up a methane gas (Highly Explosive), it is also used for uplifting the containers to be placed ashore so personnel ashore knows what is in which container

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The GARBAGE RECORD BOOK is a record of making sure everyone complies with the rules for the garbage that is being disposed of

Garbage falls into the following catogries

(1) Plastic

(2) Dunnage (wood)

(3) Paper-products/rags/glass/metal/bottles/crockery

(4) Food wastes

(5) Incinerator ash

How can you send a distress?
(1) 2182 Khz
(2) V.H.F. Channel 16
(3) 2187.5 Khz
(4) V.H.F. Channel 70
(5) E.P.I.R.B. on 243, 121.5, and 406 megahertz
(6) Distress parachute Rocket (Red Flare)
(7) Distress hand held flare (Red flare)
(8) S.O.S. in Morse (not recognized now)
(9) N.C. in International Code of Signals
(10) Black ball over a square flag (or vice versa)
(11) Continuous sounding of a whistle
(12) A gun fired
(13) Waving arms up and down
(14) Imarsat "C"
(15) Fire in a barrel
(16) S.A.R.T. works on 9gigaherz

How do you send a distress over a radio?

Mayday, Mayday, Mayday

This is Nonsuch, Nonsuch, Nonsuch

My position is LATITUDE ..... LONGTITUDE.....

Nature of distress (manoverboard - on fire - sinking - aground - collision etc)

Assistance Required

Number of Crew

Alter 120 degrees to starboard, do down this track for 2 miles going through datum

Alter 120 degrees to starboard, go down this track for 1 mile

Alter 120 degrees to starboard, do down this track for 2 miles going through datum

Alter 120 degrees to starboard, go down this track for 1 mile

Alter 120 degrees to starboard, go down this track for 1 mile

Alter 060 degrees to starboard and do the same all over again

---

How do you know what search to do, and what distances would you make it before turning your vessel?

There are 3 things to find out

(1) What are you looking for?
(2) What is the weather and wave height
(3) How long since they where last seen (where is datum)

(1)

If its a man your looking for any search you do must be kept really tight even in a nice dayIf its a Life raft your looking for the search must still be tight especially in a poor day, the height of the wave could easy hide a Life raftIf its a ship and depending on its size then the search can be opened up

(2)

Strong winds and tide will make the job of finding the causalities a lot harderThe wave height - a mans head will at the most stick out of the water no more that 16 inches and that's with him wearing a life jacket

(3)

When was the last information you received about the casualty, the longer you take to get to datum the further he will be drifting away from datum

TIPS

Lets assume you picked a distress from an EPIRB and your making for it, you arrived at the EPIRB and the vessel has sunk, if you stop your vessel and switch on your video plotter, now put in an event mark and start your tracking, this will let you know the direction the vessel/Life raft/men are drifting

This should be your first leg of your search

If you start a parallel search going down wind by yourself you should be making your way down towards the casualty (Single boat parallel search)

Collision with another vessel

True life situation

A fishing vessel going East has a Merchant Navy Container on his starboard bow, the bearings are steady and the distance is closing fast, the skipper of the fishing vessel is alone in the bridge has died from a heart attack, the container collides with the fishing vessel and sinks the fishing vessel straight to the seabed, all hands on the fishing vessel are lost.

The Container should have taken avoiding action to avoid collision with the fishing vessel as soon as it became apparent the the fishing vessel was not complying with the Rules and Regulations for preventing collisions at sea.

Rule 17 (c) states — A Power-driven vessel which takes action in a crossing situation in accordance with sub-paragraph (a) (ii) of this Rule to avoid collision with another power-driven vessel shall, if the circumstances of the case admit, NOT alter course to port for a vessel on her own port side.

NEVER TAKE FOR GRANTED THAT THE GIVEWAY VESSEL IS GOING TO GIVEWAY

The M.C.A. takes this as a very serious offence, the skipper of the container will loose his Certificate of Competency and probably get a custodial sentence.

If you collide into another vessel, in theory, in perfect circumstances, flat calm weather you would be your vessel going ahead at a minimum speed to block any holes your stem has caused.

But if you have a bulbous bow and you hit a vessel side on, your going to open the other vessel like a tin opener.

In Reality there is no right thing to do here, it all depends on how you hit the vessel.

questions on Pollution
(these are common questions and you must know them)

(Q)What can you dispose of into the North Sea or English Channel?
(a)Only foodstuffs (North Sea and English Channel are classed as a special area

(Q)What distance do you dispose of foodstuffs?
(a)More than 12 miles from any coast

(Q)So it would be alright to dispose of old loaves and their bags?
(a)No, the bags are made from plastic and plastic is totally banned from being disposed of into any sea (Tip, recycle the bags)

(Q)What is totally banned from being disposed of into the sea?
(a)Plastics or any substances that is dangerous to the marine enviroment