Marina Country Club
MCC Resort, Pulau Ubin

POWERED PLEASURE CRAFT DRIVING LICENCE (PPCDL)

COURSE BOOK

Marina Country Club
MCC Resort, Pulau Ubin

Acknowledgement

The Management of the Marina Country Club would like to thank Capt Hilbert Fernandez from the Maritime Education and Training Services Pte Limited (METS) for all his efforts in preparing this book for our Powered Pleasure Craft Driving License (PPCDL) course participants.

The book was prepared to cover the syllabus set by the Maritime and Port Authority of Singapore for the PPCDL course. To make it easy for the participants to learn and understand the topics, the more important topics are all highlighted and at the same time the contents simplified.

We would like to thank him for his high professional standard that he has set for the PPCDL course in conducting and managing it.

Contents

Annexures

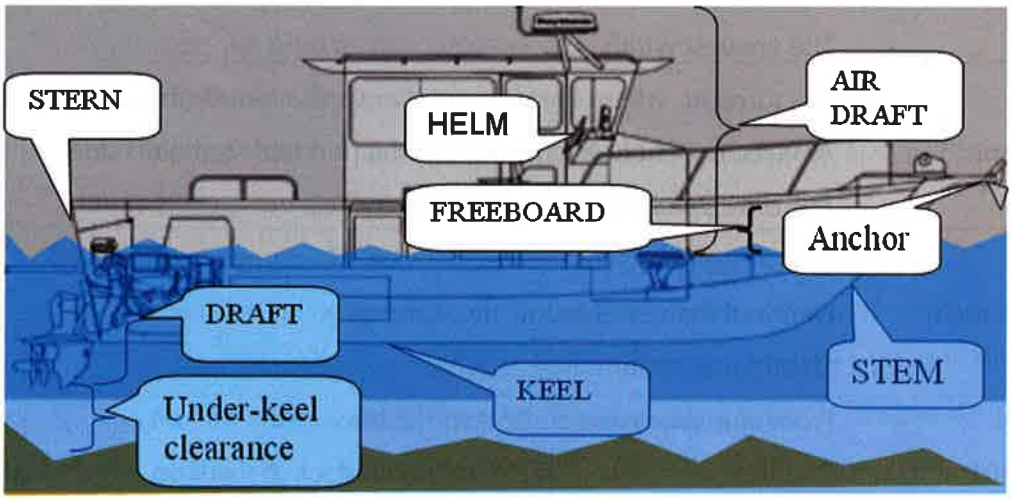
Introductions

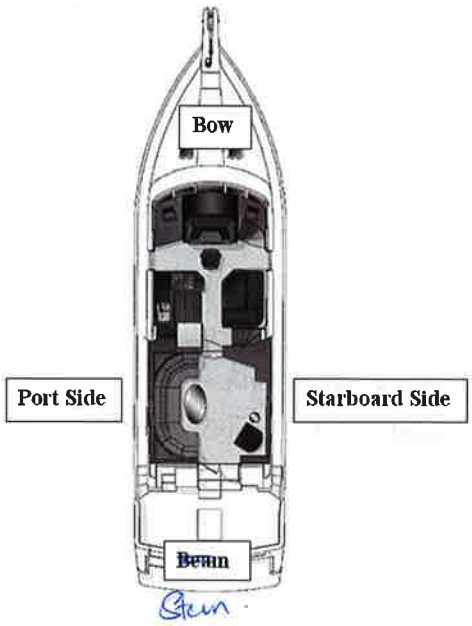
1 The aim of this course is to train all powered pleasure craft drivers in the safe handling of powered pleasure craft within the port limits of Singapore. The course emphasis the basic rules of navigation, good boating practices, safe boat handling procedures and the relevant port regulations and procedures. The following topics are covered in the course.

- Common nautical terms, boat equipment and use of lifesaving and fire-fighting equipment.
- Weather conditions and basic knowledge of tides and tidal current.
- Pleasure craft regulations and relevant port marine circulars.
- International Regulations for
  preventing collisions at sea and steering and sailing rules. Lights and shapes carried by various vessels and sound signals.
- Emergency procedures and safe practices in boat handling.
- Basic chart work, navigation marks and main aids to navigation in port.
- Practical boat handling, berthing and un-berthing.
- Practical navigation.

2 At the end of the course, the participant may apply to the Singapore Maritime Academy (SMA) to sit for the theory and practical examination. After passing the theory examination, the participant could apply to the SMA to appear for the practical boat handling assessment. On passing the practical assessment the Maritime and PortAuthority of Singapore (MPA) will issue the Powered Pleasure Craft Driving Licence.)

COMMON NAUTICAL TERMS AND PARTS OF BOAT





Port = Left = Even
(eg Room #s
sound signal)

Beam widest part of boat.

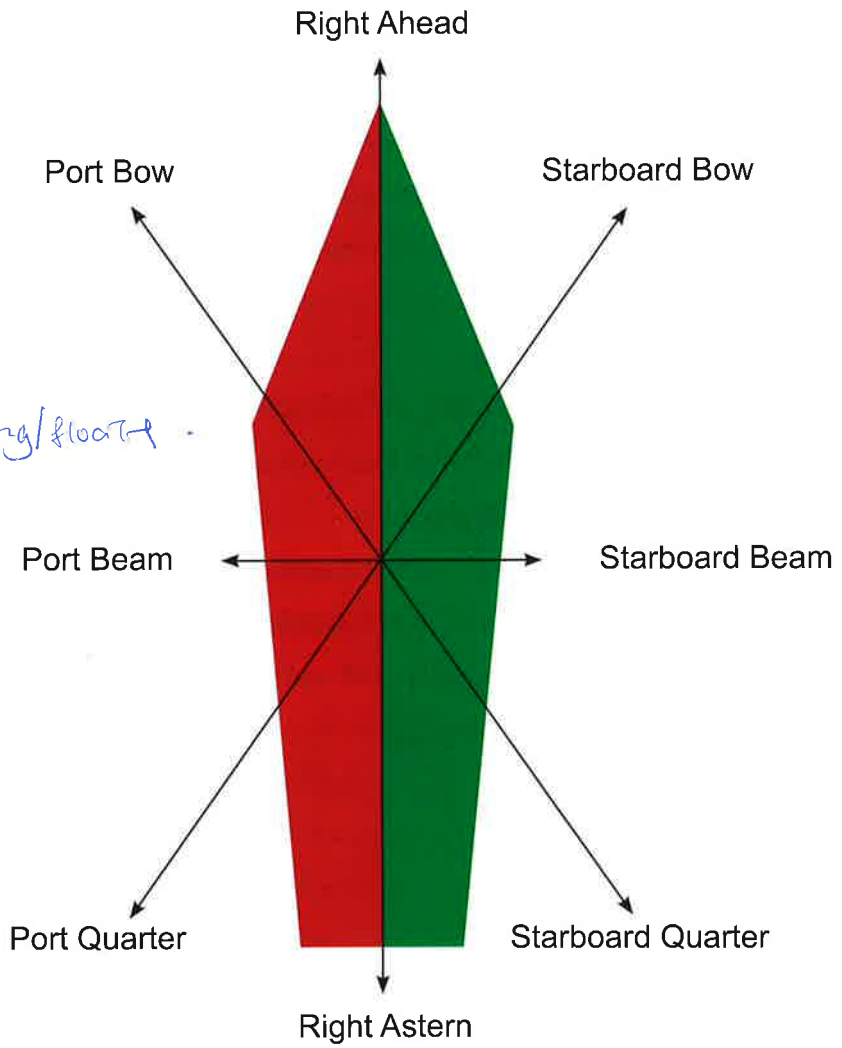
Chap 1 Nautical Terms

Abaft	Behind, towards the stern or rear end.
Abeam	At right angles to the fore-and-aft line of a ship
Aft	At or near the stern; towards the stern
Aloft	High up; up on the mast
Astern / Stern	At the rear ; behind the vessel
Beam	The greatest width.
Bow	The forepart, where the sides tend inwards towards the stem
Centerline	A measurement halfway between the port and starboard sides.
Course	The direction in which the ship is moving
Cleat	2 short iron posts like cow's horns on which ropes are belayed
Draft/Draught	Depth of the vessel below the water line.
Deck	The floor of a ship
Forward	Front of a ship; towards or near the bow
Freeboard	Distance from water line to freeboard deck at the side
Gunwale	The upper edge of boat's sides (DO NOT CUT)
Helm	Steering wheel of a ship
Hull	The body of a ship
Leeward	On the sheltered side away from the wind
Let go	Untie or free any object
Keel	The centerline of a boat running fore and aft (the backbone) - deepest projection of the hull u/water
Knot	Speed of 1 nautical mile per hour. (Nautical mile = 1852 m)

1 nm = 2000 yd
1 land mile = 1760 yards

Making Way	Moving through the water
Moor	to tie-up a vessel alongside a dock
Man-Over-board	person fallen off the boat into the water
Port	left side of a ship when facing ahead or bow
Quarter	the after part on either side of stern
Rudder	a device used to steer a vessel
Slack away	to pay out a rope, wire or chain slowly
Starboard	right side of a ship when facing ahead or bow
Steer	to keep the ship's heading in a required direction
Stem	the fore-end of the hull
Stern	the rear end of the ship
Tiller	a post attached to a rudder or outboard engine to steer a ship
Under Way	Not an anchor, made fast to the shore or aground
Windward	on the side exposed to the wind
Waterline	where a boat rests in the water. A separation point of how much boat is above the water and how much is below the water
Yawing	waving motion of a vessel to port and starboard

RELATIVE DIRECTIONS



MOB - lookout
Lg. SB Bow
fast moving/floats

1 Boaters operating in the Singapore port waters shall be familiar with the locations of wharves, berths, anchorages, fairways, pilot boarding / disembarkation grounds etc. *The information can be found in the Singapore Port Information Booklet. Please refer to the latest Port Marine Circulars (PMC) for any changes to this information.* Boaters also need to have the knowledge and ability to use MPA charts, Singapore Port Information, Singapore Tide Tables, PMCs and publications including knowing the following:

a) Anchorages and Fairways – *There are 35 anchorages and 10 fairways in the port.* The anchorages and fairways are shown in the Singapore Port Information.

b) Navigational Channels – The *16 navigational channels* in the port and the controlling depths in the channels are in the Singapore Port Information.

c) Restricted areas, including height restriction – For safety and security reasons, sev eral islands and areas within the port are restricted to entry by vessels including small boats. Vessels that are required to proceed into these restricted areas should apply and get written permission from the Port Master.

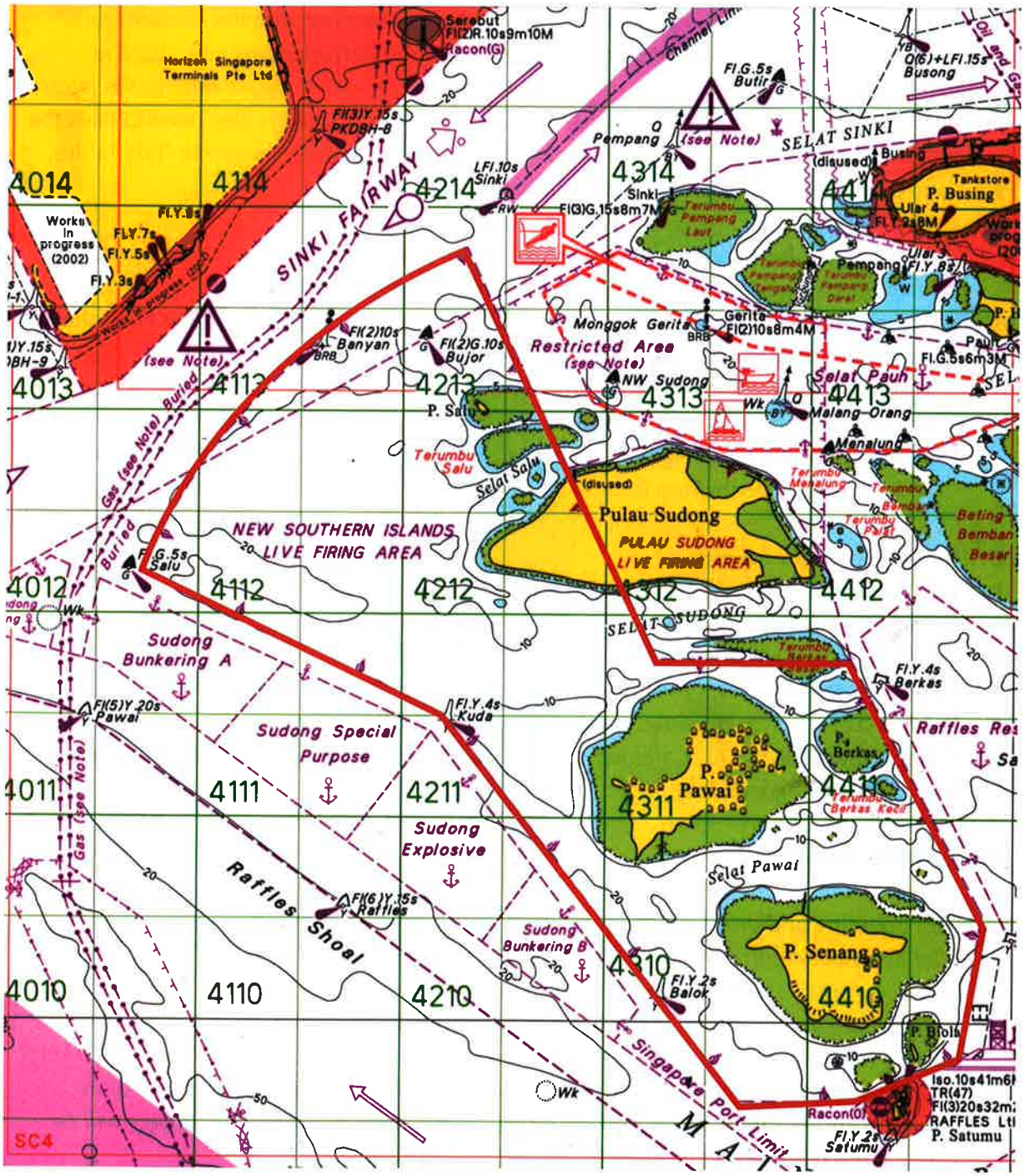
Such areas include the following:)

.1 Tuas Naval Base .2 Jurong Island;
.3 The southern Islands – Sudong, Pawai and Senang;
.4 Off Pulau Satumu (Raffles Lighthouse);
.5 Pulau Busing; .6 Pulau Bukom & Shell SBM;
.7 Pulau Sebarok; .8 Selat Sengkir; .9 Bedok Jetty
.10 Changi Naval Base; .11 Cafhi Jetty; .12 Sembawang wharves and approaches;
.13 Tuas Dangerous goods Jetty

See chartlets in ANNEX 1

d) Pilot boarding and disembarkation grounds - There are *6 pilot boarding grounds and 10 pilot disembarkation grounds* located at the port limits.

e) Live firing area - The Southern Islands Live Firing Area is a restricted area. Low-flying air craft operate in the vicinity of the live firing area. When live firing is in progress Sinki Control (on VHF channel 68) *would advise vessels in-bound via the Sinki Fairway to keep well clear of the restricted area within the Sinki Fairway.* The limits and extent of the restricted area is shown in the chartlet below. *When there is live firing red flags will be flying at the summits of the islands.*


Serebut
Fl(2)R.10s9m10M
Racon(G)
Horizon Singapore Terminals Pte Ltd
Fl(3)Y.15s
PKD8H-8
SINKI FAIRWAY
LFl.10s
Sinki
Fl.G.5s
Butir
(see Note)
Pempang
SELAT SINKI
Q(6)+LFl.15s
Busong
Busing
(disused)
Tankstore
P. Busing
Ular 4
Fl.Y.2s8M
Ular 3
Fl.Y.8s
Fl(3)G.15s8m7M
Terumbu Pempang Laut
Terumbu Pempang Darat
Pempang
Works in progress (2002)
Fl.Y.7s
Fl.Y.5s
Fl.Y.3s
Fl.Y.8s
Monggok Gerita
Gerita
Fl(2)10s8m4M
Restricted Area
(see Note)
NW Sudong
Fl(2)10s
Banyan
Fl(2)G.10s
Bujor
P. Salu
Terumbu Salu
Selat Salu
Selat Pauh
Fl.G.5s6m3M
Melang-Orang
Menalung
Terumbu Menalung
Terumbu Bemban
Beting Bemban Besar
(disused)
Pulau Sudong
PULAU SUDONG LIVE FIRING AREA
NEW SOUTHERN ISLANDS LIVE FIRING AREA
Buried Gas (see Note)
Fl.G.5s
Salu
Sudong Bunkering A
Fl(5)Y.20s
Pawai
Sudong Special Purpose
Fl.Y.4s
Kuda
Fl.Y.4s
Berkas
P. Berkas
P. Pawai
Terumbu Berkas Kecil
Raffles Res
Selat Pawai
Sudong Explosive
Raffles Shoal
Fl(6)Y.15s
Raffles
Sudong Bunkering B
P. Senang
Fl.Y.2s
Balok
Singapore Port Limit
Wk
Iso.10s41m6M
TR(47)
Fl(3)20s32m
RAFFLES Ltl
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Fl.Y.2s
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4410

Singapore Tides And Tidal Streams

1 Tidal streams in Singapore waters are basically west-going [←] on the flood tide and east-going [→] on the ebb tide. However, due to the presence of the various islands and reclamation works, the tidal streams are deflected around islands and work areas. *Rates and directions of tidal streams at the various locations can be extracted from the Singapore Tide Tables*. The Singapore Tide Tables are printed annually and contain the following information and tables, which are relevant to the boaters:

- High and low water predictions
- Hourly tidal height predictions
- Hourly tidal stream predictions

Neap - moon/Sun perpendicular

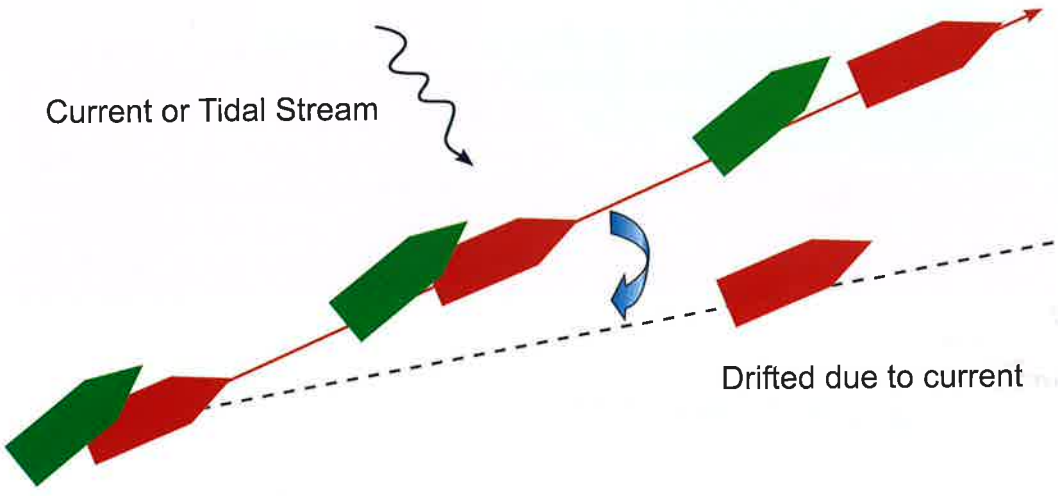
Spring tid Sun/moon/Earth in line

Set & Drifts

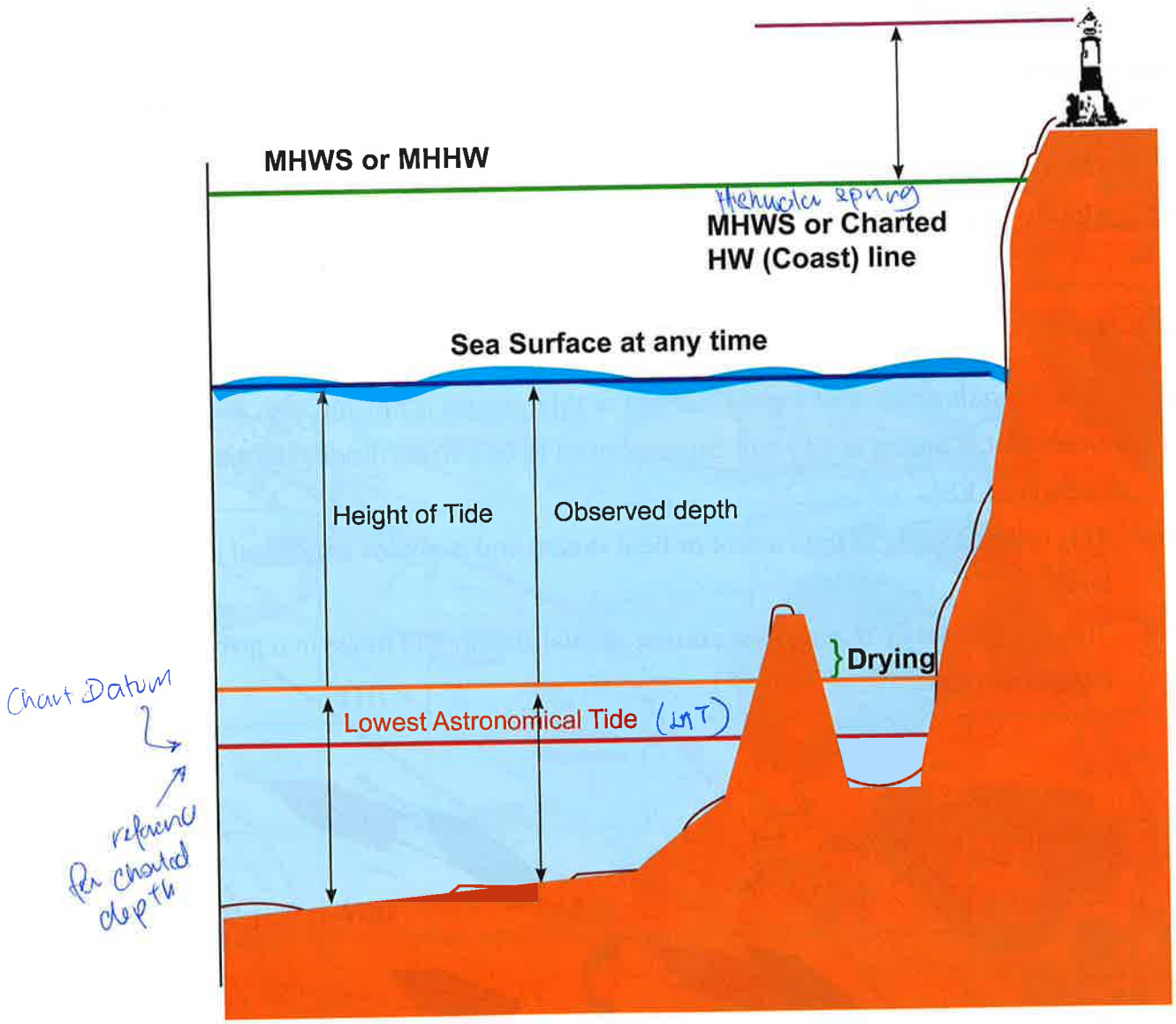
Set – This is the direction that a given current or tidal stream is moving, e.g. a current that is setting at 125 will cause a vessel to be carried (bodily) in the direction of 125.

Rate – This is the velocity of the current or tidal stream and is always expressed in knots.

Drift – This is the distance that a given current or tidal stream will move in a given interval of time.



Tidal Terminology



+ Height Tide

- # 2x Draft.

* Safety clearance

Tidal Terminology

2 Chart Soundings and Height of Tides – All chart soundings of waters around Singapore are *reduced to Chart Datum (ie. zero tide)* and all heights of tides are given from Chart Datum. This would mean that the height of water at any location at a required time would be the soundings given for the location plus the height of tide at the required time.

Example: Chart soundings for the location is 10m. Height of tide for the required time when calculated is 1.5m. Hence, height of water at the location at the required time is - *10m + 1.5m = 11.5m.*

Meteorology

1 The low and high-pressure areas over Asia, the South China Sea and East China Sea affect the weather system in this region. The South West Monsoon [↗] *dominates the region from May to August,* the North East Monsoon [↙] *from September to March.* Singapore has a tropical climate. It is warm and humid with only slight variation between the average maximum of 31° Celcius and a minimum of 23° Celcius. The humidity is high, often exceeding 90% at night. The average humidity is around 84.4%. The months of May to August are usually the sunniest months, while December and January are slightly cooler and receive the greatest amount of rain. Showers are usually sudden and heavy. During the southwest monsoon season from May to August much of the rain falls in short, intense showers that alternate with sunshine.

2 Thunderstorms are frequent in April and October. The squalls that frequent the area in the SW Monsoon period are highly localized and bring winds of more than 25 knots. Squalls with more than 50 knots winds had been experienced in the past. During this period, all navigators are advised to *take additional precautions including keeping good anchor watches.*

3 Smoke Haze - Singapore has been impacted by smoke haze when there are forest fires in the region and the prevailing Southwest Monsoon winds blow the smoke from the fires into Singapore. In the past, smoke haze episodes occurred largely within the period of *May to October.* Due to the presence of haze, the *visibility in the Singapore Strait and port waters could be significantly reduced.* The MPA issued a Port Marine Notice No. 70 of 2004 to advise of the precautionary measures to be taken. During periods of restricted visibility, all navigators are advised to keep a proper lookout and navigate with caution. They are also advised to complywith the International Regulations for Preventing Collisions at Sea and in particular *Rule No. 19, Rule No. 20 and Rule 35* concerning conduct of vessels in restricted visibility, exhibition of navigation lights and soundsignals in restricted visibility, respectively.

Tanjong Pagar - Jan 2007

DATE	TIME(LT)	HEIGHT/m	HIGH/LOW
01/07	0531	0.1	L
01/07	1254	2.4	H
01/07	1746	1.3	L
01/07	2326	2.8	H

Weather Information

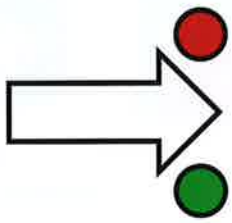
3 Days Outlook
The information below is updated twice daily at 5pm and 6pm
(2100 UTC and 1000 UTC respectively)

Issued on 22 Jun 2007

Saturday		33/25 C	Showers with thunder in the morning and early afternoon.
Sunday		33/25 C	Showers with thunder in the morning and early afternoon.
Monday		33/25 C	Showers with thunder in the morning.

Buoys, Beacons And Lighthouse

Dangers to navigation, such as reefs and shoals, are marked by floating markers known as buoys, which are anchored to the seabed, and by *fixed structures erected on the seabed known as beacons. Distinctiveshapes and colours are used to distinguish buoys and beacons by day,* and, *by night, lights with distinctive colours and characteristics are used.* The direction of buoyage is indicated on charts by the symbol:



There are five types of buoys and beacons:

1 Lateral, in which, red and green buoys or beacons indicate the port and starboard sides of a channel respectively, when proceeding in the same direction as the conventional direction of buoyage. There are many channels in Singapore waters and it is necessary to have several conventional directions, which are marked on the chart.

Port Hand Mark	Starboard Hand Marks
Colour : *Red*	Colour : *Green*
Shape (Buoys) - Cylindrical (can), pillar or spar	(Buoys) Conical, pillar or spar
Topmark - Single Red Cylinder (can)	Topmark Cone, point upward
Light : *Red*	Light : *Green*

Chap 4 Aids to Navigation

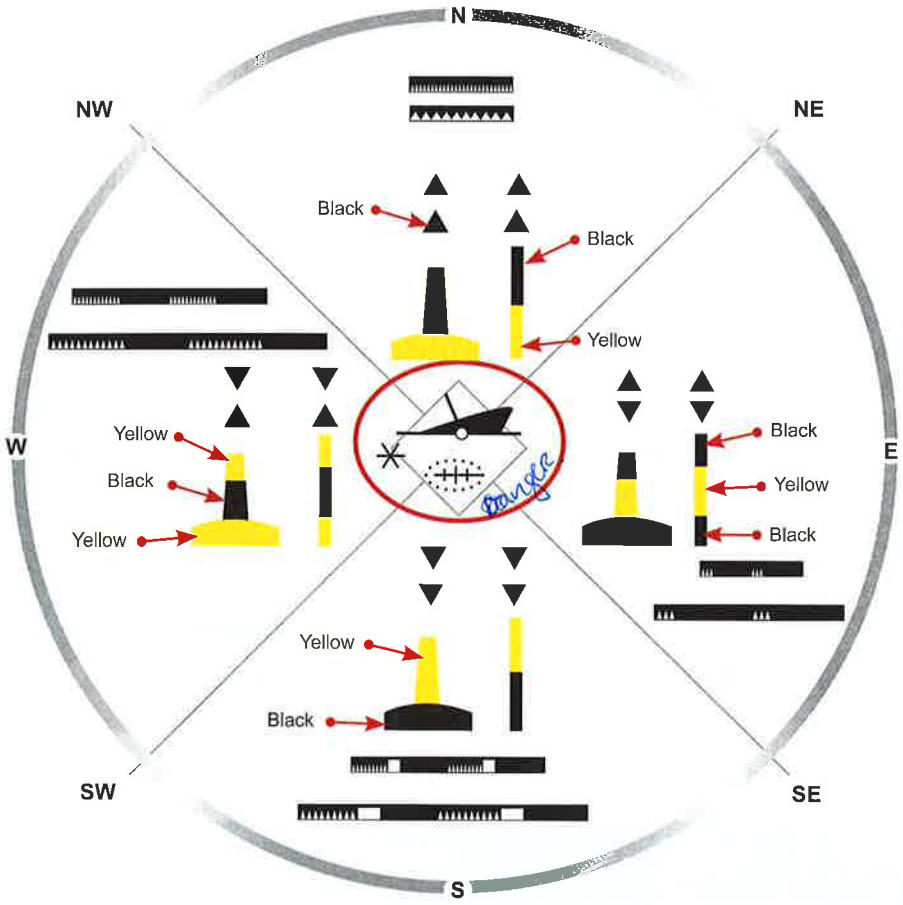
2 Cardinal, in which the deepest water lies to the named side of the mark: eg a north cardinal mark indicates safe water to the north. Cardinal buoys and beacons are always painted yellow and black and are fitted with black conical top marks.

Definition of Cardinal quadrants and marks

The four quadrants (North, East, South and West) are bounded by the true bearings NW-NE, NE-SE, SE-SW. SW-NW taken from the point of interest. A Cardinal mark is named after the quadrant in which it is placed. The name of a Cardinal mark indicates that it should be passed to the named side of the mark.

Description of Cardinal Marks

To assist in remembering cardinal marks, associate the number of flashes of each group with that of a clock face.That means that North is at "twelve" o'clock, East is at "three" o'clock, South is at "six" o'clock and West is at "nine" o'clock.



3 *Isolated Danger Marks* designate an isolated danger of limited extent, which has navigable water all round it, e.g. an isolated shoal, rock or wreck.

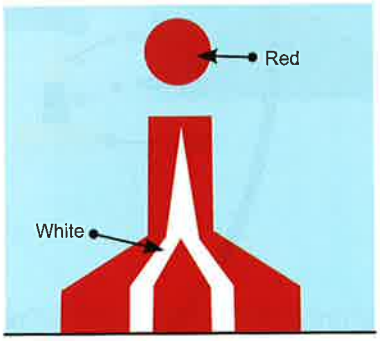
Topmark	:	2 black spheres, one above the other
Colour	:	Black with one or more broad Horizontal red bands
Shape	:	Optional, but not conflicting with Lateral marks, pillar or spar preferred
Light	:	white
Rhythm	:	Group flashing (2)

4 *Safe Water Marks* indicate navigable water rather than a danger, eg the middle of a channel. Red and white vertical stripes are used and the top mark is a single red sphere.

Definition of Safe Water Marks - Safe water marks serve to indicate that there is navigable water all round the mark, these include centre line marks and channel marks. Such a mark may also be used as an alternative to a Cardinal or a Lateral mark to indicate a landfall.

Shape	: Spherical; pillar or spar with Spherical topmark
Topmark (if any)	: Single red sphere
Light	: White
Rhythm	: Isophase, occulting, one long flash every 10s or Morse "A"

can go either side



5 *Special Marks* are used to indicate special features, such as a dumping ground, a recreation area or a cable or pipeline. They are always yellow and a yellow " X " top mark maybe fitted.

Description of Special Marks

Any shape

Colour	: Yellow
Shape	: Optional, but not conflicting with Navigational marks
Topmark	: (if any) Single yellow 'X' shape
Light	: Yellow
Rhythm	: Any rhythm, other than those used for the white lights of cardinal, isolated danger and safe water marks

Purpose eg Dredging Reclamation etc

Buoys, Beacons And Lighthouse

There are also many lighthouses in the Singapore area and the pleasure boat operators should be familiar with the characteristics of the principal lights. The four major lighthouses are:

Sultan Shoal Lighthouse, 1° 14′ 23″N 103°38′ 59″E. A white light, group flashing two every 15 seconds, exhibited from a white round tower on top of a two storey dwelling, the light being 20 metres above mean high water springs and having a luminous range of 22 miles.

Raffles Lighthouse, 1° 09′ 37″N 103° 44′ 33″E. A white light, group flashing three every 10 seconds, exhibited from a white round tower, the light being 32 metres above mean high water springs, and having a luminous range of 22 miles.

Bedok Lighthouse, 1° 18′ 33″N 103° 56′ 04″E, A white light flashing every 5 seconds, exhibited from the top of a 25 storey building, the light being 76 metres above mean high water springs, visible over the arc 261° - 067°and having a luminous range of 23 miles.

Horsburgh Lighthouse, 1° 19′ 49″N 104° 24′ 27″E. A white light flashing every 10 seconds, exhibited from a white round tower with horizontal black bands, the light being 31 metres above mean high water springs and with a luminous range of 23 miles.

Chap 5 MPA Regulations

On completion of this chapter, trainees shall have a thorough understanding, knowledge and application of therelevant provisions of the *MPA (Pleasure Craft) Regulations; MPA (Port) Regulations; Port Marine Circular (PMC); and Port Marine Notices (PMN)*.
Please refer to *ANNEX 2*.

Chap 6 International Regulations for Preventing Collisions at Sea

On completion of this chapter, trainees shall have a thorough understanding, knowledge and application of the relevant provisions of the International Regulations for Preventing Collisions at Sea.Please refer to *ANNEX 3*.

Executive Summary Boating Statistics - 2003 (US Coast Guard)

TOP TEN CONTRIBUTING FACTORS

ACCIDENT RANK	CONT FACTOR	NOs OF ACCIDENTS	NOs FATALITIES
1	OPERATOR INATTENTION	703	55
2	CARELESS/RECKLESS OPERATION	486	33
3	OPERATOR INEXPERIENCE	477	50
4	EXCESSIVE SPEED	446	34
5	HAZARDOUS WATERS	356	62
6	PASSENGER/SKIER BEHAVIOR	331	24
7	NO PROPER LOOKOUT	326	23
8	ALCOHOL USE	289	107
9	MACHINERY SYSTEM FAILURE	241	17
10	RULES OF THE ROAD INFRACTION	199	10
		------	------
Source : USCG website		**3854**	**359**

1. *Man-overboard*

Capsizing and falls overboard are some of the most common cause of boating fatalities. Very few people die from the act of falling out of a boat. They do die, however, because they do not have a life jacket on to keep them afloat while they attempt to get back into the boat. For this reason, boaters should always wear a life jacket.

Capsizing

The most common causes of capsizing are:·

- Overloading.
- Improper anchoring attachment point.
- Leaning too far over the side of the boat.
- Turning sideways to a swift current.
- Swamping or flooding caused by not putting in the boat plug, high waves, breached hulls or broken water intake hoses and fittings.

Self-Rescue: What to do if you end up in water

1. If you do not have on a vest – get one and hold on to it or put it on. Putting on a vest while in the water is extremely difficult, but can be done.
2. Try to get back into the boat, whether over the gunwale or the stern. Grab on to some part of the boat and pull yourself up and out of the water to a point where at least your chest is up and over the gunwale.
3. Most of all – DO NOT PANIC. If you panic and believe you won't make it, you probably won't. The more you thrash around, the more energy you waste. Have a positive attitude and remain calm. Think of every available option to stay afloat and chances are you will either rescue yourself or get rescued.

Rescuing others :

1. To decrease the risk of injury by the propeller, turn the stern away from the person by immediately putting the helm over towards the side on which he has fallen.
2. Manoeuvre towards the MOB, and once close, bring engine(s) to neutral. Keep the engines running in case you need to manoeuvre quickly to adjust the position of the boat for pickup.
3. Once along side, toss the MOB a life-buoy or extend a boat hook or oars and pull them to the boat.
4. Assist the MOB to the swim to the lowest freeboard area of the boat.
5. As you assist the person into the boat, STAY AS LOW AS POSSIBLE, either on your knees or with knees bent and feet spread well apart, to prevent yourself from being pulled into the water. Maintaining your own balance is crucial.
6 Once recovered, check person for signs of drowning or trauma.
7 If the victim is not breathing, begin Heimlich Manoeuvre and CPR process as required, soon as you safely can. If possible start the process even before the victim has been pulled out from the water and brought on board.

2. *Fire*

Fuel fires aboard small vessels spreads rapidly and generates intense heat. Few people are able to successfully combat them. Fires or explosions have occurred immediately after boats had been re-fuelled. It is better to prevent fires rather than fighting them.

Petrol/Other Fuel

Using common sense and taking proper precautions one can prevent boating fires as follows:·

- have an approved fire extinguisher and service it regularly·
- keep the bilge, 8 engine compartment and engine clean and free of combustible materials
- check engine compartments are properly ventilated

- be careful when using fuel stoves - don't store your extinguisher close to the stove or engine compartment
- check your fuel system regularly for leaks
- check the electrical system for faults and keep all components in a clean state
- don't fill your fuel caddies in the boat, take them ashore when fuelling clean up fuel spills quickly.

Fire fighting operation

- Never put the lives of your passengers at risk to save the boat. Staying onboard too long can be worse than abandoning ship.
- Radio or call for immediate assistance. Inform MPA (within port limits – VHF 7); [Comply with PMC 13 of 2002].
- If you decide to fight the fire, follow these steps:
- Attempt to stop the source of the fire (fuel lines, electrical panel, etc)
- Manoeuvre the boat so the prevailing wind helps blow the smoke or flames to the outside of the boat (for a stern fire, point the bow into the wind, for a fire near the bow, point the stern into the wind).
- When using a fire extinguisher, remember the word PASS:

1. **P**ull the pin out
2. **A**im the extinguisher at the base of the fire
3. **S**queeze the handle
4. **S**weep back and forth into the flame base

- Keep a constant watch of the area. Be aware that the fire may re-ignite.
- Do not attempt to restart the engine until the source of fire is identified and completely extinguished.
- If the engine and steering are still functioning, head to the nearest safe landing.

If the engine and steering are not functioning call the marina or MPA to seek towing assistance.

3. ***Aground***

Running aground can happen to the best boater. Knowing how to navigate and gaining local knowledge of thearea will greatly reduce risk of grounding your boat. The local boaters know where the hidden dangers lie! Boatingaccidents continue to indicate that a lack of understanding of local conditions contributes to boating falalities.

There are different degrees of being aground. You can be "hard grounding" meaning you hit so hard that part of the hull embedded into the sea bottom, the hull may be breached (has a hole). "Soft grounding" means you bumped the bottom, or moved into a very soft type of bottom, such as sand or mud. Actions to take if aground :

- Everyone puts on a life-jacket, and remain calm.
- DO NOT put the engines in reverse in an attempt to undo what has already happened.
- Inform MPA (within port limits – VHF 7); [Comply with PMC 13 of 2002].
- Assess the damage. Check all bilge areas for signs of water. Listen to gas and water tanks vents for sounds of rushing air. Rushing air means water is entering the tank and forcing air out through the vents.
- If the propeller, rudder or the shaft or its support is damaged, you will immediately notice a vibration when you operate the engine. If this happens, stop your boat, anchor if possible and call for assistance.

NOTE : - Continuing to operate your boat with damage can cause even more serious damage.

- If there are no obvious signs of structural damage, you have a few choices to consider - is the tide incoming or outgoing? Will the tide be enough to re-float the boat? If no tide, determine if you can manoeuvre the boat out of the area (generally in the reverse direction) without causing damage. Go very slow.
- If in doubt, call for a professional salvage company to re-float the boat.

4. ***Collision***

Most collision with other vessels occurs due to excessive speed or failing to keep a poor lookout. Actions to be taken in the event of a collision are :

- *Determine risk of sinking, if not immediately attend to any injury.*
- Ensure everyone puts on a life jacket, and remain calm.
- DO NOT put the engines in reverse in an attempt to undo what has already happened, especially if the two vessels are stuck to each other.
- Inform MPA (within port limits – VHF 7); [Comply with PMC 13 of 2002].
- Assess the extent of damage.
- If there are no obvious signs of structural damage, you have a few choices to consider – is it safe to remain on board or abandon the craft; is it safe to proceed slowly to your marina; or request to be towed to your marina or a
- safe location.

5. ***Abandonment***

Send out distress signals, making sure that the position is clearly stated in any distress message.
Ensure that all persons are clothed and wearing life jackets.
If possible, attach lines and life buoys to the vessel to hold on to. These will mark the position of the sunken vessel if the water is not too deep. Remain in the vicinity of the vessel. If the vessel is only partly submerged it is easier to detect than people in the water. Resist the impulse to swim ashore unless very close to land, as distances over the water are usually much greater than they seem. Link persons together by light lines to prevent anyone drifting away.

EMERGENCY COMMUNICATION

Mariners while in Singapore waters are more likely to use the VHF radiotelephone to communicate distress than the visual signals specified in the International Prevention of Collision Regulations.

The importance of good and orderly communication cannot be over-emphasized and it is essential that emergency communication be disciplined and clear. *The international frequency used for transmitting and receiving distress messages is VHF Channel 16.* However, within port waters you may use *VHF Channel 7.*
If communication cannot be established on Channel 7 or 16, then vessels may use any of the VHF channels used by Port Operations Control Centre. They are : 5, 12, 18, 21, 22, 25 or 68.

Emergency Calling Procedure

MAYDAY – MAYDAY - MAYDAY

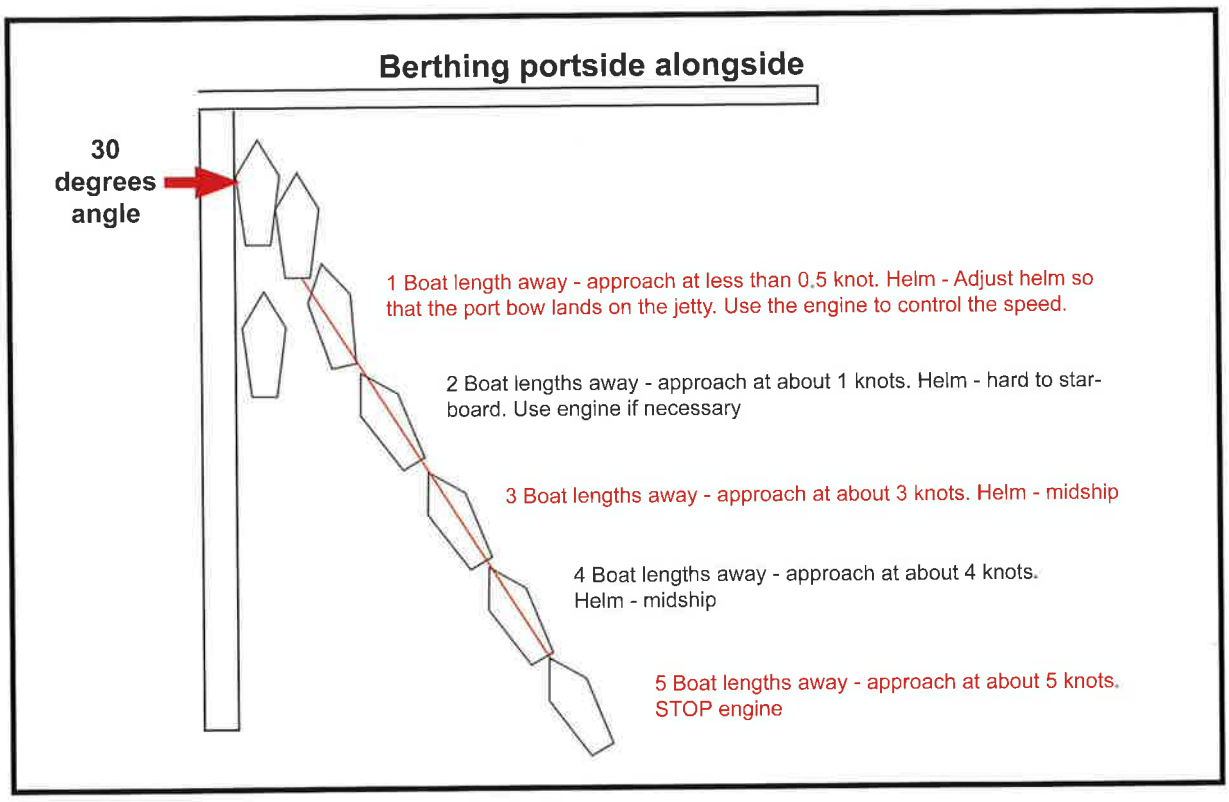
A mayday call denotes an emergency involving imminent danger to a vessel and the people on board. If you hear a mayday call you should not transmit, but continue to monitor the radio. If a shore station such as the Port Operations or the VTIS fails to respond to the call you should attempt to relay the message and render any assistance. An example of a mayday message could be: *"Mayday, Mayday, Mayday this is Phantom, this is Phantom, this is Phantom, a pleasure boat, I am in position -1 mile south of "Mano" Buoy , 1 mile south of "Mano" Buoy, 1 mile south of "Mano" Buoy. We have been swamped by a wave and we are sinking. There are four people in the water. Need immediate assistance Over."*

Chap 8 Berthing And Anchoring

BERTHING

1. Communicate with passengers your intentions to dock. Assign tasks to passengers depending on their skill level. Passengers not assisting should remain seated.
2. Prepare lines and fenders. Test reverse gear. Note current and wind direction and approach dock accordingly. See the diagram for approaches depending on the direction of the wind.
3. Approach the dock at about 30 degrees. Approaching too fast is a common mistake. Go slow and use engines only when necessary to overcome the effects of wind and current.
4. Some boat operators prefer to use the line at the bow. Once the bowline is secure, the operator shifts the motor into reverse and turns the helm so that the stern eases towards the dock.
5. Let people on the dock help moor the boat. If operating alone, use a boat hook to assist.

Caution: Never allow anyone to put hands, arms or feet over the side in an attempt to stop the boat.



UNBERTHING

1. Leaving the berth involves removing all your lines except one spring line, then using the engines against it so that the opposite end of the boat is levered off the dock. To spring the bow out, put the engines astern against the stern spring and the bow will come out. If this doesn't work, springing the stern out is even more effective. Leave the bow spring on, and put the engines ahead against it, and turn your rudder in towards the dock as though you wanted to steer your bow in. The propeller wash turns the bow inwards. The bow spring levers the stern out as well and, before you know it, you are far enough out to let go and motor astern into open water. Don't forget to use your fenders intelligently while springing off, and always be sure that you can let go the spring line without leaving one of your crew on the pontoon.

ANCHORING

To safely anchor the boat, follow these guidelines :

- Select a suitable location, which offers maximum shelter from wind, current, sufficient swinging room, away from passing traffic etc.
- Determine the depth and sea bottom conditions, and calculate the amount of anchor line (chain / rope) to put out. Refer to the local chart to check for any underwater obstructions and to identify the type of sea bottom - mud, sand, rock, clay, etc. This information will help you to identify a suitable site to anchor.
- Look at other boats in the anchorage and follow their lead. Determine where their anchors lie so you won't foul them.
- Determine the Proper Scope. The usual scope for good weather is 4:1, (4 meters of anchor line to 1 metre of water depth) which will give you good holding. In unstable weather or exposed anchorages, add more scope for insurance.
- If necessary, lay out the amount of chain / rope you will need on deck in such a manner that it will follow the anchor into the water smoothly and without entangling.
- Anchor with a single anchor from the bow. DO NOT anchor from the stern alone, this could cause the boat to swamp or capsize.
- Stem the wind / current. And be sure that the boat has stopped all forward motion before lowering the anchor.

- When you are in position, let go the anchor, slip the anchor line slowly and back down on the anchor with engine in slow reverse to help set the anchor.
- Secure the anchor line after releasing the line to the required length. Give the anchor line a hard pull to check if it is holding properly.
  When the anchor is firmly set, look around for reference points in relation to the boat. If you have a compass, you can get the bearing of two different fixed points (building, beacon, tree, rock, etc.) Over the next hour or so, make sure those reference points are in the same place. If not you're probably dragging anchor. Also should check occasionally to make sure you're not drifting.

Anchor wt & Scope
Calculation
1.5 x Boat length = wt (kg)
eg. 1.5 x 7m = 10.5kg
Scope min = 4 x Depth
Optimum = 7 x Depth

Chk Depth
- hand led line
- fish finder

Retrieving the anchor

- Retrieve the anchor by pulling in the anchor line. If necessary, use the engine ahead to assist until the anchor line hangs vertically below the bow.
- Once free, bring up the anchor on board. Clean the anchor and the line before stowing away.