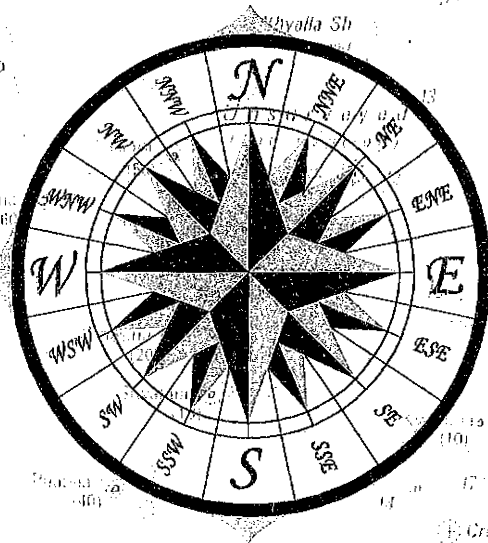
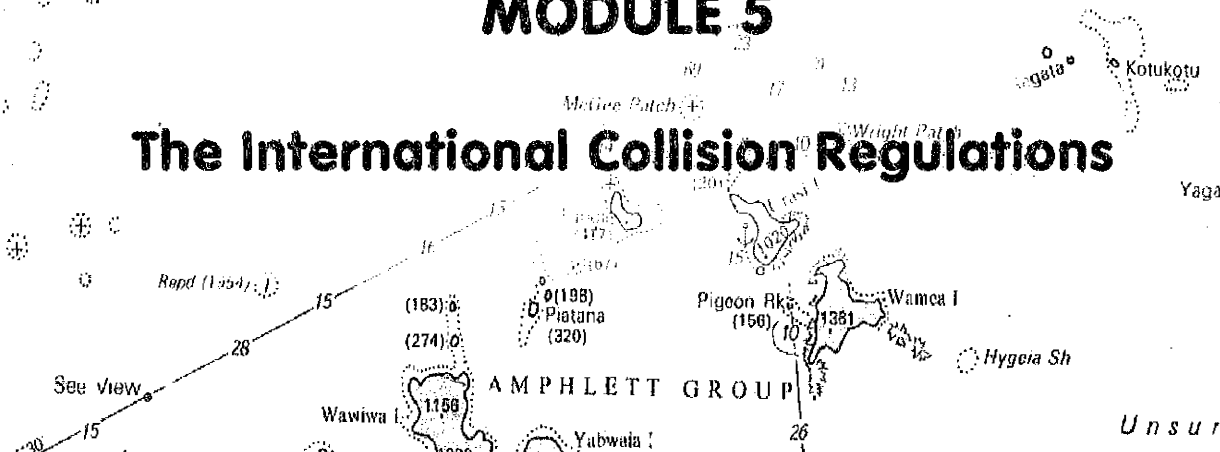


# Pacific Island Qualified Fishing Deckhand



## MODULE 5

### The International Collision Regulations



Coastal Fisheries Program  
Training Section



South Pacific Commission

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**MODULE 5:**

# **THE INTERNATIONAL COLLISION REGULATIONS**

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**LEARNING OUTCOMES:**

On completion of this module the students should be able to:-

- explain the purpose of the International Collision Regulations
- explain how specific combinations of navigation lights and day shapes are used to identify different types of vessels
- list the main types of vessel covered by the International Collision Regulations
- list the order in which one type of vessel keeps out of the way of another type of vessel when these are in sight of each other in crossing situations
- explain what is meant by “restricted visibility” and explain how a different set of rules apply in restricted visibility
- given a diagram, model or projected image identify the direction of travel of differing types of vessel in relation to own vessel
- given a diagram, model or projected image identify the navigation lights and day shapes of:
  - small craft
  - fishing vessels
  - power-driven vessels
  - for vessels underway, at anchor or aground.

**CONTENT OUTLINE:**

- Avoiding Collision at sea
- The International Collision Regulations

**Part A:**

- The General Rules

**Part B: Section 1**

- Rules to be Followed at all Times

**Part B: Section 11**

- Rules to be Followed by Vessels in Sight of Each Other
- Steering Rules
- Overtaking and Crossing Vessels
- Power-Driven Vessels Meeting End-On
- Power-Driven Vessels Crossing
- Different Types of Vessels Crossing
- Any Vessel Overtaking Another

**Part B: Section 111**

- Rules in Restricted Visibility

**Part C:**

- Lights and Shapes
- Mast-Head Light
- Side Light
- Stern Light
- All-Round Light
- Using Navigation Lights to Determine Vessel Direction
- Identifying Vessels from Lights and Shapes
- Power-Driven Vessel Under 50 Metres
- Power Driven Vessel Over 50 Metres
- Power Driven Vessel under 12 Metres
- Power Driven Vessel under 7 Metres Not Capable of exceeding 7 knots
- Sailing Vessel any Length
- Sailing Vessel under 20 Metres

- Small Sailing Vessels and Vessels Under Oars less than 7m.
- Sailing Vessels Propelled by Machinery
- Vessels Engaged in Fishing
- Vessels Trawling
- Vessels Engaged in Fishing other than Trawling
- Fishing Vessel Day Shapes
- Vessels at Anchor or Aground
- At Anchor Under 50 Metres
- At Anchor Over 50 Metres
- Aground
- Summary of Lights and Shapes

## **AVOIDING COLLISION AT SEA**

- To reduce the chance of accidents and to have safety on the roads, all countries have rules which road users must follow. These rules, often called the “Highway Code”, instruct motorists on safety rules, such as which side of the road to drive, at what speeds they are allowed to travel, where pedestrians can cross and a variety of other rules which keep people safe on the road.
- There are also rules for ships to follow which will reduce the risk of accidents and collisions. At sea, circumstances are more difficult as there are no roads or traffick lights to direct traffic. Mariners must be able to “see” a vessel in the dark. They must also be able to determine the direction the other vessel is travelling and from this take action to avoid collision.
- To suit the marine situation a special set of rules has been created. Because these rules cater for every situation which might occur at sea, while also taking into account the limitations of differing craft, they are rather complicated. In addition, ships of many nationalities use the seas and there would be difficulties if each nation had its own set of rules. To solve this all nations of the world have come together and written a set of rules to be followed by every vessel sailing on the high seas and water connected therewith, navigable by ocean-going vessels.
- These rules are the mariners highway code and are called the International Collision Regulations.

# THE INTERNATIONAL COLLISION REGULATIONS

- The Collision Regulations are written in language which will stand up in a court of law or court of inquiry at an accident. Because of this they can be difficult to interpret or understand. Skippers and Mates will have to read and understand the actual regulations but deckhands only need to have an appreciation of some part of these regulations. The notes which follow are a simple-language version of the sections of the regulations which are covered by the deckhands' syllabus.
- For proper comprehension of the regulations it is necessary to understand that the Regulations are split into sections covering different aspects of collision.

## THESE SECTIONS ARE TITLED:-

### **PART A**

- General Rules

### **PART B Section 1**

- Conduct of vessels in any visibility.

### **PART B Section 11**

- Conduct of vessels in sight of one another.

### **PART B Section 111**

- Conduct of vessels in restricted visibility (i.e. where vessels can not see each other by eye)

### **PART C**

- Lights and shapes carried by different types of vessel.

# Part A.

## THE GENERAL RULES

- This section of the rules carefully defines the meaning of terms which are used in the regulations so that there can be no misunderstanding of their meaning. (e.g. a fishing vessel is defined as “A vessel engaged in fishing with etc.”. It is noted that when a vessel is not fishing it becomes something else, usually a power-driven vessel, within the meaning of these rules).
- Part A starts by stating that the rules shall be followed by all vessels operating on the high seas or waters connected therewith, navigable by ocean-going vessels.
- It contains the following definitions:

<b>A vessel</b>	Anything which can be used as a means of transportation on the water.
<b>Power-driven vessel</b>	A vessel propelled by machinery.
<b>Sailing vessel</b>	A vessel driven by sails alone.  Note: If a sailing vessel turns on an auxiliary engine it becomes a power-driven vessel within the meaning of these rules.
<b>Not Under Command (NUC)</b>	A vessel which due to special circumstances is unable to keep out of the way of another vessel.  Note: This is usually a vessel whose engine has broken down. Do NOT think if you leave the bridge unattended the vessel becomes NUC, this is NOT a special circumstance. The rules state a look-out must be kept at all times.
<b>Restricted in Ability</b>	A vessel which due to the special nature of its job to Manoeuvre can not manoeuvre as well as other vessels.
<b>Fishing vessel</b>	A vessel engaged in fishing etc.
<b>Constrained by her Draft</b>	A large vessel operating in areas of shallow water

**Draft**

Where it cannot always keep out of the way without moving into shallow water where it might go aground (eg coming down a dredged channel).

**Under way**

Not made fast to the shore at anchor or aground.

Note: This means a vessel which is at sea. It can either be stopped and drifting not under power or it can be moving through the water by engine or sails, both are "underway"

**Making Way**

Moving through the water i.e. propelled by sails or machinery.



## **Part B Section 1**

### **THE RULES TO BE FOLLOWED AT ALL TIMES**

These rules shall be followed whether you can see the vessel or not. They include:

- a proper lookout to be kept at all times
- the rules shall be followed at all times, but the officer of the watch or skipper should be aware that very special circumstances might occur which make a deviation of the rules necessary for the safety of the vessel
- good seamanship and the common practice of seamen shall be observed at all times
- where one vessel is to keep out of the way of another (called the "give way" vessel) the other (called the "stand on" vessel) shall maintain its course and speed
- mostly risk of collision can be avoided by the give way vessel making an alteration of course alone but the give way vessel can also stop or reverse if necessary
- where possible the give way vessel shall avoid crossing ahead of the stand on vessel
- any alteration of course by the give way vessel shall be a large alteration of course so it can be easily seen that the alteration has been made. It shall be made in ample time and not left too late so that a "close quarter situation" occurs
- risk of collision occurs when the compass bearing of the vessel is not appreciably changing. (refer Module 4)

## Part B Section 11

### STEERING RULES FOR VESSELS IN SIGHT OF ONE ANOTHER

- This is the main section of the rules as vessels are mostly operating in good visibility. "In sight of one another" means that the vessels can see the other by eye, it does not mean where radar is being used in bad visibility and a target can be seen on the radar screen, this is a different situation and is covered in another section.

### OVERTAKING AND CROSSING VESSELS

- The rules talk about crossing vessels and overtaking vessels and it is important to be able to differentiate between the two situations.

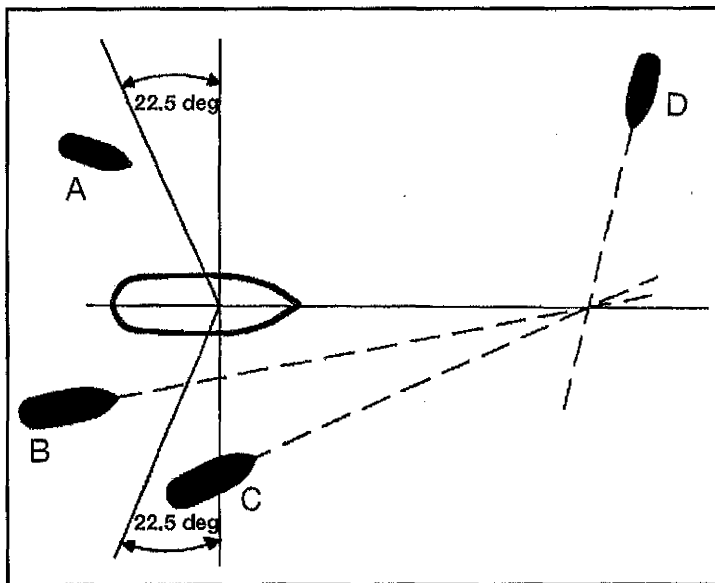


Figure 5.1 Overtaking and Crossing

- In figure 5.1 all four boats are on a collision course with the central boat. This means their bearing, in relation to the central boat, is not changing and they are moving along their course line at a speed proportional to the speed the central vessel is moving along its course line. In this case all of the vessels in the diagram will cross at the same place at the same time.

- A and B are called "overtaking" vessels, their bearing in relation to the central vessel lies more than  $22.5^\circ$  abaft her beam and this will remain the same until they reach the crossing position. During darkness A and B will see the central vessel's white stern light.
- C and D are called "crossing" vessels, their bearings in relation to the central vessel lie ahead of the  $22.5^\circ$  line. Similarly to A and B their bearing is not changing and they will reach the crossing position at the same time as the crossing vessel. At night vessel C will see the central vessel's green starboard side light and vessel D will see the central vessel's red port sidelight.

**Those rules for vessels in sight of each other which are covered by the deckhand syllabus are summarized as follows:-**

**POWER-DRIVEN VESSELS MEETING END-ON**

- Situation** Two power-driven vessels are coming directly towards each other. In day time if either vessel had two masts they would be seen to be in line or almost in line and at night both the red and green side lights would be able to be seen.
- Action** Each vessel shall alter course to starboard so as to pass on the port side of the other, as shown below.

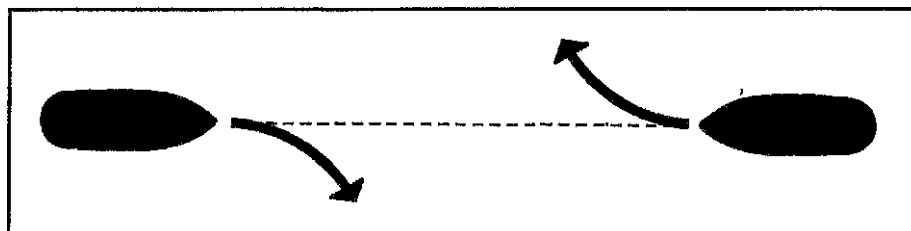


Figure 5.2 Power Driven Vessels End On

**POWER-DRIVEN VESSELS CROSSING**

- Situation** Two power-driven vessels are crossing in such a manner as to cause risk of collision.
- Action** The one with the other on its starboard side will give way. As required in Section 1 the other vessel will maintain its course and speed (stand on). At night the give-way vessel will see the red sidelight of the stand-on vessel and the stand-on vessel will see the green sidelight of the give-way vessel.
- Note:** To avoid crossing ahead the most appropriate action to avoid collision will be for the give-way vessel to make a bold alteration of course to starboard and go around the stern of the stand-on vessel. It may however slow down or stop if this is applicable to the situation.

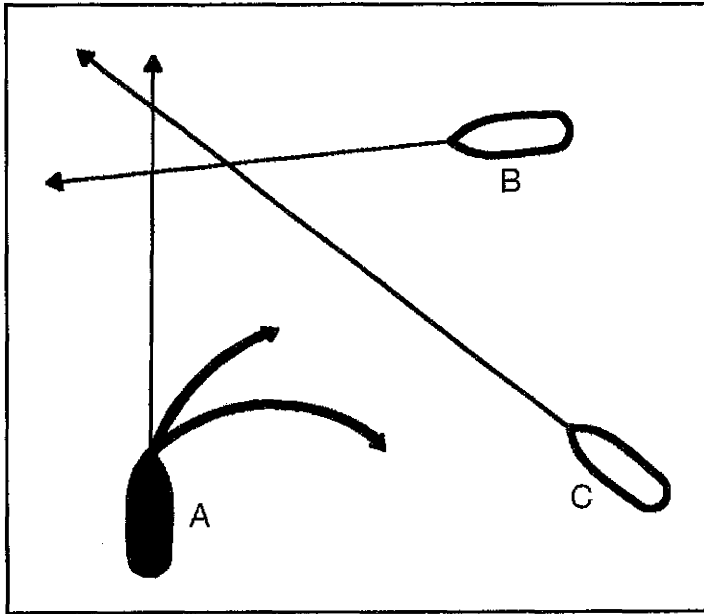


Figure 5.3

In Figure 5.3 vessel A has both vessels B and C on its starboard side. In both cases it will make a bold alteration of course to starboard and pass astern of the other vessels.

**DIFFERENT TYPES OF VESSELS CROSSING**

**Situation** One type of vessel is crossing another, different type of vessel. Risk of collision exists.

**Action** Common sense indicates that the vessel which is most able to keep out of the way, i.e. the most manoeuvrable vessel, should keep out of the way of the other. This is what the rules indicate. In the table below the vessel at the top of the table will keep out of the way of all those below.

- Power-Driven Vessel
- Sailing vessel
- Vessel engaged in fishing
- Vessel constrained by its draft
- Vessel restricted in its ability to manoeuvre
- Vessel not under command.

**ANY VESSEL OVERTAKING ANOTHER**

**Situation** Where any type of vessel is overtaking any other type of vessel in such a manner as to cause risk of collision.

**Action** The overtaking vessel shall keep out of the way of the vessel it is overtaking and it shall stay out of the way until it is finally past and clear. It must not alter course when it gets ahead so as to become a crossing vessel.

At night an overtaking vessel will see the white stern light of the vessel it is overtaking but during the day it is often difficult to work out whether your vessel is overtaking or crossing. In this case you will assume you are the overtaking vessel and keep out of the way.

**Note** While it is unlikely that any of the restricted vessels will be going fast enough to overtake power-driven vessels there might be cases where this occurs. This makes recognizing the difference between a crossing and an overtaking situation very important. e.g. while a sailing vessel must keep out of the way of a fishing vessel in a crossing situation, this changes if the fishing vessel is in an overtaking situation with regards to the sailing vessel. In this case the fishing vessel must keep out of the way of the sailing vessel.

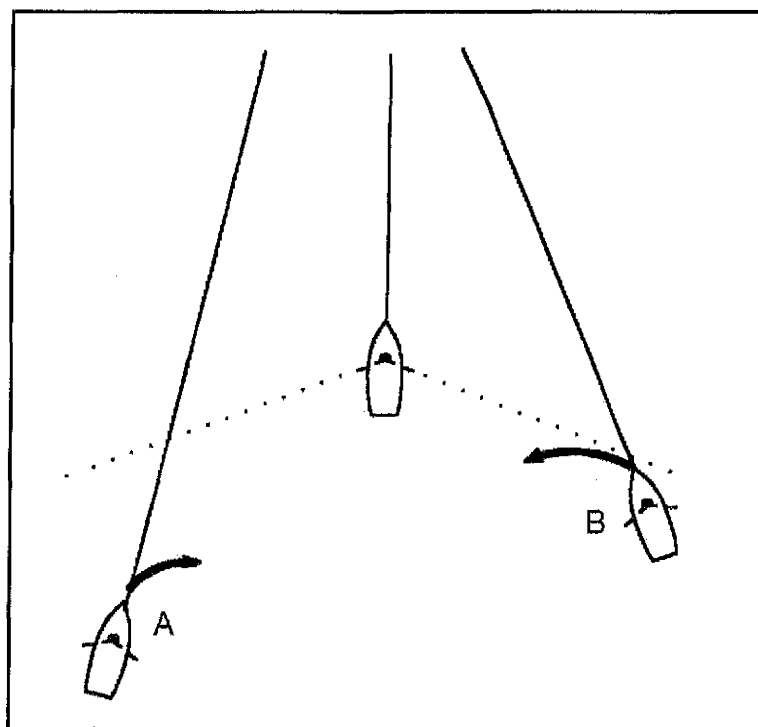


Figure 5.4

- In Figure 5.4 vessels A and B are both overtaking vessels and will have to keep out of the way of the vessel they are overtaking. Each should alter course as shown on the diagram so as to “avoid crossing ahead” of the vessel they are overtaking.

## Part B Section 111

### RULES IN RESTRICTED VISIBILITY

- Restricted visibility means any condition where visibility is restricted by fog, mist, falling snow, heavy rain storms, or any other similar cause. At these times it is not possible to determine exactly how you are approaching another vessel or exactly what class of vessel it is. (Fog signals will give some indication of type but not exact information.) During restricted visibility the previous rules change and a new set of rules take over. Deckhands do not need to know these new rules as at times of restricted visibility they must immediately call the skipper.

## Part C

### LIGHTS AND SHAPES

- At night time and during periods of restricted visibility lights must be shown which give the observer the following information:
  - Identification of vessel type. This is achieved by the vessel showing specific identifying lights or a combination of lights unique to the vessel.
  - The direction of travel of the other vessel. This is done by the vessel showing different lights over different sectors, so that by seeing some lights and not the others it can be deduced which way the vessel is travelling.

There are four types of lights:-

#### Mast-head Light

This is always a white light which is situated on the mast of the vessel and shows both sides from right ahead to 22.5° abaft the beam on either side.

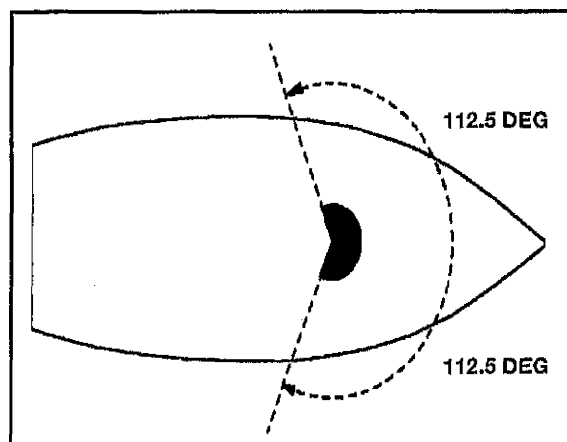


Figure 5.5

**Side-Light**

This is a red or a green light which shows from right ahead to 22.5° abaft the beam. The red side light is shown on the port side only and the green side light is shown on the starboard side only.

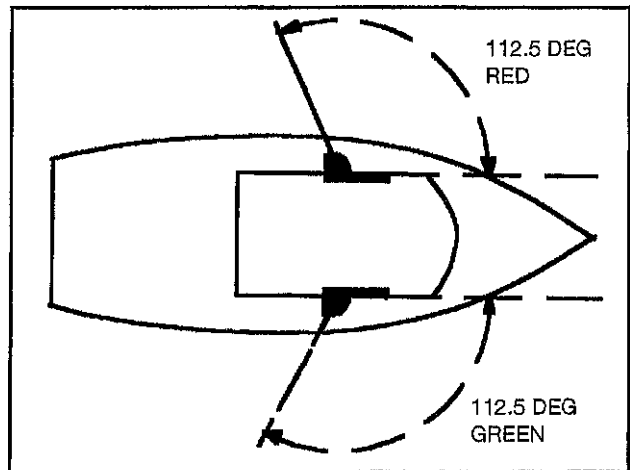


Figure 5.6

**Stern-Light**

This is always a white light and is shown on the stern of the vessel. It takes over from where the mast-head light and side lights finish, i.e. showing from 22.5° one side right around the stern to 22.5° on the other side.

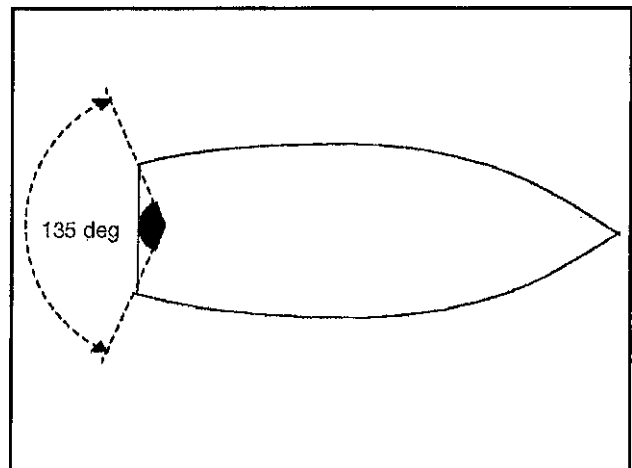


Figure 5.7

**All-Round Lights**

These are lights of various colours used in combinations to identify different classes of vessels. As the vessel must be identified from all directions they shine in an unbroken arc all around the horizon.

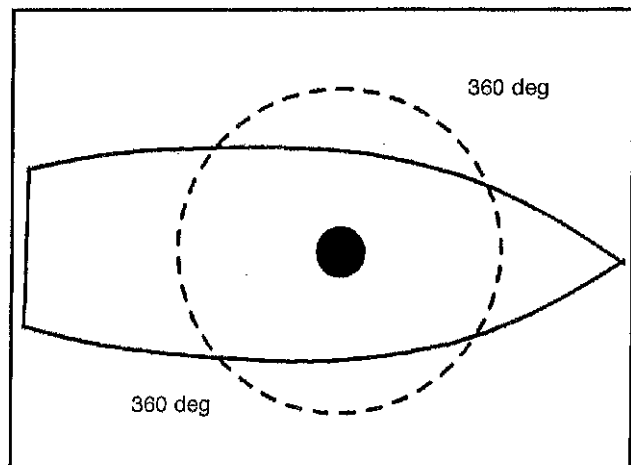


Figure 5.8

**USING NAVIGATION LIGHTS TO DETERMINE VESSEL DIRECTION**

- Because they have specified arcs, the mast-head lights, side lights and stern lights allow the mariner to estimate the direction the other vessel is travelling according to whether he sees them or not. Refer Figure 5.9

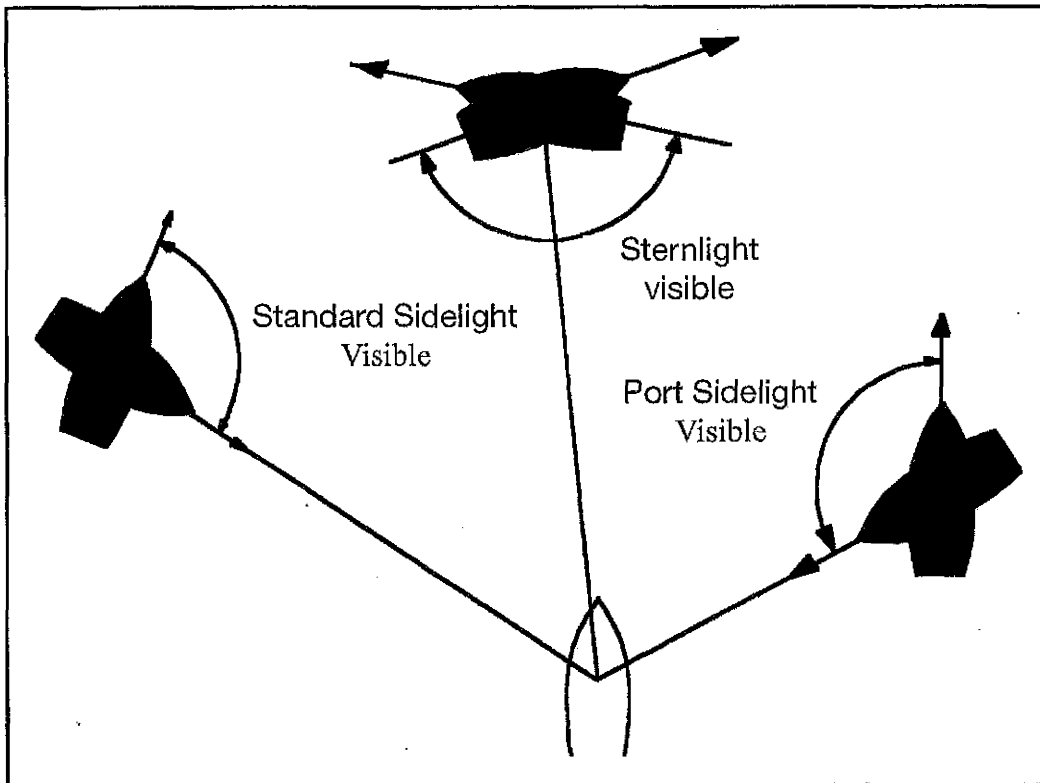


Figure 5.9

**IDENTIFYING VESSELS FROM LIGHTS AND SHAPES**

- At night different types of vessels can be identified by their navigation lights or by combinations of all-round lights. During the day they can be recognized by their shape (eg sailing vessels have sails) or by them displaying special day shapes.

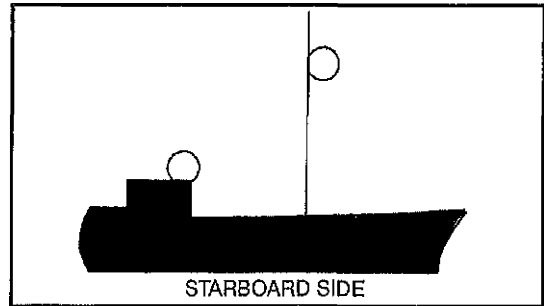
**POWER-DRIVEN VESSELS**

- The most common lights seen at sea are those of power-driven vessels. The lights they show are dependent on the length of the vessel.



**Power Driven Vessel Under 50 Metres in Length**

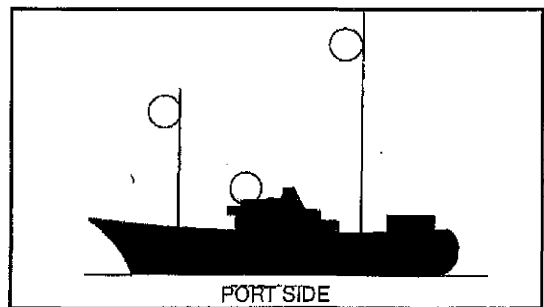
This vessel shows sidelights, sternlights and a mast head light. It may if it wishes show an additional masthead light similar to a power driven vessel over 50 metres.



**Figure 5.10**

**Power Driven Vessel Over 50 Metres in Length**

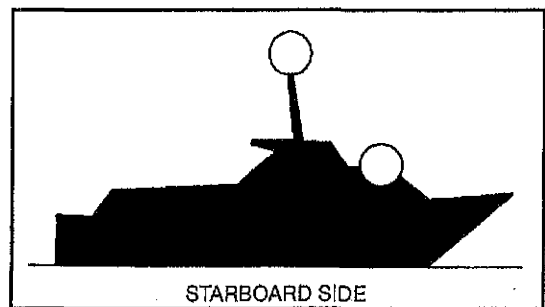
This vessel shows the same lights as a power driven vessel under 50 metres in length and in addition a second mast head light. This second mast head light shall be situated behind and higher than the first so that the horizontal distance between the lights shall be larger than the vertical distance.



**Figure 5.11**

**Power Driven Vessel Under 12 Metres**

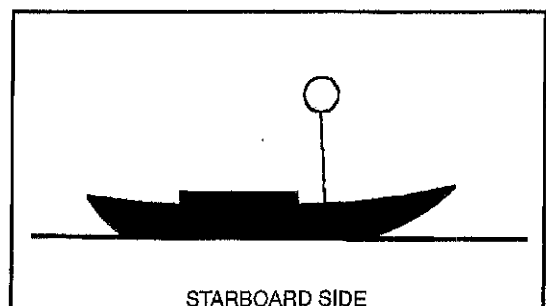
This vessel may take the mast head light and the stern light and combine them into an all round white light situated above the side lights where it can best be seen.



**Figure 5.12**

**Power Driven Vessel Under 7 Metres in Length Not Capable of Exceeding 7 Knots**

This vessel may show a single all round white light only. Note: If it wishes it can show the sidelights also.



**Figure 5.13**

## Sailing Vessels

### Sailing Vessels Any Length

A sailing vessel of any size must show side lights and a stern light. In addition, for identification purposes, it may show an all round green light over an all round red light situated at the mast head.

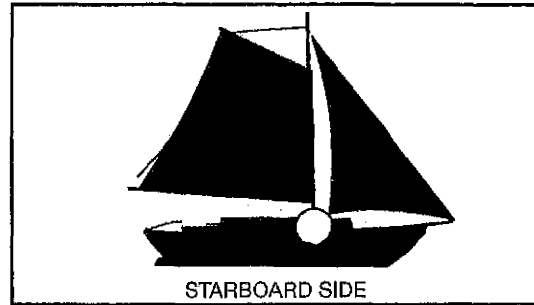


Figure 5.14

### Sailing Vessels Under 20 Metres in Length

The sidelights of small sailing vessels are very close to the water and can be difficult to see when obscured by sails or when the vessel is heeled over by the wind. In order that the navigation lights are more easily seen a sailing vessel of under 20 metres may combine the side lights and stern lights in a tri-coloured lantern at the mast head.

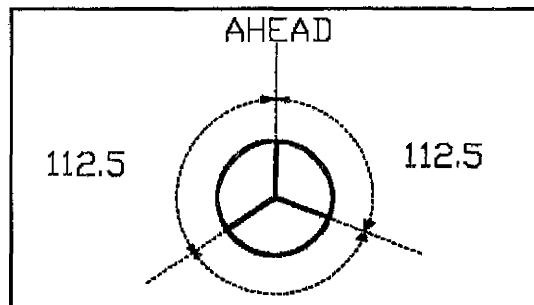


Figure 5.15

In the tri-coloured lantern the green, red and white lights must show over the correct arc of the horizon. Also if this is done this vessel cannot show the optional red over green identification lights.

### Small Sailing Vessels or Vessels Under Oars less than 7 Metres in Length

This vessel is not required to carry lights but shall have a white lantern or torch ready to show if an other vessel approaches.

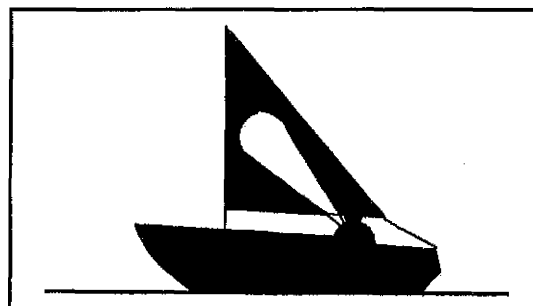


Figure 5.16

Both power driven vessels and sailing vessels keep on all of their lights if for any reason they are stopped and not making way.

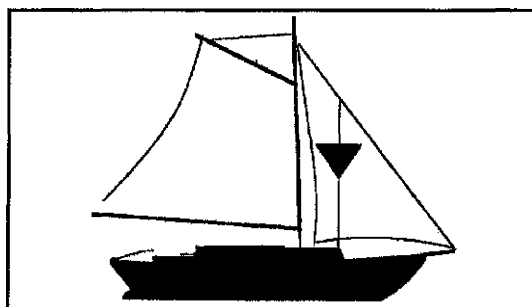
*It is easy to tell the difference between a power driven vessel and a sailing vessel when they are crossing at night. The power driven vessel will always have a white mast head or all round light, the sailing vessel will not.*

*It is not possible to tell the difference between a sailing vessel and a power driven vessel when overtaking as both show the same stern light. Remember, however, any vessel overtaking another keeps out of the way of the vessel it is overtaking.*

### **Sailing Vessel Being Propelled by Machinery**

When a sailing vessel turns on its engine, even if it still has its sails up, it becomes a power driven vessel. At night it will show the lights for a power driven vessel of its size.

To avoid confusion during the day it will let other vessels know what class of vessel it is by showing a triangle point down.



**Figure 5.17**

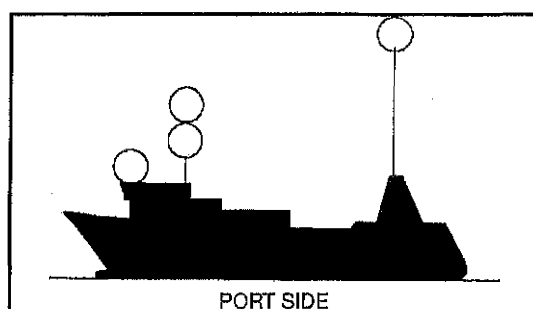
### **Vessels Engaged in Fishing**

#### **Vessels Trawling**

A trawler is any vessel dragging a net on or near the bottom of the sea.

This vessel shall show side lights and a stern light and in addition a green all round light over a white all round light.

A trawler over 50 metres in length shall also show a white mast head light abaft the two all round lights (ie in a position similar to the second mast head light of a power driven vessel over 50 metres).



**Figure 5.18**

**Vessels Engaged in Fishing other than Trawling**

This vessel shall show side lights, a stern light and an all round red light over an all white green light for identification.

Regardless of size it will never show a mast head light.

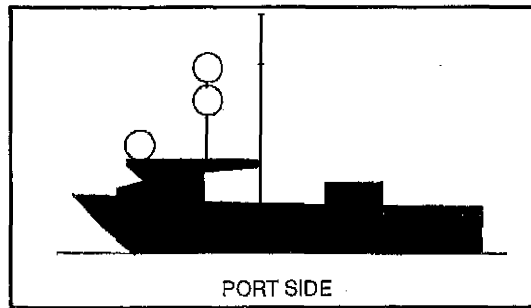


Figure 5.19

As fishing vessels start and stop frequently as part of their work they indicate this to other vessels by turning off their side lights and stern light when they are stopped and not making way.

**Fishing Vessel Day Shapes**

To identify fishing vessels during the day they shall show a day shape. This shall consist of two cones with their apexes together or alternatively if under 20 metres, a basket.

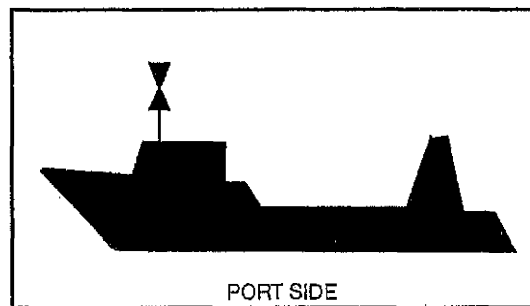


Figure 5.20

**Vessels at Anchor and Aground**

A vessel of less than 50 metres when at anchor shall show an all-round light where it can best be seen. A vessel of over 50 metres shall show an all-round light in the fore part of the vessel and in addition an all-round light in the after part of the vessel at a lower level than the for'd light.

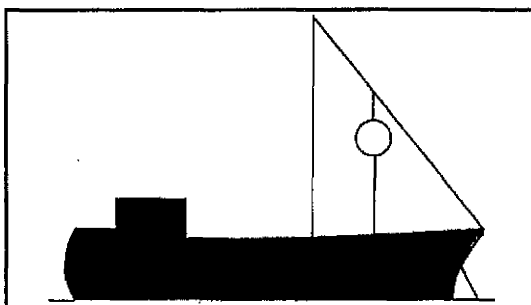


Figure 5.21

Vessel at Anchor Under 50 Metres

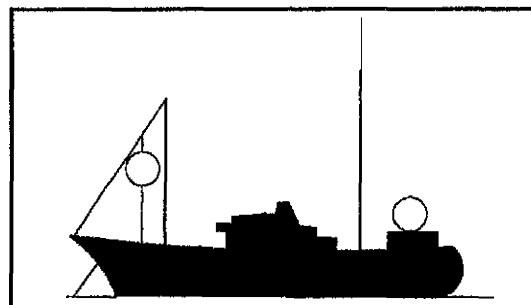


Figure 5.22

Vessel at Anchor Over 50 Metres

### Day Shape for Vessels at Anchor

All vessels at anchor shall show a black ball at the fore part of the vessel.

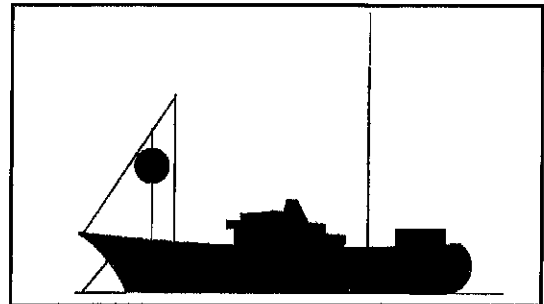


Figure 5.23

### Vessels Aground

A vessel aground shall show the anchor lights for a vessel of its size and in addition it shall show two all-round red lights in a vertical line.

During the day it shall show three black balls in a vertical line.

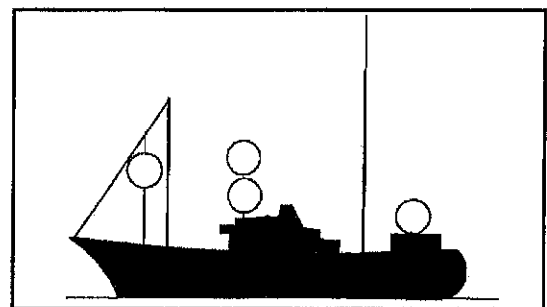
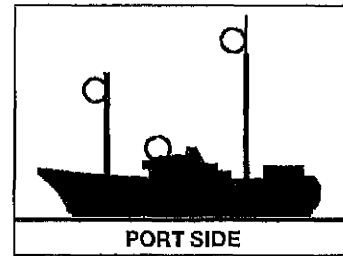
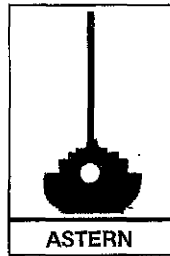
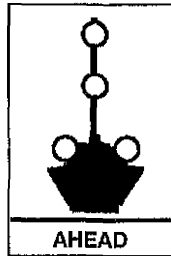
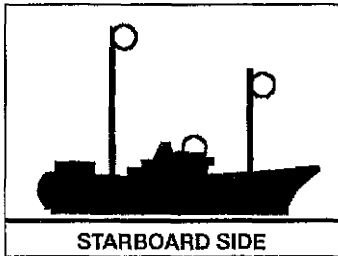


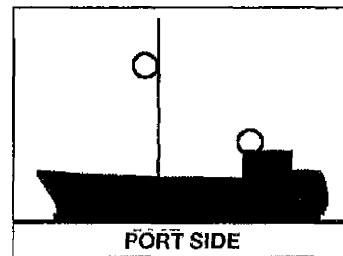
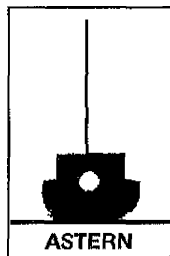
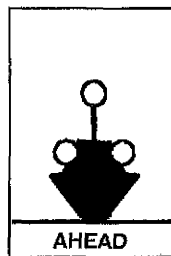
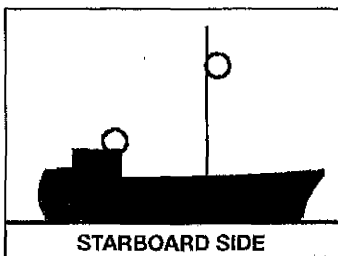
Figure 5.24

**LIGHTS AND SHAPES**

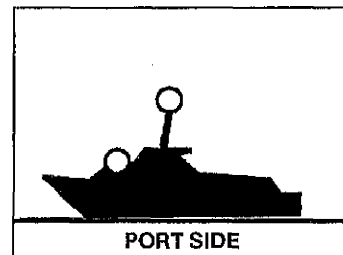
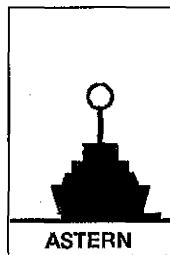
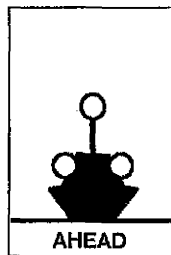
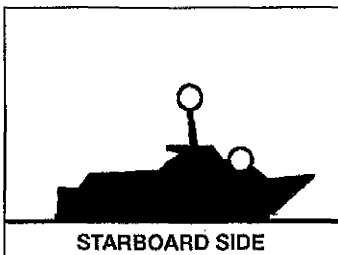
**Power Driven Vessel over 50 metres**



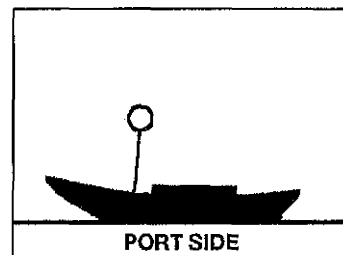
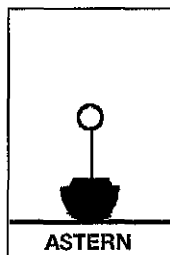
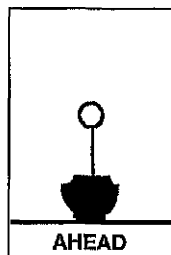
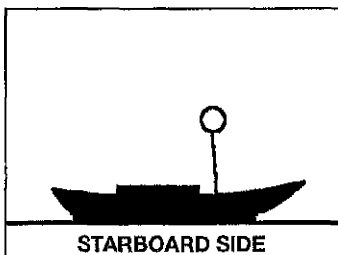
**Power Driven Vessel under 50 metres**



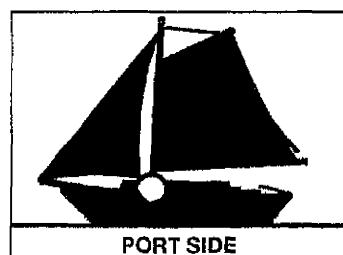
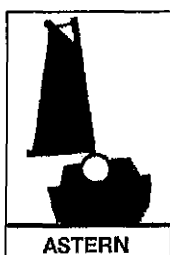
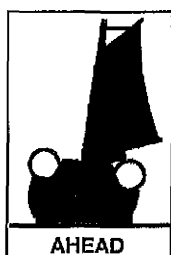
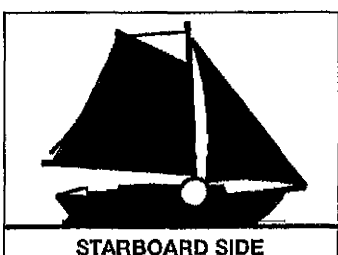
**Power Driven Vessel under 12 metres**



**Power Driven Vessel under 7 metres whose speed cannot exceed 7 knots**

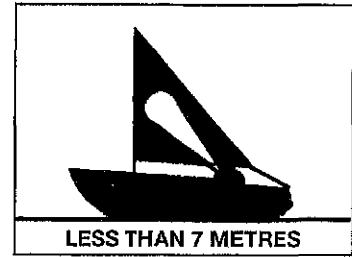
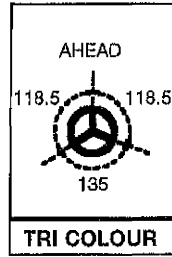
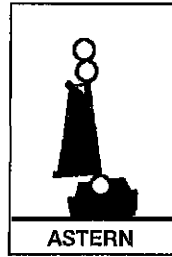
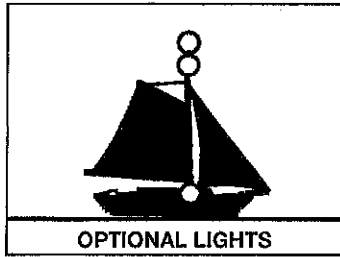


**Sailing Vessel any size**

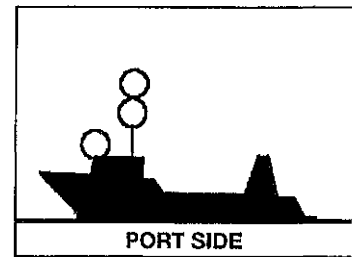
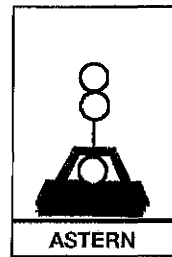
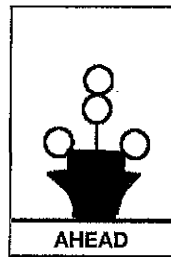
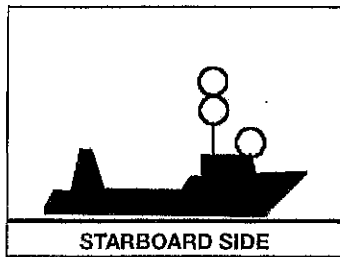


**LIGHTS AND SHAPES**

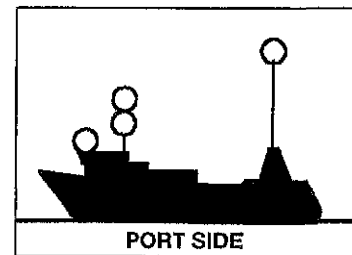
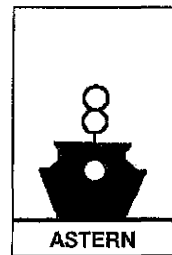
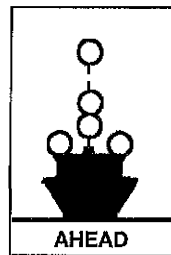
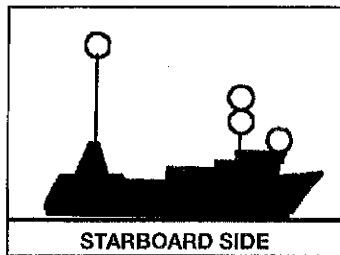
**Sailing Vessels Various**



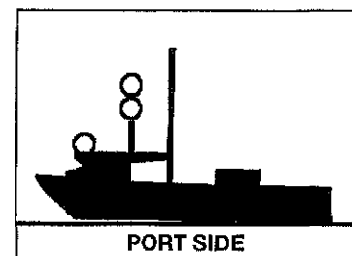
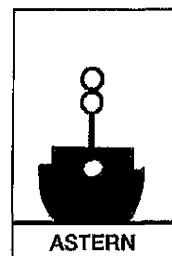
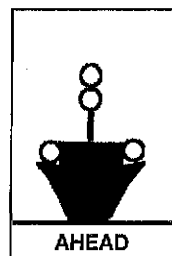
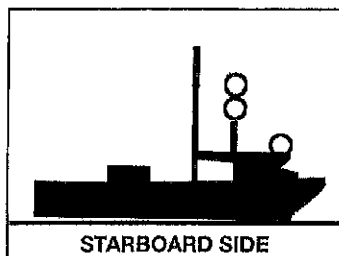
**Fishing Vessel Trawling under 50 metres**



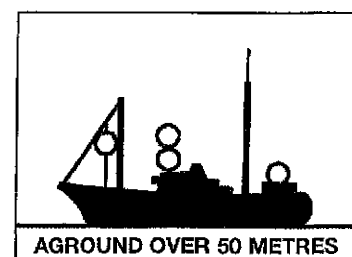
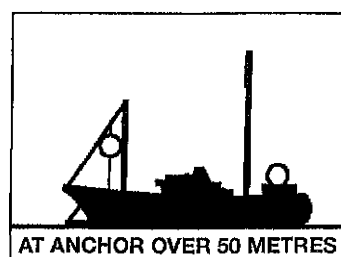
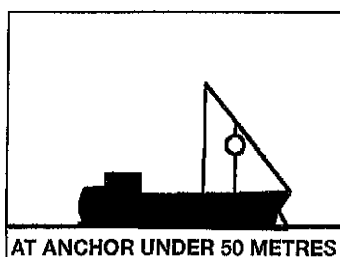
**Fishing Vessel Trawling over 50 metres**



**Fishing Vessel other than a Trawler**

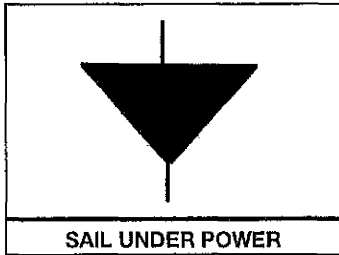


**Vessels at Anchor or Aground**

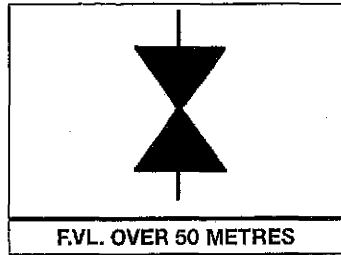


## LIGHTS AND SHAPES

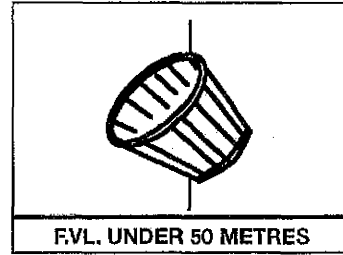
### Day Shapes



SAIL UNDER POWER

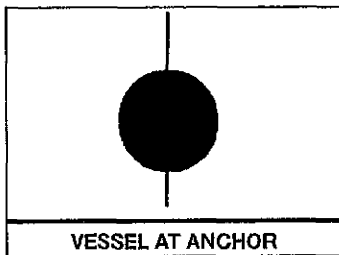


F.VL. OVER 50 METRES

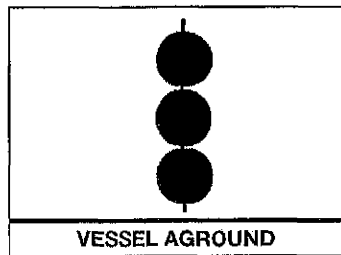


F.VL. UNDER 50 METRES

### Day Shapes



VESSEL AT ANCHOR



VESSEL AGROUND

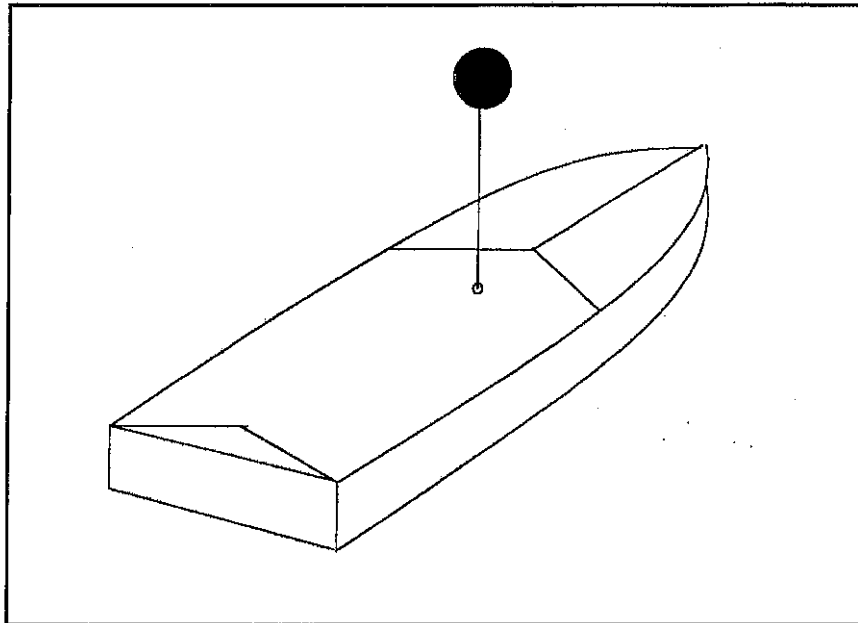


# Teaching Notes

## Teaching Aids

To teach this module you will need :-

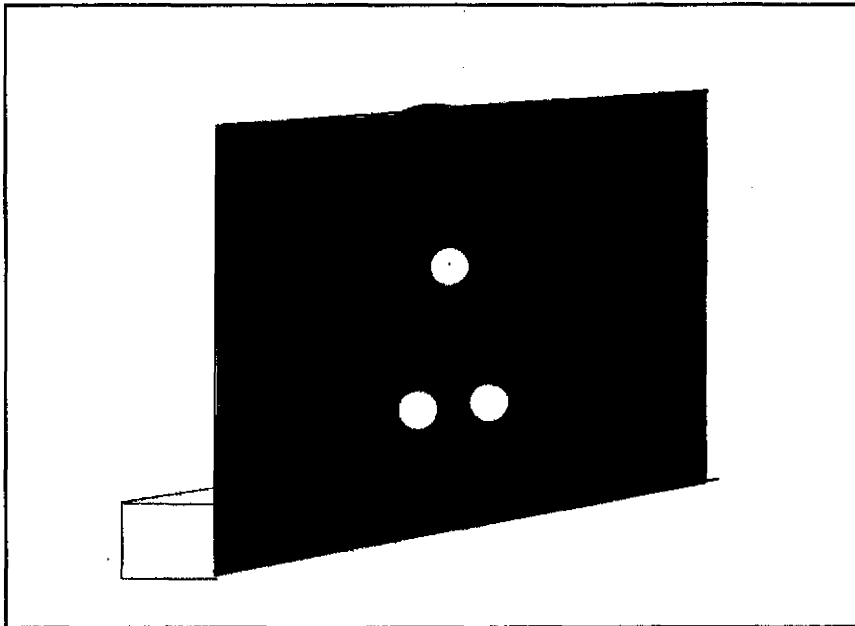
1. At least two boat shapes. These need not be very complicated and can easily be made out of wood as below.



These shapes can be marked with the arc of visibility of side-lights, stern lights and mast-head lights. They should have holes bored in them to take day shapes or a sail, as shown above.

2. Day shapes to put on the boat models.

3. A flat sheet of tin painted mat black and red, green and white magnetic rounds punched out of thin magnetic sheet. This will be used to demonstrate the arrangement and identity of various lights as shown below:



4. Thin white cardboard cut into 6 cm x 5 cm rectangles for students to make sets of "flash cards".

## Lesson Planning

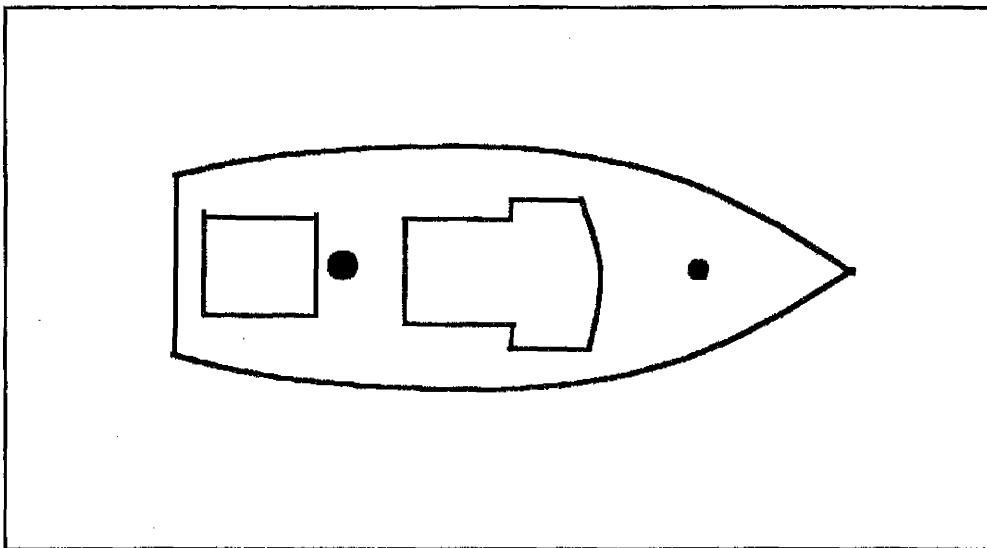
It will take several lessons for students to become proficient in the contents of this module.

### LESSON 5.1

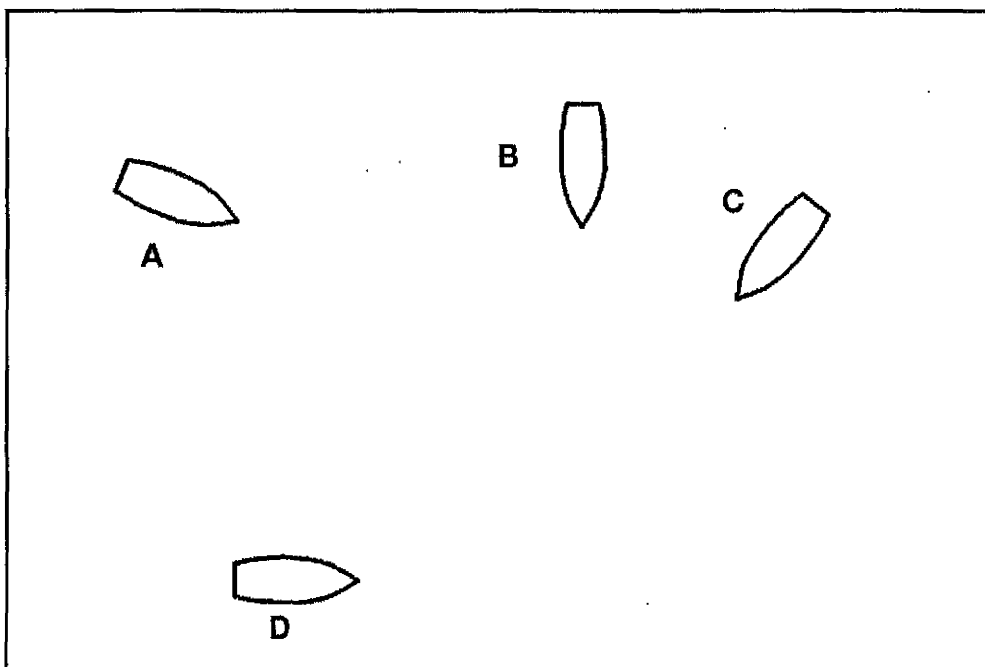
- Using the learning notes explain:-
  - The purpose of the Collision Regulations.
  - Part A. The General Rules. Emphasise students must be aware of the exact meaning of words and terms used in the regulations.
  - Part B1. Rules to be Followed at all times. Go through each item as listed in the learning notes and give practical examples which will illustrate each rule.
  - Part B2. Rules to be Followed by Vessels in Sight of Each Other.
- Show OHP 5.1 and explain when a vessel is overtaking and when it is crossing. Note that this will be reinforced in following lessons when talking about the arc of visibility of lights.
- Use OHPs 5.1 to 5.4 etc to explain:-
  - Power-driven Vessels End On (OHP 5.2)
  - Power-Driven Vessels Crossing (OHP 5.3)
  - Different types of Vessel Crossing (OHP 5.3)
  - Overtaking Vessels (OHP 5.4)
  - Part B3. Rules in Restricted Visibility. Explain as per learning notes.
- Have students read the learning notes and answer assignments 5.1.

## Student Assignments 5.1

1. On the plan view of a power-driven vessel over 50 metres in length, shown below, draw in the position and arc of visibility of its lights.



2. In the picture below, each vessel is in a collision situation. Say what each vessel will have to do with regards to the other two.



3. Explain how you will determine if risk of collision exists.
4. If you are on a power-driven vessel what alterations in course or speed would you make in the following situations, if risk of collision exists.?
  - a. Another power-driven vessel straight ahead of you ?
  - b. A fishing vessel on your starboard side ?
  - c. A sailing vessel on your port side ?
  - d. A stern light fine on your port bow ?
  - e. A stern light fine on your starboard bow ?
5. When should you keep a look-out ?
6. State five rules which apply in any condition of visibility.
7. What is meant by the term "restricted visibility" and what rules apply in restricted visibility.
8. Is there any situation where :-
  - a. a sailing vessel will keep out of the way of a power-driven vessel?
  - b. a fishing vessel will keep out of the way of a sailing vessel?
9. In the collision regulations what is meant by the following terms?:
  - A power-driven vessel
  - A sailing vessel
  - A fishing vessel
  - A vessel not under command
  - A vessel restricted in its ability to manoeuvre
  - Making way
  - Underway.
10. During the night how would you ascertain if you were a crossing or an overtaking vessel? During the day if you are not sure whether you are overtaking or crossing what shall you do?
11. If on bridge watch and you are in any doubt with regards to any situation, what shall you do?
12. If you are fishing what vessels shall you stand on for and which shall you keep out of the way of?

**LESSON 5. 2**

- Use this lesson to revise and reinforce lesson 5. 1 as follows:-
  - Have the students make "flash cards" illustrating the collision situations given in lesson 5. 1. Divide the class into pairs and have them self-test each other with the flash cards.
  - Use the ship shapes and OHPs 5.2 to 5.4 to test the class in groups on the collision regulations in Lesson 5.1.
  - Ask questions around the class on General Rules and Rules to be Observed at All Times.

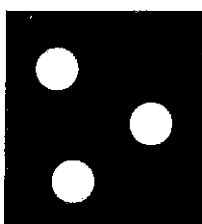
**LESSON 5. 3**

- Explain that lights and shapes are used both to identify the type of vessel and to indicate the direction in which it is heading.
- Use OHPs 5.5 to 5.8 to show the different types of navigation lights :-
  - Mast head (OHP 5.5)
  - Side light (OHP 5.6)
  - Sternlight (OHP 5.7)
  - All round light (OHP 5.8)
- Use OHP 5.9 and the ship models to demonstrate that seeing specific lights allows the observer to determine the direction of travel of the other vessel.
- Explain the different combination of lights shown by different types of vessel as follows:-
  - Power-Driven Vessel Under 50 Metres
  - Power-Driven Vessel Over 50 Metres
  - Power-Driven Vessel under 12 Metres
  - Power-Driven Vessel under 7 Metres
  - Sailing Vessel any size
  - Sailing Vessel under 20 Metres
  - Small Sailing Vessels and Vessels Under Oars
  - Sailing Vessels Propelled by Machinery

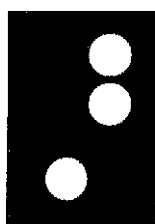
- Vessels Engaged in Fishing
    - Trawlers
    - Other than Trawlers
  - Fishing Vessel Day Shapes
  - Vessels at Anchor or Aground
    - At Anchor Under 50 Metres
    - At Anchor Over 50 Metres
  - Aground
  - Day Shapes.
- Have students read the learning notes and complete assignment 5.2.

## Student Assignment 5.2

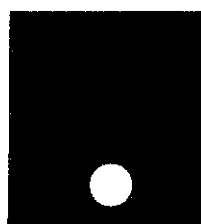
1. Using felt pens colour in all of the lights on the preceding pages.
2. Draw the day shapes for the following vessels:-
  - Vessel at anchor.
  - Fishing vessel over 50 metres with gear extending more than 150 metres.
  - A sailing vessel which is using its auxiliary engine.
  - A fishing vessel under 150 metres.
  - A vessel aground.
3. On the picture below showing lights of various types of vessel identify A, B, C, D and E.



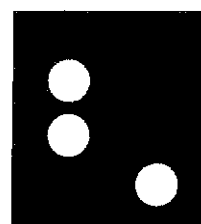
**A**



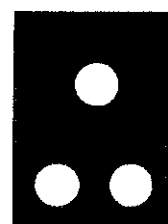
**B**



**C**



**D**



**E**

4. What shall a sailing vessel do if it turns on its engines when sailing?
5. What lights shall a fishing vessel show if it stops fishing and starts to travel home?
6. What is an "all-round" light and what is its purpose?
7. If you see a green side light on your starboard side can there be risk of collision?
8. If you are on a power-driven vessel and you see both the port and starboard lights of another vessel straight ahead is there risk of collision?
9. If you are on a power-driven vessel whose speed is 10 knots and you see the red and green lights of a sailing vessel 45 degrees on your port side, is there risk of collision?

#### **LESSON 5.4**

- Have students make flip cards of all the lights and shapes. Split the group into pairs and use the cards for self-testing.
- Test the students on the lights using the light board or, if this is not available, on the blackboard of the class. Ask round the class for them to identify the lights, determine the direction of travel and state the day shape.

#### **LESSON 5.5**

- Continue revision using flip cards, light board, models and OHPs for daytime collision situations.



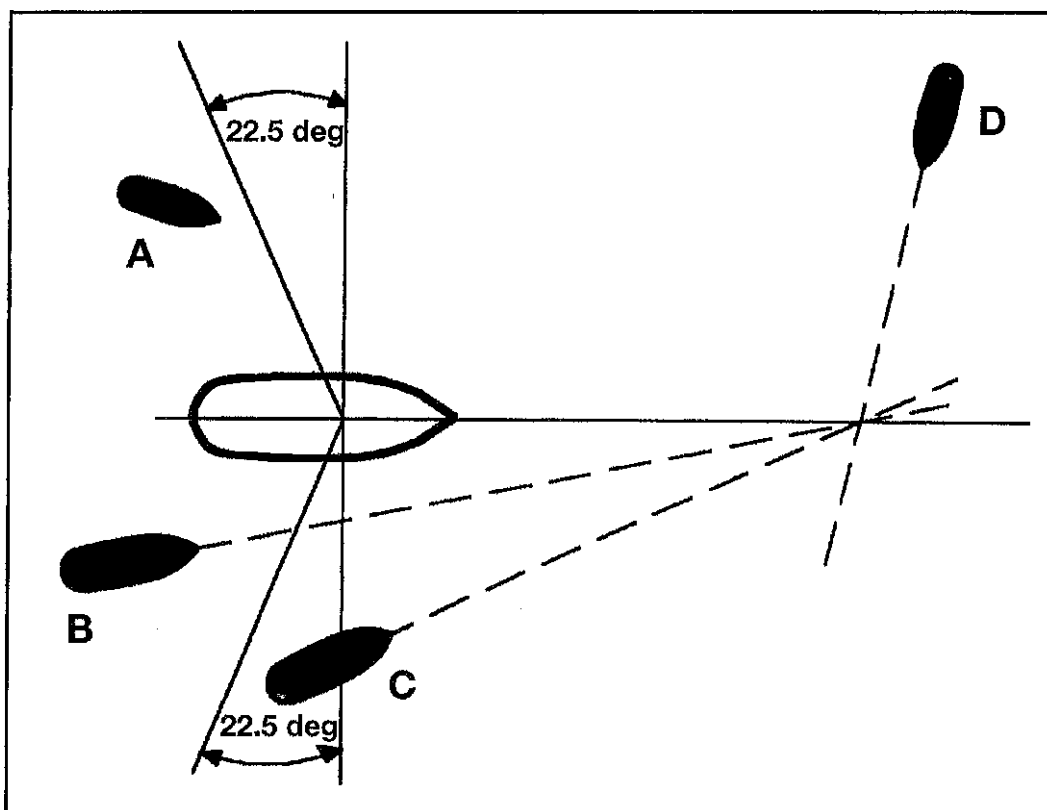
## List of OHPs

- 5.1 ..... Overtaking and crossing vessels
- 5.2 ..... Vessels meeting end on
- 5.3 ..... Vessels crossing
- 5.4 ..... Vessels overtaking
- 5.5 ..... Masthead light
- 5.6 ..... Side light
- 5.7 ..... Stern light
- 5.8 ..... All round light
- 5.9 ..... Identifying vessels
- 5.10 ..... Vessel lights No. 1
- 5.11 ..... Vessel lights No. 2
- 5.12 ..... Day shapes

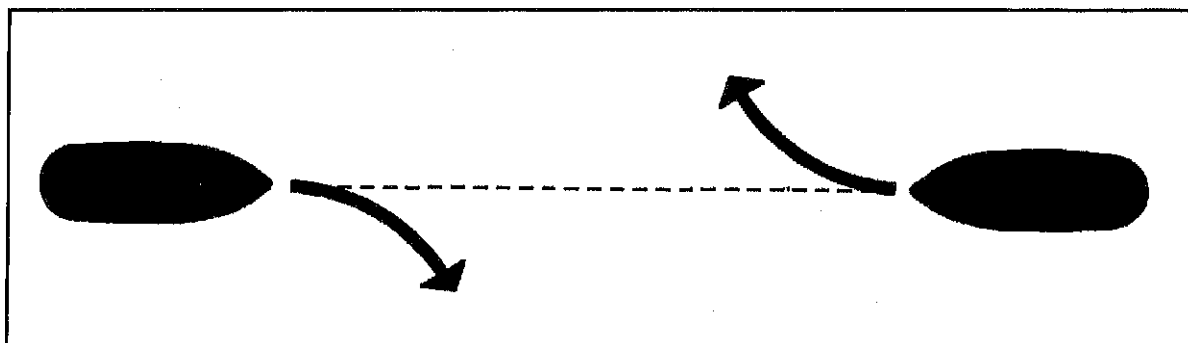


# OHP Figure 5.1/2

## Overtaking and Crossing



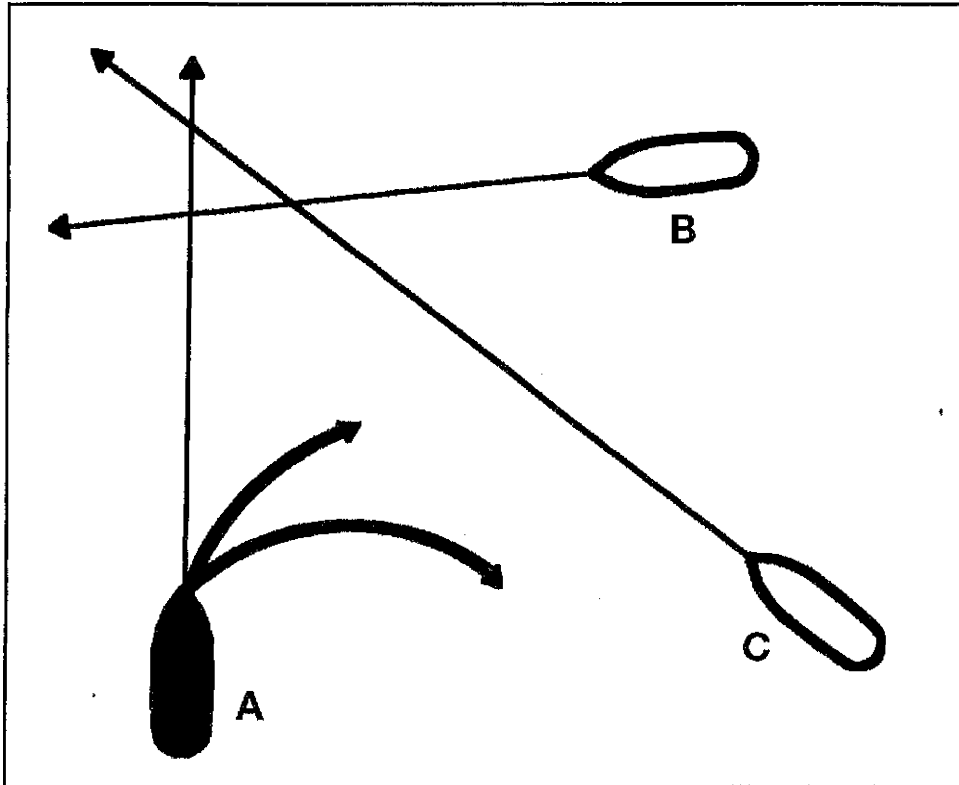
## Power Driven Vessels End On



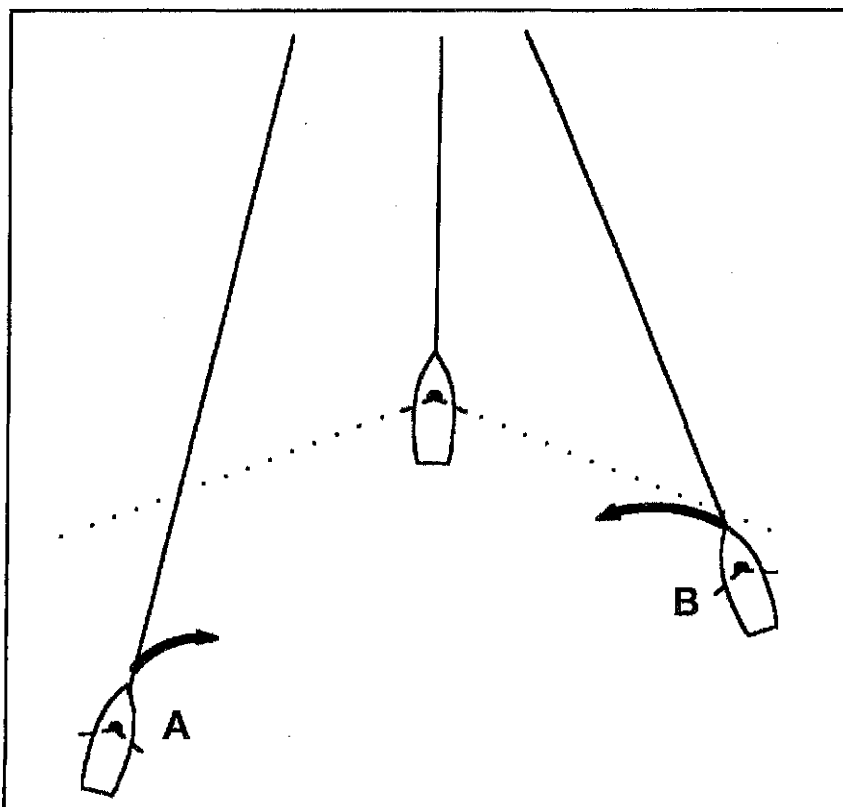


# OHP Figure 5.3/4

## Different Types of Vessels Crossing



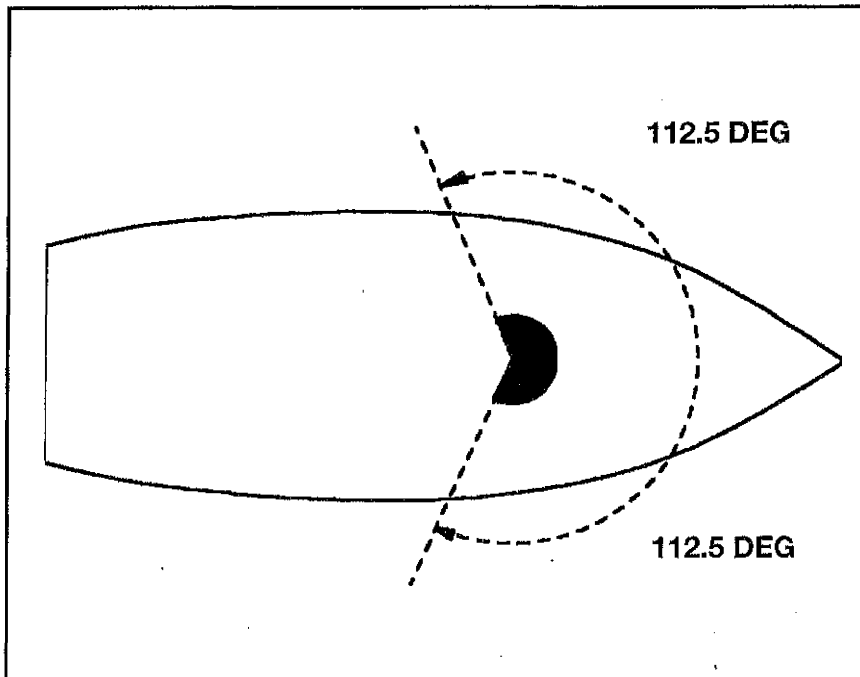
## Overtaking Vessels



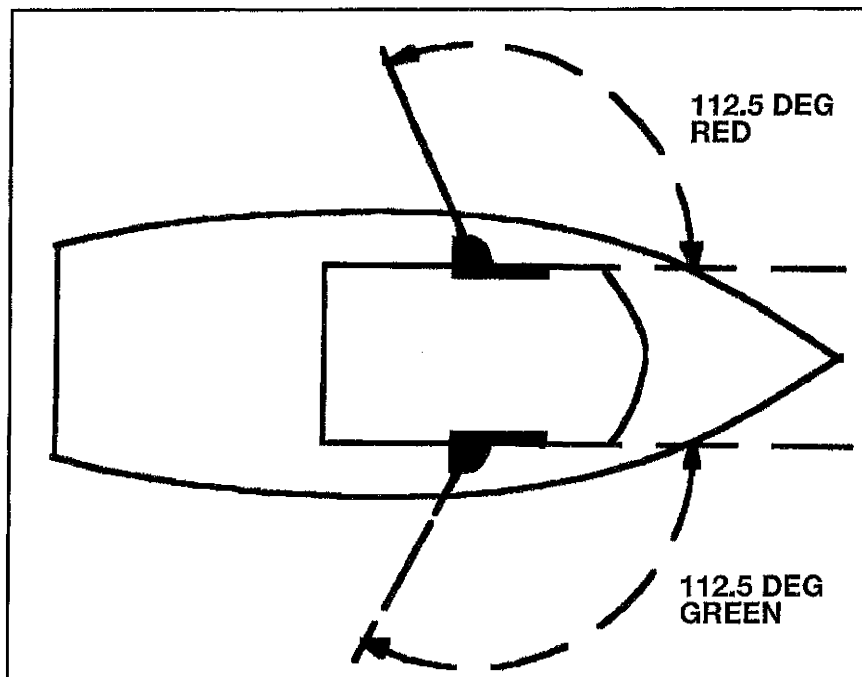


# OHP Figure 5.5/6

## Mast Head Light



## Side Light

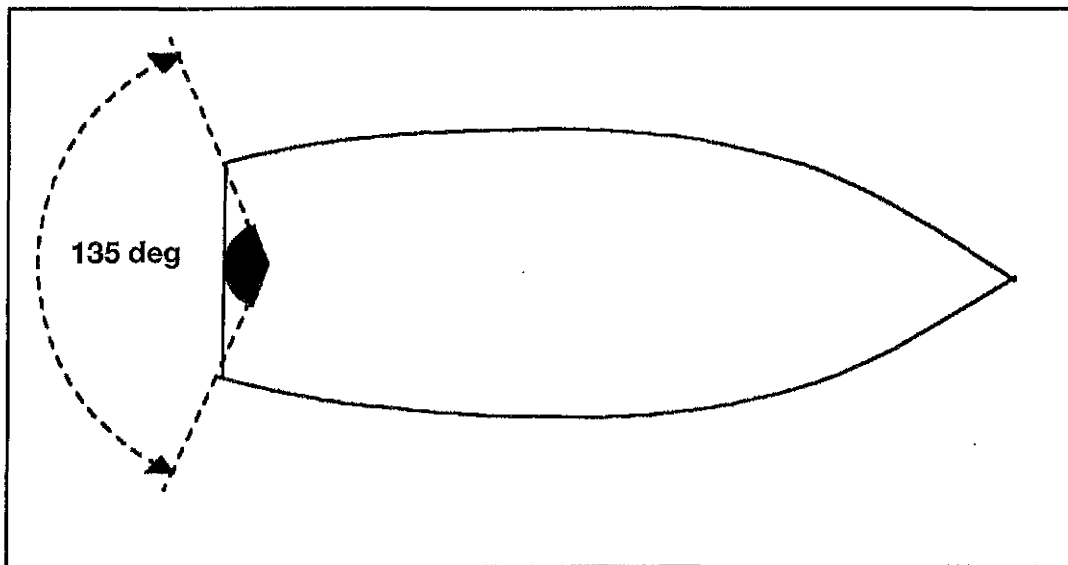




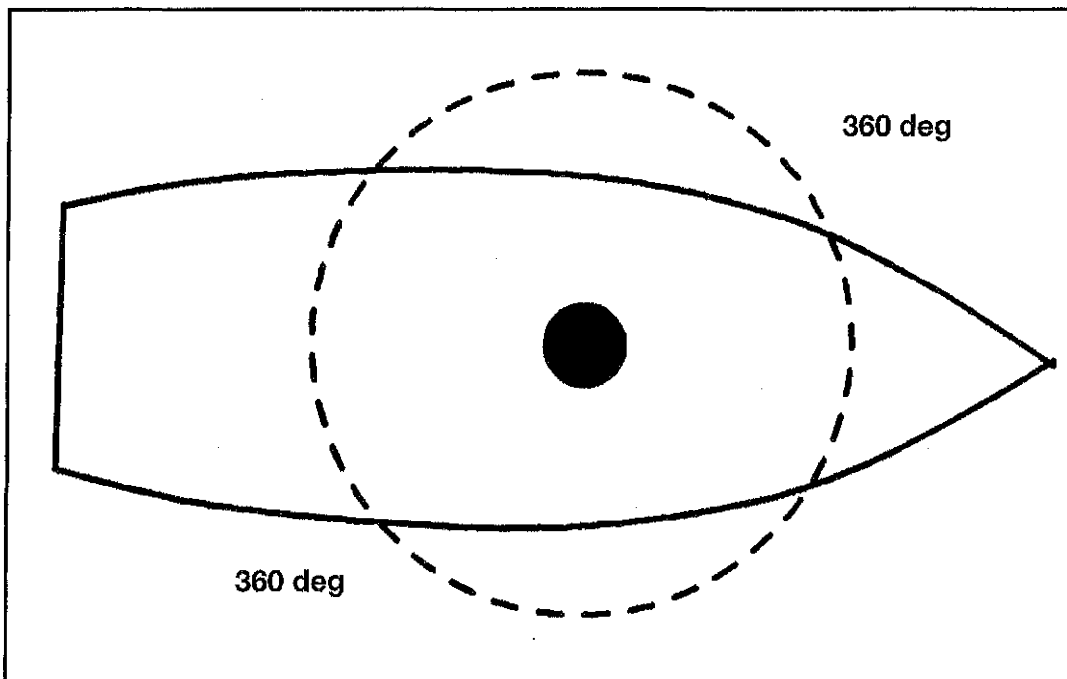


# OHP Figure 5.7/8

## Stern Light



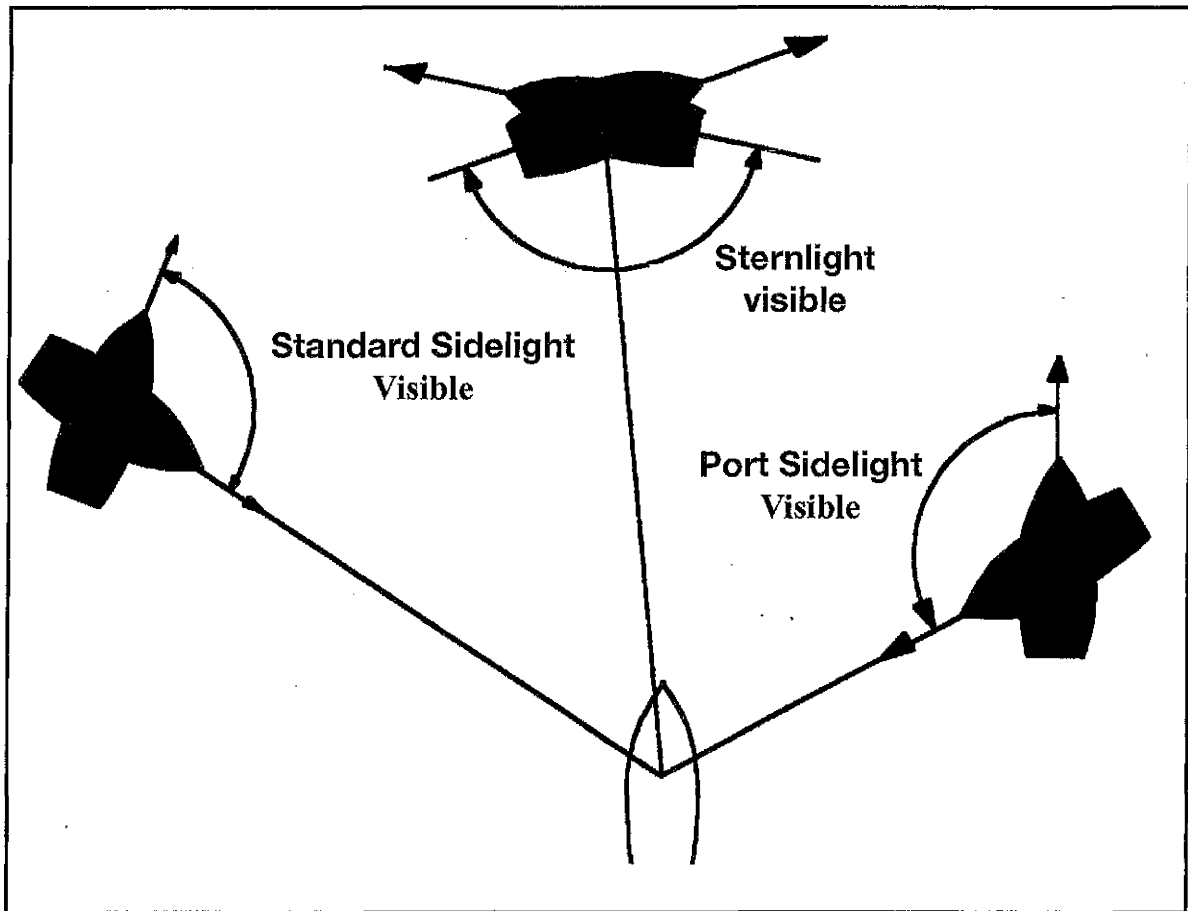
## All Round Lights





# OHP Figure 5.9

## Using Navigation Lights to Determine Vessel Direction

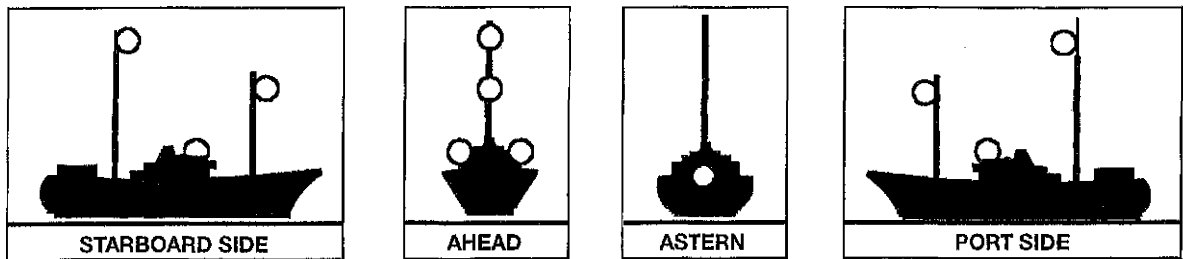




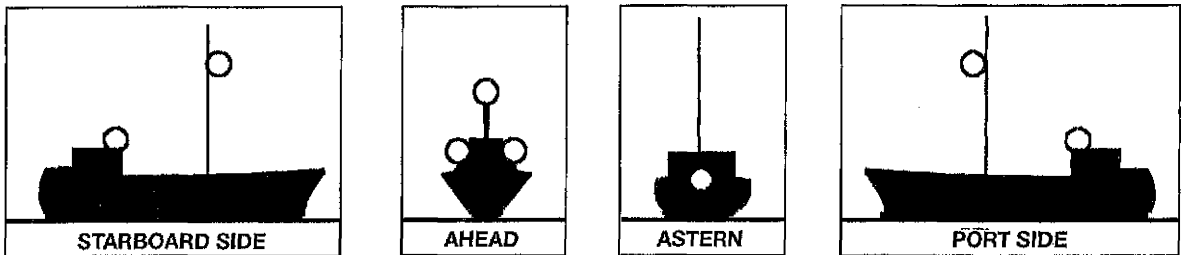
# OHP Figure 5.10

## Vessel Lights No. 1

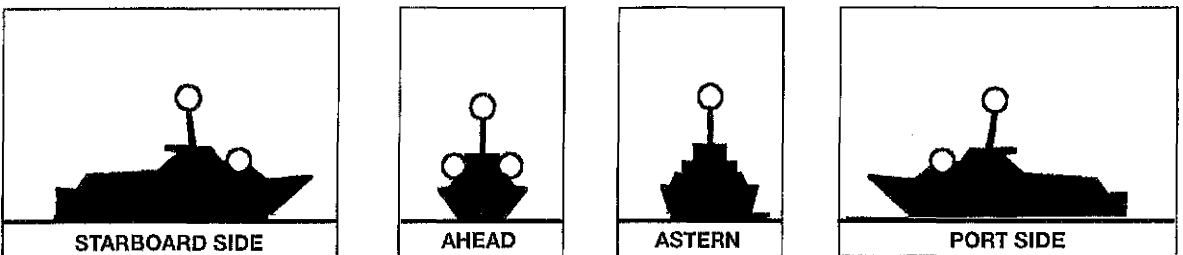
### Power Driven Vessel over 50 metres



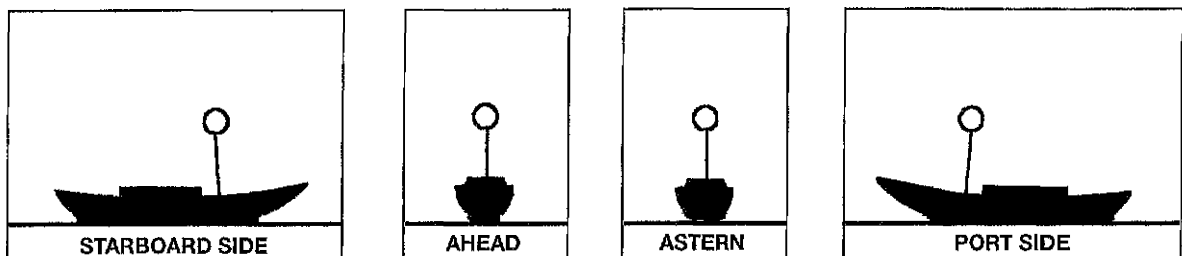
### Power Driven Vessel under 50 metres



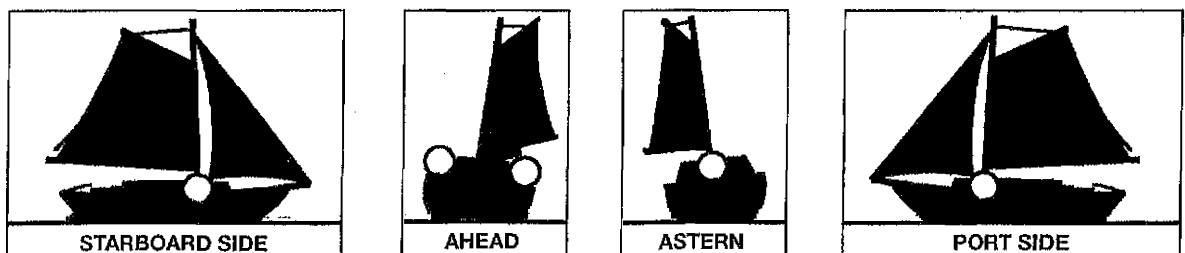
### Power Driven Vessel under 12 metres



### Power Driven Vessel under 7 metres whose speed cannot exceed 7 knots



### Sailing Vessel any size

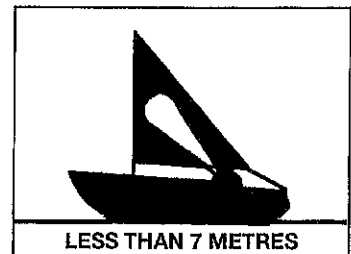
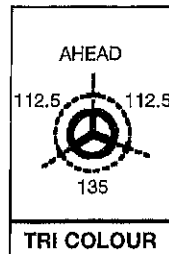
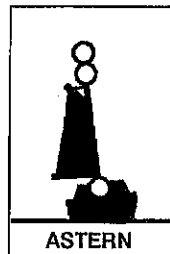
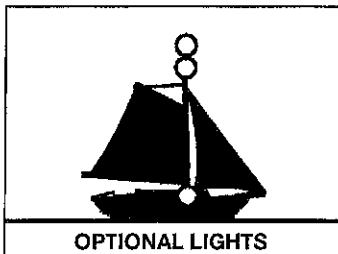




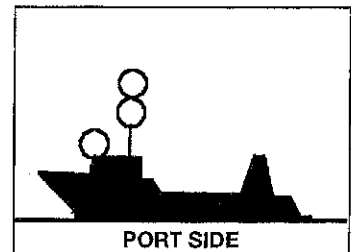
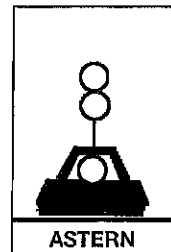
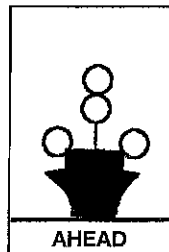
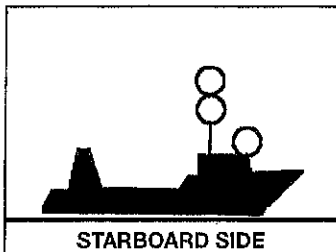
# OHP Figure 5.11

## Vessel Lights No. 2

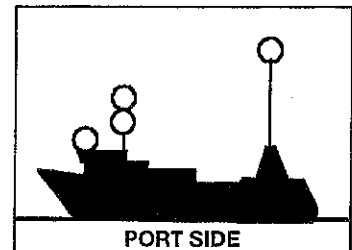
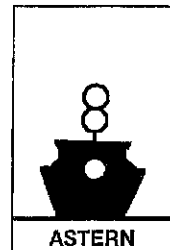
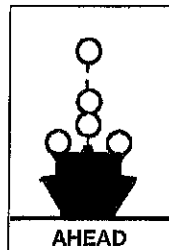
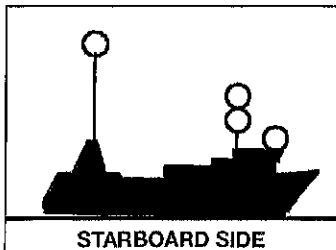
### Sailing Vessels Various



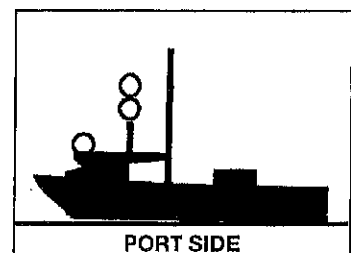
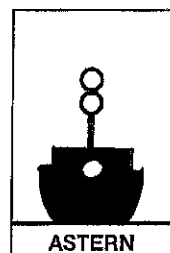
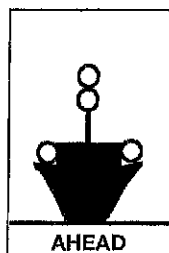
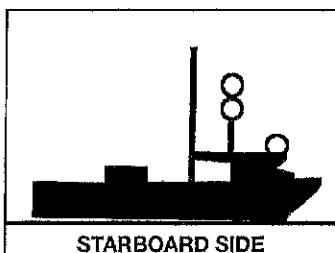
### Fishing Vessel Trawling under 50 metres



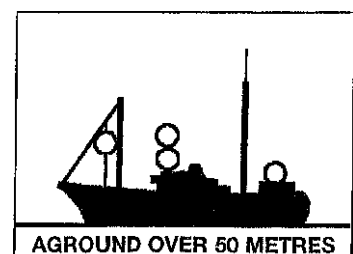
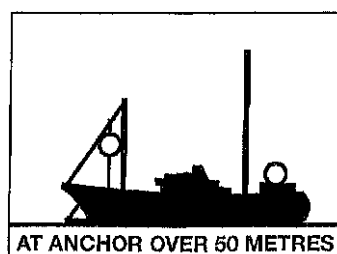
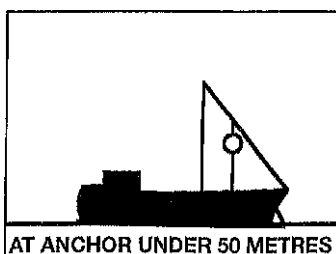
### Fishing Vessel Trawling over 50 metres

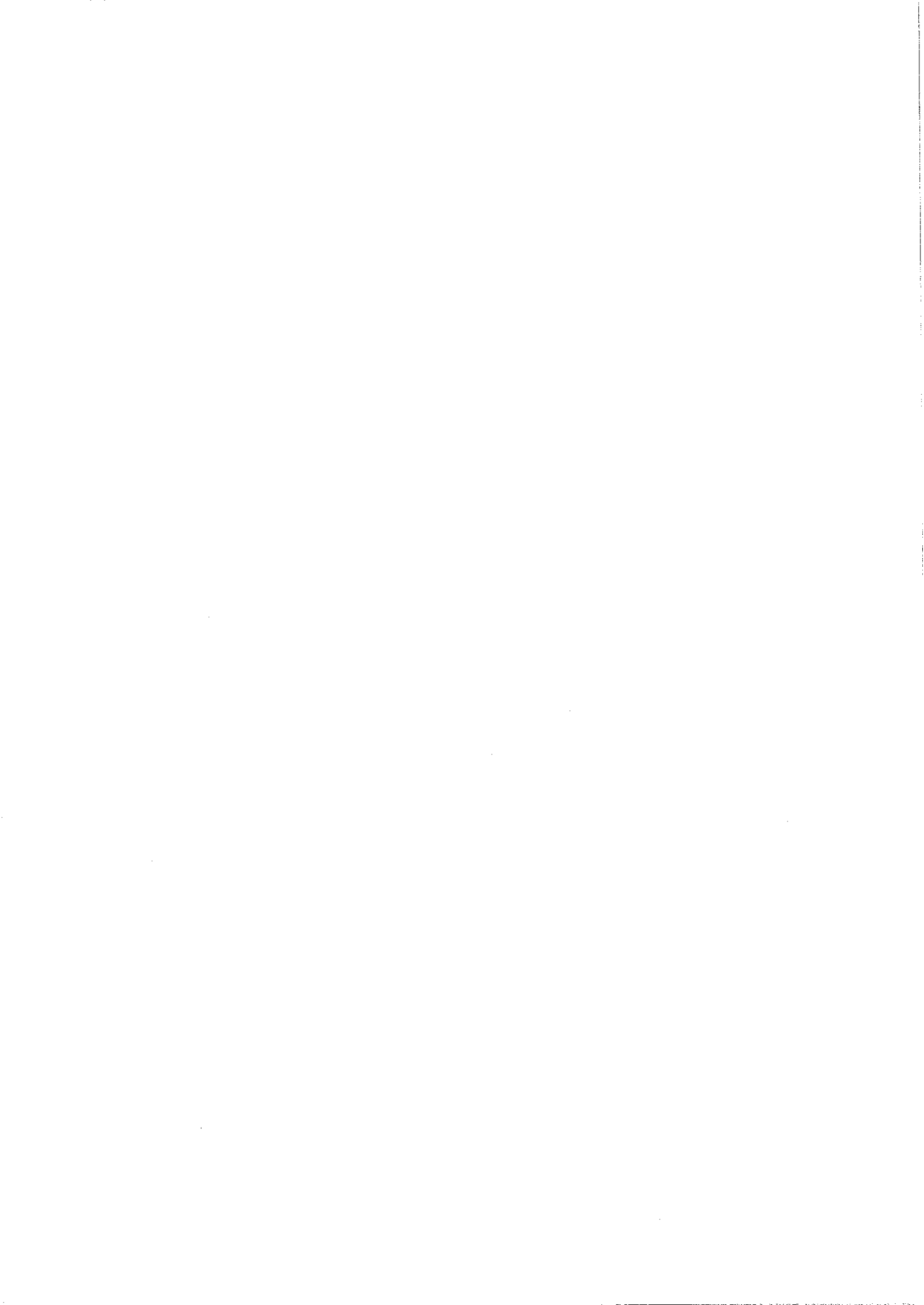


### Fishing Vessel other than a Trawler



### Vessels at Anchor or Aground



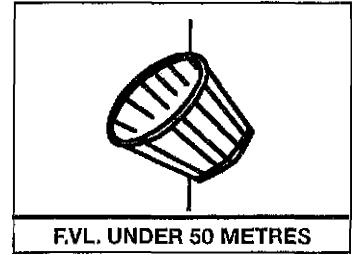
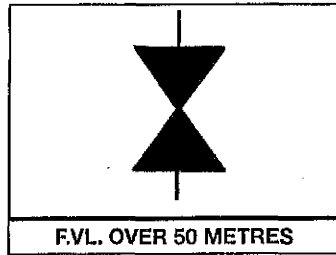
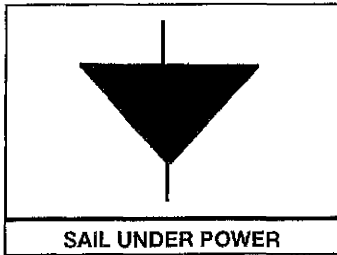




# OHP Figure 5.12

## Day Shapes

### Day Shapes



### Day Shapes

