

Safety Information

**FOR RECREATIONAL BOATING
WHEN OPERATING
IN PROXIMITY TO
COMMERCIAL SHIPPING
AT THE PORT OF NEWCASTLE**



FOREWARD

The waters of Newcastle Harbour and its approaches are a wonderful area in which we can all enjoy the pleasures of yachting, recreational boating and fishing.

As the world's largest coal exporting port the harbour is a busy area with large commercial vessels navigating the shipping channel for a proportion of each day.

The interaction between commercial vessels and recreational craft is one that has to be handled safely, and this booklet contains facts which will enhance safety for all.

I recommend this booklet to you.

Timothy J Turner

Harbour Master

Newcastle Port Corporation



INTRODUCTION

Newcastle Harbour is both a large commercial port and a popular waterway for small recreational vessels. In the past a number of incidents have occurred both within the harbour and in the harbour approaches, involving 'close quarters' situations between large ships and small recreational vessels.

Ships approaching and entering/leaving the port navigate under severe operational constraints, and it is important that skippers of all recreational vessels are fully aware of their responsibilities, obligations and legal requirements when navigating in proximity of shipping.

The purpose of this publication is to enhance safety and awareness for those who operate small recreational vessels on our waterway. A number of photographs are included to highlight some of the issues discussed.

NSW Maritime and the Port's Harbour Master together are responsible for the safe navigation of all vessels on this waterway and believe in managing the harbour not just for commercial shipping but for the enjoyment of all.

Regional Manager - Hunter
Charlie Dunkley

NSWIMARITIME

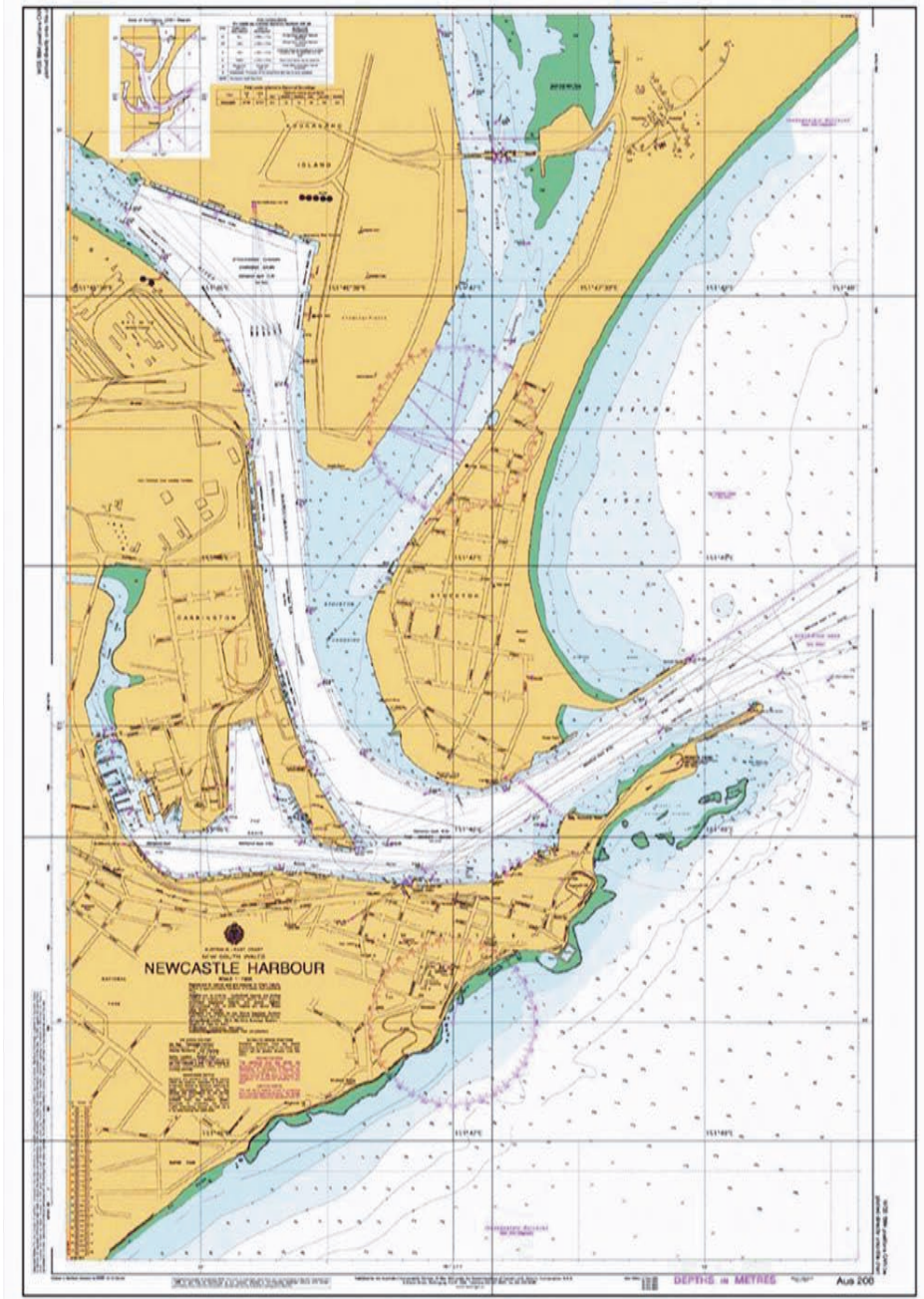

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Newcastle Harbour Chart - A208



NEWCASTLE HARBOUR AND SHIPPING

Newcastle Harbour is the largest coal exporting port in the world. Currently the port exports over 80 million tonnes of coal per annum with export earnings in the order of 5.3 billion dollars.

There are more than 3,100 commercial shipping movements within the port annually. It is not unusual on a busy day to have over 20 shipping movements in a 24 hour period.

The ships that visit Newcastle are large, the largest being 300 metres long, 50 metres wide with Gross Tonnages exceeding 100,000 tonnes. These large bulk carriers displace more than 100,000 tonne in the arrival light condition, and displace close to 180,000 tonne in the loaded departure condition. Departing within high water tidal windows, these ships have a draught in excess of 15 metres and only have about 1.5 metres of water beneath the keel (UKC) in the harbour channel.

The safe navigation tracks that ships follow within the harbour are very precise with very little room for deviation. A large ship may only be able to deviate no more than 20 metres before being severely affected by hydrodynamic interaction with the shallow areas at the edge of the main buoyed channels. Such deviations can result in ship handling difficulties and can endanger the safe navigation of the ship.

Ships both approaching the entrance from seaward and departing ships clearing the port are also following precise tracks dependant on weather conditions and agreed passing procedures between the ships involved. When two ships are meeting at the entrance to the port, they are fully committed in their passing manoeuvre.

It is important to appreciate that ships cannot stop, turn or alter course easily. Should these types of actions be required due to proximity or risk of collision with small recreational vessels, the safety of both the small vessel and ship are at risk. A large loaded ship can take up to 2 miles to stop.

The visibility from the navigating bridge of a ship is quite restricted, and although those on small recreational vessels can generally always see a ship coming, from the ship's bridge it is easy to lose sight of a small vessel under the bow. A large ship in ballast can have a blind distance ahead of up to 600m.

A ship under pilotage in Newcastle is always monitoring VHF channel 9 and 6. A ship attempting to make VHF contact with another small vessel would normally call on the safety channel VHF 16. If possible, monitor VHF channel 16 for any ship sourced communication.

COLLISION REGULATIONS

(Colregs 1972)

Having full understanding and knowledge of the Collision Regulations is paramount to safe operations by all vessels on the water.

Often the regulations are misinterpreted and many people on small recreational vessels when at anchor, fishing, or in the navigation channels believe that ships must keep out of their way. As far as the application of the Collision Regulations is concerned, all commercial shipping within the harbour, including the harbour approaches, should be considered by others to be 'constrained by draught'.

*Rule 9(b) states 'a vessel of less than 20 metres in length or a sailing vessel **shall not impede** the passage of a vessel which can safely navigate within a narrow channel of fairway'.*

It is important when keeping out of the way of a ship, that you take **early and substantial** action to do so, leaving no doubt to those on the ship as to your intentions. Alterations of course should be very large and readily apparent to those on the ship. Where those on a small vessel may consider passing a ship at a range of 100 metres to be adequate, such action would result in the ship taking major collision avoidance action with the associated risk of collision or grounding.

*Rule 8 (f) (i) states 'a vessel which by any of these rules is required not to impede the passage or safe passage of another vessel shall, when required by the circumstances of the case, **take early action to allow sufficient sea room** for the safe passage of the other vessel'.*

It is vital that all vessels maintain a proper lookout (Rule 5), and that proper assessment be made of the risk of collision at all times (Rule 7). At night and in restricted visibility, all of the appropriate navigation lights must be exhibited.

SOUND SIGNALS

The Collision Regulations also include the manoeuvring sound signals that are made under various circumstances by all vessels. Often you will hear a ship sounding the whistle either within the harbour or off the port. It is important to know what these signals mean. The manoeuvring whistle sound signals are contained within Rule 34. It is essential that everyone in small vessels understand these sound signals.

The more common ones you may hear are:

One short blast: "I am altering my course to starboard"

Two short blasts: "I am altering my course to port"

Three short blasts: "I am operating a stern propulsion"

Five short blasts: "I am in doubt about your action taken to avoid collision"

One long blast: "I am nearing a bend where another vessel may be obscured by an intervening obstruction"

NB:- If you hear 5 short blasts and you know it is directed at you, those on the ship are indicating to you that they have major concerns regarding your proximity and the risk of collision. Take immediate positive and substantial action to keep out of the way.

EXTRACTS FROM THE COLLISION REGULATIONS

PART A - GENERAL

Rule 1

Application

- (a) These rules shall apply to all vessels upon the high seas and in all waters connected therewith navigable by seagoing vessels.
- (b) Nothing in these Rules shall interfere with the operation of special rules made by an appropriate authority for roadsteads, harbours, rivers, lakes or inland waterways connected with the high seas and navigable by sea-going vessels. Such special rules shall confirm as closely as possible to these rules.

Rule 3

General Definitions

- (c) The term sailing vessel means any vessel under sail provided that propelling machinery, if fitted, is not being used.
- (d) The term vessel constrained by her draught means a power-driven vessel which, because of her draught in relation to the available depth and width of navigable water, is severely restricted in her ability to deviate from the course she is following.

Rule 5
Look-out

Every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision.

Rule 7
Risk of collision

- (a) Every vessel shall use all available means appropriate to the prevailing circumstances and conditions to determine if risk of collision exists. If there is any doubt such risk shall be deemed to exist.
- (b) Proper use shall be made of radar equipment if fitting and operational, including long-range scanning to obtain early warning of risk of collision and radar plotting or equivalent systematic observation of detected objects.
- (c) Assumptions shall not be made on the basis of scanty information, especially scanty radar information.
- (d) In determining if risk of collision exists the following considerations shall be among those taken into account:
 - (i) such risk shall be deemed to exist if the compass bearing of an approaching vessel does not appreciably change;
 - (ii) such risk may sometimes exist even when an appreciable bearing is evident, particularly when approaching a very long vessel or a tow or when approaching a vessel at close range.

Rule 8
Action to Avoid Collision

- (a) Any action to avoid collision shall be taken in accordance with the Rules of this Part and shall, if the circumstances of the case admit, be positive, made in ample time and with due regard to the observance of good seamanship.
- (b) Any alteration of course and/or speed to avoid collision shall, if the circumstances of the case admit, be large enough to be readily apparent to another vessel observing visually or by radar; a succession of small alterations of course and/or speed should be avoided.
- (c) If there is sufficient sea room, alteration of course alone may be the most effective action to avoid a close quarters situation provided that it is made in good time, is substantial and does not result in another close quarters situation.
- (d) Action taken to avoid collision with another vessel shall be such as to result in passing at a safe distance. The effectiveness of the action shall be carefully checked until the other vessel is finally past and clear.
- (e) If necessary to avoid collision or allow more time to assess the situation, a vessel shall slacken her speed or take all way off by stopping or reversing her means of propulsion.
- (f)
 - (I) A vessel which, by any of these Rules, is required not to impede the passage or safe passage of another vessel shall, when required by the circumstance of the case, take early action to allow sufficient sea room for the safe passage of another vessel.
 - (II) A vessel required not to impede the passage or safe passage of another vessel is not relieved of this obligation if approaching the other vessel so as to involve risk of collision and shall, when taking action, have full regard to the action which may be required by the Rules of this part.
 - (III) A vessel the passage of which is not to be impeded remains fully obliged to comply with the Rules of this part when the two vessels are approaching on another so as to involve risk of collision.

Rule 9
Narrow Channels

- (a) A vessel proceeding along the course of a narrow channel for fairway shall keep as near to the outer limit of the channel or fairway which lies on her starboard side as is safe and practicable.
- (b) A vessel of less than 20 metres in length or a sailing vessel shall not impede the passage of a vessel which can safely navigate only within a narrow channel or fairway.
- (c) A vessel engaged in fishing shall not impede the passage of any other vessel navigating within a narrow channel or fairway.
- (d) A vessel shall not cross a narrow channel or fairway if such crossing impedes the passage of a vessel which can safely navigate only within such channel or fairway. The latter vessel may use the sound signal prescribed in Rule 34(d) if in doubt as to the intention of the crossing vessel.

Rule 18
Responsibilities between Vessels

Except where Rules 9, 10 and 13 otherwise require:

- (a) A power-driven vessel underway shall keep out of the way of:
 - (1) a vessel not under command;
 - (2) a vessel restricted in her ability to manoeuvre;
 - (3) a vessel engaged in fishing;
 - (4) a sailing vessel.

- (b) A sailing vessel underway shall keep out of the way of:
 - (1) a vessel not under command;
 - (2) a vessel restricted in her ability to manoeuvre;
 - (3) a vessel engaged in fishing;

- (c) A vessel engaged in fishing when underway shall, so far as possible, keep out of the way of:
 - (1) a vessel not under command;
 - (2) a vessel restricted in her ability to manoeuvre;

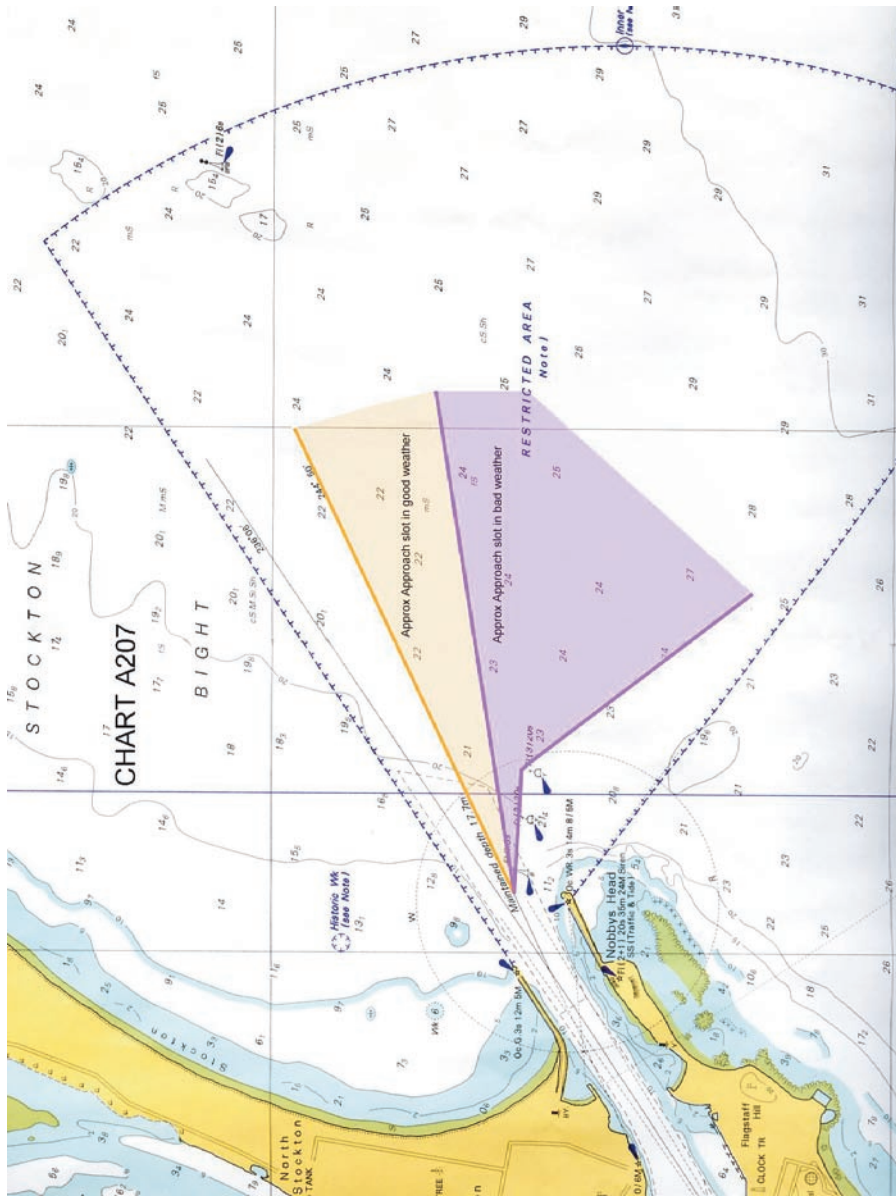
- (d)
 - (1) Any vessel other than a vessel not under command or a vessel restricted in her ability to manoeuvre shall, if the circumstances of the case admit, avoid impeding the safe passage of a vessel constrained by her draught, exhibiting the signals in Rule 28.
 - (2) A vessel constrained by her draught shall navigate with particular caution having full regard to her special condition.

- (e) A seaplane on the water shall, in general, keep well clear of all vessels and avoid impeding their navigation. In circumstances, however, where risk of collision exists, she shall comply with the Rules of this part.

- (f)
 - (1) A WIG craft shall, when taking off, landing and in flight near the surface, keep well clear of all other vessels and avoid impeding their navigation;
 - (2) a WIG craft operating on the water surface shall comply with the Rules of this part as a power-driven vessel.

(NB: WIG - Wing In Ground Effect)

Usual tracks for ships entering and leaving the Port



It should be noted that inbound the Pilot is lining up his approach from about 2 miles off the entrance, and is building up speed for safe entry (approximately 9-10 knots). Any action that requires major course deviation or loss of speed (eg taking a round turn to avoid a small vessel), can severely impact on the safety parameters of the approach. It is interesting to note that a ship that takes a round turn loses nearly all of its speed in the turn and finishes up doing about 2 knots. Dependant on the ship and its position in relation to the harbour entrance, it may not be possible to regain sufficient speed to safely enter the harbour. This may necessitate going back out to sea and lining up again for another attempt at the entrance.



Unladen Vessel Entering the Port - Problems of Visibility

A ship's bridge during pilotage is an extremely busy place with enormous operational and mental workloads. There is enough to contend with other than the possibility of collision situations with other craft, when early action by smaller vessels can avoid all of this.

NOTE: IF THE SHIP'S BRIDGE IS NOT VISIBLE TO YOU THE MARINE PILOT AND BRIDGE TEAM CANNOT SEE YOU

If a small vessel was to be at close range in front of a large loaded ship, the ship in effect would have great difficulty to avoid running down the smaller vessel, no matter what action was being taken on the ship.



The Problem of Seeing and Being Able To Stop For Small Vessels

An example of a ship that calls at Newcastle, the M.V. 'Koryu', with length of 289 m and beam of 45 m, when fully loaded and steaming at full speed takes 18 minutes to stop when the engine is placed full astern, the distance the ship travels is 2.2 miles before stopped in the water. In the light ballast condition, the same ship takes 10.7 minutes to stop and travels 1.48 miles.



From a small vessel it may appear that the Pilot and bridge team on the ship can always see you clearly. This is not always the case. As an example such a ship with a draught of 10 m and trim of 3 m by the stern has a blind distance ahead of nearly 600 m. Any small vessel ahead is totally out of sight if within this distance.

Ships entering the port have constraints imposed on them dependant on the weather and sea conditions on the day, the ship is very restricted in its approach track to harbour entrance.

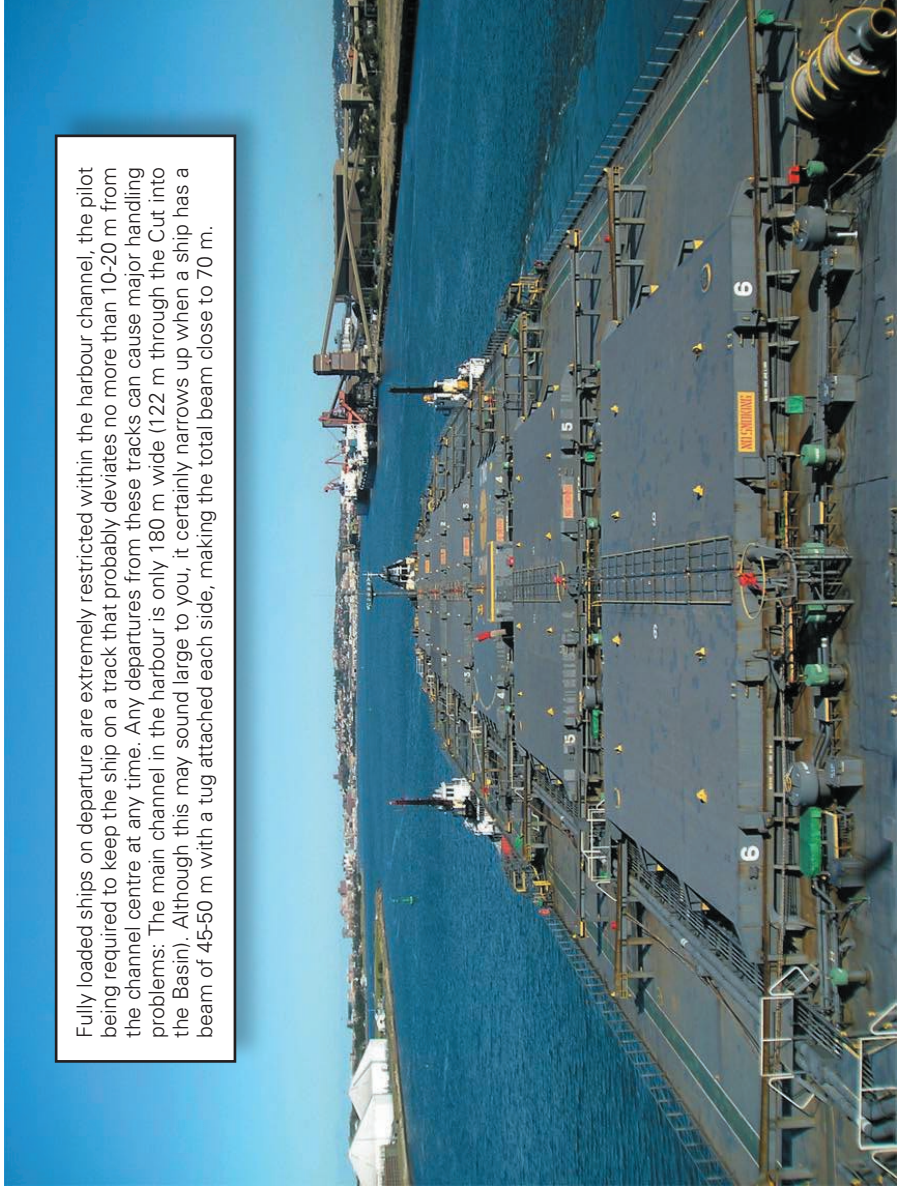


A Large Vessel Approaching the Coal Loader



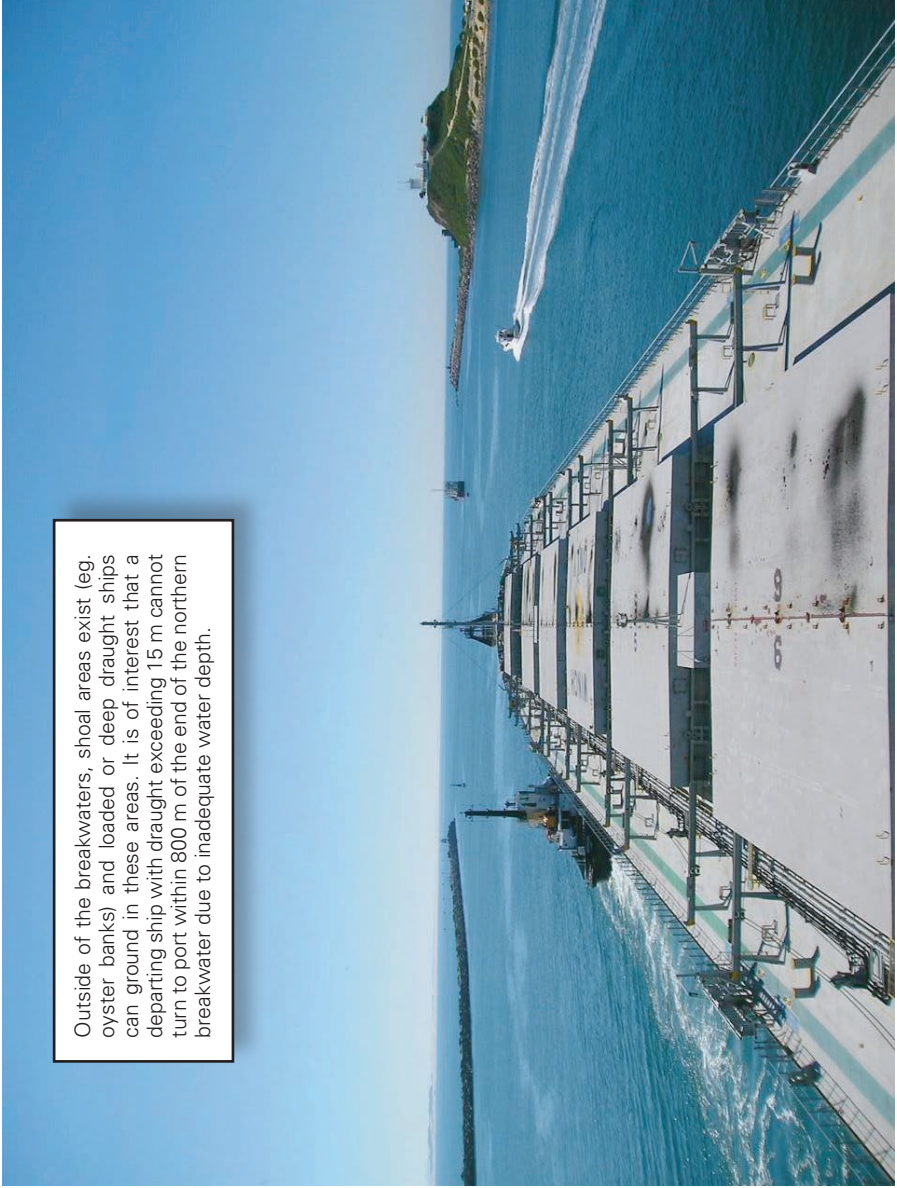
Fully Loaded Vessel Leaving Coal Loader

Fully loaded ships on departure are extremely restricted within the harbour channel, the pilot being required to keep the ship on a track that probably deviates no more than 10-20 m from the channel centre at any time. Any departures from these tracks can cause major handling problems. The main channel in the harbour is only 180 m wide (122 m through the Cut into the Basin). Although this may sound large to you, it certainly narrows up when a ship has a beam of 45-50 m with a tug attached each side, making the total beam close to 70 m.



Fully Loaded Vessel Leaving the Port

Outside of the breakwaters, shoal areas exist (eg. oyster banks) and loaded or deep draught ships can ground in these areas. It is of interest that a departing ship with draught exceeding 15 m cannot turn to port within 800 m of the end of the northern breakwater due to inadequate water depth.



BREACHES OF SAFETY

NSW Maritime Boating Service Officers have great concern with small vessels that obstruct the shipping channels and interfere with the safety of commercial shipping. Infringement notices can be issued by NSW Maritime or Police, with possible fines of up to \$1,500.

KNOW YOUR RESPONSIBILITIES

As a recreational boat skipper, know your responsibilities, they can save your life.

- Maintain a proper lookout;
- Do not 'impede' the navigation of commercial shipping within the harbour or approaches;
- Take early and substantial action to keep well clear of commercial shipping and leave no doubt of your intentions;
- Be aware of the navigation constraints of commercial shipping;
- Ships cannot easily alter course for you or stop;
- You may see the ship, but the bridge team may not see you;
- Know the Collision Regulations including sound signals;
- Exhibit appropriate navigation lights when required.

SAFETY TIPS

- Make sure your boat is appropriate for the conditions
- Overloading is dangerous and illegal
- Always carry a personal flotation device (PFD) for every person on board
- Small children and those who cannot swim, the elderly or those with a medical condition should always wear a PFD
- Wear your PFD when conditions worsen or when crossing a bar
- Always stow PFD in a handy location and keep in good condition
- Know the wind and wave limits of your boat
- A marine radio helps you keep in touch with weather updates

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NSWIMARITIME

September 2006

PRINTED BY NEWCASTLE CAMERA PRINT
17 ARNOTT STREET, NEWCASTLE WEST 2302