

PLA's Master/Pilot Exchange form

MASTER / PILOT INFORMATION & PASSAGE PLANNING EXCHANGE

BOUND / OUTBOUND Via :

Barrows
Black Deep

Long Beard Head
Fisherman's Gat

Princes
Princes DW



Critical Points

Date: 15/11/12

Deep Draught Plan Agreed w/ J. J. J.

Draft: 60.55 M

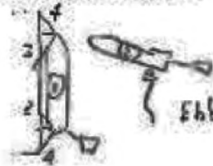
	CD	Predicted HOT	LKC	Earliest / Latest	Planned	Amended	Actual
Princes DW	79	12	31	-	02500		

Weather Forecast: Vis 2/3 // Mod to dense fog

About Contingency: Send SST Tongue non-hazardous

Manoeuvring characteristics discussed
Squat characteristics discussed
Pilot card sighted
Ready berth
Temporary N to M - Master advised
Compliant vessel

Manoeuvring diagram & plan



Side to Head
Swing

Port
Up/ber
Port

Starboard
Down/ber
Starboard

North

Tug allocation	Type	BP	Ships Restriction	Passage Notes
1. Cealica	US	53 ⁶	68	
2.				
3.				
4.				

HW: 0115 Berth/Unberth Time: 0230 Flood Ebb

AGREEMENT ABER ABER from: TFS to: NESPF
The Passage Plan and all pertinent information concerning the passage has been discussed and agreed by the Master and Pilot and may be subject to change during the passage.

Pilot's Name: _____ Master's Name: _____
Pilot's Signature: _____ Master's Signature: _____

Grounding checklist - *Amber*

SHIP'S NAME " AMBER" POSITION..... DATE/TIME.....

GROUNDING/STRANDING

Issued on: 01.09.1997		Revision No. 0		Remarks	
1.	Stop engines	yes	not		
2.	Call Master	yes	not		
3.	Sound alarm	yes	not		
4.	Muster of crew in leakage station	yes	not		
5.	Advise engine room	yes	not		
6.	Close all watertight doors	yes	not		
7.	Sound all tanks/bilges	yes	not		
8.	Check for oil spillage (if any refer to SOPEP)	yes	not		
9.	Check for internal damage (mobilise damage control party)	yes	not		
10.	If shell plates holed, assess rate of water intake	yes	not		
11.	Sound around vessel and assess how fast aground	yes	not		
12.	Establish nature of the bottom	yes	not		
13.	Check sea suction	yes	not		
14.	Fix vessel's position and time and pass them in the radio room, broadcast a navigational warning to all ships in proximity	yes	not		
15.	Inform the Designated Person Ashore	yes	not		
16.	Check machinery for damage	yes	not		
17.	Check tailshaft for oil loss	yes	not		
18.	Check propeller for damage	yes	not		
19.	Check state of the tide	yes	not		
20.	Assess if vessel likely to refloat next high water	yes	not		
21.	Check weather forecast	yes	not		
22.	Consider additional ballast to prevent vessel going further aground or to stop pounding	yes	not		
23.	Course and speed at time of grounding	yes	not		
24.	Draughts at time of grounding	yes	not		
25.	Draughts when aground	yes	not		
26.	Pilot in attendance	yes	not		
27.	If tugs in attendance, note where fast and direction of pull/push	yes	not		
28.	Check for injuries to the crew	yes	not		
29.	Assess damage to cargo	yes	not		
30.	Statements	yes	not		
31.	Assistance required	yes	not		
32.	Classification Surveyor attendance/report	yes	not		

Extract from Code of practice for ship towage operations on the Thames 2010
(Section 7: Towage in Fog)

Code of Practice for Ship Towage Operations on the Thames

2010



**PORT OF
LONDON**
AUTHORITY



SECTION SEVEN – TOWAGE IN FOG

7.1 Introduction

The following procedures are to be followed by all those involved in ship towage operations in the Port of London, including:

- Tugmasters;
- Pilots;
- Vessel Masters;
- Duty Port Controllers;
- VTS Supervisors; and
- Duty Towage Controllers.

Purpose and Application

The purpose of these procedures is to clarify, in good time, what towage services will be available to vessel Masters and Pilots when Fog exists or is expected to exist in, or in the vicinity of, the areas of the Port where tugs will assist vessels. They will apply at times when the vessel requiring tug assistance is either preparing to leave a berth or is at, or west of, the South West Oaze Buoy inward bound.

Fog

“Fog” means all circumstances when visibility is less than 0.2 nautical miles.

7.2 Procedure when Fog exists or is expected

1. When Fog is deemed to exist in or is expected to exist in, or in the vicinity of, the areas of the Port where tugs will assist a vessel, the Duty Port Controller or Duty VTS Supervisor will ascertain from the Duty Towage Controller what towage services will be available to the vessel at the time when the towage service is required.
2. To assist in the identification of the actual towage requirements it may be effective for the Pilot or Master of the vessel to liaise directly with a duty Tugmaster. In these circumstances it is important that the Duty Port Controller (and/or Duty VTS Supervisor) and Duty Towage Controller are apprised of any resultant decisions made by the Pilot or Master and the Tugmaster.

It is suggested that the range of towage services potentially available may be categorised as follows:

- Normal towage services;
- Push/pull operations (made fast alongside);
- Push operations (not made fast);
- Other (as agreed between Pilot or Master and the Tugmaster); or
- No service.

Notes:

1. Within the Thames a Harbourmaster or his designated Deputy may, using all available information, decide that Fog pertains in a particular area or at a particular time or is likely to pertain and inform shipping as appropriate.
2. For inward bound vessels having a maximum draft of 10m or more, this procedure is applicable prior to the vessel passing the South West Oaze Buoy. This is to ensure that the vessel has sufficient sea room to abort the transit should that be necessary.
3. The procedure assumes that Fog persists throughout the towage operation. Because it is recognised that Fog can lift very quickly, the decision on the level of service agreed may be qualified by 'if the Fog persists'. The response from the Duty Towage Controller must however be positive in regard to the service, which will be available, when the vessel requires it and the fog persists.

7.3 Procedure when Fog occurs during a towage operation

1. Should Fog occur during a towage operation, the Pilot and/or Master and the Tugmaster(s) will discuss the situation immediately and agree upon a course of action to ensure the safety of all persons and vessels involved, given the location, environmental and vessel traffic conditions, seeking the advice of London VTS as appropriate.
2. The Pilot or Master will advise London VTS of the circumstances and the decision immediately, keeping VTS informed of any operational developments, or any improvement or deterioration of the visibility, as necessary.

Svitzer Marine Ltd restricted visibility procedures

UNCONTROLLED COPY

Prepared By: [REDACTED] Authorised By: [REDACTED] | Revision Date.:29/04/2009 | Revision Number.:6 | Document ID.:SW00288

Towage in Restricted Visibility

Tug Masters, crews and management shall be mindful of the risks associated with assisting vessels in restricted visibility.

Restricted visibility means all circumstances where visibility is or is expected to reduce to a distance where the tug's normal ability to perform may be impaired (i.e. fog, mist, falling snow, rain, sleet or sandstorm).

Tugs can safely assist vessels in conditions of restricted visibility, but only if a thorough risk assessment has been carried out and a passage plan agreed with all the parties involved in the operation.

The specific dangers associated with towing on a line in such conditions, particularly for the head tug, must be considered and risk reduction measures agreed prior to commencement of the operation. If in doubt the Tug Master must refuse to tow by this method.

Risk Assessments

Risk assessments have already been carried out on each tug for their suitability to work in normal visibility within the port where they operate.

Risk Assessments in Restricted Visibility

Where restricted visibility is present or expected Tug Masters must carry out a specific risk assessment which must include in addition to any other identified potential hazards:

The suitability of the tug to operate in the current or expected conditions of restricted visibility

The operational status of all navigational aids and equipment

The type of vessel to be assisted and in particular the minimum and maximum speeds which will be encountered during the operation

The terminal or berth to or from which the vessel is to be moved.

The tug-assist methods that might be used

The movement of other vessels in the area

The navigational characteristics of the particular area of the port, including the use of information from Vessel Traffic Services

The characteristics of the other tugs which will be involved in the operation

The level of experience of the Tug Master and the crew

The contingency plans which may be required, including one covering the situation where the tug has to disengage because the Tug Master considers the crew or the tug to be in danger.

Pilot/Master/Tug Master Communications

It is imperative that the Tug Master communicates with the Pilot/Master of the vessel to be assisted as soon as practicable, to plan the operation with the full knowledge of any restrictions that may apply. Contingency plans should be agreed in case these circumstances change.

It is essential that good and seamanlike communication continues throughout the operation and the Tug Master must inform the Pilot/Master of the towed vessel of this requirement.

In particular the Tug Master must inform the Pilot / Master of the following:

- Any limitations on the tug's ability to assist
- The maximum permissible speed at which any manoeuvre may have to be carried out
- The necessity to provide information well in advance to the tug of all engine movements and alterations of course of the towed vessel
- The necessity to inform the tug immediately of any changes in the towed vessel's circumstances
- If a Tug Master believes his tug is being put at risk or he is not comfortable with the tug's position relative to the vessel

All the tugs involved in the operation must also maintain communications with each other throughout the operation.

Port Authority Risk Assessments

Under the Port Marine Safety Code (PMSC), Port Authorities should have undertaken operational risk assessments for vessel movements within the port in conditions of restricted visibility and drawn up guidelines or regulations. However, they may not have taken into consideration the risks which may apply to the towage services during such vessel movements and they must be made aware of the risks identified by SVITZER in the conduct of such operations.

SVITZER port management must therefore liaise with the local Port Authorities to ensure that any port guidelines or regulations take account of and mitigate the risks associated with the use of tugs in restricted visibility and that all parties are aware of them

In ports where regulations and guidelines exist on restricted visibility they must be reviewed regularly. Where there are no specific regulations or guidelines or they do not cover the operation adequately the management must seek to have them revised.

The Port Authorities must be made fully aware of and understand the Company procedures within the port for the towage of vessels in restricted visibility.

Master's Over-Riding Authority

All Tug Masters are reminded that they have an over-riding duty and authority to take whatever action they consider necessary to ensure the safety of their crew and their tug. This can include refusing to connect to a tow or taking action to disengage from a tow.

Attention is drawn to other applicable references:

Section 3:
Watch Keeping Responsibilities
Navigating within Harbour Limits
Navigating in Restricted Visibility

Svitzer Marine Ltd operating procedure for towage in restricted visibility on the Thames

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Prepared By: [REDACTED] Authorised By: [REDACTED] Revision Date.:16/01/2011 | Revision Number.:2 | Document ID.:SW01462

Towage in Restricted Visibility on the Thames.

The Svitzer Integrated Management System section 2.13 - Towage In Restricted Visibility, outlines the risks associated with and requirements for towage in restricted visibility.

Port of London Authority Code of Practice for ship Towage operations on the Thames, section seven refers to Towage in restricted visibility and section 7.2 outlines the procedure for determining the level of towage services available.

Where visibility is deemed to be below 2 cables the Duty Towage Controller / Duty Master will advise the Duty Port Controller that towage operations are suspended who will advise the pilot of the inward vessels requiring tugs that an abort should be considered.

When a vessel is committed to arrival due to geographical / navigational restrictions then the tugs will endeavour to provide push only assistance.

The level of service provided when restricted visibility is deemed to exist will be determined by the Tug master who will liaise with both pilot and London VTS.

All Masters will consult the Restricted Visibility Bridge Procedure Card when considering getting underway in restricted visibility.

All Tug Masters are reminded that they have an over-riding duty and authority to take whatever action they consider necessary to ensure the safety of their crew and their tug.

Documents related to this procedure:-

SWIMS 2.13 Towage in Restricted Visibility.
PLA Code of Practice for Ship Towage Operations on the Thames 2010
[Restricted Visibility Bridge Procedure Card](#).
Risk assessment for towage in Restricted Visibility.

Svitzer - restricted visibility bridge card/checklist

UNCONTROLLED COPY

Prepared By: [REDACTED] Authorised By: [REDACTED] | Revision Date: 01/01/2009 | Revision Number: 1 | Document ID: SW01464

Restricted Visibility Bridge Procedure Card

When Towing or running light tug in Restricted Visibility, the Master shall consider the following points;

SAFETY

- Have Applicable Risk Assessments been read
- Are the crew aware of the dangers
- Is the correct PPE being worn
- Have extra Lookouts been posted (if available)
- Is the Tug In Hand Steering
- Is the vessel's speed Safe
- No one to be working down below unless absolutely necessary

COMMUNICATION

- Has Port Control been notified of your intentions
- Are you aware of other traffics Intentions
- Has communication been established between Bridge / Deck (lookout)
- Has communication been established between Bridge / E/R
- Is communications between Tug / Pilot Clear
- Are the correct Lights / shapes / sound signals used

EQUIPMENT

Type of Tug; Capabilities / Limitations Towing / Towing Gear Suitable for the conditions

NAVIGATIONAL AIDS

- Are all Nav' aids verified and working correctly to optimum level
- Radar
- Magnetic Compass
- G.P.S
- Echo Sounder
- Whistle

MACHINERY

Are Main Engines and any other relevant machinery ready for immediate use

PUBLICATIONS

- SVIMS
- Collision Regs
- Local Bylaws
- Local Notices
- M, Notices
- Charts
- Masters Standing Orders
- PLA Code of Practice for Ship Towing

PLA's list of relevant potential hazards for vessels underway in the accident area

Plasma Hazard Detail Report

Hazard Detail

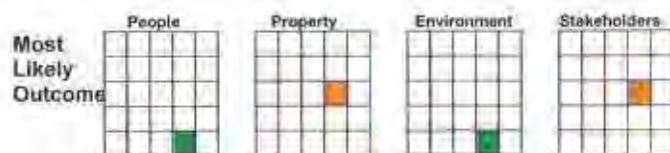
Hazard Title	Grounding - Sea Reach 1 to Tilburyness
Reference	76
Accident Category	Grounding
Primary	Vessels Involved
Secondary	All Vessels :- All Vessels
Review Date	01/01/2013
Areas Affected	Nore Sand Swatchway and Medway Approach Channe and Sea Reach No 1 to Gravesend and Gravesend to Crayfordness

Hazard Description

Hazard Detail	Vessel operating between Tilburyness and Sea Reach 1.
Possible Causes	<p>Misjudgement, Inattention, Distraction, Fatigue, Failure to adequately monitor position, provide support for pilot / conn, Inadequate passage planning, Steering, power or main engine failure, Inadequate bridge manning, Flood setting vessels outward on bends onto mud flats/ Shelves, Berthing breakouts by ship wash, Optical illusion of being further north than actual position (Blyth Sands), Available width restricted if vessel manoeuvring onto Thameshaven berths, Depth restrictions at SR2, 3. Squat, Available width restricted (side channels only 150m wide - Yantlet Channel), Cross channel tidal set at SR 6 and 7, Inaccurate declaration of draught, Tidal cut, Vessels need to move out, possibly past the channel centreline opposite SE Leigh buoy, Flood tide pushing vessel over onto Mucking Flats, Vessels avoiding main channel due deep(er) draft traffic (SR and Lower Hope), Temporary increase in traffic density, following restrictions in navigation, Following an emergency incident in the area, Bad weather (wind or visibility), Pilot boat late on rendezvous (Gravesend Reach), Difficulty manoeuvring at slow speed (Gravesend Reach), Vessel dragging anchor, Tow failure, Erratic navigation of own or other vessel, Oversight of miscalculation on the part of vessel, berth operator or agent which could lead to vessel berthing/sailing may be delayed unnecessarily, Vessel restricted in ability to manoeuvre or not under command, Leisure craft impedes the passage of vessels navigating in the channels, A Health and Safety accident on board could result in or contribute to causing a navigational incident.</p>
Remarks	<p>Traffic includes the full range of vessels including passenger and tankers, Mucking buoys give a good indication of the side of the channel in Lower Hope Reach, PLA pilots are licensed for the Medway Approach, West Blythe buoy gives good indication of shoal area but (small) vessels commonly pass outside of buoys when vessels manoeuvring off Thameshaven, Gas pipe line crosses channel at Coalhouse Point.</p>

Risk Assessment

Ranked **40th of 117**



A powered grounding at moderate speed or a drift grounding due to power failure. Unlikely to result in serious damage, as most of the river bed is soft mud. Pollution or injury is very unlikely.



Plasma Hazard Detail Report

Hazard Detail

Hazard Title	Contact - Moored Vessel/Structure
Reference	188
Accident Category	Contact
	Vessels Involved
Primary	All Vessels :- All Vessels
Secondary	
Review Date	01/09/2016
Areas Affected	Sea Reach No 1 to Gravesend, Gravesend to Crayfordness, Crayfordness to London Bridge and London Bridge to Bell Lane Creek and Bell Lane Creek to Teddington

Hazard Description

Hazard Detail	Vessel operating in the vicinity of moored vessel/structure (e.g. restaurant, office & residential accommodation, civil engineering sites etc) and vessels on all River Ship Tiers and Swing Buoys. Also outfalls, beacons, dolphin and other fixed marks.
	This hazard does not include contact whilst on passage with Berths, Jetties and Piers (see Hazard 55).
Possible Causes	Misjudgement, Inattention, Fatigue, work overload, Failure to follow procedures, especially position monitoring and passage planning Adverse weather, poor visibility, Unlit mooring buoys, barges, installations or works. Mechanical / steering failure, total power failure. Vessel characteristics (high freeboard, cpp, manoeuvring characteristics, etc) Tidal set. Vessel manoeuvring onto adjacent berth Increased landwater flows will impact on tidal flows and streams. Master/helmsman medically incapacitated Passing vessel losing directional control or a drift impact (e.g. vessel suffers power failure or broken away from moorings or from tow). Proximity of the channel (increases the risk from steering failure / misjudgment on passing ships). Failure of navigation lights on obstructions. Flotsam, including sheet plastic, rope, garbage etc. Mud in intakes. A Health and Safety accident on board could result in or contribute to causing a navigational incident. Tower Bridge failing to open could cause contact in Upper Pool.
Remarks	The moored restaurant vessels in Central London can hold a high number of people particularly at weekends and evenings. They are particularly vulnerable to flooding (as they are not required to comply with any merchant shipping legislation) and have limited on-board emergency equipment. St Clements anchorage is half a cable from the channel and has mooring buoys in close proximity. Construction works at LGP will increase risk temporarily. 25 Jan 2012 - Hazard 139 (Contact - Vessel Moored in Upper Pool) merged into this hazard on the basis that Tower Bridge lower mooring removed.

Risk Assessment

Ranked **52nd of 117**



Slight localised damage to vessel's plating and frames. Possibility of perforation of vessel's side plating with resulting water ingress and/or cargo loss / pollution. Damage to structure/vessel contacted, Possible minor injuries.



Plasma Hazard Detail Report

Hazard Detail

Hazard Title	Contact - Navigation/Mooring Buoy (River)
Reference	26
Accident Category	Contact
Primary	Vessels Involved
Secondary	All Vessels :- All Vessels
Review Date	01/01/2014
Areas Affected	Sea Reach No 1 to Gravesend, Gravesend to Crayfordness, Crayfordness to London Bridge and London Bridge to Bell Lane Creek and Bell Lane Creek to Teddington

Hazard Description

Hazard Detail	Contact with Navigation/mooring buoy..
Possible Causes	<p>Misjudgement, Inattention, Fatigue, Failure to follow procedures, especially position monitoring and passage planning.</p> <p>Failure to keep a proper lookout.</p> <p>Adverse weather, poor visibility.</p> <p>Mechanical / steering failure.</p> <p>Vessel characteristics (high freeboard, cpp, manoeuvring characteristics, etc)</p> <p>Nav aid or mooring buoy out of position.</p> <p>Nav aid / buoy unlit.</p> <p>Failure to follow published Nav updates.</p> <p>Complacency.</p> <p>Poor Bridge Management.</p> <p>Loss of situational awareness.</p> <p>Vessel navigating which is encumbered in some way and is unable to proceed normally or respond to external influences (Vessel not under command).</p> <p>A Health and Safety accident on board could result in or contribute to causing a navigational incident.</p> <p>Lack of experience and /or lack of qualifications of watch keeper.</p> <p>A significant proportion of mooring buoys in the river are unlit.</p>
Remarks	<p>More likely in river than estuary due to closer intended passing distances and greater buoy density.</p> <p>Mucking No.1 is vulnerable in respect of inbound vessels on the flood tide. Lower Hope buoy is vulnerable to contact from outbound vessels due to inbound vessels cutting the corner. Mid Blyth is vulnerable on the ebb and is difficult to distinguish against the background lights. Sea Reach No.3 is vulnerable as vessels move out towards the centre of the channel off SE Leigh to make the turn when inbound. Most of the mooring buoys in Gravesend Reach are well outside the main channel. Most are unlit and are difficult to distinguish against the background light. Vessels may be manoeuvring with difficulty at slow speed, approaching the Gravesend pilot boarding area.</p> <p>In Area G The channel is narrow channel and mainly used by small vessels (tugs and tows, fishing vessels and leisure craft). Tugs and tows are less manoeuvrable, particularly in high wind conditions.</p> <p>More prominent buoys in the upper district have been lit; however the mooring buoys at Woolwich Ship Tier Lower and Tower Bridge Upper are although already lit are under review.</p> <p>Environmental Monitoring buoys in place in Sea Reach and Warp areas for LGP works.</p> <p>Temporary mooring buoys at Blackfriars Rail Bridge.</p>

Risk Assessment

Ranked **22nd of 117**



Plasma Hazard Detail Report

Hazard Detail

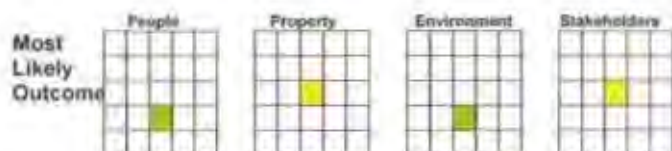
Hazard Title	Contact - Jetties, Berths, Piers during Transit
Reference	55
Accident Category	Contact
	Vessels Involved
Primary	All Vessels ; - All Vessels
Secondary	
Review Date	01/05/2013
Areas Affected	Sea Reach No 1 to Gravesend and Gravesend to Crayfordness and Crayfordness to London Bridge

Hazard Description

Hazard Detail	Jetties, berths and piers in river (vessels on passage, not berthing).
Possible Causes	<p>Misjudgement, Fatigue, Inattention, Failure to follow procedures, especially position monitoring and passage planning</p> <p>Failure to keep a proper lookout.</p> <p>Adverse weather, poor visibility.</p> <p>Mechanical / steering failure,</p> <p>Vessel characteristics (high freeboard, cpp, manoeuvring characteristics, etc)</p> <p>Limitations and expectations of tug assistance during extended ship towage operations eg passenger ship stern first from Greenwich</p> <p>Failure of tug(s).</p> <p>Vessels manoeuvring to enter or exit Tilbury Lock.</p> <p>Navigation lights not maintained on some jetties.</p> <p>Collision avoidance manoeuvre.</p> <p>Inappropriate and/or insufficient allowance for tidal conditions.</p> <p>Bank effect/shallow water effect.</p> <p>Vessel manoeuvring onto adjacent berth.</p> <p>Master/helmsman incapacitated.</p> <p>Poor navigational skills in restricted visibility.</p> <p>Vessel navigating which is encumbered in some way and is unable to proceed normally or respond to external influences.</p> <p>Proximity of the channel (increases the risk from steering failure / misjudgment on passing ships)</p> <p>A Health and Safety accident on board could result in or contribute to causing a navigational incident.</p> <p>Inappropriate advice from VTS.</p>
Remarks	<p>In the event of engine failure, the vessel may be able to steer to mitigate effects of contact. Vessel emergency anchors. In this case any damage would probably be a glancing blow when steerage could no longer be maintained - a low energy impact. Steering failure could result in a very wide variety of outcomes, according to the particular circumstances. Power failure would usually disable steering and propulsion - again with a wide variety of outcomes depending on particular circumstances.</p> <p>State of the tide will determine which berths can be reached by a vessel navigating past the berth</p> <p>Berths in Northfleet Hope - This area is particularly busy around high water as vessels manoeuvre to enter Tilbury Lock. Vessels would be on reduced speed for this section.</p> <p>Some berths eg Northfleet Terminal are relatively close to the navigational channel and extra caution is required.</p> <p>Links to hazard reference 37 (Contact - Berths on the southside at Tilburyness) which specifically addresses a specific scenario at Tilburyness.</p>

Risk Assessment

Ranked **33rd of 117**



Slight/moderate localised damage to ships plating and frames. Possibility of perforation of ships side plating with resulting water ingress and/or cargo loss/ minor pollution. Damage to structure/vessel contacted. Possible minor injuries



COLREGS: Rules 5, 6, and 7

International Regulations for Preventing Collisions at Sea, 1972, as amended

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 6

Safe speed

Every vessel shall at all times proceed at a safe speed so that she can take proper and effective action to avoid collision and be stopped within a distance appropriate to the prevailing circumstances and conditions.

In determining a safe speed the following factors shall be among those taken into account:

(a) By all vessels:

(i) the state of visibility;

(ii) the traffic density including concentrations of fishing vessels or any other vessels;

(iii) the manoeuvrability of the vessel with special reference to stopping distance and turning ability in the prevailing conditions;

(iv) at night the presence of background light such as from shore lights or from back scatter of her own lights;

(v) the state of wind, sea and current, and the proximity of navigational hazards;

(vi) the draught in relation to the available depth of water.

(b) Additionally, by vessels with operational radar:

(i) the characteristics, efficiency and limitations of the radar equipment;

(ii) any constraints imposed by the radar range scale in use;

(iii) the effect on radar detection of the sea state, weather and other sources of interference;

(iv) the possibility that small vessels, ice and other floating objects may not be detected by radar at an adequate range;

(v) the number, location and movement of vessels detected by radar;

(vi) the more exact assessment of the visibility that may be possible when radar is used to determine the range of vessels or other objects in the vicinity.

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 fitted 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 change is evident, particularly when approaching a very large vessel or a tow or when approaching a vessel at close range.