



SAFETY MANAGEMENT PLAN

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Technical Support Team
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For the attention of the Chief Executive, Maritime & Coastguard Agency

Dear Sir

Port Marine Safety Code – Statement of Compliance

I, Edmund Dorman, the Chairman on behalf of the Gloucester Harbour Trustees being the Port Marine Safety Code Duty Holder for the Gloucester Harbour, having considered all the requirements of the Port Marine Safety Code, including reviewing the risk assessment and safety management system, certify that the Gloucester Harbour meets the standards required by the Port Marine Safety Code.

Yours faithfully

A handwritten signature in black ink, appearing to read "Edmund Dorman".

Edmund Dorman
Chairman of the Board and Duty Holder

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This Safety Management Plan has been endorsed by the Gloucester Harbour Trustees.

The Trustees (January 2010):	Edmund Dorman Derek Hughes Barry Leat Mike Johnson Basil Booth Garry Strickland John Beevor Tom Appleby Carl Merry Tony Potts	(Chairman) (Vice Chairman)
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I Port Marine Safety Code: Statement of Compliance

- 1 GHT is the competent harbour authority for the Gloucester Harbour pursuant to the Pilotage Act 1987.
- 2 The current limits of the Gloucester Harbour are prescribed by Article 11 of the Gloucester Harbour Revision (Constitution) Order 2002.
- 3 Following the grounding of the Sea Empress at Milford Haven in 1996 the DETR initiated a Review of the Pilotage Act 1987 which led to the issue of the Port Marine Safety Code (PMSC) by the DETR in March 2000.
- 4 The aim of the PMSC is to help harbour authorities to be seen to achieve and maintain nationally agreed standards for safe marine operations within their waters. It sets down a standard to which in future they should hold themselves accountable publicly.
- 5 To demonstrate compliance with the PMSC, and in the interests of transparency, each harbour authority must produce a periodic statement setting out the policy it has adopted for discharging its duty to ensure that marine operations in the harbour and its approaches are properly regulated; and reporting on the effectiveness of that policy and associated systems and procedures.
- 6 All harbour authorities are required to develop policies and procedures in accordance with the PMSC and publish the policies and procedures they have adopted to achieve the required standard. Harbour authorities are also required to publish amendments to their plans and to publish reports of their formal periodic reviews, setting performance against their plans and against the standards set in the PMSC. Reports should be at not less than three-yearly intervals; additional reports may also be appropriate.
- 7 A harbour authority's policies and procedures should include a statement of policy committing the authority to undertake and regulate marine operations in a way that safeguards the harbour, its users, the public and the environment.
- 8 Harbour authorities are required to develop a safety policy for marine operations within their jurisdiction. This requirement itself makes a contribution to safety by obliging those responsible to consider its importance, and the need for practical and formal safety systems. The policy should be published, both to demonstrate the authority's commitment to the policy and also to ensure the involvement of harbour users. The management of any harbour under statutory powers should be based on a clear safety policy adopted by the harbour authority. Harbour authorities should make the following commitments:
 - to undertake and regulate marine operations in a way that safeguards the harbour, its users, the public and the environment
 - to manage the relevant assets of the authority safely and efficiently
 - to discharge the duties and powers described in the PMSC
 - to maintain relevant harbour equipment to agreed industry standards
 - to recruit and train operational staff to nationally agreed competence levels
 - to ensure that staff are properly trained for emergencies and contingencies.

- 9 GHT has formally resolved to meet these commitments and to that end has taken the steps and published the documents listed in the schedule attached. For full details the individual documents need to be consulted. GHT has consulted users of the Gloucester Harbour, through the former Gloucester Harbour User Forum, on the production of its documentation and copies are readily available on GHT's website at www.gloucesterharbourtrustees.org.uk. Copies are also available from the Trustees' office on request.
- 10 GHT is committed to reviewing its policies and procedures at regular intervals, in line with the requirements of the PMSC, to ensure that they are effective and efficient. It also has in place a system for reporting any accidents or incidents involving safety which will also trigger a review of the relevant policies and practices of GHT. The 'designated person' appointed by GHT will provide an independent audit of its documentation and procedures.
- 11 In accordance with the requirements of the PMSC, GHT formally announced its completion of the implementation of PMSC in December 2001. During January 2009 a review by the Trustees' Designated Person of their Safety Management System and Risk Assessment concluded that the Gloucester Harbour continued to meet the standards required by the Port Marine Safety Code, and a further Statement of Compliance was provided to the Maritime and Coastguard Agency in January 2009. Further reports will be issued at regular intervals.

Schedule

1 Introduction

Actions taken by GHT since the Review of Pilotage commenced are listed below; in many instances this involved a review of procedures already in force under the relevant legislation relating to Harbour Authorities. These will continue to be reviewed in accordance with the requirements of the PMSC.

2 List

- Commissioned a hydrographic survey of the main navigation channel between the Second Severn Crossing (M4) and Hock Cliff near Fretherne on Severn in August 2000. (The results of this survey have been passed to the UK Hydrographic Office at Taunton which has issued a new edition of Chart No 1166.)
- Formalised and implemented passage planning in 2000 which includes the production of passage plans (reviewed June 2002 and again in October 2008)
- Carried out risk analysis and, following extensive consultation, approved a safety management plan based thereon in September 2001 (reviewed July 2006)
- Appointed a 'Designated Person'
- Accepted the Trustees' role as 'the Duty Holder'.
- Reviewed and revised the Authority's Pilotage Directions in May 2007 (reviewed in September 2008 and again in September 2009)
- Issued General Directions in March 1999 (reviewed September 2003)
- Approved a Strategic Plan for the Authority in October 2000 (reviewed September 2003)
- Issued the Gloucester Harbour Management Plan in March 2000 (reviewed September 2003)
- Improved the format for the monthly low water surveys carried out by the Gloucester Pilots on behalf of the Authority
- Elevated safety to the first item of business on the agenda for the Trustees' bi-monthly meetings
- Renewed the Pilot Watch Radar System intrinsic to navigational safety in the approaches to Second Severn Crossing
- Improved the provision for recording radar data displayed by the Pilot Watch Radar in December 2008
- Formalised arrangements for Gloucester Pilots to report any defects in the navigation aids to the Authority's Marine Officer
- Improved the intensity and reliability of certain navigation lights
- Introduced modern solid state light sources for navigation aids

- Refined the information included in the Authority's Annual Report and Accounts
- Made the Gloucester Harbour Byelaws which were confirmed by the Secretary of State in October 1998 (amended in May 2006 to incorporate the revised harbour area)
- Suspended the provision of an emergency mooring buoy at Northwick Roadstead on safety grounds
- Replaced the Hayward Buoy with a fixed structure in June 1999
- Replaced the Bull Beacon and tide gauge with a new structure in 2005
- Replaced the Lyde Beacon with a new structure in October 2007
- Introduced a documented quality control system which includes navigation aid maintenance, purchasing, safety reporting and other activities
- Re-negotiated a new agreement with the Gloucester Pilots Partnership which operates from January 1999 relating to the provision of a pilotage service for the Gloucester Harbour. The agreement covers manning levels and working arrangements. The agreement was revised and renewed in April 2004. This was reviewed in March 2009 and will under normal circumstances be reviewed again in March 2014
- In January 2010, formalised and set out the considerations pertaining to general navigation practice and to navigation during periods of restricted visibility to be observed by vessels subject to pilotage directions.

2 Introduction

The Port Marine Safety Code (PMSC) was published in March 2000 by the DETR Ports Division (Reference 1). It aims to establish a standard which all harbour authorities should apply to the discharge of their statutory responsibilities.

The Gloucester Harbour Trustees (GHT) is a safety conscious and publicly accountable authority and is accountable to its stakeholders and the Secretary of State. The means by which it discharges its responsibilities to meet the standards of the PMSC are set out within this document – the Gloucester Harbour Trustees Safety Management Plan.

The structure of the Plan broadly follows that suggested by the HSE guidance document 'Successful Health and Safety Management' – HSG65 (Reference 2). A model of the safety management 'system' is shown in Figure 1.

The promulgation of this plan and its contents to external stakeholders is principally through the Gloucester Harbour Advisory Body which meets twice per year.

Some background to the Harbour and its environs is given in Appendix 1. Conservancy duties are given in Appendix 2. Regulations and compliance requirements relating to the navigation and passage of vessels through the Harbour are given in Appendix 3.

3 Policy

The Gloucester Harbour Trustees (GHT) is committed to achieving and maintaining the highest standards of health and safety in its activities and operations. Matters of health and safety will not be overridden by any other priorities.

GHT assesses the risks to everyone who may be affected by its activities or operations under its control with the aim of removing hazards. If this cannot be achieved, GHT aim to reduce the risk to a level, which is as low as reasonably practicable.

GHT has appointed a designated person to be responsible for reporting on health and safety standards.

These standards of health and safety apply to GHT employees, contractors and any other third party operating within the Harbour area engaged in activities over which GHT has jurisdiction.

GHT employees will be adequately trained and instructed and provided with suitable equipment to conduct their activities in a safe manner. Contract staff are required to work to the same standards. Events will be promptly reported and followed up.

GHT is committed to full compliance with all relevant health and safety legislation.

GHT will continue to develop policies and procedures in response to changing trends in traffic and operations to ensure exposure to risk by harbour users is kept as low as reasonably practicable.

GHT will publish the adopted policies and procedures, together with plan amendments and reports of formal performance reviews.

4 Organisation

The overall responsibility for health and safety lies with the Trustees. The responsibility for executing the policy, however, rests with the Officers.

Employees and contracted staff are recruited and selected on their suitability for the work to be undertaken. Each position has a job description, which describes jobholder's responsibilities and duties.

Training is provided and instructions are given by way of Standing Instructions (Reference 9). The level of supervision provided is dependent on the complexity of the task and the experience of the individual.

The "Designated Person" (as described in the PMSC) is an independent person with appropriate qualifications and experience in safety management. The Designated Person reports on matters of safety to the Trustees who, collectively, are the "Duty Holder".

For commercial vessels, safe navigation is the responsibility of their Masters and the Pilots as well as GHT, who authorise the Pilots and provide information (from, for example, surveys (Reference 4) and Notices to Mariners (Reference 5)) and navigation aids.

For leisure craft, safe navigation is the responsibility of the person in charge of the craft. GHT provides information (from, for example, surveys (Reference 4) and Notices to Mariners (Reference 5)) and navigation aids. GHT has recently produced safety guidance notes for users of small craft in the estuary. This may be obtained, along with many other documents, directly from GHT's website.

An advisory body, set up in accordance with the provisions of the Gloucester Harbour (Constitution) Revision Order 2002 meets biannually.

The structure of the organisation is shown in Figure 2.

5 Implementation

5.1 Definitions

A **HAZARD** is an event with the potential to cause harm.

The **RISK** from an event is the produce of the consequences of the event and their/its likely frequency of occurrence.

The risk analysis below lists possible hazards grouped in order of their risks, before mitigation ('preliminary risks'); and lists those measures which, by ameliorating the likely consequences or reducing the frequency of occurrence are judged to produce an acceptably small 'residual risk'. This level of residual risk is also tabulated below

5.2 Procedures

The procedures to be followed for all work activities are set out in Standing Orders (Reference 3). The principal work activities are:

- Boarding and Landing of Pilots
- Maintenance of Navigation Aids (onshore)
- Maintenance of Navigation Aids (offshore)

5.3 Risk Assessment

Each activity is subject to risk assessment. This process begins with hazard identification and where possible hazards are eliminated. Where hazards cannot be wholly or partly eliminated, an assessment of the residual risks is undertaken. Control measures are then introduced to reduce risk to as low as is reasonably practicable.

For the purposes of this assessment of risk, three levels have been established – low, medium and high. These levels may be applied to how incidents may affect a variety of subjects, e.g. those affecting personnel, property, operations, the marine environment etc.

LOW – where the consequence causes minimal loss (taken year on year), no injuries requiring first aid or medical treatment, where good controls, monitoring and work procedures are in place, where there is no accident history etc; where an incident is unlikely to cause damage to a vessel or affect port operations and is not frequent; where the financial consequences are deemed tolerable by the Trustees or their insurers and where there is minimal risk to the marine environment.

MEDIUM – where injuries requiring first aid or medical treatment may occur; where accidents may have occurred at some stage in the past; where controls and hazard awareness are effective but could improve etc; where an incident may cause some damage (repairable) to a vessel or cause temporary short term interruption to port activities or where an incident could have limited short term effect on the local marine environment.

HIGH – where injuries could result in disease, loss of limbs, maiming or death, where hazards occur frequently or permanently and controls are inadequate or missing and accidents happen frequently etc; where irreparable damage may be caused to a vessel or long term or permanent interruption to port activities; where an event would threaten the commercial viability of the port or otherwise negate the Trustees' major responsibilities to users of the harbour, the port and its environs; when permanent damage could be caused to the total marine environment.

A hazard and risk assessment register (including the control measures) is given in Appendix 5.

Where significant amelioration of risk is claimed or indicated, the tables of safety/control measures are set out to indicate that there are several effective independent and diverse factors which act to reduce the risk.

5.4 Event Reporting

All events affecting or with implications for the health and safety of persons shall be promptly reported and investigated. Actions to prevent a recurrence shall be implemented and lessons learnt shall be promulgated to staff and contractors.

A reporting regime which draws to the attention of the Officers any unsafe act or condition shall be promoted and feedback given.

5.5 Contingency and Emergency Arrangements

The procedures to follow for contingencies and emergencies are set out in:

- Contingency and Emergency Arrangements (Reference 6)

This instruction specifies the actions to be taken to ensure a timely and effective response to a range of possible events within the powers of the organisation.

An 'Incident Form' enables a record of an incident involving vessels (both commercial/piloted and private/leisure) to be recorded using a pro-forma. An example is attached – Appendix 6.

Note: An OPRC-compliant Oil Spill Contingency Plan (Reference 7) is separately maintained.

6 Audit

An audit programme is established to ensure that procedures and practices are periodically reviewed for compliance. The “Designated Person” is responsible for audit.

Full records are maintained and aids to navigation are inspected annually by Trinity House.

7 Review

All procedures are reviewed at least every three years.

The person responsible for the review of this procedure is the Marine Officer. Persons responsible for the review of other procedures are given in those procedures.

8 References

- 1 Port Marine Safety Code (PMSC)
- 2 Successful Health and Safety Management – HSG65
- 3 GHT Standing Orders (2003) (GHT 5)
- 4 Low Water Survey and reports (monthly)
- 5 GHT Notices to Mariners (issued as necessary)
- 6 GHT Emergency Procedures/Arrangements (2008)
- 7 GHT Oil Spill Contingency Plan (2008)
- 8 British Admiralty Chart No. 1166
- 9 QA Manual - Standing Instructions
- 10 The Gloucester Harbour Management Plan (2000) (GHT 2)
- 11 GHT Byelaws (1997 and 2006) (GHT 9)
- 12 General Directions to Shipping (1999) (GHT 3)
- 13 Passage Plan Information
- 12 Pilotage Directions (2009) (GHT 7)
- 13 HSE ‘Reducing Risks, Protecting People’

Other documents to which reference may be made but which are not specified above include:

Gloucester Harbour Revision Orders (1889 to 2002)
The Gloucester Harbour Strategic Plan (2003) (GHT 1)
GHT Annual Report and Accounts (latest)

Figure I – Safety Management System

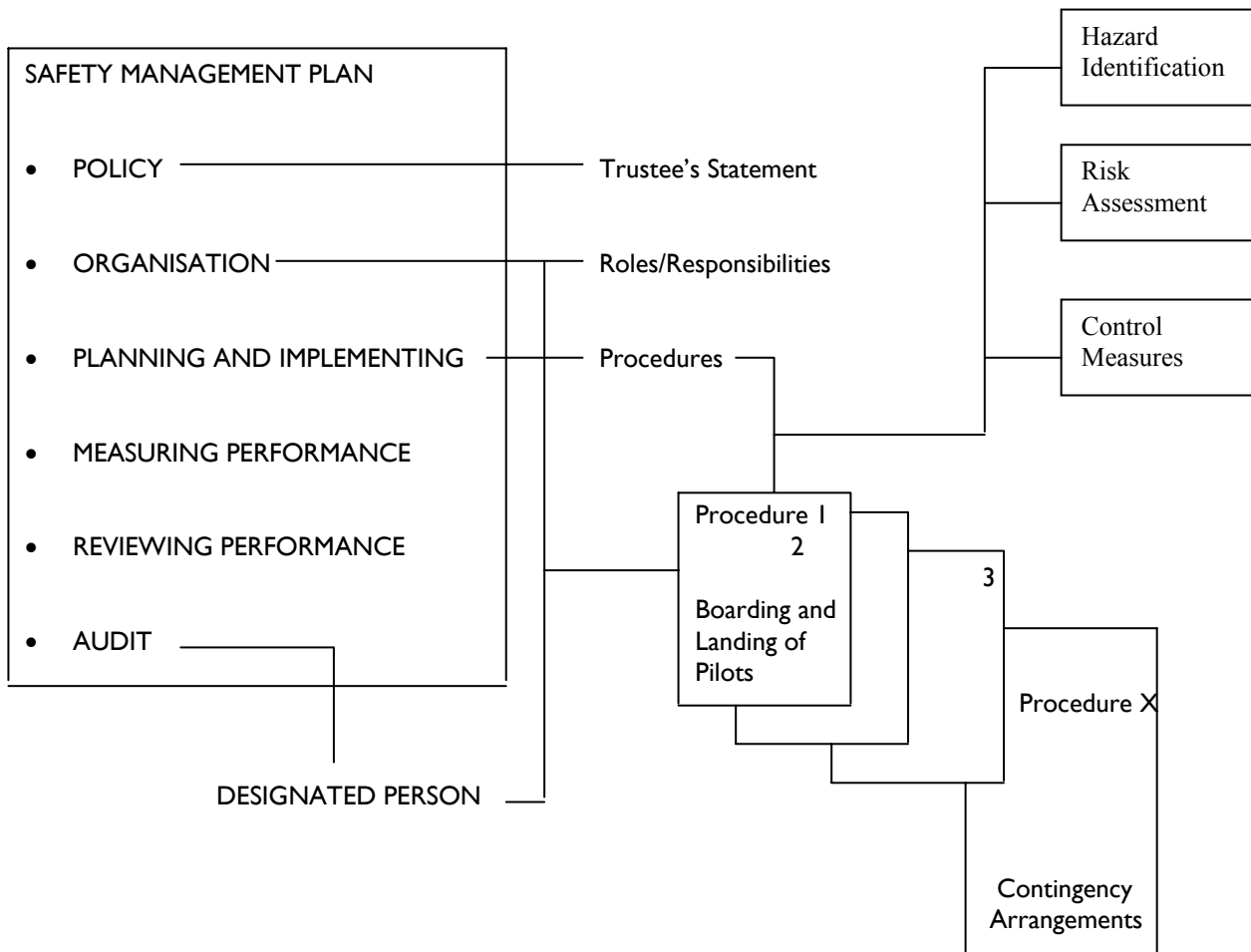
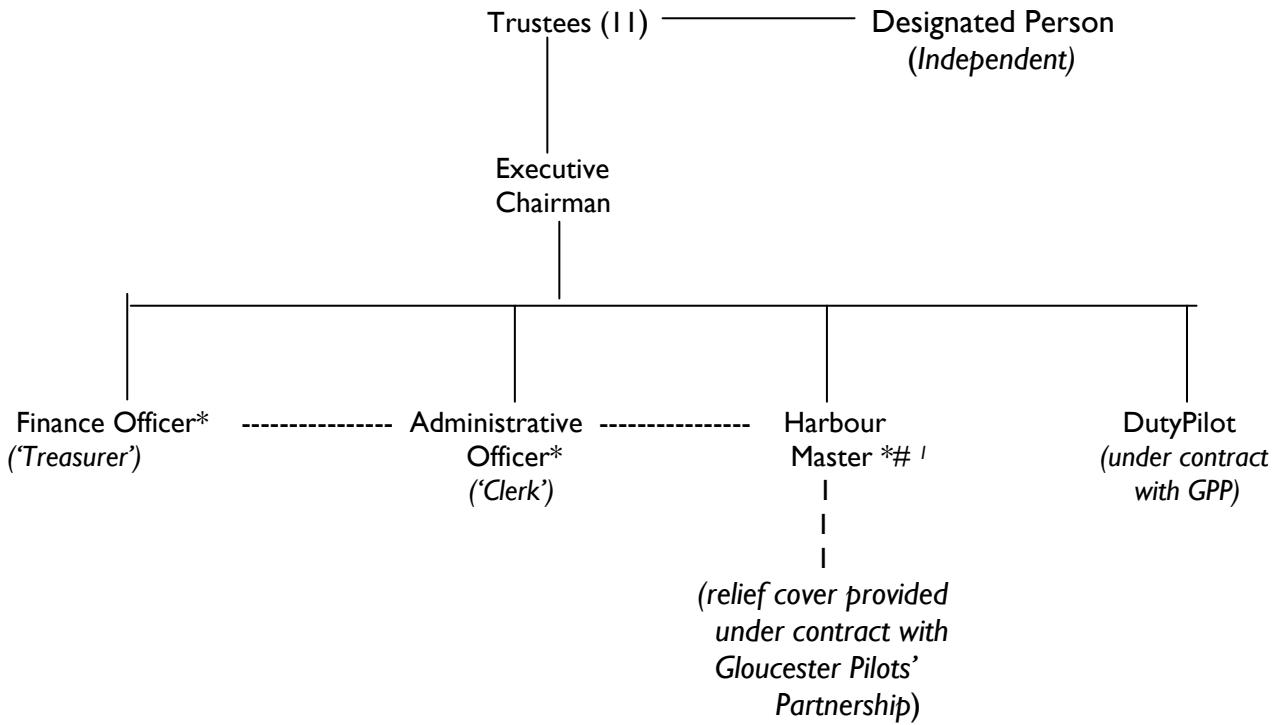


Figure 2 – Organisational Structure



* employed staff

reports directly to the Trustees on safety matters

' Harbour Master as GHT's principal operational officer is ex officio a Trustee

---- Administrative Officer reports to Finance Officer on financial matters and to Marine Officer on pilotage matters

Appendix I - Background

- **Location and Description:**

The Gloucester Harbour includes the estuarial waters of the River Severn upstream of a line joining Goldcliff on the Welsh shore, Denny Island and a point south of Severn Beach on the English shore to Llanthony and Maisemore Weirs at Gloucester and the River Wye downstream of Bigsweir Bridge. This involves some 50 nautical miles of tidal waters.

These waters are part of a large estuary system formed following marine inundation of a former river valley system. Tidally generated and maintained sandbanks over which there are continually changing depths are found within the shallow waters. The bed of the narrow navigable channel is of hard consolidated sand with occasional rock outcrops.

The Severn Estuary exhibits one of the largest tidal ranges in the world, with currents of up to 8 knots being noted in certain locations under appropriate conditions. In general, the high tidal velocities inhibit permanent deposition over most of the estuary. Maintenance dredging within the harbour has not been required, although levelling of the rock bed in one section of the harbour was carried out in the past.

The effects of the Severn Bore, which occurs regularly within the harbour, may be experienced between Sharpness and Gloucester.

The tides in the Gloucester Harbour are uniformly diurnal, with a mean range of 7.2m at Sharpness and 9.6m at Beachley. The area has an annual average temperature of 10°C. Periods of fog and mist which significantly affect visibility are usually temporary, affecting an average of 12 days annually. Southwesterly winds prevail with an average strength of 12 knots. Ice does not affect navigation within the Gloucester Harbour.

A comprehensive system of aids to navigation serves the mariner.

- **Bridges**

The River Severn is crossed by two major road bridges. The Second Severn Crossing (M4) and Severn Bridge (M48) have, respectively, 37m and 36m vertical clearance above MHWS.

Close to Beachley Point, the River Wye is crossed by the Wye Bridge (M48), having a vertical clearance of 16m above MHWS. At Chepstow and beyond, several further road and rail bridges cross the river, but limited vertical clearance restricts the type of craft which may navigate to small leisure craft.

- **Overhead Cables**

Power Cables: An overhead power cable with a safe vertical clearance (as defined by the responsible authority) of 41m above MHWS crosses the River Severn between Beachley Point and Aust Cliff. The same cable crosses the River Wye with a safe vertical clearance of 18m. Between Beachley Point and Chepstow, the River Wye is spanned by two further overhead cables, the safe vertical clearance being 34m above MHWS. The River Severn above Sharpness is spanned by two further overhead cables, the safe vertical clearance being 21m above MHWS. St Pierre Pill is spanned by a power cable having a safe vertical clearance of 8.8m.

Telephone Cables: An overhead telephone cable with a safe vertical clearance (as measured) of 7m above MHWS crosses the River Severn between Minsterworth stone chute and Elmore Back.

- **Anchorage**

There are no formally-designated anchorages within the harbour.

- **Environmental factors**

Included within the area of the Gloucester Harbour are the Severn Estuary SSSI, the Upper Severn SSSI, River Wye (Lower Wye) SSSI, a RAMSAR site and SPA. The harbour also falls within the Severn Estuary cSAC and includes the River Wye SAC.

- **Harbour Users**

The products moved within the Gloucester Harbour consist mostly of dry bulk cargo, including cement, scrap, cereals, fertiliser and feed stuffs. There is no movement of crude oil or petroleum products. With the exception of a small local trade in dredged sand, all cargoes are moved through the port of Sharpness.

The current traffic comprises bulk carriers engaged in the European coastal trade having an average size of 2,500 DWT and recreational craft. Drafts of most vessels are less than 6 metres. The least depths within the marked navigation channel are between 5.5m (MHWN) and 8.8m (MHWS).

- **Traffic Patterns**

The traffic in the harbour is two-way day and night with no vessel traffic control. Pilotage is compulsory for the majority of commercial vessels using the harbour. The marked channel is formally designated a narrow channel, requiring all vessels to heed the appropriate rules concerning collision avoidance. Unless exceptional circumstances dictate, commercial vessels do not deviate from the marked channel. To avoid conflict, vessels departing Sharpness generally do so prior to the arrival of inbound traffic. Vessel movements are timed to avoid passing or grouping of vessels where the channel narrows.

- **Towage**

There is no specified requirement for towage or tug assistance to be applied to any particular vessel. No tugs are provided by the harbour authority, but are available for use from commercial service providers if required. Only registered tugs and bona-fide tug operators will be permitted to undertake towage or tug services within the harbour.

The need for towage is a matter for the master to consider in conjunction with advice from the pilot.

The harbour authority can, however, require towage to be taken in any circumstance in the interests of port safety. Such a requirement may be imposed after an assessment of the particular circumstances with the pilot. Factors which may be taken into account include, but are not limited to, vessel draft, vessel defects/damage, vessel length, vessel manoeuvring characteristics, manoeuvring room available, pilot experience and reduction of risk.

Appendix 2 – Activities and Duties

The following is a list of the principal activities and duties and the actions taken by GHT in accordance with the statutory powers under which they operate.

- **Pilotage**

The Trustees will keep under consideration whether any, and, if so, what, pilotage services need to be provided to secure the safety of ships navigating in or near the approach to the harbour, and whether in the interests of safety, pilotage should be compulsory for ships navigating in any part of the harbour or its approaches and, if so, for which ships and in which circumstances pilotage services need to be provided for those ships. Particular account will be taken should the use of the harbour change in such a way so as to affect the requirements of the service provided. Having considered the above, the Trustees will ensure that the appropriate level of pilotage service is provided. Pilotage services for the Gloucester Harbour are presently provided under contract by the Gloucester Pilots' Partnership in accordance with the provisions of the Pilotage Act 1987.

- **Hydrographic Survey**

A full survey of the harbour was conducted in 2000. Low water inspections and monitoring of the channels and shoal areas are carried out monthly (Reference 4) and the results distributed internally. Local Notices to Mariners (Reference 5) are promulgated in the event of navigational hazards being identified.

- **Information to Mariners**

The UK Hydrographic Office receives all hydrographic information and any Local Notices to Mariners promulgated by the Trustees. Chart BAI 166 (River Severn – Avonmouth to Sharpness) (Reference 8) is thereby kept up to date.

- **Prevailing Conditions**

Harbour users are at liberty to obtain weather forecasts from the great number of usual official sources.

- **Provision of Aids to Navigation**

The harbour is marked by a comprehensive, well-maintained and modern system of navigation aids, the characteristics and availability of which comply with internationally agreed guidelines. The routine inspection and maintenance regime is set out in Standing Instructions (Reference 9).

- **Anchorage**

There are no formally-designated anchorages within the harbour.

- **Wrecks**

There are currently no wrecks of any significance to navigation within the Gloucester Harbour. The Trustees will exercise their powers to deal appropriately with any wreck that is, or is likely to become, a danger to navigation.

- **Works Licenses**

The Trustees' regulations and conditions for the issue and control of works and dredging licences is contained in the Management Plan (Reference 10).

Appendix 3 – Regulations and Compliance

- **Byelaws**

The Gloucester Harbour Byelaws (Reference 1) are based on practical experience and are intended to enhance the safety of navigation and protect the environment. They are subject to periodic review.

- **General Directions**

The Trustees have issued General Directions (Reference 12) to all vessels.

- **Port Passage Guidance**

Vessels are required by law to produce passage plans. Port Passage Guidance (Reference 13) is provided by Pilots to augment and enhance passage plans.

- **Pilotage Directions**

The Trustees have issued Pilotage Directions (Reference 14). With limited exceptions, all vessels operating in the harbour are subject to compulsory pilotage. GHT authorises pilots and issues Pilotage Exemption Certificates where appropriate.

In any case, the Trustees will ensure that its pilotage directions define the circumstances in which pilotage is to be compulsory, how and to which vessels they apply, and in what circumstances.

- **Collision Regulations**

The Collision Regulations apply to all vessels navigating within the harbour

- **Enforcement**

Policy regarding prosecution may be found within the Management Plan (Reference 10). The Trustees will monitor and, where appropriate, actively enforce, compliance with the Gloucester Harbour byelaws and directions. It is to be noted that an apparent contravention of such byelaws or directions may result in the prosecution of the offender.

Appendix 4 – Marine Services

- **Boarding and Landing of Pilots**

Boarding and landing of Pilots is carried out in accordance with the provisions of statutory legislation and relevant Codes of Practice and with due regard to matters of health and safety.

- **Maintenance of Navigation Aids**

Aids to navigation are maintained to a level consistent with the availability criteria laid down by the General Lighthouse Authority (Trinity House). Characteristics of these aids to navigation comply with the recommendations and guidelines as set down by IALA. Orders for the safe operation of the RIB and maintenance procedures are contained in Standing Instructions (Reference 9). These measures, together with the availability of data from channel monitoring, will assist a competent helmsman to navigate safely within the harbour.

- **Provision of Pilots**

Recognising that the Pilots play a pivotal role in the safe navigation of the harbour by commercial craft, manning levels are regularly reviewed to ensure that an adequate number of authorised pilots is available. Pilot training is monitored and future training requirements will take the relevant National Occupational Standards into account.

Appendix 5 – Hazard and Risk Register

The principal accident categories listed below are taken from Annexe B of the International Maritime Organisation document “Formal Safety Assessment” (IMO MSC 69/INF.14 12.02.98).

Section One: ‘Generic’ Maritime Accident Categories

Accident No.	Nature of Accident	Risk of accident occurring within the Harbour?	Risk of accident occurring as a result of GHT activities?	Risk of accident occurring as a result of other activities?	Whether risk addressed in other safety plans?
1	Contact	✓	✓		Severn Bridges Operations Manual, BNFL-Magnox Site Plans
2	Collision	✓	✓		
3	Fire	✓		✓	Severn Bridges Operations Manual
4	Grounding	✓	✓		
5	Stranding	✓	✓		
6	Explosion	✓		✓	Severn Bridges Operations Manual
7	Loss of Hull Integrity	✓	✓		
8	Flooding	✓	✓		
9	Machinery Related Accidents	✓		✓	
10	Payload Related Accidents	✓		✓	
11	Hazardous Substance Accidents	✓		✓	COMAH, BNFL-Magnox plans
12	Accidents to Personnel	✓	✓	✓	

The nature of the accident (numbered as above), potential hazards, the effect of the hazards, the preliminary risk, and the residual risk after implementation of the control measures are described on the following sheets. A control measures summary sheet is associated with each of the “risk” sheets.

Accident No.1: Contact – a vessel striking, or being struck, by an external object that is not another vessel or the seabed

Potential Hazard	Hazard Effect	Where likely to occur	Preliminary Risk			Hazard Ref. No.	Residual Risk		
			L	M	H		L	M	H
Buoys and beacons	Damage to buoy or beacon, disruption to navigation service	At various points in the navigable channel		X		1.1	X		
Power station cooling water reservoir	Damage to vessel and wall, possible pollution, disruption to power station, injury to personnel	Off Oldbury Nuclear Power Station		X		1.2	X		
Severn and Wye road crossings	Damage to bridges, vessel, disruption to bridge operation and traffic, possible pollution, injury to personnel, disruption to shipping	Shoots, Aust/Beachley		X		1.3	X		
Dock entrance piers	Damage to piers, possible disruption to shipping movements	Sharpness		X		1.5	X		
Fisheries	Damage to small craft from existing and derelict fixed engines/putcher ranks	River bank locations		X		1.6	X		
Moorings	No moorings exist in any location that may cause a hazard	Throughout harbour	X			1.7	X		
Wrecks	Damage to vessel, possible pollution, injury to personnel, disruption to shipping movements	Well away from the deep water channel (Lydney Sands, Purton)	X			1.8	X		

No. of incidents since 1982: 2

Control Measures – Summary Sheet - Contact

Hazard Ref. No.	<u>Details</u>	Control Measures	Responsibility for action to be taken and by whom
1.1	Vessel contacting navigation buoy or beacon	Navigation aids are conspicuously painted in the appropriate colour, fitted with daymark, appropriate lighting, and are regularly inspected and maintained	GHT and their maintenance contractors; Pilots report faults
1.2	Vessel contacting power station cooling water reservoir wall	Navigable channel adjacent to reservoir is marked by two buoys. Area marked on chart as a prohibited area for navigation	GHT and their maintenance contractors; Pilots report faults
1.3	Vessel contacting Severn and Wye road bridges	Bridge piers are marked with appropriate redundant lighting, centre of span is marked with appropriate light, fog signals installed on Severn bridges, RACON installed on Second Severn Crossing, administrative control of vessel sizes	GHT & SRC plc; Pilots report faults
1.5	Vessel contacting Sharpness Docks entrance piers	Piers are marked with appropriate lights and carry fog signal	British Waterways
1.6	Vessel contacting fishery installations	Fishery structures are marked on chart and are outside the recommended navigation routes	Fishery operators, Environment Agency, GHT
1.7	Vessel contacting mooring installations	No moorings exist in the harbour where they may pose a hazard. GHT assess and licence mooring applications	GHT, mooring owners
1.8	Vessel contacting wreck	Remains of two vessels lie within the harbour, both of which are well away from the deep water channel, the remains having been reduced to a safe level	GHT, vessel owners
		In all cases, commercial vessels above a minimum size are subject to compulsory pilotage, undertaken by Pilots with wide experience of the river	

Accident No.2: Collision – vessel striking, or being struck, by another vessel, regardless of whether either vessel is underway, anchored or moored, but excludes hitting underwater wrecks

Potential Hazard	Hazard Effect	Where likely to occur	Preliminary Risk			Hazard Ref. No.	Residual Risk		
			L	M	H		L	M	H
Collision between large (commercial) vessels	Damage to vessels, possible injury, possible pollution, disruption to port operations, risk of fire, loss of hull integrity	In main navigation channel		X		2.1	X		
Collision between large vessel and recreational/leisure craft	Serious damage to small craft, probable injury to personnel, possibility of minor environmental damage, possible loss of life	In main navigation channel		X		2.2	X		
Collision between recreational/leisure craft	Damage to small craft, injury to personnel	Anywhere within harbour	X			2.3	X		

No. of incidents since 1982: 1 (2006)

Residual risk reduced from M (2001) to L (2003) following re-evaluation of frequency of occurrence and new guidelines promulgated to local leisure craft users

Control Measures – Summary Sheet - Collision

Hazard Ref. No.	Details	Control Measures	Responsibility for action to be taken and by whom
2.1	Collision between large (commercial) vessels	Compulsory Pilotage regime, intership communication, designation of main channel as a narrow channel. Effective liaison between Pilots and Harbourmaster regarding coordination of vessel movements in the immediate vicinity of the dock entrance. Movements arranged to avoid conflict during manoeuvring in the area between Bull Rock and Sharpness. Level of traffic is low.	Harbourmaster/Pilots/Masters
2.2	Collision between large vessel and recreational/leisure craft	Published bylaws, general directions, advice to local leisure craft users	operators of small craft
2.3	Collision between recreation/leisure craft	None in place save for knowledge of existing Rules of the Road and common sense	operators of small craft
		In all cases, commercial vessels above a minimum size are subject to compulsory pilotage, undertaken by Pilots with wide experience of the river	

Accident No. 3: Fire – the uncontrolled process of combustion characterised by heat or smoke or flame or any combination of these

Potential Hazard	Hazard Effect	Where likely to occur	Preliminary Risk			Hazard Ref. No.	Residual Risk		
			L	M	H		L	M	H
Vehicular or other fire on the Severn or Wye road crossings	Damage to vessel, Damage to cargo Accident enquiries, compensation claims etc Loss of life or injury to personnel	Second Severn Crossing, Severn Bridge, Wye Bridge	X			3.1	X		
Fire at Berkeley or Oldbury nuclear installations	Possibility of toxic emissions leading to evacuation of neighbouring areas and suspension of shipping movements	In the vicinity of Oldbury Naite and Berkeley shore	X			N/A	X		
Fire aboard ship in vicinity of Severn and Wye bridges	Disruption of road traffic, damage to structure Damage to overhead structures (e.g. bridges)	Second Severn Crossing, Severn Bridge, Wye Bridge	X			3.2	X		
Fire aboard ship	Injury to personnel, damage to vessel arising from failure of or damage to propulsion and manoeuvring equipment leading to grounding, stranding, flooding, loss of hull integrity etc. Risk of environmental damage. Disruption of port activities	At any point within harbour	X			3.3	X		
Fire at Avonmouth and Severnside industrial areas	Possibility of toxic emissions leading to evacuation of neighbouring areas and suspension of shipping movements	In the vicinity of the Severnside industrial sites	X			3.4	X		

No. of incidents since 1982: 0

Control Measures – Summary Sheet - Fire

Hazard Ref. No.	Details	Control Measures	Responsibility for action to be taken and by whom
3.1	Damage to vessel, Damage to cargo Accident enquiries, compensation claims etc Loss of life or injury to personnel	SRC and GHT emergency plans and chain of notification in place	Masters of vessels, Coastguard
3.2	Damage to propulsion or manoeuvring equipment	Vessels own on-board procedures	Masters, crew
3.3	Damage to overhead structures	Vessels own on-board procedures, meeting standard set by a legal requirement, availability of rescue services	Masters, Pilots, Harbourmaster (Directions)
3.4	Non-compliance with statutory regulations	COMAH regulations, H&S Regs	Emergency Planners, Emergency Services

Accident No. 4: Grounding – vessel coming to rest on, or riding across underwater features or objects, but where the vessel can be freed from the obstruction by lightening and/or assistance from another vessel (e.g. tug) or by floating off on the next tide.

Potential Hazard	Hazard Effect	Where likely to occur	Preliminary Risk			Hazard Ref. No.	Residual Risk		
			L	M	H		L	M	H
Sandbanks, rock outcrops	Damage to vessel and its equipment, possible pollution, possible injury to personnel	At points outside the marked navigable channel or if insufficient underkeel clearance			X	4.1	X		
Power station cooling water reservoir	Damage to vessel and wall, possible pollution, disruption to power station*, injury to personnel	Off Oldbury nuclear power station		X		4.2	X		

No. of reported incidents since 1982: 6 (2000: 1, 2003: 1, 2007:1 all leisure craft), 2009: 1 commercial vessel

* Failure of the reservoir wall leading to loss of reservoir water is highly unlikely and any consequences are adequately addressed in the station safety case study (Oldbury exercise 2003 included vessel damage to reservoir wall)

Control Measures – Summary Sheet - Grounding

Hazard Ref. No.	Details	Control Measures	Responsibility for action to be taken and by whom
4.1	Grounding on natural features of the harbour	Regular, recorded survey of the navigable channel is carried out	GHT, Pilots
	- do -	Vessels remain within confines of marked channel under guidance of authorised Pilot	Master, Pilots
	- do -	Pilots ensure passages are timed to ensure safe underkeel clearance for a vessel in the channel and when swinging to enter the docks	Master, Pilots
	- do -	Vessels to advise of any defects which may affect manoeuvring	Master
	- do -	Navigable channel marked by a combination of transits and cardinal/lateral marks	GHT
	- do -	In all cases, commercial vessels above a minimum size are subject to compulsory pilotage, undertaken by Pilots with wide experience of the river	GHT
	Possibility of pollution	Refer to statutory response plan provided under OPRC	GHT, response contractors, Coastguard
4.2	Grounding on artificial features such as Oldbury reservoir wall	Artificial features are absent from the designated navigable channel, and those close are adequately marked	GHT, BNFL Magnox
		Vessels to advise of any defects which may affect manoeuvring	Master
		Tugs available with appropriate notice from Bristol Channel area	

Accident No. 5: Stranding – vessel becoming fixed on an underwater object or feature such that the vessel cannot readily be moved by lightening, floating off or with assistance from other vessels (e.g. tugs)

Potential Hazard	Hazard Effect	Where likely to occur	Preliminary Risk			Hazard Ref. No.	Residual Risk		
			L	M	H		L	M	H
Sandbanks, rock outcrops	Damage to vessel and its equipment, possible pollution, possible injury to personnel	At points outside the marked navigable channel or if insufficient underkeel clearance			X	5.1	X		
Power station cooling water reservoir	Damage to vessel and wall, possible pollution, disruption to power station, injury to personnel	Off Oldbury nuclear power station		X		5.2	X		

No. of incidents since 1982: 1 (2006: 1 decommissioned f/v)

Control Measures – Summary Sheet - Stranding

Hazard Ref. No.	Details	Control Measures	Responsibility for action to be taken and by whom
5.1	Stranding on natural features of the harbour	Navigable channel marked by a combination of transits and cardinal/lateral marks	GHT
		In all cases, commercial vessels above a minimum size are subject to compulsory pilotage, undertaken by Pilots with wide experience of the river	GHT
		Regular, recorded survey of the navigable channel is carried out	GHT, Pilots
		Vessels remain within confines of marked channel under guidance of authorised Pilot	Master, Pilots
		Pilots ensure passages are timed to ensure safe underkeel clearance for a vessel in the channel and when swinging to enter the docks	Master, Pilots
		Vessels to advise of any defects which may affect manoeuvring	Master
5.2	Stranding on artificial features	Artificial features are absent from the designated navigable channel	GHT
		Vessels to advise of any defects which may affect manoeuvring	Master
		Compulsory Pilotage regime in place	GHT, Pilots, Masters

Section Two. OPERATIONAL PROCEDURES AND ASSOCIATED LEVELS OF RISK

The 'Generic' Maritime Accident Categories referred to in Section One are all pertinent to the operation procedures associated with the movement of craft throughout the Gloucester Harbour, and reference should be made to Section One when considering the following commentaries on operational procedures.

1. Use of Northwick Emergency Mooring

The single-point mooring installed at Northwick Roadstead has now been removed following an assessment of need and taking into account the hazards associated with maintaining this facility to an acceptable standard.

2. Tug availability

Tug and towage facilities are available from Royal Portbury Docks. The Wijsmuller fleet is not permanently manned but the duty crew would expect to have a tug in the lock within one hour of call-out. Movement through the Royal Portbury Lock is possible from 4h before HW to 3h after HW. The tugs available draw between 3.5 and 5 metres. HW Avonmouth is approx. 45 minutes before HW Sharpness. Depending upon tidal levels and timing, it may be possible to provide tug assistance to disabled outbound vessels in the lower section of the Gloucester Harbour between Inward Rocks and the seaward limit, and for inbound vessels between the seaward limit and Sharpness. It is not anticipated that a permanent tug presence at Sharpness would fulfil any useful purpose given the constraints imposed by the tidal regime and the operation of the lock and basin gates at the entrance to Sharpness Docks.

Probability of successfully recovering a disabled vessel with tug assistance: 'high', provided that vessel has been able to anchor in an appropriate location. Otherwise, 'moderate', but depending on circumstances

3. Failure of navigational equipment in poor visibility

Where navigational equipment aboard a vessel subject to compulsory pilotage fails in visibility which is such that the standard onshore lights and marks cannot be seen, the Pilot will advise the Master on the practicalities of continuing the voyage. A Pilotwatch Radar system provides independent radar coverage of the lower section of the Gloucester Harbour, specifically in the vicinity of the two Severn road bridges, thereby assisting the vessel to either continue on its voyage or be guided to a suitable location.

Overall probability of the equipment being inadequate or failing as described above is considered to be low. There are highly redundant nav aids in the passage-critical areas.

4. Underkeel clearance within the Gloucester Harbour

The point at which least underkeel clearance may be found is the outer sill at Sharpness Docks (0.5m above Chart Datum). The published British Waterways minimum underkeel clearance required before vessels will be permitted to cross the sill varies from 0.61m to 0.91m. The sill is 0.5m above local chart datum.

The Pilot ensures, through continual assessment of the prevailing conditions, the time of high water, the characteristics of the vessel and adjustment of speed, that adequate underkeel clearance is maintained throughout the passage. For normal operations this is unlikely to be less than 1 metre west of the Bull Channel with the vessel in the deep water channel.

5. Use of helmsman

It is the practice, when considered necessary by the Pilot and/or Harbour Master, for a second Pilot to be embarked to act as helmsman and assistant. (Refer to Pilotage Directions).

6. Where the tide does not reach a level such that the required minimum underkeel clearance for entry to Sharpness Docks is obtained.

Under certain conditions, it has been known for the tide to fall short of the predicted rise, leaving a vessel with insufficient clearance to enter Sharpness Docks. If this circumstance arises, the vessel may be expected to depart to a safe anchorage and resume the passage on a subsequent tide. Provided that the vessel is free from any defects in navigation, propulsion or manoeuvring equipment and departs promptly, adequate and safe underkeel clearance will be maintained throughout the Gloucester Harbour as the tide ebbs. The return voyage should not be undertaken in conditions of deteriorating weather or visibility.

Probability of successful undertaking the return voyage: 'high'.

7. Normal Navigation

Within the Gloucester Harbour, the tracks to be followed are indicated by a series of regularly inspected and maintained shore-based marks and transits, as well as several buoys, which are visible at appropriate distances and in the normally-prevailing conditions of visibility. Standard navigational procedures are set out in Appendix 7.

Probability of significant failure of GHT nav aids during passage: 'low'.

8. Failure of GHT Navigation Aids

Offshore buoys and beacons are lit by solar/battery power and lamps with built-in redundancy. Onshore marks are lit by mains electricity. Offshore buoys and beacons are securely fastened to the river bed and are not subject to periodic shift in position. Onshore marks carry distinctive daymarks.

Availability of navigations aids (typically 99%) well exceeds IALA and Trinity House availability criteria. Risk of failure: 'low'.

9. Compulsory Pilotage

Most commercial vessels are subject to compulsory pilotage.

10. Passage Plan

Masters of vessels are required by international law to prepare passage plans and to declare any defects which may affect the safe conduct of the vessel. Pilotage passage plans are also prepared by the Pilots and discussed with the Master prior to and during the voyage.

11. Pilot Boarding and Disembarkation Areas.

Pilot boarding and disembarkation areas are clearly defined on the appropriate chart, and particular reference is made through local Notices to Mariners and in Admiralty List of Radio Signals Vol. 6 to the usual boarding/disembarkation point to be used by Sharpness bound vessels. Use of these areas is monitored by Severn VTS, and arrangements are in place for vessels to request alternative areas in the event of adverse weather or other factors.

12. Pilot Boat.

Pilot boarding and disembarkation is carried out using properly manned and certificated boats and crew under an arrangement with an adjoining harbour authority. The Trustees do not operate or maintain craft for this purpose.

II Maintenance Activities – Safe systems of work

Potential Hazard	Hazard Effect	Where likely to occur	Preliminary Risk			Hazard Ref. No.	Residual Risk		
			L	M	H		L	M	H
Large tidal range	Loss of or injury to personnel, loss of equipment	At sites of all offshore aids to navigation accessible by foot or boat			X	.1	X		
Strong currents	As above	As above			X	2	X		
Adverse weather conditions	As above	Throughout the harbour		X		.3	X		
Working on or near the water	As above	Throughout the harbour		X		.4	X		
Vertical ladders for access to boats or for access to navigation aids	As above	At onshore and offshore navigation aids, at power station structures		X		.5	X		
Launching and recovery of small boats using crane	As above	Oldbury Power Station, SARA Sharpness		X		.6	X		
Fire	As above	Throughout the harbour	X			.7	X		
Hazardous and toxic materials	As above	During maintenance activities that involve painting	X			.8	X		
Manual handling operations	As above	During maintenance activities that involve erection of scaffolding, changing batteries, renewing mooring components; at onshore and offshore navaid sites		X		.9	X		
Working from access ladders	As above	At onshore and offshore navaid sites		X		.10	X		
Low water access to navigation aids	As above	At offshore navaid sites		X		.11		X	

Control Measures – Summary Sheet – Maintenance Activities

Hazard Ref. No.	Details	Control Measures	Responsibility for action to be taken and by whom
.1	Loss of or injury to personnel, trips and falls, loss of equipment due to being cut off by tide	Use tide tables and local knowledge to identify tide heights and times between which access to any particular location and return to shore is possible; awareness of dangers of wading through mud and water where the bottom cannot be seen. Always work in pairs or small groups. One man to remain in the boat at all times. Lifejackets to be worn when in boat.	Maintenance contractors
.2	As above	As above	As above
.3	Loss of or injury to personnel, loss of equipment due to adverse weather conditions	Obtain weather forecasts on a regular basis and be prepared.	As above
.4	Loss of or injury to personnel, loss of equipment	Personnel will wear life jackets when using a boat or when wading through deep water. Personnel will work in pairs or small groups when working on the river. A mobile phone is provided.	As above
.5	Loss of or injury to personnel, loss of equipment	Good condition footwear to be worn; no smooth soles. Exercise extreme caution when using vertical ladders. Nothing to be carried in the hands; all equipment and materials to be transferred by crane or hand held rope; offshore ladders are fitted with fall-safe wires thus harnesses provided should be worn	As above
.6	Loss of or injury to personnel, loss of equipment	All lifting equipment shall comply with the relevant statutory provisions with certificates and inspection records available if required. Crane to be under the control of a banksman at all times. No personnel allowed in boats when they are being lifted	As above, plus crane operators/owners
.7	Loss of or injury to personnel, loss of equipment	Fire extinguisher to be carried on boat	Maintenance contractors, boat owners
.8	Injury to personnel	COSHH regulations appropriate to materials being handled to be complied with	Maintenance contractors, GHT
.9	Loss of or injury to personnel, loss of equipment	Minimise requirements for manual handling; correct lifting aids to be used as applicable	Maintenance contractors, GHT
.10	Loss of or injury to personnel, loss of equipment	Fall-safe harnesses to be worn; harnesses not to be used to support full body weight during maintenance operations	Maintenance contractors, GHT
.11	Loss of or injury to personnel, loss of equipment	Competent Personnel to work in pairs with due regard to low water times and access/return times; mobile telephone provided	Maintenance contractors, GHT

Appendix 6 – Incident Form

INCIDENT REPORT

To be used to report all incidents of failure of propulsion, manoeuvring or steering equipment and groundings, strandings, contact or collision within the Gloucester Harbour and submitted to Gloucester Harbour Trustees within 24 hours of the incident

(1) VESSEL:

(2) DATE:

(3) PILOT:

(4) TIME:

(5) LOCATION OF INCIDENT:

(6) NATURE OF INCIDENT:

(7) ACTIONS TAKEN:

	Y	N
(8) INJURY TO PERSONNEL	<input type="checkbox"/>	<input type="checkbox"/>
(9) DAMAGE TO VESSEL	<input type="checkbox"/>	<input type="checkbox"/>
(10) DAMAGE TO NAVIGATION AIDS	<input type="checkbox"/>	<input type="checkbox"/>
(11) EXTERNAL ASSISTANCE REQUIRED	<input type="checkbox"/>	<input type="checkbox"/>
(12) COASTGUARD/HARBOURMASTER NOTIFIED	<input type="checkbox"/>	<input type="checkbox"/>

In the event of an affirmative response to any of items (8) to (12) above, Harbour Master to be advised at time of incident and a full report submitted to Gloucester Harbour Trustees within 24 hours of the incident.

Received:

Incident No:

POST-INCIDENT ACTION REPORT

Incident No:

Action taken:

By:

Date:

Appendix 7 - Navigational Procedures for all vessels subject to Pilotage Directions (Gloucester Harbour)

1.0 General Procedures

1.1 Vessel arriving at Lock or Basin

Prior to entering basin pilot should seek permission to enter from Sharpness Radio having due regard to:

- Required under keel clearance*
- Other traffic in vicinity
- Manoeuvrability of vessel
- The readiness of the port to accept the vessel

1.2 Vessel Departing Lock or Basin

Prior to departing lock or basin pilot should seek permission to depart from Sharpness Radio having due regard to:

- Required under keel clearance*
- Other traffic in vicinity
- Manoeuvrability of vessel
- Any constraints imposed by the port infrastructure, repairs thereto or other works

And in addition should:

- Establish communications with any inbound vessel inward of Hayward Beacon and agree a plan to pass

1.3 Vessels Passing within District

When two or more vessels are to navigate within the district at the same time communication should be established to confirm:

- Details of passing or overtaking

* The published minimum clearance over the sill at Sharpness is dependant on the beam of the vessel as follows. It should be noted that weather and tidal conditions may require such minimum clearances to be increased at the discretion of the British Waterways harbourmaster

Beam	Minimum Clearance
< 10.3m	0.61m
10.36 – 13.71m	0.76m
13.72 – 16.76m	0.91m

1.4 Vessels navigating with minimum under keel clearance

Vessels navigating with an expected under keel clearance of less than 1.5m on the sill at Sharpness should before arrival pay particular regard to factors such as:

- The performance of previous tides at Sharpness (height, timing)
- The performance of tide at Avonmouth
- Meteorological conditions (wind speed and direction, barometric pressure)
- Manoeuvrability of vessel

2.0 Procedures in Restricted Visibility

2.1 Overview

Restricted visibility elevates risk which may be mitigated by appropriate procedures and the increase in safety margins. It may be necessary in the interests of safety and following appropriate risk assessment to increase the minimum underkeel clearance for vessels by at least 0.5m if it is deemed that visibility is generally restricted to less than 0.5 mile in order to provide a greater navigational envelope in the river.

2.2 Definitions

- Restricted visibility procedures will be implemented when the general visibility is deemed to be less than 1 mile

2.3 Initial Action

When it is apparent that visibility is restricted to less than 1 mile then the docking and sailing of vessels should be reassessed. Consultation should be made, but not restricted to, between:-

- Pilots
- Master of vessel
- Bristol VTS
- GHT Harbourmaster
- British Waterways Harbourmaster/Responsible Person

Consultation should include but not be restricted to the following points:-

- Passage plans
- Draft in relation to the available depth of water
- Whether vessel in ballast or loaded condition
- Availability and status of navigational equipment on board vessel (eg. chart plotters)
- Competence of crew with particular regard to steering ability
- Other vessel movements within district
- Ability to manoeuvre vessel
- Ability to work mooring lines
- Available space in dock

- Likelihood of visibility improving within the tidal window
- Other temporary restrictions within the dock, entrance or river
- Operational status of shore side navigational aids (e.g. radar)
- Contingency plans

2.4 Subsequent Actions

Consideration to be given to delaying arrivals and departures.

- Consideration should be given to delaying movements if:
 - Visibility at the Second Severn Crossing is less than 0.5 mile and
 - The visibility at Sharpness is reported to be such that:
 - Panhurst Light is not visible from Pierhead (0.5 mile)
 - Pier lights are not visible from Watch House
 - An inbound vessel is already in the river
 - Reports from the river indicate visibility of less than 2 cables
 - Reports from other points in the river do not indicate significant improvement

In severely restricted visibility the pilotage service may be halted.

2.5 Further considerations

If a vessel encounters restricted visibility during an inbound passage and the circumstances are such that the Master and pilot in consultation with the parties listed in section 2.3 consider it safe to proceed to Sharpness rather than abort the passage, then this shall be the preferred course of action.