

PORT OF LONDON AUTHORITY

NAVIGATIONAL SAFETY MANAGEMENT SYSTEM MANUAL



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DOCUMENT RECORD					APPROVAL	
<i>REV</i>	<i>DATE</i>	<i>DESCRIPTION</i>	<i>BY</i>	<i>CHK</i>	<i>HM (SMS)</i>	<i>NMT</i>
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SMS REVIEWS AND AUDITS RECORD SUMMARY				APPROVAL	
<i>YEAR</i>	<i>DATE</i>	<i>PERIOD</i>	<i>DESCRIPTION</i>	<i>BY</i>	<i>NMT</i>
2008	January	Monthly	PLACID Report		
	February	Monthly	PLACID Report		
	March	Monthly	PLACID Report		
	April	Monthly	PLACID Report		
	May	Monthly	PLACID Report		
	June	Monthly	PLACID Report		
		Six Monthly	Incident Trends – Navigational Incidents		
		Six Monthly	Performance Measures		
	July	Monthly	PLACID Report		
	August	Monthly	PLACID Report		
	September	Monthly	PLACID Report		
	October	Monthly	PLACID Report		
	November	Monthly	PLACID Report		
	December	Monthly	PLACID Report		
		Six Monthly	Incident Trends – Navigational Incidents		
		Six Monthly	Performance Measures		
		Annually	Overall Performance of the SMS during the past 12 months.		
2009	January	Monthly	PLACID Report		
	February	Monthly	PLACID Report		
	March	Monthly	PLACID Report		
	April	Monthly	PLACID Report		
	May	Monthly	PLACID Report		
	June	Monthly	PLACID Report		
		Six Monthly	Incident Trends – Navigational Incidents		

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<i>YEAR</i>	<i>DATE</i>	<i>PERIOD</i>	<i>DESCRIPTION</i>	<i>BY</i>	<i>NMT</i>
		Six Monthly	Performance Measures		
	July	Monthly	PLACID Report		
	August	Monthly	PLACID Report		
	September	Monthly	PLACID Report		
	October	Monthly	PLACID Report		
	November	Monthly	PLACID Report		
	December	Monthly	PLACID Report		
		Six Monthly	Incident Trends – Navigational Incidents		
		Six Monthly	Performance Measures		
		Annually	Overall Performance of the SMS during the past 12 months		
2010	January	Monthly	PLACID Report		
	February	Monthly	PLACID Report		
	March	Monthly	PLACID Report		
	April	Monthly	PLACID Report		
	May	Monthly	PLACID Report		
	June	Monthly	PLACID Report		
		Six Monthly	Incident Trends – Navigational Incidents		
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	October	Monthly	PLACID Report		
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<i>YEAR</i>	<i>DATE</i>	<i>PERIOD</i>	<i>DESCRIPTION</i>	<i>BY</i>	<i>NMT</i>
		Six Monthly	Performance Measures		
		Annually	Overall Performance of the SMS during the past 12 months.		
	3-5 years	3-5 years	Periodic External Audit of the SMS and compliance with the PMSC		
2011	January	Monthly	PLACID Report		
	February	Monthly	PLACID Report		
	March	Monthly	PLACID Report		
	April	Monthly	PLACID Report		
	May	Monthly	PLACID Report		
	June	Monthly	PLACID Report		
		Six Monthly	Incident Trends - Navigational Incidents		
		Six Monthly	Performance Measures		
	July	Monthly	PLACID Report		
	August	Monthly	PLACID Report		
	September	Monthly	PLACID Report		
	October	Monthly	PLACID Report		
	November	Monthly	PLACID Report		
	December	Monthly	PLACID Report		
		Six Monthly	Incident Trends - Navigational Incidents		
		Six Monthly	Performance Measures		
		Annually	Overall Performance of the SMS during the past 12 months.		
2012	January	Monthly	PLACID Report		
	February	Monthly	PLACID Report		
	March	Monthly	PLACID Report		
	April	Monthly	PLACID Report		
	May	Monthly	PLACID Report		

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SMS REVIEWS AND AUDITS RECORD SUMMARY				APPROVAL	
YEAR	DATE	PERIOD	DESCRIPTION	BY	NMT
	June	Monthly	PLACID Report		
		Six Monthly	Incident Trends in Navigational Incidents		
		Six Monthly	Performance Measures		
	July	Monthly	PLACID Report		
	August	Monthly	PLACID Report		
	September	Monthly	PLACID Report		
	October	Monthly	PLACID Report		
	November	Monthly	PLACID Report		
	December	Monthly	PLACID Report		
		Six Monthly	Incident Trends in Navigational Incidents		
		Six Monthly	Performance Measures		
		Annually	Overall Performance of the SMS during the past 12 months		

Components of the Navigational Safety Management System

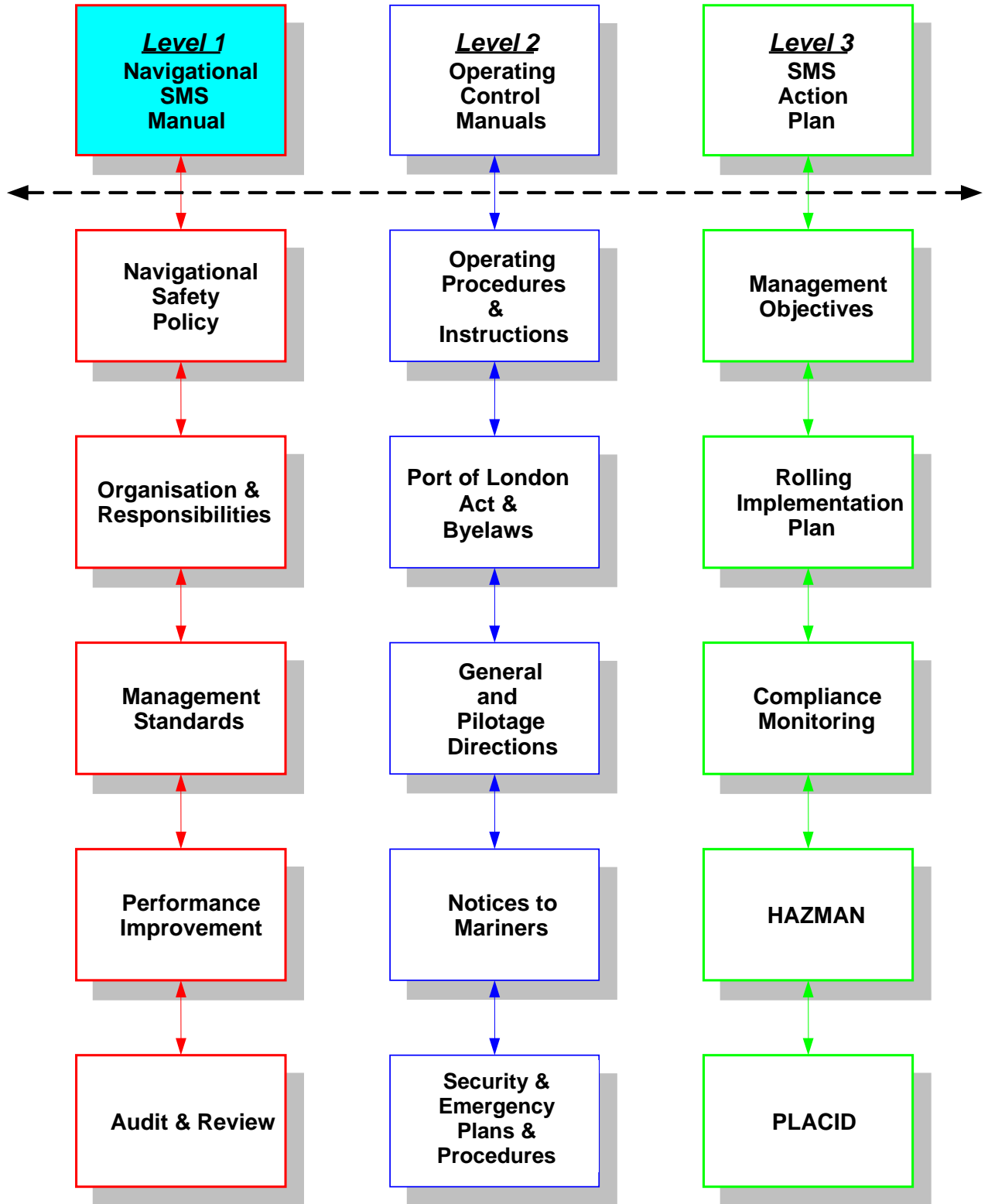


Figure 1

Overview of Navigational SMS components
(Shaded Box refers to this Manual)

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The safety of navigation is dependent upon the provision of relevant, up to date hydrographic information, delivered in a form most appropriate to each sector of the wide spectrum of port and river users. 40

ENFORCEMENT & PROSECUTION POLICY 41

STATUTORY AND REGULATORY DELEGATIONS 1

Annex A – PLA Navigational & Supporting Marine Policies

Annex B – PLA Consultation Policy

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0.0 NAVIGATIONAL SAFETY MANAGEMENT SYSTEM PRINCIPLES

The Port of London Authority (PLA) Navigational Safety Management System (Navigational SMS) is based on principles embodied in guidance published by the Health and Safety Executive (HS(G)65), and is designed to deliver the relevant requirements of the Port Marine Safety Code (PMSC).

The PLA's Navigational Safety Policy and complementary Marine Policies define the organisation and arrangements that the PLA has established to monitor, promote and proactively manage the conduct of navigation and associated marine activities so that safety is enhanced.

Figure 2 shows the links between Policy, the organisational structure and the administration of the Navigational Safety Management System.

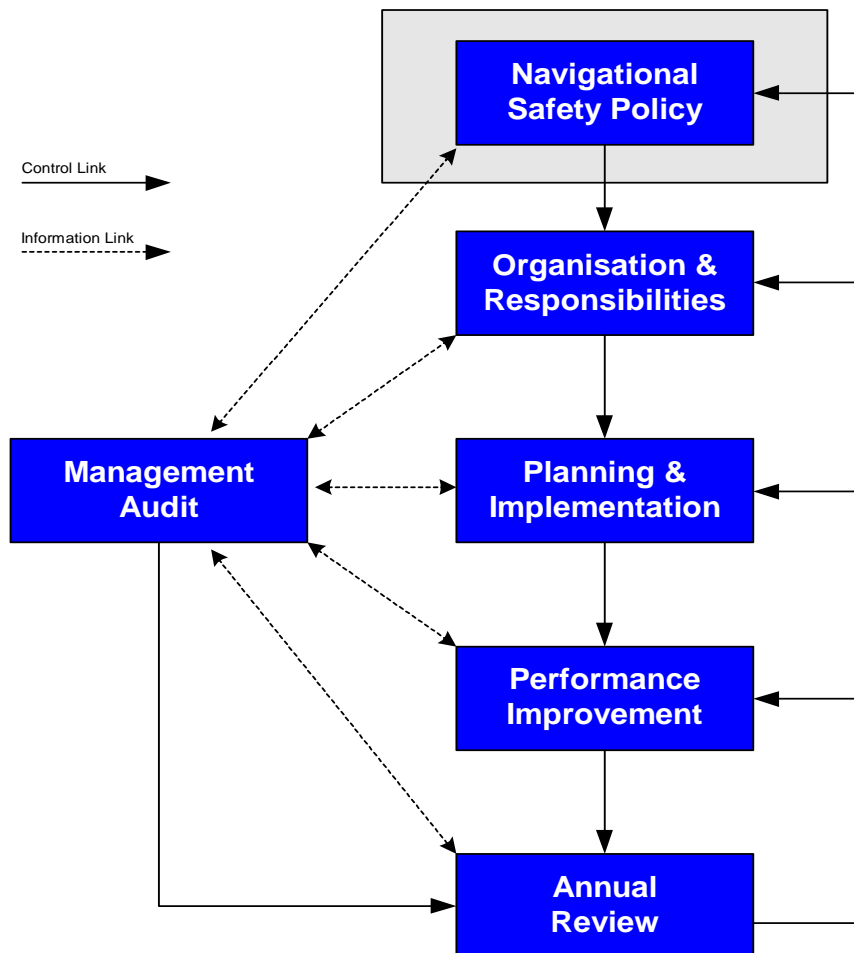


Figure 2

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1.0 INTRODUCTION

The provisions of the Port of London's Navigational SMS are set out in this manual. The purpose of this document is to describe, at a high level, the overall framework for the management and co-ordination of marine activities necessary for the effective facilitation of navigational safety. Based on PLA Navigational Safety and Marine Policies, the manual describes primary accountability and procedures, communication and monitoring regimes. The Navigational SMS arrangements referred to in this manual comply with the Port Marine Safety Code (March 2000).

This Navigational SMS Manual takes precedence over all previously issued PLA navigational safety control documents which, if not subsumed within the Navigational SMS, are no longer extant.

The Navigational Management Team (NMT) is responsible for maintaining the design, the overall content, approval and subsequent management of the Navigational SMS.

1.1 Scope of the Navigational Safety Management System

The port's navigational Safety Management System, as administered and managed by the PLA, applies to marine operations and activities within the PLA's area of jurisdiction in the Port of London. The scope of the SMS includes all:

- commercial shipping operations in the port, with the exception of operations that are solely the responsibility of the berth or facility and with no implications for navigational safety.;
- marine leisure and sports activities; and
- marine operations undertaken by any support or service organisation; including ship and craft towage, pilot boarding and landing, mooring and line handling, dredging and other marine services, and the navigational activities of other regulators, the Emergency Services, Government Agencies and voluntary organisations.

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1.2 Port Marine Safety Code Requirements

Navigational SMS procedures and guidelines fulfil the requirements of the Port Marine Safety Code including but not limited to, the following:

- Making risk control the basis of all marine activities, procedures and regulations applied to or required of port users.
- Using risk assessment to identify the requirement for navigation aids.
- Applying risk assessment to all harbour works.
- Subjecting wrecks to risk assessment and programming periodic review.
- Periodically reviewing the provision of safe anchorages.
- Maintaining systems to implement the findings of risk assessments.
- Identifying and designating safe pilot boarding and landing areas.
- Applying and adhering to current pilot transfer arrangement regulations.
- Reporting deficiencies on visiting vessels.
- Providing procedural advice for giving Directions in relation to dangerous vessels or substances.
- Regulating the use of harbour craft and ensuring powers are sufficient to govern the mooring of vessels.
- Maintaining and developing a competence based training scheme to support delivery of all marine functions. This includes cross training with tug crews.
- Maintaining appropriate plans and procedures for emergency response and associated training\exercises.
- Using verification\audit systems.

1.3 System Components

The Port of London's Navigational Safety Management System focuses on the operational and administrative output of the marine departments:

Harbour Masters Lower and Upper
Pilotage
Vessel Traffic Services
Hydrographic including Marine Conservancy
Marine Safety & Contingency Management, and
Marine Services.

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It includes the following components:

- Navigation and Marine Policies
- Navigation Management Team
- Marine Conservancy Team
- Navigation SMS Manual
- Risk Assessment and Risk Control Measures
- Hazard Management Database – HAZMAN
- Incident Database – PLACID
- Rolling SMS Action Plan
- Staff Involvement and Consultation
- Navigation Advisory Panels (NAP)
- River User Consultative Forums (RUCF)
- Records and Controls
- Audit and Review

Risk Control Measures fall into two broad categories:

- Documentary - Regulatory Framework
 - Accurate Charts and other Navigational Information
 - Operational Manuals & Guidelines
 - Operating Procedures
 - Emergency Plans and Procedures
 - Notices to Mariners
 - Ship Information System – POLARIS
 - Formalised Training and Assessment
- Hardware -
 - Radars
 - VHF Communication
 - VTS System
 - Tide Gauges
 - Aids to Navigation
 - Moorings/Anchorages
 - Harbour Service Craft

1.4 SMS Information Notes

A series of four SMS Information Notes have been produced to provide a brief overview of the workings of the ports navigational safety management system.

Please see Annex D.

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2.0 POLICY

The Navigational Safety Policy sets out PLA's intentions and commitment to safety. It also describes the organisational responsibilities and arrangements established to ensure that the Policy is implemented. The Policy, with its supporting policies (VTS, Pilotage, Hydrographic and Enforcement & Prosecution) contributes to operational objectives and states PLA's commitment to meet its legislative responsibilities. The fundamental objective of the Navigational SMS is to demonstrate the consistent application of these Policies (Ref. PMSC Clause 2.2.3).

The Navigational Safety Policy and its supporting marine policies are attached at Annex A.

2.1 Policy Development and Communication

The Navigational Safety and Marine Policies were developed by the NMT and are approved by the PLA Board. The Policies have been communicated to PLA staff, port users and interested parties and are posted on the PLA website and Staff Intranet. In addition, the PLA has developed a Consultation Policy, the application of which will further aid the development of the Navigational SMS, the involvement of all port users and stakeholders, and contribute to compliance with the Port Marine Safety Code. This policy, also approved by the Board, is attached at Annex B.

Copies of all Navigational Safety and Marine Policies are freely available to all and there is a continuing process of briefing and updating information with regard to navigational safety.

2.2 Purpose and Use of the Policies

The primary purpose of the PLA Navigational Safety and Marine Policies is to provide an overall standard for marine operations throughout the Port of London. They also provide a reference point for a variety of operational decisions including the selection of resources and the design and implementation of safe working practices.

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2.3 Commitment Statement

The PLA Board, as “Duty Holder” and the body with ultimate responsibility, has committed itself to comply with the requirements of the Port Marine Safety Code (Ref. PMSC 1.5.3). Furthermore, it is committed to ensuring that adequate resources are available to discharge its navigational safety obligations (Ref. PMSC 1.6.1.b).

One purpose of this document is to show a link between the policies set by the Board and the management arrangements, controls and provisions that discharge those policies.

The Board (as Duty Holder) has confirmed, to the Maritime & Coastguard Agency, its continued compliance with the requirements of the Code.

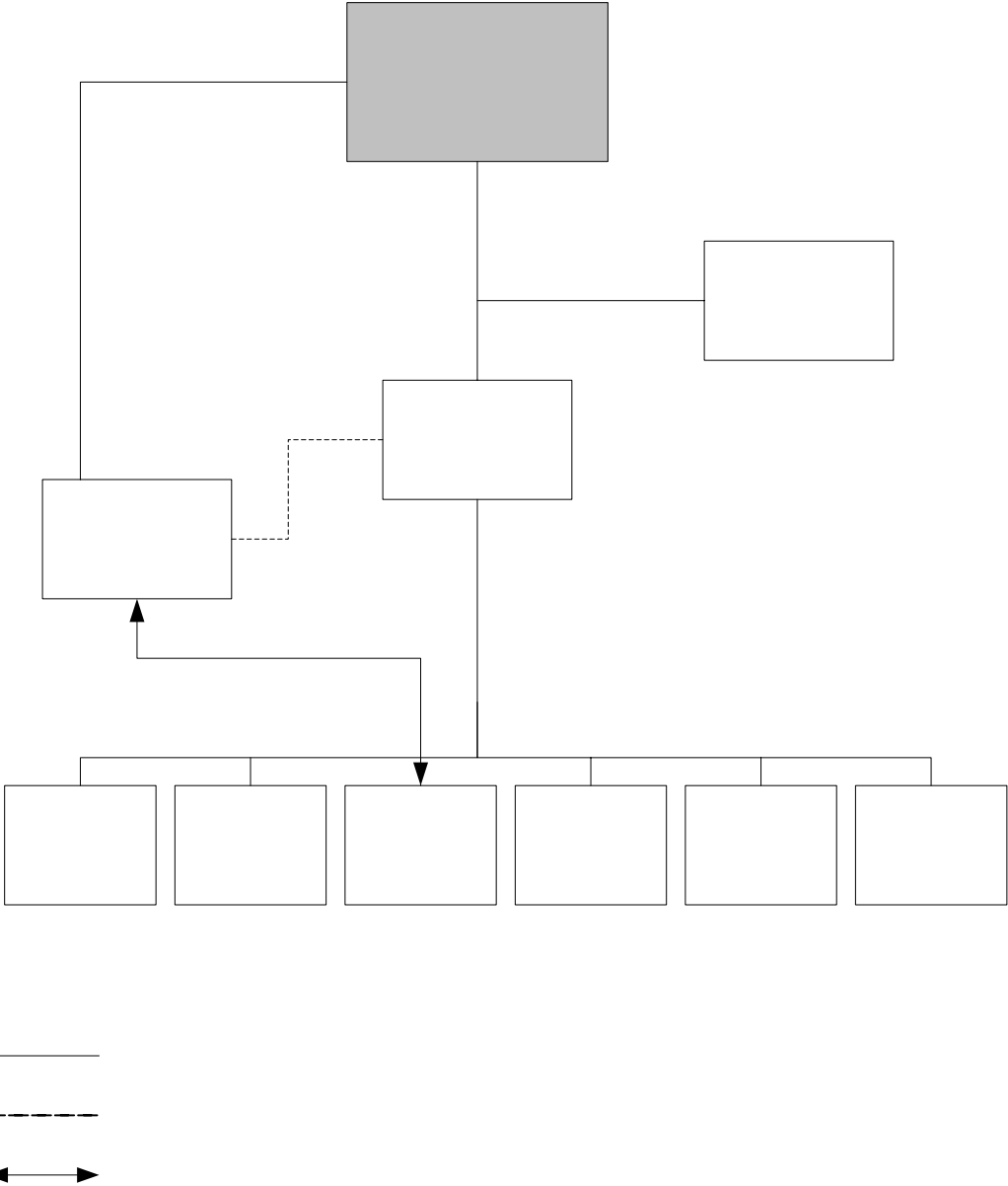
2.4 Policy Review

The Navigational Management Team undertakes a formal review of all Marine Policies on a 3-yearly basis or as circumstances dictate.

3.0 ORGANISATION

3.1 Functional Structure for the Management of Navigational Safety

Figure 3



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3.2 Responsibilities

3.2.1 The Board

In respect of Navigational Safety, the PLA Board:

- Discharges the duties and exercises the powers given to it, both directly and by delegation, as it considers appropriate as permitted by the Port of London Act 1968;
- Discharges the function of "Duty Holder" as defined in the Port Marine Safety Code by ensuring compliance with the Code, and the safe management of navigation;
- Approves the strategy, policies, plans and budgets of the PLA together with its strategic objectives;
- Reviews the performance of the PLA against its strategic and operational objectives, plans and budgets.

Note: Delegation by the PLA Board is addressed in the Delegation of Authority document maintained by the Secretary to the Board (See also Annex C).

3.2.2 Executive Committee (ExCo)

For the purpose of the Navigational SMS, ExCo is responsible for co-ordinating cross-departmental projects, which may include or bear upon navigational safety. It is also responsible for budget preparation and resource planning. The Terms of Reference for ExCo are:

- To provide a forum for discussion of cross-departmental issues so as to provide advice to the Chief Executive and to take decisions as appropriate.
- To set the scope and general principles in respect of cross-departmental projects and subsequently to monitor and co-ordinate their implementation.
- To evaluate and develop draft strategies, policies, plans, objectives and budgets, and where appropriate, recommend them to the PLA Board for approval.
- To monitor PLA performance against its strategic and operational plans, budgets, objectives, and the achievement of the PLA's performance measures, and to co-ordinate such actions as may be necessary from time to time to ensure the achievement of these plans, budgets and objectives.

3.2.3 Chief Harbour Master

The Chief Harbour Master is appointed by the PLA Board to discharge the statutory role of harbourmaster in accordance with the PMSC (para 1.3.2). He is responsible for delivering navigational safety policy and keeping the Chief Executive advised and informed. This role is key to ensuring that the Navigational SMS fulfils the marine aspects of the PLA's statutory duties and relevant non-statutory obligations.

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3.2.4 Navigational Management Team (NMT)

The NMT Terms of Reference are:

In the context of CHM Departments' roles and responsibilities to:

1. Manage marine operations and implement conservancy measures in accordance with PLA policies as approved by the Board, and the guidance contained in the NMT Management Guidelines.
2. Review and take appropriate action in respect of:
 - all safety incidents and navigational occurrences, and the associated recommendations of the investigating Harbourmaster and/or the subsequent Navigation Advisory Panel;
 - any identified trends in the nature or frequency of safety incidents and navigational occurrences;
 - the programmed assessment of hazards and associated risk control measures; and
 - the outcomes of any navigational, environmental or marine operations risk assessments.
3. Develop for approval by the Board where appropriate, draft strategy, policies, plans and budgets in respect of navigational and conservancy issues and marine operations.
4. Oversee the regular review of PLA's marine regulatory and enforcement framework in order to ensure its continuing fitness for purpose.
5. Monitor the development of operational procedures, guidelines, recommendations or "lessons learned" arising from (local or national) incident investigations and programmed reviews of hazards and risk control measures.
6. Monitor navigational safety performance measures.
7. Continue to develop and expand the PLA's understanding of the river and estuarine environment and use this knowledge to manage marine operations in accordance with best environmental practice.
8. Contribute, as appropriate, to the PLA's strategic planning and monitor progress in completing the relevant objectives as identified in the Annual Strategic/Operating Plans.
9. Keep under review best national practice as prescribed in the (PMSC) Guide to Good Practice and to ensure compliance within the PLA where appropriate.

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10. Consider recommendations for unbudgeted capital and revenue expenditure arising from an identified need to enhance navigational safety.
11. Co-ordinate the activities of the CHM departments.

At 06.07.06

The Navigational Management Team comprises:

- Chief Harbour Master
- Harbour Master (Lower)
- Harbour Master (Upper)
- Pilotage Manager
- VTS Manager
- Port Hydrographer
- Harbour Master (SMS) (Designated Person)

NMT members are individually responsible for the management and function of their respective departments. The statutory and regulatory marine responsibilities delegated to NMT members and others by the PLA Board are contained in the Marine Delegation of Authority document, and are attached at Annex C.

Other responsibilities and duties are contained within individual Job Descriptions, which are signed as an acceptance and undertaking of those responsibilities, by the individuals concerned.

3.2.5 Designated Person (DP)

In meeting its obligations under the PMSC, the PLA Board has appointed a 'Designated Person', the Marine Administrative Support Manager, who maintains a right of direct access to the Board.

The role of the 'Designated Person' is to:

- Provide independent assurance to the PLA Board that the PLA has an effective and appropriate Safety Management System.
- Provide the PLA Board with independent and professional advice regarding the PLA's overall compliance with the requirements of the Port Marine Safety Code.

3.2.6 Harbour Master (Safety Management System)

The Harbour Master (SMS) maintains an overview of the system and is responsible for the effective functioning of the SMS as a whole. The Harbour Master (SMS) is also responsible for the overall distribution and dissemination of this Navigational SMS Manual to PLA staff and external bodies\port users.

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3.2.7 Departmental Managers

Departmental Managers, including the Marine Services Manager, are responsible for the development and implementation of appropriate procedures and guidelines to contribute to the delivery of the Navigational SMS and other supporting policies within their operational area. In all cases, relevant staff and junior managers should be fully involved and be able to contribute to such development.

In particular, within this overall remit, they are responsible for:

- Identifying and proposing solutions to any hazard to safe navigation;
- Appropriate training of assigned personnel;
- Maintaining overall navigational safety awareness.

3.2.8 Navigational Safety System Coordinator

Is responsible to the Harbour Master (SMS) for the maintenance and administration of HAZMAN - the navigation hazard and risk control management system, and PLACID - the navigational incident database.

3.3 External Involvement and Responsibilities

3.3.1 Navigational Advisory Panel

Navigational Advisory Panels (NAPs), consist of practising mariners whose knowledge and experience is relevant to the nature of any particular hazard, risk control measure or new circumstance which such a panel is convened to consider. Following any incident or change in circumstances the district Harbour Master will consider the need to establish a Navigational Advisory Panel.

3.3.2 River User Consultative Forums

The PLA has a long established liaison with port users. The three River User Consultative Forums (Upper, Lower and Estuary) play an important role in monitoring the performance of the Navigational SMS and in reviewing relevant SMS issues.

The Forums have the following Terms of Reference, acting as:

- A forum for raising and discussing issues, including safety, relating to the tidal Thames, relevant to the Port of London Authority;
- A vehicle for consultation with the PLA, which contributes to meeting the requirements of the Port Marine Safety Code and the supporting Guide to Good Practice;

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- A sub-committee of the South East District Marine Safety Committee, in continuation of the role of the former River User Liaison Groups.

Each Forum normally meets on a six-monthly basis, but additional meetings may be called as circumstances dictate. The Harbour Master (Upper) chairs the Upper Forum, the Harbour Master (Lower) the Lower and Estuary Forums.

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4.0 IMPLEMENTATION

4.1 Navigational Safety Objectives

In association with its duties and responsibilities the PLA annually reviews its Strategic Objectives. To support those Strategic Objectives, the NMT also sets individual Departmental Objectives, which include the ongoing maintenance and development of the Navigational SMS. In general these objectives seek to:

- Reduce risks to as low as is reasonably practicable.
- Ensure all reasonably practicable steps are taken to identify the hazards and risks arising from operational activities on the Thames.
- Ensure conformance with our navigational safety and marine policies, associated operating controls and applicable port and marine legislation and non-statutory obligations.
- Periodically review data gathered from audits, inspections, incidents and any concerns raised to evaluate and determine where improvements and changes need to be made.
- Implement employee competence training and Navigational SMS awareness programmes.
- Encourage employees to become more involved and participate in continually improving our overall navigational safety performance.
- Facilitate port user involvement in the maintenance of the Navigational SMS and the overall improvement in the provision of navigational safety.
- Communicate PLA's ongoing efforts and achievements in facilitating navigational safety on the Thames to all stakeholders.
- Review the effectiveness of and continually improve the PLA Navigational SMS.

4.2 Initial Risk Assessment and Rolling SMS Action Plan

The report of the initial risk assessment, undertaken between October 1999 and May 2001, provided recommendations which, together with subsequent recommendations arising from both proactive and reactive reviews of hazards and risk control measures, form the Rolling SMS Action Plan.

Section 4.1 lists the generic navigational safety objectives on which the plan is based. The Rolling SMS Action Plan reflects these objectives and incorporates the outcome of subsequent risk assessments, reviews, NAP recommendations and safety associated recommendations, as approved by the NMT.

The overall purpose of the Plan is to collate all actions requiring to be implemented, to identify the person responsible, and to set target completion dates. The Plan also includes those departmental managers' targets affecting safety and arising from the annual review process.

The Rolling SMS Action Plan provides a tool for the continuous monitoring by management of all objectives and recommendations requiring implementation.

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Summary

In summary, the primary objective of PLA's Navigational SMS is the implementation of the Navigational Safety Policy. This is achieved by:

- Providing the organisation, arrangements and resources to manage marine activities safely;
- Recognising that people are PLA's most important asset; and
- Ensuring that due importance and priority are accorded to navigational safety issues.

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5.0 NAVIGATIONAL SMS DATA

5.1 PLA Safety Management Archive – HAZMAN

The HAZMAN database contains comprehensive details of all identified hazards, together with the associated risk control measures employed to mitigate those hazards. Both hazards and risk control measures have a designated 'owner'. All hazards are maintained within the system in ranked order, based on the outcome of the risk assessment process. This ranking structure will change with time as the hazards and risk controls continue to be reviewed, reassessed and rescored.

The archive also includes a comprehensive audit record, which documents the outcome of the scheduled proactive hazard review process, any incident review, and the addition of any new risk and its associated assessment. In each case the outcome of the review is recorded separately and includes:

- The action taken and recommendations made by the Harbour Master;
- Whether a Navigational Advisory Panel has been initiated;
- The names of those involved and their recommendations; and
- The subsequent decisions by NMT.

5.2 PLA Computerised Incident Database – PLACID

PLACID holds the details of all reported navigational safety incidents and other occurrences having significance to the maintenance of navigational safety. The inputs are provided by the district Harbour Master.

The day to day administration of both HAZMAN and PLACID is the responsibility of the SMS Administrator. In particular, the job-holder:

- Maintains, administers and interprets the HAZMAN database to ensure effective support to the marine departments;
- Maintains, administers and interprets the PLACID database to ensure the effective recording, availability and archiving of marine incident information;
- Constructs and presents HAZMAN and PLACID information and reports as required and in an effective and appropriate format, such that the overall navigational safety performance of the port may be reviewed and assessed.

Once a record has been initiated, additional information is included in respect of the outcome of the Harbour Master's initial regulatory investigation, and subsequently details of any follow-up disciplinary action and/or prosecution. The Harbour Master's findings and recommendations (if any) of his

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navigation safety investigation are also recorded in respect of the incident's impact on the Navigational SMS.

PLACID records also allow effective cross-referencing to the HAZMAN database, thereby prompting and recording an assessment of the hazard(s) and associated risk control measures relevant to an incident.

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6.0 RISK CONTROL MEASURES

The generic risk control measures employed by the PLA can be categorised as follows:

6.1 Documentary Risk Controls

- Regulatory Framework – Includes the Port of London Act, Byelaws & Directions.
- The provision and promulgation of accurate charts, tidal and other navigational information, navigation warnings and weather advice.
- Departmental Operational Manuals & Guidelines – See section 7.3.
- Process or task specific Operating Procedures – See section 7.3.
- Emergency Plans and Procedures – See section 6.3.7
- Notices to Mariners – General navigational and safety guidance and advice.
- Ship Information System – POLARIS. The PLA's main record of ship and cargo movements in the port.
- Formalised Training and Assessment – See Section 8 and the various departmental operational manuals.

6.2 Hardware Risk Controls

- Radars – A comprehensive network of interlinked radars providing effective coverage of tidal waters from the outer limits to Greenwich.
- VHF Communication – A marine radio network covering in whole of the tidal Thames, providing effective port communications for shipping, VTS, PLA and other regulatory craft and all river users.
- VTS System – PC based integrated traffic display system operated at the VTS Centres at Gravesend and Woolwich.
- Tide Gauges – A system of tide gauges located throughout the port providing live tidal information in support of the POLATIDE system.
- Aids to Navigation – Buoys, marks and lights etc. Those to the east of Sea Reach No. 1 maintained by Trinity House, those to the west by PLA Marine Services or other undertakers.
- Moorings/Anchorages – Short and long term anchorages and moorings located throughout the port. The continued relevance and utility of which are subject to ongoing review and assessment.

6.3 Departmental Risk Control Functions

6.3.1 Marine Conservancy

The Port Hydrographer has established an effective hydrographic survey programme for the tidal Thames to establish and confirm the depths of channels and fairways, and to inform the appropriate Harbour Master and port users of any shoaling, obstructions and/or new wrecks identified during

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survey work. A risk assessment is carried out on those new or repositioned wrecks, which pose a new or changed hazard. A procedure exists for acting on the findings of the wreck risk assessment.

Tide gauges are maintained throughout the Port to provide real time observations for safety of navigation and records on which to base predictions.

All hydrographic operations are managed through guidance contained in the Hydrographic Manual and international best practice.

6.3.2 Pilotage

All pilotage matters are the responsibility of the Pilotage Manager, who shall determine, by a continual process of risk assessment, the identification of safe boarding and landing areas and the safe transfer of pilots as required by the appropriate current regulations. The pilotage service provided is administered through best demonstrated practice and associated operational instructions and guidelines.

6.3.3 Vessel Traffic Services

Vessel Traffic Services (VTS) are provided throughout the PLA port limits. London VTS, through the Port Control Centre (PCC), Gravesend and the Thames Barrier Navigational Centre (TBNC), Woolwich monitors and manages vessel traffic within two separate areas of responsibility. These are:

- PCC Outer limits to Crayfordness
- TBNC Crayfordness to Teddington

The VTS Manager is responsible for the effective management of PCC and TBNC.

Guidance and instruction for operational and maintenance aspects of VTS, and the training and authorisation of VTS staff to internationally recognised standards, are addressed in the 'VTS Manual'.

6.3.4 Harbour Patrol

A regular harbour patrol is maintained in both districts with supporting administrative and regulatory functions to assist in the effective regulation and enforcement of navigational safety policy.

6.3.5 Marine Safety and Contingency Management

This central support function includes the administration of the vessel licensing regime, emergency and security planning (see Section 6.3.7) the maintenance of an appropriate regulatory framework, including the revision of byelaws, directions; and the publication and promulgation of navigational information and advice e.g. Notices to Mariners etc.

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6.3.6 Marine Services

The Marine Services Manager is responsible for the provision and maintenance of navigational buoys and lighthouses between Sea Reach No.1 and Teddington.

NB: Maintenance of other aids to navigation, including lights on berths is the responsibility of other undertakers. PLA monitors the reliability and availability of all such aids to navigation as the local lighthouse authority. Trinity House is responsible for the maintenance of aids to navigation within port limits to the east of Sea Reach No.1.

Marine Services additionally provide the District Harbour Masters with a limited capability to remove wrecks and obstructions and oil spill clearance. Such operations are managed through guidance contained in the Marine Service Manual, Oil Spill Contingency Plan and associated procedures.

6.3.7 Emergency Preparedness and Response

The PLA has established emergency response plans and procedures to address specific marine emergency incidents. Training exercises and seminars are programmed on an annual basis to familiarise and update staff on these emergency procedures and to exercise individual response actions. Appropriate Staff training and emergency exercise records are maintained.

6.3.8 Environmental Management

PLA maintains effective procedures and control measures designed to ensure that the potential impact on the environment is fully considered when planning or approving commercial and recreational activities within the port.

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7.0 SYSTEM OPERATION AND CONTROL

7.1 Navigational SMS Review Processes

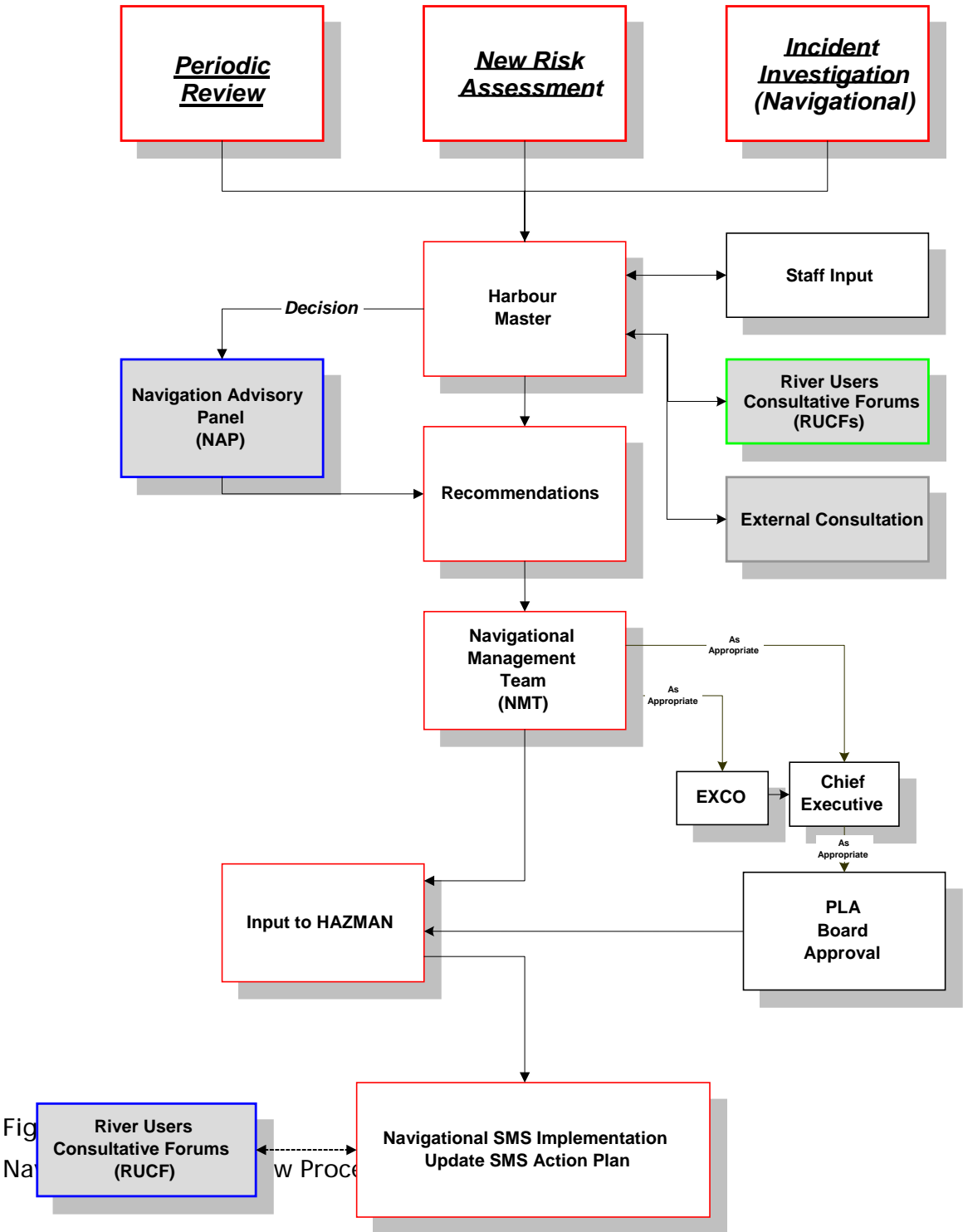
The identification and assessment of navigational hazards is central to the effective maintenance of the Navigational SMS. The PLA uses HAZMAN as the basis for its continuing review of both new and existing hazards and their preventative control measures.

In reviewing identified hazards and risk control measures PLA management will involve PLA marine staff and practising port users as appropriate. It may also, on occasions, involve external specialist consultants.

The review of hazards and control measures are prompted by three circumstances:

- Planned, periodic, formal review of established hazards and risk controls, initiated by the HAZMAN software;
- Review of hazards and associated risk controls following an incident; and
- The identification and assessment of any potential hazards arising from changes to circumstances including the introduction of a new trade and/or marine operation.

The process used to implement, modify or develop the Navigational SMS is shown in Figure 4 overleaf.



7.1.1 Periodic Monthly Reviews – Proactive (NB: Shaded boxes = External Organisation(s))

The SMS Administrator schedules, in accordance with agreed criteria, the individual hazards and their associated risk control measures for ongoing review.

This schedule ensures that all currently identified hazards are reviewed over a four-year period, some more frequently than others. The individual

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periodicity of review is dependent upon the ranking of the hazard. The highest ranked hazards are reviewed six-monthly, the lowest four-yearly.

All hazards and risk control measures have been allocated an 'Owner', normally one of the two District Harbour Masters. The Owner is responsible for the review of each hazard and its risk control measures. The Harbour Master will undertake each review in consultation with staff members and other river users as appropriate.

7.1.2 Post-Incident Reviews – Reactive

Following a navigational incident, the District Harbour Master will undertake an initial investigation. This will establish whether there has been a failure to comply with PLA regulations, or internal procedures, and whether further regulatory action is warranted. The Harbour Master will also investigate the circumstances of the incident from a Navigational SMS perspective and establish whether there is a need to review the relevant HAZMAN hazard and its associated control measures. This review may involve appropriate staff and practising river users and, dependent upon the nature and outcome of the incident, the Harbour Master may convene a Navigational Advisory Panel.

7.1.3 New Risk Assessments

Whenever circumstances change to introduce activities into the port which are outside the existing scope of the Navigational SMS, the District Harbour Master will, in full collaboration with the relevant stakeholders, undertake a risk assessment of the intended operation. This process is likely to include the activation of a Navigational Advisory Panel.

7.2 Navigational SMS Recommendations

Any recommendations arising from the deliberations of the Harbour Master and his staff or a Navigational Advisory Panel will be passed to the NMT for consideration and approval. Following such approval, the SMS Administrator will record the outcome in the HAZMAN database (as appropriate) and any new or revised operational guidance will be put in place, accompanied by training as necessary. Planned implementation will be recorded in the Rolling SMS Action Plan.

ExCo will be informed as appropriate, of plans to develop or introduce new risk controls, together with any budgetary implications. Where appropriate, approval for change will be underpinned by a PLA Board debate and decision.

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7.3 Documentary Control

The document control procedure will be in accordance with the requirements of the PLA's Quality Management System.

All documents within the Navigational SMS are reviewed and approved, as appropriate, by the relevant Senior Manager(s) and the respective Line Manager prior to issue. Prior to approval the aforementioned shall ensure that:

- The correct issues of relevant documentation are available, where needed, by approved personnel.
- Obsolete copies have been removed.
- Changes and amendments to documents are reviewed and approved by the same personnel or department that carried out the original review and approval unless specifically designated otherwise.
- All controlled documents are issued in accordance with the abovementioned document control procedure, including the production of a master list.
- Documents subjected to minor change and amendments are only reissued after a practical number of changes have occurred to avoid unnecessary paperwork.

7.3.1 Manuals, Procedures and Operational Guidance

The cornerstones of PLA's Navigational SMS are the knowledge, skills and competence, underpinned by appropriate training, of individuals within the system. Operating controls in the form of departmental manuals, operating procedures and/or guidance notes reinforce this.

Departmental manuals provide direction and guidance on the core functions of the department. They also provide an overview of recruitment, training and, as appropriate, authorisation procedures and standards.

Operating Procedures and/or Guidance Notes are produced by function, as deemed necessary, to describe the activities to be carried out for each operational process or task, including any precautionary measures that need to be observed.

Operating Procedures and Guidance Notes may provide, where appropriate, the step-by-step instructions for all or any of the following:

- What activities are to be done
- In what sequence
- By whom
- When
- On what frequency
- What records and paperwork to prepare and/or retain

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Examples of consultation, involvement and communication employed by the PLA in the maintenance of the Navigational SMS include:

- Navigational Advisory Panels
- River User Consultative Forums
- Consultation Notices
- Pilots Operational Advisory Panel
- Pilot/VTS Working Group
- Byelaws and Directions consultation processes

7.5 Risk Assessment Standards

7.5.1 Methodology

The general risk assessment process used is based on that adopted by the International Maritime Organisation (IMO). This formal approach involves the following five sequential assessment stages, applied in appropriate depth:

- **Data gathering and familiarisation**
Review of the existing management structure, risk control arrangements, policies, procedures and operational functions.
- **Hazard Identification**
Identification of potential hazards and mapping of existing control measures.
- **Risk Analysis**
Consideration of the likelihood of identified hazardous incidents and their associated potential consequences, including prioritising of their risk factors.
- **Risk Assessment**
Comparison of risk factors with effectiveness of existing risk control arrangements, and subsequent determination of additional control measures.
- **Risk Control**
Judgement and endorsement of specific control measures to be implemented and managed through the Navigational SMS.

7.5.2 Risk Level Criteria

The resulting risk level from each identified hazard is determined by numerically comparing the potential severity of the consequences (against life, the environment, property and port business) and the likelihood of that hazard occurring.

Hazards are then ranked according to their numerically scored risk level. It is the principle aim of the ongoing hazard review process to actively manage the risk control measures associated with each hazard and attempt to reduce the level of risk, and therefore the ranked score, at each review.

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8 TRAINING

8.1 Competence Assurance

The competence assurance process is linked directly to considered personnel selection and recruitment procedures, relevant job descriptions and appropriate pre-determined recruitment selection criteria.

Typically, the process comprises four stages:

Stage 1: Pre-Job

A person shall not be permitted to undertake work until the entry-level criteria have been satisfied. Entry-level requirements are normally defined within the relevant job description and vacancy notice.

Stage 2: Induction Training

All new staff, including any temporary personnel, will receive appropriate induction training. This will take the form of general induction training common to all new staff, followed by departmental induction training and operational briefings as appropriate. Relevant departmental managers are required to record that induction training has been completed.

Stage 3: Supervision and On the Job Training (OJT)

Once a person has been identified as suitable to fulfil a specific job function, that person will be placed under the supervision of a competent person, who will recommend when the person is considered competent. Alternatively, in certain cases, this period of supervision may take the form of On the Job Training, following which a formal assessment of competence is conducted.

Stage 4: Competence

A person may be considered competent once he/she has completed all necessary induction training, and has been assessed either by his/her supervisor, or by formal assessment on completion of OJT.

The principles of competence assurance are followed when recommending authorisation of a Pilot Exemption Certificate.

8.2 Marine Training

Training is a key element within the Navigational SMS. In order to ensure that personnel are properly trained, the principles of job analysis and training design are followed. In particular, the person responsible for marine training will:

- Identify operational and safety training needs;
- Establish a skills matrix of competency levels required for key tasks;
- Plan how training requirements are to be met and when;
- Establish a process to appraise the effectiveness of training.

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Marine Training Policy

In support of the Navigational SMS, the PLA has developed and maintains an internal Marine Training Policy, which is included at Annex A.

Training of Pilots

Responsibility for the development, provision and maintenance of the training of Authorised Pilots, Pilot Exemption Certificate Holders and Local Navigational Certificate Holders has been delegated by the NMT to the Pilotage Training Panel. The Terms of Reference for the Pilotage Training Panel is included at Annex A.

8.3 Safety Management Training

It is PLA policy that all senior managers and line-managers shall attend a Navigational Safety Management induction briefing to ensure that they are fully aware of the provisions of the Navigational SMS, and of specific roles and responsibilities assigned to them within this programme. The topics to be covered shall include:

- Overview of relevant PLA Byelaws, General and Pilotage Directions;
- Review of the Navigational Safety Policy;
- Outline of management and Operating procedures, and their provisions;
- Principles of individual accountability and responsibilities;
- Formal and informal procedural controls in place;
- Outline of response to emergencies and contingencies.

8.4 Task Changes

Changes to operational systems and/or safety critical tasks or activities may require will be considered when:

- Employees transfer to different operating functions, tasks or work locations, or where they are required to take on new responsibilities or to deputise for an employee performing a different activity.
- There is a significant change in the work equipment or risk management systems employed (*This may also require a re-assessment of the risks*).

8.5 Refresher Training

To ensure that staff remain abreast of developments and to prevent any decline in the level of competence and skills of either management or staff, relevant training and instruction shall be repeated periodically, as appropriate. This will ensure that continued competence and skill levels are

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maintained in accordance with required competence, pre-determined job requirements and/or risk control criteria.

8.6 Training and Competence Records

All training and instruction provided to employees will be duly recorded and kept in a secure file.

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9 PERFORMANCE MONITORING

The PLA performance-monitoring programme is designed to progressively improve navigational safety. By measuring key indicators, which reflect both the performance of the PLA and that of port and river users, appropriate measures can be adopted and introduced which further navigational safety.

9.1 Performance Measures

The following measures are used to monitor navigational safety and PLA performance:

- Facilitating the safety of navigation within the tidal Thames
 1. Number of safety incidents per 100 POLARIS movements
 2. Number of formal Harbour Master warnings issued
 3. Number of CHM prosecutions initiated (excluding pollution incidents)
 4. VTS system performance
 5. Non-availability of navigation lights and buoys above Sea Reach No.1
 6. Number of occasions when significant hydrographic information is not published within 24 hours.

- Respecting Environment of Tidal Thames
 1. Total number of reported pollution incidents
 2. Number of attributable pollution incidents, including safety incidents
 3. Number of prosecutions initiated.

The NMT reviews the Navigational SMS performance measures on a monthly basis. ExCo reviews all PLA performance measures on a quarterly basis.

9.2 Compliance Monitoring

The day-to-day monitoring of navigational safety management controls and provisions is measured and checked through departmental monitoring regimes using the criteria laid out in Section 4.

Evaluation of the level of compliance is achieved through:

- Proactive systems that monitor performance in relation to objectives and operating standards.
- Reactive systems, which investigate incidents and unwanted events.

9.2.1 Proactive Monitoring

The responsibility for conducting compliance monitoring lies primarily with departmental managers (NMT) and the Marine Services Manager. However,

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these managers must ensure that all levels of management are involved in the monitoring regime.

9.2.2 Reactive Monitoring

Incident Reporting and Investigation

The PLA wishes to create an environment within which all navigational incidents are reported. PLA River Byelaws require that a master provides a report to the Harbour Master should his vessel be involved in certain incidents. However, all are encouraged to report other incidents, for only by understanding the causes and avoidance measures adopted in all such circumstances can more serious incidents be avoided.

A dedicated River Users Incident and Near Miss Report Form has been made available for reporting incidents, near misses, hydrographic notes and information. The Form has been promulgated by Notice to Mariners and can be downloaded from both the PLA intranet and website.

Incident

In relation to the Navigational SMS an Incident is defined as:

‘Any unplanned event which causes, or is liable to cause, an undesirable outcome’.

The above definition encompasses:

- injury or death to one or more persons;
- damage to property (i.e. vessels, port infrastructure or aids to navigation);
- damage to the environment;
- damage to port business (i.e. financial loss or damage to the PLA’s or the Port’s reputation); or
- non-compliance with a statute or regulation.

Near Miss

Note that the inclusion of ‘liable to cause’ brings Near Misses into the definition of incident.

Examples of those to be considered include:

- Situations where a vessel needs to take unconventional avoiding action.
- A vessel passing another so close as to create a risk of collision or interaction.
- A vessel passing so close to shoal water as to create a risk of grounding.
- A vessel passing so close to a structure as to create a risk of contact.

The District Harbour Master is responsible for the investigation of navigational incidents, both from the Navigational SMS perspective (i.e. the cause\circumstance of the incident - see Section 7.1.2.) and in the regulatory sense (whether there has been a breach of PLA or other regulations).

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The requirements of the Navigational SMS and enforcement investigations may conflict. The PLA Enforcement Manual addresses this issue in detail.

In certain circumstances the Marine Accident Investigation Branch or Maritime and Coastguard Agency may become involved.

In such cases, the PLA will take a provisional view of any failings of the Navigational SMS and act upon them. A full appraisal of the final outcome of any external investigation (following the publication of any reports or the conclusion of any investigation, inquiry or prosecution) will subsequently be undertaken and any remaining issues considered at that time.

9.3 Records and Record Management

The SMS Administrator, in liaison with the appropriate Harbour Master and Information Systems support, is responsible for maintaining appropriate records in both HAZMAN and PLACID databases. Such records are to include a complete and accurate audit trail of the development and maintenance of the Navigational SMS.

The SMS Administrator submits quarterly reports to the Marine Administrative Support Manager in this respect and ensures that all such records are available for inspection, as and when required.

In addition, departmental managers are responsible for identifying any supplementary records they require to keep, and for establishing the necessary procedures and/or guidance notes for keeping and retrieving these records, as related to their areas of responsibility. All supplementary records kept shall also be made known to the SMS Administrator for information and/or use if required.

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10 AUDIT AND REVIEW

The auditing process of the Navigational SMS requires an assessment of continuous development and improvement and its responsiveness to events and changing circumstances.

In order to comply with the requirements of the PMSC, all formal internal audits of the SMS will be conducted by the person appointed 'Designated Person' by the PLA Board.

10.1 Audit

10.1.1 Objectives

Audits are conducted to achieve the following objectives:

- To determine if the Navigational SMS is being operated in accordance with the PLA's Navigational Safety Policy and, the provisions of the PMSC.
- To monitor the overall effectiveness of the system.
- To identify and implement ways of improving overall performance.
- To confirm that relevant procedures are understood and being actioned by those involved.

The overall objective is to implement systematic, independent, audits to support the continuous improvement in navigational safety performance.

10.1.2 Independent Audits by the Designated Person

The 'Designated Person' shall undertake periodic audits/reviews of the Navigational SMS for the purpose of assessing the following:

- The continued provision of an appropriate and effective Navigational SMS.
- The PLA's ongoing, overall compliance with the requirements of the Port Marine Safety Code.

10.1.3 ISO Audits

The overall PLA management system is subject to and has been certified ISO 9001:2000 compliant. Accordingly, the PLA processes which contribute to the management of navigation are subject to internal and external (LRQA) ISO audit in order to confirm they continue to comply with the ISO standard.

10.2 Ongoing Reviews

Reviews of SMS performance are carried out by the NMT as follows:

- **Monthly** - to review individual navigational incidents and any developments to the SMS arising from such incidents, and an appraisal of progress in implementing the Rolling SMS Action Plan;

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- **Six-monthly** – to analyse and consider any trends in navigational incidents and to review navigational and associated Performance Measures;
- **Annually** – to consider the overall performance of the SMS during the period (NAPs, incident record, hazard review performance), and to reflect on any major developments (e.g. serious/major incidents and their outcome, enforcement history, major regulatory changes);
- **Periodic External Audit** – to submit to an external audit of the SMS and compliance with PMSC every three to five years;

10.2.1 Review of relevant external information

1. Sunk Area

Details of navigational incidents in the Sunk Area will be passed to the PLA by Harwich Haven Authority VTS on behalf of the MCA. These incidents will be reviewed approximately 6 monthly by the Sunk VTS Working Group and issues will be passed to NMT as appropriate to determine any relevance for the PLA SMS, and in particular for pilotage and VTS procedures.

2. MAIB Safety Digest and Incident Reports

The PLA receives copies of each published MAIB Safety Digest. The Harbour Master (SMS) reviews each issue to identify any reported incidents, which impact or have the potential to impact upon the PLA's navigational SMS. All such incident summaries are then circulated to all marine managers for information/action, and where appropriate, considered formally by the NMT with a view to taking any necessary action, including the promulgation of any lessons learned.

In addition, the Harbour Master (SMS) assesses the synopsis of all published MAIB Incident Investigation Reports, and where appropriate and potentially relevant to the navigational SMS, the Reports, including lessons learned and/or consequences are reviewed formally by NMT.

3. Other Publications and Reports

The same process will be applied to any other relevant publications and reports, of which the PLA becomes aware.

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Annex A

PLA Navigational Safety Policy & Supporting Marine Policies

NAVIGATIONAL SAFETY POLICY

The Port of London Authority (PLA) has a primary responsibility to facilitate the safety of navigation on the tidal Thames. To this end, it is Board policy that the PLA shall:

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- Maintain an effective navigational Safety Management System based on a continuing, formalised assessment and mitigation of risk in consultation with river users;
- Review regularly the effectiveness of, and if necessary seek amendments to, its legal powers, Byelaws and Directions in respect of navigational safety;
- Monitor and manage vessel traffic within the VTS Area through the provision of an Information Service, a Traffic Organisation and a Navigational Assistance Service;
- Provide an appropriate level of pilotage services in accordance with the Pilotage Act 1987;
- Make and publish hydrographic surveys;
- Undertake maintenance dredging as appropriate;
- Remove sunken vessels and other obstructions that are, or may become, an impediment to safe navigation;
- Ensure the provision of necessary aids to navigation within port limits to the west of Sea Reach No.1 Buoy and maintain a close liaison with Trinity House in respect of the other aids which Trinity House maintains within PLA port limits to the east of Sea Reach No1 Buoy;
- Promulgate effectively navigational, tidal and other relevant information to all port and river users;
- Provide effective management and co-ordination in respect of the PLA's response to emergency incidents within its area of jurisdiction;
- Consult widely with port and river users and other relevant stakeholders in respect of navigational safety issues and proposed changes to navigational arrangements;
- Verify the fitness for purpose of licensed commercial vessels by inspection, and where appropriate, define and enforce minimum crew competencies;
- Ensure, through risk assessment that the licensing of river works takes due regard of the safety of navigation.

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VTS POLICY

In order to provide for safe navigation in the Thames, it is necessary to ensure that:

- an effective Vessel Traffic Service (VTS) operates throughout the port; and
- positive control of navigation is maintained in the vicinity of the Thames Flood Defence Barrier.

To this end it is Board policy that the PLA shall:

- Operate a 24-hour Vessel Traffic Service at the Gravesend PCC and Woolwich TBNC stations in accordance with its published Navigational Safety Policy;
- Provide a Traffic Information Service between the seaward limit of the VTS Area and Teddington Lock, a Traffic Organisation Service between the seaward limit of the VTS Area and London Bridge and a Navigational Assistance Service between the seaward port limit and Greenwich.
- Maintain VHF communication with all vessels of over 13.7 metres in length within its area of responsibility;
- Seek to ensure that the PLA VTS system operates at 99.9% availability;
- Review regularly the performance of the system and seek improvements through technical enhancement, staff development, training and effective management as necessary;
- Maintain standards for training and certification of VTS personnel in line with IALA recommendation V-103;
- Formally authorise all VTS personnel qualifying to the required IALA standard;
- Record all relevant radar video, VHF and telephone communications as an aid to enforcement and incident reconstruction and investigation; and
- Maintain comprehensive details and records of commercial vessel movements in the port using the POLARIS database.

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PILOTAGE POLICY

The Port of London Authority (PLA) is a Competent Harbour Authority (CHA) within the meaning of the Pilotage Act 1987 and publishes Pilotage Directions. The Port of London Pilotage Directions define the London Pilotage District and the requirements for compulsory pilotage within it. They also lay down regulations under which Pilotage Exemption Certificates (PECs) are issued and administered in that District.

PLA Board policy in respect to pilotage is to:

- Ensure that the operation of the pilotage service is compliant with national regulations, guidelines and competency standards;
- Keep under review its Pilotage Directions to ensure that they based on formal risk assessment and are fully in accord with the current navigational safety management system;
- Maintain a competent and authorised pilotage force;
- Maintain a fully supported Pilotage Service, able to respond to all properly notified pilotage requirements;
- Keep the means of boarding and landing pilots under review to ensure that these operations are always undertaken as safely as possible;
- Administer the PEC system to ensure that all PEC applicants and holders fully meet the requirements laid down in Pilotage Directions.

02.09.08

HYDROGRAPHIC POLICY

The safety of navigation is dependent upon the provision of relevant, up to date hydrographic information, delivered in a form most appropriate to each sector of the wide spectrum of port and river users.

To this end it is Board policy that the PLA shall:

- Undertake such hydrographic surveys as are necessary for safe and efficient navigation within port limits;
- Carry out a managed programme of hydrographic surveys of the bed of the Thames from the landward limit to the seaward limit and bounded by the Mean High Water line;
- Set and maintain programmes, standards and specifications for PLA hydrographic services, including the competency, training and continued professional development of appropriate personnel;
- Provide port and river users with up-to-date, timely and accurate hydrographic information, where appropriate, on a commercial basis;
- Provide continuous, timely and accurate tidal data;
- Maintain hydrographic and tidal information;
- Maintain a close liaison with, and provide relevant data to, the United Kingdom Hydrographic Office;
- Represent the PLA's hydrographic interests nationally and internationally.

02.09.08

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ENFORCEMENT & PROSECUTION POLICY

The Port of London Authority (PLA) is responsible under the Port Marine Safety Code for the effective enforcement of its regulations, which are adopted in order to assist in managing the safety of navigation within the port. In this Policy, enforcement comprises the promulgation of regulation and guidance, effective surveillance, incident investigation, and where appropriate formal warning and prosecution.

Where appropriate, and where empowered to do so, the PLA will prosecute offenders for committing criminal offences, including those set out in the Port of London Act 1968 (as amended), the Merchant Shipping Act 1995 and in ancillary regulations and byelaws.

To this end, it is Board policy that the PLA shall:

- Maintain through regular reviews, an effective regulatory framework, which is integrated with relevant national legislation and includes local regulation resulting from risk assessment, or as otherwise made necessary;
- Ensure that PLA regulations and associated guidance are widely promulgated;
- Develop and maintain effective enforcement procedures, which comply with relevant national legal requirements and guidelines;
- Develop and maintain effective investigation procedures for use in the event of a navigational incident, which support PLA enforcement procedures, but also meet the requirements of the navigational Safety Management System in respect of identifying and promulgating any 'lessons learned';
- Ensure that all staff involved in an incident investigation, or who are required to follow PLA enforcement procedures, receive effective and relevant training;
- Maintain an effective surveillance and spot check regime, to monitor compliance with, and detect breaches of, relevant national and PLA regulations;
- Respond to breaches of regulation, where justified by the evidence and other circumstances, by the use of formal warnings and legal prosecution;
- When bringing prosecutions observe the Code for Crown Prosecutors and evidential Codes in so far as appropriate;
- Manage the progress of enforcement activities, including incident investigations and prosecutions, and the maintenance of appropriate records.

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MARINE TRAINING POLICY

Appropriate and effective training and the associated competence of marine operations personnel are essential elements in the facilitation of navigational safety.

To that end, and in compliance with the requirements of the Port Marine Safety Code (PMSC), the Port of London Authority (PLA) shall:

- Adopt the competence standards for marine personnel associated with the PMSC or demonstrate that any standards adopted as an alternative are fully equivalent;
- Ensure that adequate resources are made available to maintain the established standards of competence and training;
- Assess the suitability of all persons appointed to positions with responsibility for safety of navigation to ensure the required competence standards are met;
- Establish and maintain an appropriate and effective ongoing schedule of marine operational training for PLA staff;
- Promote the involvement of port users in the PLA training programme as necessary;
- Ensure that all marine based (PLA) staff are appropriately trained and qualified for the tasks they are likely to perform;
- Facilitate and encourage exchange training and familiarisation between different marine operational disciplines as required;
- Establish and maintain an effective ongoing schedule of emergency management and response training and exercises;
- Establish a regular review and assessment programme for all PLA marine training to ensure that standards are maintained. In particular that training is appropriate, relevant, cost effective and meets operational staffing requirements;
- Ensure that appropriate training records are maintained.

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PILOTAGE TRAINING PANEL

Terms of Reference

Introduction

Within the scope of the port's navigational Safety Management System (SMS) the following Pilotage Policy applies.

Pilotage Policy

The Port of London Authority (PLA) is a Competent Harbour Authority (CHA) within the meaning of the Pilotage Act 1987 and publishes Pilotage Directions. The Port of London Pilotage Directions define the London Pilotage District and the requirements for compulsory pilotage within it. They also lay down regulations under which Pilotage Exemption Certificates (PECs) are issued and administered in that District.

PLA Board policy in respect to pilotage is to:

- Ensure that the operation of the pilotage service is compliant with national regulations, guidelines and competency standards;
- Keep under review its Pilotage Directions to ensure that they based on formal risk assessment and are fully in accord with the current navigational safety management system;
- Maintain a competent and authorised pilotage force;
- Maintain a fully supported Pilotage Service, able to respond to all properly notified pilotage requirements;
- Keep the means of boarding and landing pilots under review to ensure that these operations are always undertaken as safely as possible;
- Administer the PEC system to ensure that all PEC applicants and holders fully meet the requirements laid down in Pilotage Directions.

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In order to support and achieve, where appropriate, the requirements of this policy, the Pilotage Department has established a Pilotage Training Panel (PTP), which reports, through the General Manager (Pilotage), to the PLA's Navigational Management Team. The Terms of Reference of the PTP are approved (and reviewed on a regular basis) by NMT and are laid out below.

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Terms of Reference

The PTP is responsible to NMT for ensuring that the PLA maintains and delivers an appropriate, effective and robust system of training of Authorised Pilots, Pilotage Exemption Certificate Holders and Local Navigation Certificate Holders.

In order to meet its remit, the PTP will establish and undertake the following:

Authorised Pilots

In respect of the training regime for Trainee and Authorised Pilots:

- Keep under review the UK Pilots National Occupational Standards and training requirements;
- Utilising the National Occupational Standards as necessary, formulate, adopt and maintain an appropriate training syllabus for PLA Authorised Pilots (at all grades from Trainee Pilot to Class 1 Unrestricted);
- Formulate, adopt and maintain appropriate training syllabi for PLA Authorised Pilots undertaking specific pilotage duties i.e. Inner List Pilot, Berthing Pilot, River Pilot, Pilot Examiners and Pilotage Simulator Trainers; and
- Establish and maintain effective and robust examination and assessment regime for Authorised Pilots.

The training regime will include both in-house training and external courses as the PTP deems necessary to achieve its aims.

Pilotage Exemption Certificate (PEC) Holders

PEC training requirements are as set out in the current PLA Pilotage Directions and as referenced in the Port Marine Safety Code and its associated Guide to Good Practice. In respect of the training regime for PEC Applicants and Holders:

- Formulate, implement and maintain additional training and certification requirements for PEC Holders for vessels greater than 160m loa; and
- Establish and maintain effective and robust examination and assessment regime for PEC Applicants and Holders; and
- Keep the rules and regulations for the administration and use of PECs under regular review, ensuring that they remain current and relevant to, as appropriate, the Authorised Pilot training syllabus and regime.

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Local Navigation Certificate (LNC) Holders

In respect of the training and assessment regime for LNC Holders and Applicants:

- Keep the rules and regulations for the administration and use of Local Navigation Certificates under regular review, ensuring that they remain current and relevant to, as appropriate, the Authorised Pilot and PEC training syllabus and regimes.

The PTP will also:

- Seek NMT endorsement of any changes to or development of the identified training, examination and assessment syllabi and regimes;
- Establish and maintain an appropriate and effective ongoing schedule of Pilot, PEC Holder and LNC Holder training, examination and assessment in order to meet operational and river users needs;
- Ensure that appropriate training, examination and assessment records are maintained for all areas under its remit;
- Submit a quarterly Training Report to NMT, providing a summary of all training, examination and assessment undertaken in the previous quarter; the results of that training, examination and assessment; and highlighting any particular trends or issues and what steps are proposed to address any shortcomings or adverse trends or failings;
- Oversee all aspects of Pilotage Simulator training; including trainee reviews, assessments, tripping administration and monitoring conducted by assessing pilots and examiners;
- Establish and maintain procedures to facilitate the periodic re-validation of Pilots' Authorisations, and PEC and LNC renewals;
- Determine anticipated training and assessment costings ahead of each annual budget round and present the required documentation as appropriate to the General Manager (Pilotage)
- Contribute to the maintenance of the PLA's regulatory framework by the periodic review of PLA Pilotage Directions and Regulations, and General Directions as they apply to provision of pilotage and local navigation services and associated training, and submit any proposals for change to NMT as necessary; and
- Produce proper records of meetings and maintain a robust audit trail of decisions.

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The PTP will comprise the following members:

- Pilotage Resources Manager (Chairman);
- 2 x Simulator Instructors; and
- 1 x Pilot Examiners.

The Simulator Instructors and Pilot Examiners will be Class 1 Unrestricted Pilots. Additional members may be invited onto the Panel on a temporary basis, as necessary, in order to assist with specialist advice and support.

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Annex B

PLA Consultation Policy

CONSULTATION POLICY

Both the Guide to Good Governance and the Port Marine Safety Code emphasise the importance of effective consultation by all ports with all stakeholders and beneficiaries. This includes all those who work in the port or use the tidal Thames in some way, as well as those that represent them.

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It is therefore Board policy, that the PLA shall publish matters of relevance to, and encourage comment and contribution from, stakeholders and beneficiaries.

In particular, the PLA shall:

- Consult as early as is practicable with stakeholders and beneficiaries when changes to PLA legislation and policy are being considered;
- Include appropriate PLA staff in the consultation process;
- Maintain an effective consultation mechanism with appropriate stakeholders and beneficiaries on safety and other operational issues;
- Include appropriate practising port and river users in the ongoing work to identify navigational hazards, assess the risk of such hazards and recommend appropriate control and mitigation measures;
- Provide regular feedback on the Authority's performance, in particular its compliance with the Port Marine Safety Code, to all stakeholders and beneficiaries;
- Publish an annual review of PLA activity and achievements.

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Annex C

Marine Delegation of Authority

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Marine Delegation of Authority

The PLA is a Statutory Harbour Authority under the Harbours Act 1964 and a Competent Harbour Authority under the Pilotage Act 1987. Certain powers are also granted to the Authority under the Merchant Shipping Act 1995 and other legislation. The PLA is subject to the requirements of the Port Marine Safety Code.

The Port Marine Safety Code identifies the PLA Board, collectively, as the 'duty holder' and as such members are accountable, and therefore responsible for ensuring that marine operations within the port are managed safely and efficiently. The Board fulfils these requirements by ensuring that all statutory and operational responsibilities for marine safety are clearly assigned and has delegated the statutory and operational responsibilities as in Appendix B. Where appropriate, responsible officers have further delegated responsibilities to deputies and/or assistants. Individual responsibilities in respect of marine operations have been formally acknowledged in writing through the acceptance and signature of specific job descriptions.

Officers to whom those responsibilities are entrusted are accountable for their performance.

STATUTORY AND REGULATORY DELEGATIONS

POST	DELEGATED RESPONSIBILITY/FUNCTION	POWERS / DUTIES	RELEVANT LEGISLATION/CODES
Chief Harbour Master	Harbourmaster	Appointed Harbourmaster by the Port Authority Initiation of prosecution Prosecution under the Pilotage Act Decision to initiate maintenance dredging	PL Act - s 5 - Pilotage Act 1987 PL Act - s 60
Harbour Master (Lower)	District Harbourmaster	Appointed District Harbour Master Power to give special directions Restricting public use of the Thames Removal of wrecks Raise and remove sunken vessels Removal of obstructions Removal of projections Repair of landing places/embankments Identity of vessel Master Power as a Local Lighthouse Authority Surrender of local lighthouses Lights detrimental to navigation Refuse/revoke craft registration Removal of vehicles Restrictions on transfer of oil at night Power to prosecute for oil pollution offences Power to detain for oil pollution offences Control of Dangerous Vessels Control of the movement of dangerous substances	PL Act - s 5 PL Act - s 112 PL Act - s 91 Merchant Shipping Act 1995 - s 252 PL Act - s 120 PL Act - s 121 PL Act - s 122 PL Act - s 123 PL Act - s 138 Merchant Shipping Act 1995 - s 201 Merchant Shipping Act 1995 - s 204 PL Act - s 133 PL Act - s 128 PL Act - s 177 Merchant Shipping Act 1995 - s 135 Merchant Shipping Act 1995 - s 143 Merchant Shipping Act 1995 - s 144 Dangerous Vessels Act 1985 Dangerous Substances in Harbour Areas Regulations 1987. PL Act - s 149

POST	DELEGATED RESPONSIBILITY/FUNCTION	POWERS / DUTIES	RELEVANT LEGISLATION/CODES
	Explosives Security Officer	Control of the movement of explosives	Dangerous Substances in Harbour Areas Regulations Aviation & Maritime Security Act 1990. Ro-ro Freight Code.
Harbour Master (Upper)	District Harbourmaster	As for HM(L) – see above	*Except control of the movement of dangerous goods and explosives.
		Work sluices at Richmond Lock	PL Act - s 88
Pilotage Manager	Pilotage Manager	Provision of pilotage services	Pilotage Act 1987
VTS Manager	VTS Manager	Provision of vessel traffic service systems	
Port Hydrographer	Port Hydrographer	Provision of hydrographic surveys	PL Act - s 7
Harbour Master (Safety Management System)	Harbour Master (Safety Management System)	Act as 'Designated Person'	Port Marine Safety Code
	Port Security Officer	Implementing Port Security Plan. Conducting security inspections	Aviation & Maritime Security Act 1990. ISPS Code Ro-ro Freight Code

POST	DELEGATED RESPONSIBILITY/FUNCTION	POWERS / DUTIES	RELEVANT LEGISLATION/CODES
Marine Surveyor	Marine Surveyor	Inspection and licensing of vessels	PL Act - s 124 & 126
		Replacement of inaccurate and lost certificates	PL Act - s 130
An 'Officer' of the Authority (All authorised personnel)	'Officer' of the Authority	Power to board a vessel	PL Act - s 137
		Power to give special directions	PL Act - s 112
Licensing Officer	Licensing Officer	Issue of licences for river works including maintenance dredging.	PL Act - s 66 PL Act - s 73
		Permission to dig on the foreshore *	PLA River Byelaw 57
Marine Services Manager	Marine Services Manager	Raise and remove sunken vessels (not to declare obstruction).	PL Act - s 120
		Removal of obstructions	PL Act - s 121
		Removal of projections	PL Act - s 122
		Removal of vehicles	PL Act - s 177
Civil Engineer	Chief Engineer	Repair of landing places/embankments	PL Act - s 123
River Regime and Environmental Manager	River Regime and Environmental Manager	Commissioning and project managing capital and maintenance dredging.	-
		Monitoring compliance with and developments in national and European legislation relevant to dredging and river regimes.	Habitats Regulations 1994 Harbour Works (EIA) Regs 1999 EC Shellfish Waters Directive Water Framework Directive

POST	DELEGATED RESPONSIBILITY/FUNCTION	POWERS / DUTIES	RELEVANT LEGISLATION/CODES
Licensing Committee	Licensing of River Works	Granting river works licences	PL Act - s 66
	Licensing of Dredging	Granting of licence to undertake maintenance dredging.	PL Act - s 73
	Pilotage	Authorising pilots and Pilotage Exemption Certificate Holders.	Pilotage Act 1987
		Suspension and revocation of Pilotage Exemption Certificates.	Pilotage Act 1987
		Re-issue of Pilotage Exemption Certificates.	Pilotage Act 1987
		Re-authorisation of pilots.	Port Marine Safety Code
	Land Use Planning	Granting PLA or lessees exemption from planning controls under certain circumstances.	Town & Country Planning (General Permitted Development) Order 1995.
Board/Licensing Committee	Capital Dredging	Decision to undertake capital dredging	Full scope of legislation to be identified.

- Notes: 1. * Presently lies with CHM.
2. The Marine Services Manager is the Nominated Person for the storage of petroleum at Denton Wharf. (Local authority requirement).

Annex D

SMS Information Notes

NAVIGATIONAL SAFETY MANAGEMENT SYSTEM**INFORMATION NOTE No. 1****The Navigational Safety Management System****Introduction**

The Port of London Authority (PLA), as the Statutory Harbour Authority for the tidal Thames, is responsible for the management of navigational safety in the Port of London. It is obliged, under the requirements of the Port Marine Safety Code (the Code) to maintain a navigational safety management system (SMS) based on formal risk assessment. In simple terms the Code requires the PLA to assess what incidents may happen, take reasonable precautions to prevent such incidents happening and keep appropriate records. The Code requires that risks should be managed so that they are reduced to as low 'as reasonably practicable' (ALARP). This proactive management of risks must be recorded and is subject to continual review and formal audits.

As with any Safety Management System the personnel involved in it need to have their roles clearly defined. This extends from the highest levels of authority down through all levels of management and to the staff. Everybody in the "team" needs to know what is expected of them and how to meet that expectation.

Navigational Safety Policy

The PLA's Navigational Safety Policy and complementary Marine Policies define the organisation and arrangements that the PLA has established to monitor, promote and proactively manage the conduct of navigation and associated marine activities. These policies are key components of the navigational SMS.

The Navigational SMS

The main provisions of the PLA navigational SMS are set out in this, and in the three other accompanying SMS Information Notes. They describe, at a high level, the overall framework for the management and co-ordination of marine activities necessary for the effective facilitation of navigational safety.

Navigational SMS procedures and guidelines fulfil the requirements of the Code including, but not limited to the following:

- Identifying hazards to navigation and ensuring such hazards are mitigated to acceptable levels.
- Making risk control the basis of all marine activities, procedures and regulations applied to or required of port users.
- Using risk assessment to identify the requirement for navigation aids.
- Applying risk assessment to all harbour works, wrecks and obstructions.
- Periodically reviewing the provision of safe anchorages.
- Maintaining systems to implement the findings of risk assessments.
- Identifying and designating safe pilot boarding and landing areas.
- Reporting deficiencies on visiting vessels.
- Regulating the use of harbour craft and ensuring powers are sufficient to govern the mooring of vessels.
- Maintaining and developing a competence based PLA training scheme to support delivery of all marine functions. This includes cross-training with tug crews.
- Maintaining appropriate plans and procedures for emergency response and associated training\exercises.
- Using verification\audit systems.

The PLA undertakes a formal review of how it meets the requirements of the Port Marine Safety Code every three years.

Hazard Database

All currently identified hazards to navigation are maintained in a dedicated management software programme. This database contains comprehensive details of all identified hazards, together with the associated risk control measures employed to mitigate those hazards. All hazards are maintained within the system in ranked order, based on the outcome of the risk assessment process. This ranking structure changes with time as the hazards and risk controls continue to be reviewed, reassessed and rescored.

Incident Database

The PLA also maintains a comprehensive record of all reported navigational incidents. The system holds the details of all reported navigational safety incidents and other occurrences having significance to the maintenance of navigational safety. The inputs are provided by the district Harbour Master.

Once a record has been initiated, additional information is included in respect of the outcome of the Harbour Master's regulatory investigation, and subsequently details of any follow-up disciplinary action and/or prosecution. The Harbour Master's findings and recommendations (if any) of his navigational safety investigation are also recorded in respect of the incident's impact on the Navigational SMS.

END

NAVIGATIONAL SAFETY MANAGEMENT SYSTEM**INFORMATION NOTE No. 2****The PLA Board and Navigational Management Team****Introduction**

The Port of London Authority (PLA), as a statutory Harbour Authority, is responsible for the management of navigational safety in the Port of London. It is obliged, under the requirements of the Port Marine Safety Code (PMSC) to maintain a navigational safety management system (SMS) based on formal risk assessment.

PLA Board

Whilst the PLA involves port users and practitioners in continuing to develop and maintain the SMS, it is the PLA Board (as Duty Holder), which has ultimately responsible for navigational safety in the port.

The PLA Board delegates the statutory powers of the Harbour Master and responsibility for day to day navigational management decisions to the Chief Harbour Master, who in turn is supported by six specialist marine departments i.e.:

- Pilotage
- Vessel Traffic Services
- Harbour Master (Lower)
- Harbour Master (Upper)
- Hydrographic Services
- Marine Safety and Contingency Management

Navigational Management Team

These departmental managers, together with the Chief Harbour Master (CHM) form the PLA's Navigational Management Team (NMT). NMT has a broad remit in respect of the management of marine operations. Its Terms of Reference are summarised below.

1. Manage marine operations and implement conservancy measures in accordance with PLA policies as approved by the Board.
2. Review and take appropriate action in respect of:
 - all safety incidents and navigational occurrences, and the associated recommendations of the investigating Harbour Master and/or the subsequent Navigational Advisory Panel;
 - any identified trends in the nature or frequency of safety incidents and navigational occurrences;
 - the programmed assessment of hazards and associated risk control measures; and
 - the outcomes of any navigational, environmental or marine operations risk assessments.
3. Develop for approval by the Board where appropriate, draft strategy, policies, plans and budgets in respect of navigational and conservancy issues and marine operations.
4. Oversee the regular review of PLA's marine regulatory and enforcement framework in order to ensure its continuing fitness for purpose.
5. Monitor the development of operational procedures, guidelines, recommendations or "lessons learned" arising from (local or national) incident investigations and programmed reviews of hazards and risk control measures.
6. Monitor navigational safety performance measures.
7. Continue to develop and expand the PLA's understanding of the river and estuarine environment and use this knowledge to manage marine operations in accordance with best environmental practice.
8. Keep under review best national practice as prescribed in the PMSC Guide to Good Practice and to ensure compliance within the PLA where appropriate.

END

NAVIGATIONAL SAFETY MANAGEMENT SYSTEM**INFORMATION NOTE No. 3****Public Consultation****Introduction**

A key element of the port's Navigational Safety Management System (SMS) is the need to involve port users, practitioners and other interested parties in the management of navigational safety. This includes the regular review and maintenance of the Port of London Authority (PLA) regulatory framework. This framework: byelaws, directions, codes of practice, and supporting guidance and information forms the basis of the control and regulation of navigation and marine operations in the port. These rules and advice are shaped by and directly related to the formal risk assessment of navigational safety on which the SMS is founded.

The Consultation Process

All the PLA's local rules, codes of practice and guidance are reviewed on a rolling three-year cycle. This helps to ensure that the regulatory framework remains current, fit for purpose and relevant to port operations and the trades and vessels using the port. Operating procedures are kept under constant review and proposals for change or development made when prompted by such issues as changing trade patterns, navigational incident or events.

Once the PLA Navigational Management Team has agreed the basic form of its proposed changes, it will seek the views of port users through a Safety of Navigation Consultation Notice. These notices provide details of the reasons for the proposed changes, identify the change and any impact they may bring.

Where general guidance or, say, a code of practice is subject to review, we may simply ask for views as to whether the code content remains current and appropriate, and seek suggestions for amendments and/or enhancements. Most consultation periods normally run for at least 6 weeks and details are sent direct to appropriate practitioners and users in hard copy or preferably by e-mail, and

posted on the PLA website. When PLA byelaws are being reviewed, this informal consultation will always be followed by the statutory formal public consultation administered by the Department for Transport.

Consultation feedback is usually channelled through a central point of contact identified on the Consultation Notice, and we will always acknowledge receipt of your input. Once the consultation period has closed, the appropriate marine manager(s) within the PLA will review the comments and suggestions and consider what changes are appropriate to be made to the draft proposals.

A matrix will then be produced detailing the points raised in the consultation and the PLA's response to them, including any changes or developments of the proposals. The feedback matrix will then be copied to all those that responded and also posted on the PLA website. The PLA's Navigational Management Team will always endorse the final proposals and the PLA's position. All new/changed regulations - byelaws and directions are also approved by the PLA Board.

END

NAVIGATIONAL SAFETY MANAGEMENT SYSTEM**INFORMATION NOTE No. 4****Navigational Advisory Panels****Introduction**

The Port Marine Safety Code requires port authorities to liaise with and involve local practitioners, port users and other interested parties in the management of marine operations and navigational safety in the port, i.e. the development and maintenance of the port's navigational Safety Management System (SMS).

Navigational Advisory Panels

In London, we have established the concept of a Navigational Advisory Panel (NAP) to fulfil part of this requirement. NAPs are ad-hoc groups convened usually, but not exclusively, by the District Harbour Master to consider a particular issue or incident within the SMS.

The Harbour Master will normally request the involvement of a range of practitioners, river users and specialists, relevant to the matter to be considered. The Panel may meet only once, or more times as may be required to meet its Terms of Reference.

NAP Terms of Reference will be set by the PLA's Navigational Management Team (NMT) and each NAP will be asked to submit its recommendation to the NMT for consideration by the PLA.

NAPs have been held to consider a wide range of issues including:

- Post incident investigation
- Un-scheduled review of navigational hazards
- Development of codes of practice or operational guidance
- Other specific matters such as the review of the impact of navigational safety of a new trade or issues surrounding navigation in a particular area, such as through bridges or the transit of large vessels through the Thames Barrier.

END