



SHETLAND

ISLANDS COUNCIL

Marine Safety Management System (2023)

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Shetland Islands Council

Marine Safety Management System

The Shetland Islands Council (SIC) 'Marine Safety Management System' provides the foundation for ensuring individual SIC ports consistently and appropriately address the requirements of the Department for Transport (DfT) 'Port Marine Safety Code' (the Code). This document has been prepared using the latest version of the Code published in November 2016 and the accompanying Guide to Good Practice (the Guide), published in February 2018.

The SIC Marine Safety Management System (MSMS) describes how SIC marine policies are designed and implemented. This document is supplemented with local MSMS documents for Sullom Voe, Scalloway and Small SIC Ports which detail specific operational manuals and plans.

Issue	Date	Prepared By	Checked By	Checked by	Revision Approved By Duty Holder
1.0	January 2013	ABPmer: Monty Smedley Project Manager	ABPmer: Claire Brown Project Director	Designated Person: Capt. Trevor Auld	Review copy
1.1	September 2013	ABPmer: Monty Smedley Project Manager	P M Morgan Deputy Harbour Master	C Reeves Harbour Master	11 October 2013
2	June 2015	S Skinner Port Safety Officer	P M Morgan Acting Harbour Master	M Irvine Pilot	28 August 2015
3	December 2018	P Bryant Deputy Harbour Master	S Skinner Port Safety Officer	G Maitland Harbour Master	27 May 2019
4	October 2019	S Skinner Port Safety Officer	R Gordon Deputy Harbour Master	G Maitland Harbour Master	28 October 2019
5	September 2023	B. Clifton	R. Gordon	G. Maitland	

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Glossary

ABPmer	ABP Marine Environmental Research Ltd
AIS	Automatic Identification System
ALARP	As Low As Responsibly Practicable
AtoN	Aids to Navigation
CCTV	Closed Circuit Television
CEO	Chief Executive Officer
CHA	Competent Harbour Authority
CPD	Continuous Professional Development
“the Code”	Port Marine Safety Code
COPFS	Crown Office and Procurator Fiscal Service
DfT	Department for Transport
FSA	Formal Safety Assessment
GLA	General Lighthouse Authority
“the Guide”	Guide to Good Practice on Port Marine Operations
Health Check	Intelligence led investigation to test compliance with the Code
HRO	Harbour Revision Order
HSE	Health and Safety Executive
IALA	International Association of Lighthouse Authorities
IHO	International Hydrographic Organisation
IMO	International Maritime Organization
Incident	Refers to accident or near miss
ISO	International Standards Organization
ISPS	International Ship and Port Facility Security
KPI	Key Performance Indicators
LLA	Local Lighthouse Authority
MAIB	Marine Accident Investigation Branch
MarNIS	Maritime Navigation and Information Services
“Marine Operations”	Moving, berthing and unberthing of ships and other marine craft within the limits and approaches of a Harbour Authority
MCA	Maritime and Coastguard Agency
MGN	Marine Guidance Note
MSMS	Marine Safety Management System
NLB	Northern Lighthouse Board
NtM	Notice to Mariners
“Organisations”	CHA, Municipal Port or Harbour Authority, Trust Port or Harbour Authority, Private Port or Harbour Authority, and Marine Berths, Terminals or Jetties
PANAR	Ports Aids to Navigation Availability Reporting
PEC	Pilot(age) Exemption Certificate
PMSC	Port Marine Safety Code
POLREP	Pollution Report
RCO	Risk Control Option
QMS	ISO 9001 – Quality Management System
SHA	Statutory Harbour Authority
SIC	Shetland Islands Council
SMS	Safety Management System
SOSREP	Secretary of States Representative
SOTEAG	Shetland Oil Terminal Environmental Advisory Group
SVA	Sullom Voe Association
SVHA	Sullom Voe Harbour Authority

TWG	Technical Working Group
UK	United Kingdom
UKHO	United Kingdom Hydrographic Office
VTs	Vessel Traffic Services
VTsO	Vessel Traffic Services Operator
VHF	Very High Frequency (Radio)
ZCC	Zetland County Council

Cross Reference Table

PMSC - Section Name	PMSC – Subject Heading	PMSC Paragraph Reference	SIC Document Reference
Background	Harbour Authority		SIC MSMS & QMS
	Harbour authorities subject to the Code		SIC MSMS & QMS
	Functions to which the PMSC Applies		SIC MSMS & QMS
1 Accountability for Marine Safety	Accountability	1.0	Page 5
	The Duty Holder	1.1 – 1.10	Page 5
	The Designated Person	1.11-1.12	Page 7
	Key Officers - Chief Executive	1.13	Page 7
	Key Officials - Harbour Master	1.14 – 1.15	Page. Error! Bookmark not defined.
	The Authorities Officers	1.16 – 1.17	Page 7 and 9
2 Key Measures Needed for Compliance	Key Measures	2.0 -2.2	Page 11
	Review existing powers	2.3 - 2.6	Page 11
	Use Formal Risk Assessment	2.7 – 2.11	Page 11
	Implement a Marine Safety Management System	2.12 -2.17	Page 11
	Competence standards	2.18	Page 12
	Incident investigation	2.19 – 2.23	Page 13
	Monitoring performance and auditing	2.24	Page 15
	Enforcement	2.25	Page 19
	Publication of plans and reports	2.26 – 2.28	Page Error! Bookmark not defined.
	Consensus	2.29	Page Error! Bookmark not defined.
3 General Duties and Powers	Monitoring compliance	2.30 – 2.32	Page Error! Bookmark not defined.
	General duties and powers	3.0 – 3.2	Page Error! Bookmark not defined.
	Safe & Efficient Port Marine Operations	3.3 – 3.4	Page Error! Bookmark not defined.
	Open Port Duty	3.5	Page Error! Bookmark not defined.
	Conservancy Duty	3.6 – 3.7	Page Error! Bookmark not defined.
	Environmental Duty	3.8	Page 22
	Civil contingencies Duty	3.9	Page Error! Bookmark not defined.
	Harbour Authority Powers	3.10 – 3.11	Page Error! Bookmark not defined.
4 Specific Duties and Powers	Revising Duties and Powers	3.12 – 3.14	Page 22
	Specific Duties and Powers	4.0, 4.1	Page 26
	Appointment of Harbour Master	4.2	Page 26
	Bye-laws	4.3 – 4.5	Local Port SMS
	Direction (Special)	4.6 -4.7	Page 27

	Directions (General)	4.8 – 4.9	Page Error! Bookmark not defined.
	Directions and Passage Plans		Local Port SMS
	Incidents threatening Pollution and Safety		Local Port SMS
	Dangerous Vessels	4.10	Page Error! Bookmark not defined.
	Dangerous Substances		Local Port SMS
	Prevention of Pollution		Local Port SMS
	Vessel Traffic Monitoring Reporting Requirements		Local Port SMS
	Alcohol and Drugs		Local Port SMS
	Vessel Traffic Services		Local Port SMS
	Pilotage and Authorisation	4.11, 4.12	Page Error! Bookmark not defined.
	Authorisation of Pilots	4.11, 4.12	Page Error! Bookmark not defined.
	Pilotage Exemption Certificates	4.15, 4.16	Page Error! Bookmark not defined.
	Collecting Dues	4.17 – 4.20	Page Error! Bookmark not defined.
	Aids to Navigation	4.21 – 4.24	Page Error! Bookmark not defined.
	Wrecks and Abandoned Vessels	4.25 – 4,32	Page 33

1 Introduction

1.1 Background to Port Marine Safety

The Port Marine Safety Code, referred to as ‘the Code’ within this document, applies to every “Organisation” which is defined within the Code as a Competent Harbour Authority, Municipal Port or Harbour Authority, Trust Port or Harbour Authority, Private Ports or Harbour Authorities, and Marine Berths, Terminals or Jetties. The Code is concerned with responsibilities for port marine safety, but does not explicitly cover other duties derived from separate legislation, such as the Merchant Shipping Act 1995 referred to in the code but also the Health and Safety at Work Act 1974 and the Corporate Manslaughter and Corporate Homicide Act 2007.

Every Harbour Authority has a statutory duty to manage safety and should have a MSMS for Marine Operations in its waters, developed from formal risk assessment processes. The model for carrying out risk assessments is based on the Formal Safety Assessment (FSA) concept publicised by the International Maritime Organization (IMO, 2002). The linkage between risk assessment and the SMS is shown in concept in Figure 1.

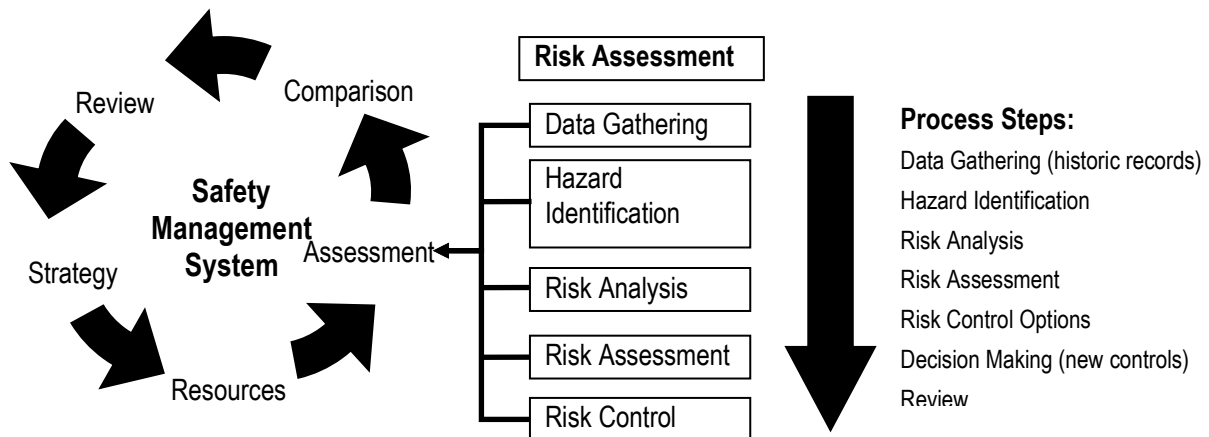


Figure 1. Marine Safety Management System and Formal Safety Assessment Relationship

1.2 Port Marine Safety Code Requirements

The Code refers to some of the existing legal duties and powers that affect Harbour Authorities in relation to marine safety, but it does not in itself create any new legal duties for Harbour Authorities. There are however several additional measures which, although not mandatory under legislation, are key to its successful implementation. In order to comply with the PMSC the Code states that, Statutory Harbour Authorities must consider the following 10 measures. Other organisations are advised to identify which of the items may be applicable to their port marine activities. It is recommended that, at the very minimum, items 4,5 and 6 below should be considered by all organisations.

1. **Duty holder:** Formally identify and designate the duty holder, whose members are individually and collectively accountable for compliance with the Code, and their performance in ensuring safe marine operations in the harbour and its approaches.
2. **Designated Person:** A 'designated person' must be appointed to provide independent assurance about the operation of the marine safety management system. The designated person must have direct access to the duty holder.
3. **Legislation:** The duty holder must review and be aware of their existing powers based on local and national legislation, seeking additional powers if required in order to promote safe navigation.
4. **Duties and Powers:** Comply with the duties and powers under existing legislation, as appropriate.
5. **Risk Assessment:** Ensure that marine risks are formally assessed and are eliminated or reduced to the lowest possible level, so far as is reasonably practicable, in accordance with good practice.
6. **Marine Safety Management System:** Operate an effective MSMS which has been developed after consultation, is based on formal risk assessment and refers to an appropriate approach to incident investigation.
7. **Review and Audit:** Monitor, review and audit the risk assessment and MSMS on a regular basis – the independent designated person has a key role in providing assurance for the duty holder.
8. **Competence:** Use competent people (who are trained, qualified and experienced) in positions of responsibility for managing marine and navigation safety.
9. **Plan:** Publish a safety plan showing how the standards in the Code will be met and produce a report assessing performance against that plan at least every 3 years.
10. **Aids to Navigation:** Comply with directions from the General Lighthouse Authorities and supply information & returns as required.

The Code is based on three general principles:

- A Harbour Authority has statutory and non-statutory duties;
- These duties include an obligation to conserve, and facilitate the safe use of the Harbour and a duty of care against loss caused by the Authority's negligence; and
- Duties to ensure the safety of marine operations are matched with general and specific powers to enable the Authority to discharge these duties.

Some duties and Harbour Authority's powers are contained in local Acts and Orders, and although they have much in common, the detail varies from port to port. Most are established by the incorporation or transposition into local Acts and Orders of provisions in the Harbours, Docks and Piers Clauses Act 1847. Other duties and powers are in general legislation.

The Code also identifies who is accountable for maritime safety in harbour waters and their approaches, based on the following general principles:

- The Duty Holder, on behalf of the Harbour Authority is accountable for managing operations within the port safely and efficiently;
- Harbour Authorities should make a clear published commitment to comply with the standards laid down in the Code;
- The Code represents the National standard against which the policies, procedures and performance of Harbour Authorities may be measured;
- Executive and operational responsibilities for marine safety must be clearly assigned, and those entrusted with these responsibilities must be answerable for their performance; and
- A 'Designated Person' must be appointed to provide independent assurance about the operation of its MSMS. The Designated Person must have direct access to the Harbour Board.

The key to effective discharge of the functions described in the Code is the development and operation of a MSMS for marine operations.

1.3 Marine Safety Management System Components

The SIC MSMS (this document) is regularly reviewed and updated in line with good practice, and to reflect experiences and lessons learned both within SIC and reported by other Ports and organisations.

Due to the diversity in size and scale of SIC Ports, there are variations in the numbers of plans and operational procedures that are appropriate for each port location. The SIC MSMS ensures that the requirements of the Code are consistently achieved across all SIC ports, and focuses on the following functions:

- Harbour Master;
- Pilotage;
- Vessel Traffic Service;
- Hydrography;
- Conservancy Management;
- Emergency planning; and
- Marine Services.

These functions may be facilitated and outlined by a number of components, for example:

- SIC Marine Safety Policy;
- SIC Marine Safety Plan;
- VTS Policy
- This MSMS document;
- Local Port MSMS documents;
- Risk assessment and risk control measures
- Accident/Incident reporting;
- Staff interaction and consultation (internal meetings and systems);
- Stakeholder interaction and consultation (external meetings and systems);
- Records and change-history; and

- Audit and review.

Local Port Marine SMS documents comprise of the sets of documents shown in Table 1. The documents are not common to all ports within the SIC Group as each Port requirement is dictated by the size and scale of its operations and by the duties and responsibilities shown in the individual Port Acts. Each local Port MSMS document contains specific references to the documents which constitute the Port's overall SMS.

Table 1. Local Marine SMS Documentation List

Document	Sullom Voe	Scalloway	SIC Small Ports
SIC - Marine Safety Policy	✓	✓	✓
SIC - Marine Safety Management System (this Document)	✓	✓	✓
SIC - Quality Management System Manual	✓	✓	✓
SIC - Environmental Management System Manual	✓	✓	✓
SIC - Health, Safety and Environment Policy Manual	✓	✓	✓
SIC – Emergency Plan	✓	✓	✓
SIC – Local Notice To Mariners	✓	✓	✓
SIC – Marine Staff training records	✓	✓	✓
Local Port – Marine Safety Management System	✓	✓	✓
Local Port – Navigation Guidelines and Pilotage Directions	✓	✓	
Local Port – Oil Spill Contingency Plan	✓	✓	✓
Local Port – Bye-laws	✓	✓	✓
Local Port – Port Emergency Plan	✓	✓	
Local Port – Risk Assessments	✓	✓	✓
Local Port – Accident/Incident Database (MarNIS)	✓	✓	
Local Port – Visiting Craft Information	✓	✓	✓
Local Port – Waste Management Plan	✓	✓	✓
Local Port – Port Operations Manuals	✓	✓	✓

2 Accountability - SIC Marine Safety Policy (1.0)

The Harbour Board of SIC, as Harbour Authority, is accountable for the discharge of its duties and powers to the standard laid down in the Code. To demonstrate this commitment, SIC publishes a Marine Safety Policy, the current version of which can be found on the SIC website..

The SIC Marine Safety Policy demonstrates the Harbour Authority's commitment to the safe and responsible operation of SIC Ports and Harbours by detailing areas of primary concern (which are closely based on the requirements of the Code).

Linked to this policy, SIC Ports and Harbours have prepared plans detailing the manner in which this policy is implemented locally. These local MSMS documents are supported by the SIC MSMS (this document) which sets out the approach on common plans and procedures.

Throughout this MSMS document the subject headings are identified with bracketed numbers to indicate the PMSC section addressed by the subsequent text, this provides an auditable cross-reference to the PMSC. For example, 'Accountability for Marine Safety (1.1 – 1.10)' indicates that the text following the subject heading relates to the requirements detailed within section 1.1 to 1.10 of the Code.

2.1 SIC as Harbour Authority & Duty Holder (1.1 – 1.10)

The Harbour Board of SIC, as Harbour Authority, will support the commercial activities of the port through the provision of pilotage (at CHA Ports) and conservancy services and through the regulation of shipping within harbour limits. SIC will also ensure the safety at work of employees and other persons who may be affected by the Authority's activities as far as is reasonably practicable to do so. This commitment is identified within the SIC Marine Safety Policy and confirms the Authority's commitment to the Code. Harbour Board members are collectively the 'Duty Holder' and as such accept the responsibility for ensuring the Authority discharges its duties and powers to that standard. The role of Duty Holder includes:

- Statutory and non-statutory duties as conferred by local Acts, Empowerment Orders and general legislation;
- Duties and obligations to conserve and facilitate the safe use of their harbours, and a duty of care against loss caused by the authority's negligence; and
- Duties to ensure the safety of marine operations are matched with general and specific powers to enable the authority to discharge these duties.

SIC is the Statutory Harbour Authority (SHA) for fourteen (14) Ports and Harbours as identified in the Zetland County Council (ZCC) Act 1974 (as amended), namely:

- Sullom Voe;
- Blacksness (referred to as Scalloway);
- West Burra (Hamnavoe);
- West Burrafirth;
- Housa Voe, Papa Stour;
- Mid Yell, Yell;
- Cullivoe, Yell;

- Baltasound; Unst;
- Uyeasound, Unst;
- Hamars Ness, Fetlar;
- Symbister, Whalsay,
- Out Skerries (two separate areas: West Voe and the South and North-East Mouths); and
- North Haven, Fair Isle.
- Vaila Sound and Gruting Voe, known as Walls;

A number of legacy marine facilities are owned by SIC and are inspected / maintained as such.

- Billister
- Melby
- Toogs
- Mail
- Gutcher (old pier)

SIC is also the Competent Harbour Authority (CHA) for Sullom Voe and Scalloway Harbour.

The SIC Harbour Board, as a Harbour Authority, is therefore the 'Duty Holder' as defined by the Code for all of the SIC Ports listed above. A full structure diagram is shown in Appendix A. The Duty Holder identifies the executive and operational responsibilities for marine safety with the appointment of key officers. Whilst the operation of the Harbour Authority's Ports and Harbours are delegated to appointed professionals; the Duty Holder cannot assign or delegate its accountability for compliance with the Code.

The SIC also owns, operates and maintains 16 Ferry Terminals & Piers inside or outside the Statutory Harbour Authority areas of jurisdiction:

- | | |
|-------------------------------|----------------|
| 1. Belmont (Ro/Ro)- | Unst |
| 2. Harmars Ness (Ro/Ro) - | Fetlar |
| 3. Gutcher (Ro/Ro) - | Yell |
| 4. Ulsta (Ro/Ro) - | Yell |
| 5. Toft (Ro/Ro) - | North Mainland |
| 6. Vidlin (Ro/Ro) - | North Mainland |
| 7. Out Skerries (Ro/Ro) - | Out Skerries |
| 8. Symbister (Ro/Ro) - | Whalsay |
| 9. Laxo (Ro/Ro) - | North Mainland |
| 10. Lerwick (Ro/Ro) - | East Mainland |
| 11. Bressay (Ro/Ro) - | Bressay |
| 12. Grutness - | South Mainland |
| 13. Foula - | Foula |
| 14. Walls - | West Mainland |
| 15. Housa Voe (Ro/Ro) - | Papa Stour |
| 16. West Burrafirth (Ro/Ro) - | West Mainland |

Ferry Terminals are operated by the SIC Ferry Services who carry out the marine operations at these facilities. For the purposes of this document marine operations have been taken to mean the moving, berthing and un-berthing of ships and other marine craft at these terminals. Marine operations within the Ferry Service use a formal risk assessment approach and Safety Management System (ISM). For

the purposes of compliance with the code this is considered as an alternative similar standard applicable to their sector.

2.2 Key Officers

2.2.1 Designated Person (1.11 – 1.12, 2.15)

SIC has appointed a 'Designated Person' to provide independent assurance directly to the Duty Holder that the MSMS, for which the Duty Holder is responsible, is working effectively. The Designated Person has direct access to the Board, and is responsible for determining, through assessment and audit, the effectiveness of the MSMS system and compliance with the Code. The Designated Person is identified in each local Port Marine SMS document. The inter-relationship between the SIC Duty Holder, Designated Person and Port/Marine staff within SIC is shown overleaf in Figure 2.

The Designated Person's contact information is:

- Captain Trevor Auld
- Email contact: shetland@abpmer.co.uk
- Phone number: 023 8071 1840 (request a member of the 'Shetland' team)

2.2.2 Key Officers - Chief Executive (1.13)

The Chief Executive is accountable for the operational and financial control of the authority. The Chief Executive (CE) has authority on all matters related to duties and powers. This role includes the following responsibilities under the Code:

- Oversee the implementation of SIC policies and decisions;
- Have overall executive responsibility for the safety of operations and staff; and
- Oversee the recruitment and training policy for staff and key officers.

2.2.3 Key Officers – Director of Infrastructure (1.13)

The Director of Infrastructure is answerable to the CE for the commercial operation of the Ports and Harbour department. In addition, they are responsible to the CE for:

- Implementing the SIC Marine Safety Policy;
- Health, Safety and Environmental Policies relevant to SIC Port and Harbour operations, and ensuring compliance with relevant reporting duties to agencies such as the Health and Safety Executive (HSE), MAIB and MCA;
- Dealing with disciplinary measures according to the Policies when appropriate; and
- Providing SIC's key officers (such as the Executive Manager - Harbour Master, Deputy Harbour Master and Port Engineer) and other Port and Harbour staff with appropriate support and resources to fulfil their responsibilities as required under the Code.

2.2.4 Key officers – Executive Manager – Harbour Master (1.13) (1.14 – 1.15)

The Executive Manager – Harbour Master reports to the Director of Infrastructure and is a member of the Directorate Management Team.

The Executive Manager – Harbour Master :

- Leads, directs and manages an efficient and effective Ports & Harbours Operation in accordance with the Council's values, objectives, targets and statutory obligations;
- Provides professional advice to the Council, Chief Executive and Director and ensures the Council fulfils all statutory requirements and implements policies in respect of Ports & Harbours Operations;
- Advises on the strategic direction and developments required in the Ports and Harbours, to meet the Council's statutory and legal duties in delivering the Council's priorities and plans; and Leads the setting of budgets for services, maintains effective budgetary control to achieve cost reduction targets and ensures the most cost effective delivery of services within the statutory duties and policies of the Council.

The Harbour Master has day-to-day responsibility for the safe operation of navigation and other marine activities in SIC's Ports and Harbours. The post holder must be competent and a suitably qualified person with sufficient experience for the role. Furthermore, the post holder must also be competent to undertake other relevant duties, in relation to Health & Safety at Work and Merchant Shipping legislation.

The Harbour Master:

- Has powers of direction to regulate the time and manner of any vessel's entry to, departure from and movement within the harbour waters, and related marine safety purposes;
- Has overall responsibility for the provision and maintenance of Aids to Navigation in relation to the authority's conservancy duties.
- Has the responsibility for developing and implementing emergency plans and procedures for regulating dangerous goods in transit on ships and for counter-pollution and waste disposal plans.

The Harbour Master's powers are determined by the ZCC Act 1974 and are further strengthened by Harbour Byelaws.

2.2.5 Key Officers – Deputy Harbour Masters

The Deputy Harbour Masters report to the Executive Manager - Harbour Master and is a member of the management team. The Deputy Harbour Master provides information and advice to the Executive Manager – Harbour Master and management team, to support service and directorate decision taking.

The Deputy Harbour Masters have the delegated powers of authority of the Harbour Master.

2.2.6 Key Officers – Port Safety Officers

The Port Safety Officers report to the Deputy Harbour Masters and are responsible for the day-to-day safety issues of Ports & Harbours Operations personnel and for ensuring safety inspections and audits are carried out.

2.2.7 Key Officers – Vessel Traffic Service Operator

VTSOs report to the Deputy Harbour Master and are responsible for providing vessels with timely and relevant information, monitoring and management of ship traffic and responding to developing unsafe situations in the VTS area. VTSOs have the appropriate delegated authority to enable them to provide these functions.

2.2.8 Key Officers – Small Ports Supervisor

The Small Ports Supervisor, Scalloway is responsible, through the Team Leader – Deputy Harbour Master, for the day-to-day management of all Scalloway and Small Ports harbour operations and services.

2.2.9 Key Officers – Small Ports Officer

The Small Ports Officer, Scalloway is responsible to the Small Ports Supervisor for the day to day operation of Scalloway Harbour and Small Ports.

2.2.10 Key Officers – Pier Assistants

The Pier Assistant is responsible to through the Small Ports Supervisor. They will provide a first line check, inspection, maintenance support and reporting service to Council port and harbour facilities.

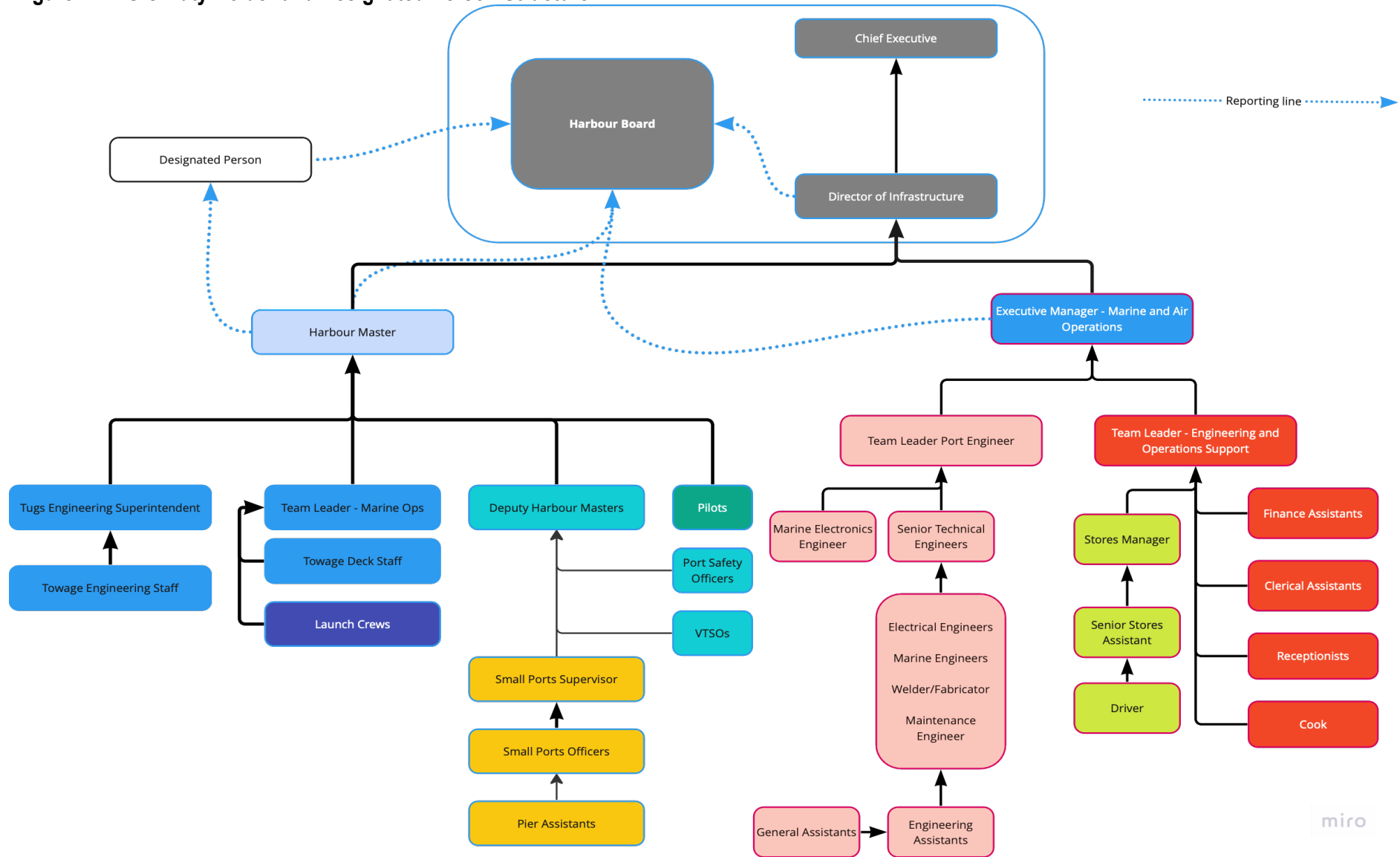
2.2.11 Key Officers – The Authorities Officers (1.16, 1.17)

The appointment of officers is a matter for the Organisation, with delegations being clear and formal and will not obscure the accountability of the organisation and its duty holder.

The Harbour Authority ensures that:

- Executive and operational responsibilities are appropriately assigned to properly trained people;
- If some functions are combined, a proper separation of safety and commercial activities is maintained; and
- All employees will have training that is appropriate for their level of responsibility.

Figure 2. SIC Duty Holder and Designated Person Structure



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3. Key Measures Needed for Compliance (2.0, 2.1-2.2)

The Code clearly defines the key measures required for compliance. The following sections describe how SIC ensures that port marine operations meet the standards required by the Code, and how SIC adhere to the published Marine Safety Policy statement.

3.1 Review Existing Powers (2.3 – 2.6)

SIC Harbour Authority powers are detailed within the ZCC Act 1974 (as amended). These powers are reviewed periodically through committees such as the Harbour Master chaired Technical Working Group (TWG). Additional powers will be sought if a risk assessment concludes that this would be the best means of meeting the safety obligations. Methods may include the use of Harbour Revision Orders, additional or amended Bye-laws and the use of powers of General Direction. Each local Port MSMS describes local powers and their derivation. SIC ensures that these powers and local byelaws are kept under review and are fit for purpose at each port.

3.2 Formal Risk Assessment (2.7 – 2.11)

Port marine risk assessments have been established in SIC Ports since the inception of the original Port Marine Safety Code in 2000. SIC has a set of Navigational Risk assessments for Sullom Voe, Scalloway and the Small Ports which follow a Formal Safety Assessment methodology to:

- Identify hazard and analyse risks;
- Assess those risks against an appropriate standard of acceptability; and
- Where appropriate, consider a cost-benefit assessment of risk reduction measures.

The process of assessment within SIC is continuous and reflective, so that new hazards to navigation and marine operations are identified and properly addressed. The SIC engages with stakeholders and industry representatives in order to identify and take advice on new hazards and control measures. Central to the risk management process within is the concept of reducing risk to levels which are 'as lowest as reasonably practicable' (ALARP). The process adopted within SIC for managing risk is described in detail in Sections 6 of this document.

3.3 Implementing the Marine Safety Management System (2.12 – 2.17)

The Code requires Harbour Authorities to establish and maintain a MSMS. This document, together with the individual Port MSMS documents discharges that responsibility. The SIC MSMS:

- Confirms roles and responsibilities of key personnel;
- Measures performance against targets (for reporting to the Designated Person); and
- Refers to common SIC Port and Harbour practices, procedures and manuals.

Local MSMSs include reference to the policies and procedures necessary to ensure each port or harbour, or group of ports and harbours:

- Maintains proper control of shipping movements within its harbour area;
- Protects the general public from dangers arising from marine activities within the harbour;
- Outlines present procedures for maritime safety (typically, through reference to an operational manual);
- Has regard to possible environmental impact; and
- Prevents acts or omissions which may cause injury to employees or others.

The SIC MSMS is subject to ongoing review as a result of incidents which may lead to a review of risk assessments and controls, impacting on the implementation of the MSMS. In addition, every three years, a comprehensive review of Code's compliance will be completed, including a review of the MSMS documentation.

The three yearly review will take into account the results of annual (internal) audits, examples of best practice from other ports and organisations, plus other relevant reports (for example MAIB accident/incident investigations).

3.4 Competence Standards (2.18)

Under the Code, all persons involved in the management and execution of marine services should be qualified and trained to the requirements of the position. Appropriately trained and competent members of staff are key elements of many risk control measures, and are essential in determining risks and appropriate controls at the outset. Recruitment and training policy is described in the relevant Council policy.

Competence assurance begins at the recruitment stage and is maintained thereafter. In order to assure initial competence, within SIC a four-stage process is followed:

1. Prior to Job Commencement: no staff member will be permitted to undertake work until the entry level criteria (as defined in the job description / vacancy advertisement) have been met;
2. Induction Training: All new staff (including temporary) will receive appropriate induction training and specific job related operational and procedural training, which will be overseen and recorded by appropriate line managers;
3. Supervision and On Job Training: Full competence for the post will be assessed once the staff member has completed a probationary period in the role. This may be achieved by working under the supervision of a competent person who will recommend when the new starter is to be considered competent, or by means of formal assessments after pre-determined periods of on-the-job training; and
4. Competence: When all the above stages have been satisfactorily completed, the person may be considered competent.

SIC maintains a training matrix for marine staff, this is split into the following matrices:

- Management;
- VTS;

- Pilots;
- Launch Crew;
- Tug Crew; and
- Small Ports Officers.

SIC operates a Towage Safety Management System which contains training requirements. The above reference to 'Tug Crew' is a cross reference to the same training matrix.

These matrices inform the audit process by ensuring that members of staff are suitably trained for their roles and responsibilities, this also ensures that qualifications are kept current through continuous professional development (CPD) and/or formal refresher training.

3.5 Incident Investigation (2.19 -2.23)

SIC recognises that however effective the safety regime is, incidents and 'near misses' will occur. A clear process of incident recording, investigation, follow up and closure has been established, and all stages of this process are recorded.

- To determine the cause of the incident, with a view to preventing a recurrence; and
- To determine if an offence has been committed and whether enforcement action is appropriate.

The Department of Transport's Port Marine Guide to Good Practice identifies that a harbour authorities Safety Management System should contain clear procedures on the levels and purposes of accident investigations that will be expected. These procedures should provide clear indicators to the authority's officers on how to determine, at an early stage, whether the purpose of the investigation is either for safety purposes or for enforcement purposes.

SIC, as the Harbour Authority, considers that the principle requirement of a marine incident investigation should be to determine the probable causes and contributing factors, so that precautions can be put in place to ensure known risks are managed to ALARP. By identifying the 'what' and 'why' of an incident SIC is better equipped to prevent a recurrence. In meeting this objective an investigation to determine if an offence has been committed (a criminal investigation) may be compromised and in such cases SIC will seek assistance through an agency of another authority such as the Police, HSE or the MCA.

3.5.1 Independent Investigation

In respect of incident investigation, the Code identifies that "the Duty Holder may require a robust, rigorous, independent investigation to be carried out in cases where it is desirable to obtain external assurance that their obligations for compliance have been addressed"..

SIC considers that 'independent investigation', means that the investigating officer is independent of the incident. For example, if an incident involves a Pilot and/or PEC, the investigating officer will be a marine professional drawn from a non-related department, who is not personally associated (friend or relation) of those directly involved in the incident. To establish independence, a group of at least two management grade staff will identify the investigating officer and establish their credible independence. In the instance that an independent investigating officer cannot be identified, SIC will consider making a request for assistance to nearby Harbour Authorities, or may engage the services of an external contractor.

3.5.2 Incident Investigation Procedure

Circumstances where an investigation to determine cause should take primacy include:

- Where it is necessary to determine the cause of the incident so that precautions can be put in place at the earliest opportunity to prevent a recurrence;
- Where it is necessary to promulgate the cause of an incident to interested parties and other Harbour Authorities so that lessons can be learned; and
- Where it is necessary to determine the cause of the incident where those causes may initiate amendments to the MSMS which in turn will ensure SIC continues to comply with the PMSC.

When conducting an investigation to determine cause due regard will be given to the IMO (2008) 'Casualty Investigation Code' (resolution MSC.255(84) adoption of the PMSC of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident) insofar as it provides guidance to the Harbour Authority. The Merchant Shipping (Accident Reporting and Investigation) Regulations 2012 as detailed in MGN 458 (M+F) must also be complied with.

The following schematic (Figure 3) provides an overview of accident/incident reporting as applied by SIC:

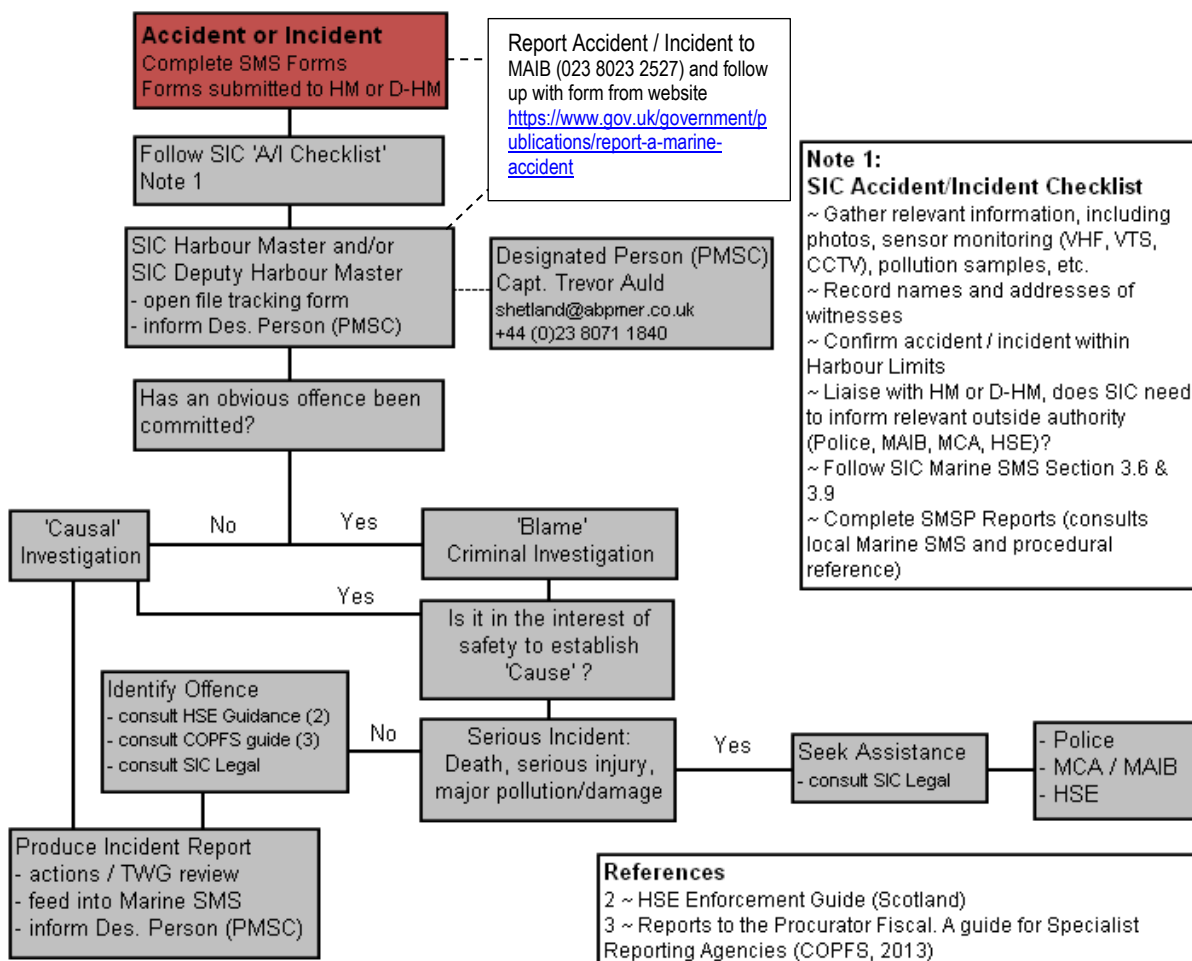


Figure 3. SIC Accident/Incident Structure

The format for reporting is not specified allowing adaptability on a case-by-case basis depending on the scale of the accident or incident. Having completed an investigation to determine cause, a report will be compiled. Before a report is finalised, parties that are involved in the incident may be given the opportunity to make representations. The object of the report will not be to apportion blame but to inform and improve the MSMS and in particular to inform a review of relevant risk assessments.

Reports on an investigation to determine cause will not be made public or published where it may prejudice an investigation conducted by another agency or when legal actions are anticipated. Although a report may not be published any lessons learned will be promulgated on a confidential basis to parties that can assist in the management of risks identified in the report. The TWG will review and consider the best method of implementing the findings of accident and incidents reports.

Accidents and incidents are now required to be reported to the MAIB. Additionally where appropriate Harbour Authorities must, so far as is reasonably practical, ensure that the circumstances of every accident are examined. The findings of such an examination, stating the measures taken or proposed to prevent a recurrence, must be provided to the Chief Inspector as soon as is practicable, irrespective of any investigation that may be conducted by the MAIB.

3.5.3 Potential Incident Investigation

MCA definition of a marine incident is a procedure, practise or condition that a reasonable person would consider, if not corrected, to have the potential to lead to a marine casualty. The SIC places particular emphasis on reporting potential incidents (including near miss and close-quarters situations) which are investigated and followed up using the same procedure as actual incidents. This enables a review and/or creation of risk assessments with associated risk control measures to reduce the potential for an actual incident. Details of any marine reportable incident which meets the criteria published by the MAIB from the 'Merchant Shipping (Accident Reporting and Investigation) Regulations 2012' will be reported by the quickest means available. Investigations by the SIC will be provided to the relevant authorities, generally by email as soon as the report is completed.

3.6 Monitoring Performance and Auditing (2.24)

The Designated Person will take appropriate measures to determine whether the individual elements of the marine SMS meet the specific requirements of the Code'. These measures will include:

- **Monitoring** the thoroughness of the risk assessment process and the validity of the assessment conclusions;
- **Monitoring** the thoroughness of the incident investigation process and the validity of the investigation conclusions;
- **Monitoring** the application of lessons learnt from individual and industry experience and incident investigation;
- **Assessing** the validity and effectiveness of indicators used to measure performance against the requirements and standards in the Code; and
- **Assessing** the validity and effectiveness of consultation processes used to involve and secure the commitment of all appropriate stakeholders.

To achieve this, the following is undertaken by the Designated Person for SIC:

- Monitoring the activities of the Technical Working Group by consulting the following documentation:
 1. Copy of each meeting's agenda;
 2. Copy of each meeting's minutes;
 3. Copy of any reports which may be produced by the Technical Working Group; and
 4. Copy of the ATON report made available to the Technical Working Group.

- Monitoring the activities of the Ports & Harbours Safety Sub Committee by consulting the following documentation:
 1. Copy of each meeting's agenda; and
 2. Copy of each meeting's minutes.

- Monitoring the activities of the Examination Panel by consulting the following documentation:
 1. Copy of each meeting's agenda; and
 2. Copy of each meeting's minutes as appropriate.

- Monitoring incident and accident reports for SIC Ports and Harbours by consulting the following documentation:
 1. Copy of the completed marine Incident/Accident Report form for each incident/accident occurring in SIC Port and Harbour limits;
 2. Copy of each completed report forms sent to the MAIB;
 3. Copy of any marine specific near miss reports submitted to, or raised by, VTS or the Small Ports Officers at Scalloway; and
 4. Copy of each Incident/Accident entry entered onto the Port Information System.

- Monitoring internal and external audits of all, or selected operations within SIC Ports and Harbours by consulting the following documentation:
 1. Copy of each internal audit report;
 2. Copy of each external audit report; and
 3. Copy of each verification visit audit report.

- Monitoring the training of all SIC employees undertaking port marine activity by consulting the following matrices:
 1. Management
 2. VTS;
 3. Pilots;
 4. Launch Crew; and
 5. Small Ports Officers.

- Monitoring the validity and effectiveness of consultation processes used to involve and secure the commitment of all appropriate stakeholders by consulting the following documentation:
 1. Copy of every SIC Marine Circular and Local Notice to Mariners;
 2. Copy of the terms of reference, agenda and the minutes of every meeting organised by SIC to which representatives of harbour users;
 3. Copy of the terms of reference, agenda and the minutes of every meeting organised by an external body to which representatives of SIC and representatives of the Harbour users are invited to attend; and
 4. Copy of all SIC correspondence sent formally to representatives of the Harbour users in for the purpose of obtaining their views on such issues as changes to:
 - i) The characteristic of an aid to navigation;
 - ii) Number of floating aids to navigation;
 - iii) Categorisation of VTS;
 - iv) The VTS limits;
 - v) VHF radio channels;
 - vi) Byelaws;
 - vii) General Directions; and
 - viii) Pilotage Directions.

3.6.1. Key Performance Indicators (KPIs)

The Code states that: 'The Marine Safety Management System must have a regular and systematic review of its performance. This should be based on information from monitoring the system itself and from independent audits of the whole system. Performance of the system should be assessed against internal performance indicators and where appropriate, by benchmarking against other ports that have adopted good practice'.

To assess the validity and effectiveness of indicators used to measure performance against the requirements and standard of the Code is more difficult than the monitoring exercise. It is well known in industry that for a Key Performance Indicator (KPI) to be of any value there must be a way to accurately define and measure it. SIC has determined that meaningful statistical measurements of performance are appropriate for the following five performance indicators:

1. The number of completed marine incident/accident reports reviewed by the TWG expressed as a percentage of all completed marine incident/accident reports;
2. The number of hours in which the Sullom Voe VTS functioned as a fully operational service (i.e. down-time due to equipment or technical difficulties, or staffing issues). This will be reported as a percentage of the total number of operational hours;
3. The number of marine risk assessments for Sullom Voe, Scalloway and cumulative number for all other SIC Ports and Harbours exceeding the review date, as a percentage of the total number of marine risk assessments;
4. The number of port marine employees with time-expired qualifications required for their job role, as a percentage of the total number of employees undertaking port marine activities; and
5. The availability of Aids to Navigation (in three classification bands) expressed as a percentage of total availability over a three year period.

3.6.2. Audit Requirements

The MSMS is subject to regular audits through two processes; namely:

- PMSC auditing which recommends that an external audit is conducted on a three yearly basis, and a formal review of the whole plan should take place every five years;

For PMSC compliance, a statement about the performance standard of SIC Ports and relevant audit findings are included in Harbour Board Reports. As part of this process, changes to the MSMS are made to reflect the lessons learnt from other ports and incorporate the recommendations and conclusions of any port related MAIB investigations.

Within SIC, auditing is conducted as a centralised activity. The following audit in respect of the PMSC is adopted within the overall framework of business auditing:

- Annual internal local Marine SMS audit (carried out at selected SIC Ports on a rolling basis);
- Annual internal review of the SIC Marine Safety Policy and SIC MSMS;
- Three yearly external audit of the SIC Marine Safety Policy, SIC MSMS and local MSMSs documents; and
- Five yearly internal review of the whole Safety Plan for Marine Operation.

3.6.3. Internal Audit

An internal audit on select SIC ports is carried out on a rolling basis, this examines Port MSMSs. Internal Port MSMS audits are conducted to achieve the following objectives:

- To determine if the Port MSMS is being operated in accordance with the SIC Marine Safety Policy, Group MSMS Manual and the provisions of the Code;
- To monitor the overall effectiveness of the system;
- To identify and implement ways of improving overall performance; and
- To confirm that relevant procedures are understood and being followed by all those involved.

In addition, an internal audit of the Group MSMS Manual and the public facing Marine Safety Policy is carried out. The internal audit is conducted to achieve the following objectives:

- To determine if the Group MSMS Manual is being used at Group level in accordance with the PMSC's requirements;
- To ensure the Marine Safety Policy meets the requirements of the PMSC;
- To monitor the overall effectiveness of the system;
- To identify and implement ways of improving overall performance; and
- To confirm that relevant procedures are understood and being followed by all those involved.

The Designated Person uses the results of the internal audits to monitor and report upon the effectiveness of the MSMS and compliance with the Code to the SIC Board. The Duty Holder is responsible for publishing an assessment (every three years) of the Harbour Authority's performance against the SIC Marine Safety Policy. This report will draw heavily on the results of the audit process.

3.6.4. External Verification

From time to time, ports may be subject to external verification visits to ensure PMSC compliance, such as an MCA Health Check. A health check visit is intelligence led and may be triggered for a variety of reasons ranging from reports which suggest failure in the Port's MSMS to a MAIB recommendation. Ports may also wish to volunteer for a Health Check. SIC will ensure that lessons learned from audits are reviewed and considered as a revision to the SIC MSMS and associated local policies and procedures.

3.7 Enforcement (2.25)

SIC, as Harbour Authority, is responsible for enforcing relevant laws within its jurisdiction. Local Byelaws will be used to prosecute offenders if appropriate. SIC provides internal resources to support the Harbour Master in this regard when required; including advice from Designated Person and access to SIC's legal service. If necessary, external support and advice will be utilised.

It must be noted however, that enforcement does not necessarily mean prosecution. Prosecution and the associated penalties imposed by a Court provide the ultimate sanction; enforcement provides a range of responses from informal verbal warnings, through formal written warnings to action in the Courts. SIC has developed a consistent approach for dealing with those persons who use its Ports and Harbour and fail to meet acceptable standards. SIC acknowledges that in order to maintain its credibility it must demonstrate that it can effectively utilise the full range of enforcement options.

3.7.1. Range of SIC Enforcement Options

Enforcement covers everything from information and education on the conduct expected of port and harbour users to prosecution on indictment in the High Court where the Court may send someone to prison. The range of options available in SIC Ports and Harbours include:

- Information and Instructional leaflets;
- Informal education;
- Formal education, for example seminars, briefings etc.;
- Formal advice, for example local Notices to Mariners (NtM);
- Informal warnings;
- Formal warnings; and
- Prosecution.

The option used will depend on the circumstances of each particular incident, the following will be considered when selecting the Enforcement Option:

- Misconduct severity;
- Misconduct risk and potential consequential outcome;
- Any repetition of the misconduct;
- The attitude of the person involved;
- Known knowledge and experience of the suspect;
- Available evidence (quality and reliability);
- The need to provide a deterrent; and
- The interests of the public safety.

The conduct of a criminal investigation has to meet strict requirements; failure to meet this standard will make it almost impossible to prosecute an offender regardless of the evidence. When an incident indicates that a criminal investigation is appropriate but in the interests of safety an investigation to determine cause should take precedence, assistance will be sought from outside agencies. In the case where SIC elects to conduct its own criminal investigation, it will be conducted in accordance with the requirements of the 'Reports to the Procurator Fiscal. A guide for Specialist Reporting Agencies' (COPFS, 2013).

3.8 Publication of Plans and Reports (2.26 – 2.28)

The PMSC provides detail on the way in which Harbour Authorities should show commitment to maritime safety and to ensuring the involvement of harbour users. The PMSC specifically requests a 'safety plan for marine operations' which should be published at least once every three years. SIC has provided the 'SIC Marine Safety Policy' as confirmation of the SIC commitment to maritime safety. This document is reviewed and reissued by the Duty Holder, and confirms how commercial pressures are managed without affecting the safe provision of services and the efficient discharge of its duties.

The Harbour Master facilitates the supply of information to the Designated Person, including details of meetings, training, audits and specific Port KPIs, plus other matters of relevance to Port Marine Safety. These reports, together with a summary document, are provided to the Duty Holder (SIC Harbour Board as Harbour Authority) in writing by the Designated Person. During formal presentation at a Board meeting, time is made available for discussion of marine safety issues, and for the Designated Person to answer any questions raised by the Harbour Board members. The Designated Person attends at least one Harbour Board meeting in person on an annual basis.

3.9 Consensus (2.29)

The SIC seeks to consult with Harbour users and relevant interested parties when considering safe navigation and applicable matters. The Local Port MSMS documents identify the main consultation groups established at individual SIC Ports and Harbours.

3.10 Monitoring Compliance (2.30 – 2.32)

Every three years, SIC will ensure that a prompt and internally verified response is made to the MCA compliance programme. SIC will always assist the MCA should a verification visit be required at any SIC Port or Harbour. Should internal audits reveal potential compliance issues which cannot be resolved internally, SIC will seek advice from the MCA to assist in gaining confirmation of compliance.

4 General Duties and Powers (3.0 – 3.2)

4.1 Safe and Efficient Port Marine Operations (3.3 – 3.4)

The Harbour Authority will support the commercial activities of SIC Ports and Harbours through the safe and efficient provision of pilotage and conservancy services and the regulation of shipping within harbour limits. The policy of the Harbour Board (the Duty Holder) and the SIC as the Harbour Authority in adherence to the PMSC is to:

- Safeguard the harbour/facility, its users, the public and the environment;
- Take reasonable care, so long as its Ports and Harbours are open for public use, that all who may choose to navigate in them may do so without danger to their lives or property;
- Conserve and promote the safe use of its Ports and Harbours, and prevent loss or injury caused by the authority's negligence;
- Have regard to efficiency, economy and safety of operation as respects the services and facilities provided; and
- Take such action that is necessary or desirable for the maintenance, operation, improvement or conservancy of its Ports and Harbours.

SIC undertakes to ensure that enough resources are available to discharge its marine safety obligations and will set the level of dues accordingly.

4.2 Open Port Duty (3.5)

SIC recognises its responsibility to maintain 'open port duty' as defined in Section 33 of the 'Harbours, Docks and Piers Clauses Act 1847', incorporated into the enabling 'ZCC Act 1974'.

4.3 Conservancy Duty (3.6 -3.7)

SIC outsources hydrographic surveys, as required, providing charting and updates of bathymetric information for the harbour area. Surveys are conducted to the standard of the 'International Hydrographic Office' Standards for Hydrographic Surveys SP44 (IHO, 2008). A schedule of SIC Port and Harbour hydrographic surveys is maintained and monitored by the Port Engineer. Upon completion of a survey, and in accordance with the PMSC, hydrographic records are maintained and passed to the UK Hydrographic Office (UKHO) to update their records.

Small scale surveys including depth checks at berths are routinely carried out by SIC personnel and equipment. Any changes to charted depths noted are advised to the UK Hydrographic Office for amendment and to mariners by Notices to Mariners.

Due to the minimal input of suspended material and deep water approaches at many of SIC's Ports and Harbours, maintenance dredging is not routinely undertaken. Capital dredging works are occasionally conducted to increase the navigable depth in key locations, when these works are undertaken, SIC seeks a Marine Licence and conducts pre and post dredge surveys.

Maintenance of navigation aids is managed by the Port Engineer with the aim of ensuring all aids to navigation meet the requirements set by the General Lighthouse Authority (the Northern Lighthouse Board (NLB))

4.4 Environmental Duty (3.8)

The SIC Marine Safety Policy document acknowledges SIC's duty to exercise its functions as a Harbour Authority with due regard to nature conservation and environmental best practice. This statement takes into account SIC's duties in relation to National and International requirements as a statutory undertaker, including the requirements of the Nature Conservation (Scotland) Act 2004 which places the duty on every public body and office holder in Scotland to further the conservation of biodiversity. Accordingly SIC, as Harbour Authority, acknowledges this requirement and seeks to ensure that its operations do not adversely affect biodiversity.

SIC is a member of the Sullom Voe Association (SVA) who fund and oversee the Shetland Oil Terminal Environmental Advisory Group (SOTEAG). SOTEAG is an independent body with members drawn from academia, the oil industry, central and local government, government environmental agencies and indigenous industries with a maritime focus. The advisory group was set up in 1977 (originally set up as the 'Sullom Voe Environmental Advisory Group') to develop a comprehensive scientific monitoring programme designed to ensure the health of Shetland's marine and coastal environment, focussing on Sullom Voe Terminal and Port.

SOTEAG has two main sub-Committees, the SOTEAG Monitoring Committee and the Wildlife Response Co-ordinating Committee, who report back to the main Group on all issues. Through its comprehensive monitoring programme, SOTEAG provides early warning of environmental change and advises on any remedial action required to protect the environment. A committee of independent scientific experts evaluates the monitoring programme results and helps to keep the monitoring strategy relevant and cost-effective.

SIC also recognises the requirement to give sanctuary to vessels, under the direction of the Secretary of State's Representative (SOSREP), where there is a risk to safety or pollution by hazardous substances. This power is exercised by the Secretary of State, through the office of SOSREP. The Secretary of State also has wide powers to take action, or authorise others to take action, where it is considered that issuing directions alone would be insufficient. Persons to whom a direction is given will try to comply with the direction in a manner which avoids risk to human life.

4.5 Civil Contingencies Duty (3.9)

Shetland Islands Council as Harbour Authority is a Category 2 responder under the Civil Contingencies Act 2004. This means that the Harbour Authority has statutory duties when dealing with an emergency, including sharing information with and assisting Category 1 responders.

Category 1 responders in Scotland are listed in Schedule 1 of the Civil Contingencies Act 2004 as

- Local Authorities
- Emergency Services
- SEPA

The Shetland Islands Council (SIC) as a Local Authority is a Category 1 responder. As a category 1 responder, the SIC may be required to respond to an incident within a Harbour Area. If SIC as a whole respond, they will form the Corporate Management Team. The Corporate Management Team will coordinate the Councils response as a whole.

The Harbour Authority as a Category 2 responder, will form the Incident Management Team. The Incident Management Team will coordinate the Harbour Authorities response to the emergency.

4.6 Harbour Authority Powers (3.10 - 3.11)

Shetland Islands Council is the Statutory Harbour Authority and Local Lighthouse Authority for Ports and Harbours defined in Zetland County Council 1974 Act and subsequent amendments.

Shetland Islands Council is the Competent Harbour Authority for Sullom Voe and Scalloway as defined in the Pilotage Act 1987.

SIC's powers and duties are derived primarily from the following legislation (as amended):

- [Harbours, Docks and Piers Clauses Act 1847](#);
- [Harbours Act 1964](#)
- [Pilotage Act 1987](#);
- [Merchant Shipping Act 1995](#) ; and
- [Zetland County Council Act 1974](#).

4.6.1 Statutory Harbour Authority Powers

Section 6 of the ZCC Act 1974 identifies SIC with the authority required to act as Harbour Authority and reads:

'The Council shall exercise jurisdiction as a harbour authority and the powers of the harbourmaster shall be exercised within:

- (a) the respective limits of which are described in Schedule 1 to this Act; and
- (b) any area designated by the Secretary of State under section 33 (Harbour jurisdiction in respect of works) of this Act.'

Note: "the Council" means the county council of the county; "the county" means the county of Zetland. [Zetland was replaced by the 'Shetland Islands Council' on May 1st 1974].

The Harbour Authority has powers to dredge within its Statutory Harbour Areas by virtue of Section 10 'Powers to Dredge':

'(1) The Council may deepen, widen, dredge, scour, cut and improve the bed and banks of a harbour area and the seaward approaches thereto, and for such purpose may blast any rock within such area or approaches.

(2) Any materials, other than wreck within the meaning of Part IX of the Merchant Shipping Act 1894, taken up or collected in the exercise of the powers of this section (in so far as they are not the property of the Council before being taken up or collected) shall become the property of the Council and may be used, sold, deposited or otherwise disposed of as the Council think fit'.

In order to deposit any dredged materials at sea, consent is still required under the current Marine Licensing regime. Furthermore, SIC may also grant licence to other to dredge under Section 12 'Licence to Dredge':

'(1) The Council may upon such terms and conditions as they think fit grant to any person a licence to dredge in any part of the coastal area.

(2) Application for a dredging licence shall be made in writing to the Council'

Section 11 'Licensing of Works' provides the Harbour Authority with powers to licence works within its Statutory Harbour Area:

'(1) The Council may upon such terms and conditions as they think fit grant to any person a licence to construct, place, maintain, alter, renew or extend any works on, under or over tidal waters or tidal land below the level of high water in the coastal area notwithstanding any interference with public rights of navigation or other public rights by such works as constructed, placed, maintained, altered, renewed or extended.

(1A) A works licence shall not be granted for fish farm development.

(2) Application for a works licence shall be made in writing to the Council'

Whilst the Harbour Authority has powers to licence works, any such works would also be subject to other National legislation, for example; planning, Marine Licensing, Water Resources Act etc. In addition, Section 14 'Restriction of Works or Dredging' provides control over others making changes, additions or removing structures; Section 14 states that:

(1) No person other than the Council shall:

(a) construct, place, alter, renew or extend any works on, under or over tidal waters or tidal lands below the level of high water in the coastal area unless he is licensed so to do by a works licence and except upon the terms and conditions, if any, upon which the licence is granted and in accordance with plans, sections and particulars approved in pursuance of section 11 (Licensing of works) of this Act;

(b) dredge in the coastal area unless he is licensed so to do-by a dredging licence and except upon the terms and conditions, if any, upon which the licence is granted and in accordance with plans, sections and particulars approved in pursuance of section 12 (Licence to dredge) of this Act: Provided that this subsection shall not apply to the construction, placing, alteration, renewal or extension of any such works [, to works comprising fish farm development] 1 or to the carrying out of dredging in the coastal area specifically authorised under any enactment or to fishing operations in the coastal area involving an element of dredging.

(2) Any person who offends against the provisions of this section or who contravenes or fails to comply with any term or condition of a works licence or dredging licence granted to him shall be guilty of an offence and liable to a fine not exceeding one thousand pounds and to a daily fine not exceeding one hundred pounds.'

In addition, Section 19 provides for 'Repair of landing places and embankments':

4.7 Revising Duties and Powers (3.12 – 3.14)

The PMSC requires Harbour Authorities to review their powers to ensure they discharge their duties correctly, and do not exceed their powers. Powers and duties for Harbour Authorities are enabled with Local Acts. The ZCC Act 1974 provides these powers and duties to SIC as Harbour Authority. This includes the powers to make Bye-laws and to create General Directions.

In reviewing duties and powers, SIC will consider the need for Harbour Revision Orders or Harbour Closure Orders to amend or relinquish Statutory Powers.

5 Specific Duties and Powers (4.0 – 4.1)

5.1 Appointment of Harbour Master (1.14 - 1.15, 4.2)

Under the ZCC Act 1974 the Harbour Master means a person appointed by the Council to be a harbourmaster and includes the deputies and assistants of a person so appointed.

The Harbour Master has statutory powers to regulate commercial and leisure vessels within the Harbour Area and is responsible for enforcing local Byelaws and General Directions, and can issue a Special Direction to the master of any ship within his jurisdiction for the purposes of navigational safety or traffic regulation.

5.2 Delegation

The powers of the Harbour Master may be delegated by the Port Authority to specifically authorised Deputies and Assistants and any persons authorised by the Port Authority to act in that capacity.

The Deputy Harbour Masters are authorised by the Port Authority to act as Harbour Master.

(1) The Council may by notice require the owner or occupier of a landing place or embankment which in the opinion of the Council is, or is likely to become; by reason of its insecure condition or want of repairs:

- (a) dangerous to persons or vessels using a harbour area;
- (b) injurious to the condition of a harbour area as a navigable waterway; or,
- (c) a hindrance to the navigation of a harbour area; to remedy its conditions to the satisfaction of a duly authorised officer of the Council within a reasonable time specified in the notice.

(2) If a person to whom notice is given under this section fails to comply with it within the time stated in the notice, or, if he appeals and the appeal is not allowed, within the time stated in the notice or such other time as the court may substitute therefore:

- (a) he shall be guilty of an offence and liable to a fine not exceeding one hundred pounds and to a daily fine not exceeding ten pounds; and
- (b) the Council may carry out the works they consider necessary to remedy the condition of the landing place or embankment in question and may recover the expenses of so doing from the person on whom the notice was served as a debt due to them.

Those persons authorised by the Port Authority to act as Vessel Traffic Service Operator, in circumstances where Masters of vessels are required to follow directions for matters specific only to the Sullom Voe Harbour Area, can exercise the delegated authority of the Harbour Master to give Directions (Special Directions) for the purposes of navigational safety or traffic regulation. These powers are given to cover situations which may occur at any time when immediate action may be required.

5.3 Byelaws (4.3 – 4.5)

SIC seeks to make best use of powers conferred within local enabling (or subsequent) Acts to make Byelaws where appropriate. SIC considers the use of General Powers of Direction as a more pragmatic method of regulating the movement and berthing of shipping, these powers are identified in Section 38 of the ZCC Act 1974

SIC has created under, regulation 44 of the Zetland County Council Act 1974 General Byelaws as below;

Sullom Voe Harbour General Byelaws 2002
Small Harbours and Piers Byelaws 1987

5.4 Direction (Special Directions) (4.6 – 4.7)

The principal responsibility for navigational safety lies with the Harbour Master who, by virtue of Section 39 'Special directions to vessels' of the ZCC Act 1974.

For the purposes of this document, the most important aspect is the power to give Direction. This level of control enables the Harbour Master to regulate the movements of traffic within the harbour area to minimise the risk of collision and ensure the safe and timely movement of vessels.

Section 39 details the Harbour Master's statutory powers, namely:

(1) The harbourmaster may give a direction under this section to a vessel anywhere in a harbour area for any of the following purposes:

- (a) requiring a vessel to comply with a requirement made in or under a general direction pursuant to section 38 (General directions to vessels) of this Act;
- (b) regulating or requiring the movement, berthing, mooring or unmooring of a vessel;
- (c) regulating the manner in which a vessel takes in or discharges cargo, fuel, water or ship's stores and the dispatch of its business at port premises;
- (d) the precautions to be taken in respect of apparatus, machinery and equipment;
- (e) the use of its motive power;
- (f) prohibiting or restricting the use of fires or lights;
- (g) the loading, discharging and methods of storing and safeguarding, of cargo, fuel, water or ship's stores;
- (h) the use of ballast;
- (i) requiring the removal from port premises or from a harbour area of a vessel if
 - (i) it is on fire;
 - (ii) it is in a condition where it is liable to become immobilised or waterlogged, or to sink;
 - (iii) it is making an unlawful or improper use of port premises;
 - (iv) it is interfering with the use of port premises by other vessels, or is otherwise interfering with the proper use of port premises or the dispatch of business therein; or
 - (v) its removal is necessary to enable maintenance or repair work to be carried out to port premises or to premises adjacent thereto.

(2) A direction under this section may be given in any manner considered by the harbourmaster to be appropriate.

5.5 Direction (General) (4.8 – 4.9)

Section 38 of the ZCC Act 1974 empowers the Harbour Authority to make 'General directions to vessels':

(1) The Council may, after consultation in each case with the Chamber of Shipping of the United Kingdom and the local pilotage authority, give directions for the purpose of promoting or securing conditions conducive to the ease, convenience or safety of navigation in a harbour area, and, without prejudice to the generality of the foregoing, for any of the following purposes:

- (a) for designating areas, routes or channels within a harbour area which vessels are to use or refrain from using for movement or mooring;
- (b) for securing that vessels move only at certain times or during certain periods;
- (c) requiring the master of a vessel to give to the harbourmaster information relating to the vessel reasonably required by the harbourmaster in order to effect the objects of this subsection.

(2) Directions given under subsection (1) of this section may apply:

- (a) to all vessels or to a class of vessels designated, or the designation of which is provided for, in the direction; and
- (b) to the whole of a harbour area or to a part designated, or the designation of which is provided for, in the direction; and
- (c) at all times or at times designated, or the designation of which is provided for, in the direction; and every direction made under this section shall specify the extent of its application in relation to the matters referred to in paragraphs (a), (b) and (c) of this subsection.

(3) The Council may, after such consultation as aforesaid, revoke or amend directions given under this section.

Further powers are identified in Section 41 which specifies 'Failure to comply with directions':

(1) The master of a vessel who fails to comply with a general direction or a special direction shall be guilty of an offence and liable to a fine not exceeding fifty pounds.

(2) It shall be a defence to the master of a vessel charged with an offence under subsection (1) of this section to prove that he had reasonable ground for supposing that compliance with the direction in question would be likely to imperil his vessel or that in the circumstances compliance was impracticable.

And Section 42 'Enforcement of directions.' which states:

(1) Without prejudice to any other remedy available to the Council, if a special direction is not complied with within a reasonable time, the harbourmaster may, where practicable, put persons aboard the vessel to carry out the direction or may otherwise cause the vessel to be handled in accordance with the direction.

(2) If there is no one on board a vessel to attend to a special direction, the harbourmaster may proceed as if the direction had been given and not complied with: Provided that the powers of this subsection shall not be exercised:

- (a) in relation to a vessel other than a lighter, unless, after reasonable inquiry has been made, the master cannot be found; or
- (b) in relation to a lighter unless it is obstructing the access to or exit from port premises or otherwise interfering with navigation in a harbour area.

(3) Expenses incurred by the Council in the exercise of the powers conferred by subsection (1) of this section shall be recoverable by them as if they were a charge of the Council in respect of the vessel.

5.6 Health and Safety

SIC ensures that it will conduct its Port and Harbour operations in full compliance with the Health and Safety at Work Act 1974 (as amended). SIC acknowledges the provisions of the most current Memorandum of Understanding between the Health and Safety Executive, the MCA and the MAIB for health and safety enforcement activities and investigation at the water margin and offshore.

5.7 Dangerous Vessel Directions (4.10)

The Harbour Master may give directions prohibiting the entry into, or requiring the removal from, the harbour of any vessel if, the condition of that vessel, or the nature or condition of anything it contains, is such that its presence in the harbour might involve grave and imminent danger to the safety of persons or property or risk that the vessel may, by sinking or foundering in the harbour, prevent or seriously prejudice the use of the harbour by other vessels.

The SIC recognises that the Secretary of State's Representative for maritime salvage and intervention (SOSREP) may override such directions and issue contrary directions to the Harbour Master in the interests of safety.

5.8 Pilotage and Pilotage Directions (4.11 – 4.12)

SIC is the Competent Harbour Authority (CHA) for Sullom Voe and Scalloway. SIC keeps under consideration, through risk assessment, the need for pilotage services within its other Ports and Harbours and, where there is a clearly identifiable need, SIC will apply for Competent Harbour Authority status. Where a need for pilotage has been identified, and CHA status granted, SIC will evaluate the need for compulsory pilotage for the safety of ships navigating in any part of its Ports or Harbours, including their approaches. SIC stipulates which ships this should apply to and in what circumstances. Pilotage will be reviewed if there is a change of use of any SIC Port or Harbour to ensure that the services provided continue to meet requirements.

Where, after risk assessment and due consultation with ship owners and other interested parties, SIC considers that pilotage should be compulsory in the interests of safety it will issue Pilotage Directions detailing how and to which vessels they apply. SIC recognises that a vessel's Master who is not subject to Pilotage Directions has a right to request a pilot.

The following aspects are subject to regular review:

- Whether pilotage should be compulsory, and if so, for what classes of ships;
- The qualifications and number of people to be authorised as pilots within the area of jurisdiction;
- The training and regulation of authorised pilots;
- The provision of pilot boats to the approved standard;
- The granting of 'Pilotage Exemption Certificates', with the exception of Sullom Voe, to bona fide Masters and/or First Officers of ships which regularly calland
- The charges to be levied for the provision of the Pilotage Service.

UK Pilotage is governed under the Pilotage Act 1987. A pilot's legal status was defined under the Merchant Shipping Act of 1894 and still stands today under current legislation as 'any person not belonging to a ship who has the conduct thereof'. However, the pilot does not assume the role of the Master and the fact that a ship is being navigated in an area that requires compulsory pilotage shall not affect any liability of the owner or Master for any loss or damage caused by the ship or by the manner in which it is being navigated.

5.9 Authorisation of Pilots (4.13 – 4.14)

Each Pilot is directly responsible to the Harbour Authority for the provision of pilotage and related services concerned with the safe movement of vessels in the compulsory pilotage area. The Harbour Authority determines the qualifications for authorisation as a Pilot in respect of fitness, time served, local knowledge, skill and any other stipulation thought necessary. Following the completion and successful evaluation of a structured training program, authorisation will be granted. The Harbour Authority may revoke or suspend pilotage duties if it appears a Pilot is incompetent, has failed to carry out his/her duty through misconduct, or has failed to continue holding the required qualifications of the post.

5.10 Pilotage Exemption Certificates (4.15 – 4.16)

The SIC recognises that, CHAs must grant a 'Pilotage Exemption Certificate' ("PEC") to bona fide Masters and/or First Officers of ships apply for one if they demonstrate they have sufficient skill, experience and local knowledge to pilot the ship within the compulsory pilotage area. The requirements for granting a PEC must not exceed or be more onerous than those needed for an authorised pilot.

The granting of PECs does not apply to the Sullom Voe Harbour area because it is exempt from the need to issue a PEC (reviewed on a three year basis) by direction of Transport Scotland (an agency of the Scottish Government).

5.11 Collecting Dues (4.17 – 4.20)

SIC levies dues within its Ports and Harbours to raise sufficient resources to enable them to pay for the discharge of their Statutory Duties. The Duty Holder is responsible for ensuring that adequate resources are provided to its officers to enable them to operate policies, procedures and systems effectively. Where SIC is the Pilotage Authority, it may make reasonable charges in respect of vessels subject to its Pilotage Directions. These pilotage charges apply to vessels with an embarked pilot, or those being piloted by the holder of a Pilotage Exemption Certificate (PEC) in Ports where PECs are granted.

5.12 Aids to Navigation (4.21 – 4.24)

Within the meaning of the Merchant Shipping Act 1995, SIC is the Local Lighthouse Authority. Section 47 of the ZCC Act 1974 (as amended) states that:

'The Council shall within a harbour area be a local light-house authority for the purposes of sections 652 to 654 of the Merchant Shipping Act 1894 provided that the Council shall not be a local lighthouse authority for the said purposes within the area described in Part 1 of the Schedule to the Sullom Voe Harbour Revision Order 1980'.

This last clause excludes the Yell Sound portion of the 'Sullom Voe' Harbour boundary.

This Act empowers SIC to carry out and maintain markings and navigation lights within the SHA areas. Any removal, alteration or placement of lighthouses, buoys or beacons are subject to consent of the NLB as General Lighthouse Authority. All characteristics of navigational aids used by SIC comply with the requirements of the 'International Association of Lighthouse Authorities (IALA) Guidelines and Recommendations'. SIC recognises the responsibility of the NLB as General Lighthouse Authority, to inspect their lighthouses, buoys, beacons and other aids to navigation as necessary and comply with any directions from the NLB concerning the provision and positioning of AtoN.

5.13 Wrecks and Abandoned Vessels (4.25 – 4.32)

Section 16 of the ZCC Act 1974 (as amended) provides powers to remove or destroy wrecks, and states:

(1) In their application to the Council sections 530 and 532 of the Merchant Shipping Act 1894 (which confer powers on the Council with respect to, and with respect to anything in or on, any vessel sunk, stranded or abandoned in such manner as to be an obstruction or danger to navigation in the harbour area or in or near any approach thereto) shall have effect:

- (a) subject to the provisions of the next following section; and
- (b) in relation to a vessel sunk, stranded or abandoned before, as well as after, the passing of this Act

(2) Subject to subsection (3) of this section, and to any enactment for the time being in force limiting his liability, the Council may recover as a simple contract debt from the owner of any vessel in relation to which they have exercised their powers under the said section 530 any expenses reasonably incurred by them under that section in relation to that vessel which are not reimbursed out of any proceeds of sale within the meaning of that section.

(3) Except in a case which is in the opinion of the Council a case of emergency, subsection (2) of this section shall not apply in relation to any vessel unless before exercising in relation to that vessel any of the powers conferred on them by the said section 530, other than the power of lighting and buoying, the Council have given to the owner of the vessel not less than forty-eight hours' notice of their intention to do so; and if before the notice expires they receive from the owner counter-notice in writing that he desires to dispose of the vessel himself, and no direction is served in respect of the vessel under paragraph (b) of subsection (2) of the next following section, he shall be at liberty to do so, and the Council shall not exercise the powers aforesaid in relation to that vessel until the expiration of

seven days from the receipt of the counter-notice and of any further continuous period thereafter during which the owner of the vessel proceeds with the disposal thereof with all reasonable diligence and in compliance with any directions for the prevention of interference with navigation which may be given to him by the Council.

(4) Notice under the last foregoing subsection to the owner of any vessel may be served by the Council either by delivering it to him or by sending it to him by the recorded delivery service addressed to him at his last known place of business or abode in the United Kingdom or, if the owner or any such place of business or abode is not known to the Council, by displaying the notice at the office of the Council for the period of its duration.

(5) In this section the expression "owner" in relation to any vessel means the person who was the owner of the vessel at the time of the sinking, stranding or abandoning thereof.'

This power is further strengthened by Section 252 of the Merchant Shipping Act 1995. Wrecks may also be lit and buoyed, until they are raised, removed or destroyed. SIC exercises its powers in respect of wrecks to mark and remove wrecks which in their opinion are a danger, or likely to become a danger to navigation.

In addition Section 18 provides further powers to 'Removal of obstructions other than vessels':

'(1) The Council may remove:

- (a) anything which is neither a vessel nor (within the meaning of Part IX of the Merchant Shipping Act 1894) wreck, causing or likely to become an obstruction or impediment in any part of a harbour area;
- (b) anything, other than a vehicle, causing or likely to become an obstruction or impediment to the proper use of any port premises'.

5.14 Detention of Vessels

The Harbour Master may detain vessels under the provisions of the Railways and Transport Safety Act 2003 (Section 84), where it is suspected that a mariner (master, pilot or seaman) has committed a drink or drugs related offence when on duty.

The Harbour Master (by virtue of Section 144 of the Merchant Shipping Act 1995) may detain any vessel (with the exception of Her Majesty's navy or any Government ship) if it is believed that the vessel has committed an offence by discharging oil, or a mixture containing oil, into the waters of the Harbour. Notice must also be given to the Harbour Master (as required by the Section 135 of the Merchant Shipping Act 1995) before oil is transferred at night to or from a ship in any Harbour.

6 Marine Risk Assessment Process

Continuous assessment of risk is fundamental to the principles of the Code. SIC has therefore made the process of risk assessment, incident recording and review central to the Marine SMS. Specifically with reference to the Code's guidance on risk assessment, the following are considered:

- **Data Gathering and Familiarisation** - Review of the existing management structure, risk control arrangements, policies, procedures and operational functions;
- **Hazard Identification** - Identification of potential hazards scenarios and mapping of existing control measures;
- **Risk Analysis** - Consideration of the likelihood of identified hazardous incidents and their associated potential consequences, including prioritisation of their hazard scenario ranking;
- **Risk Assessment** - Comparison of hazard scenarios with the effectiveness of existing risk control arrangements and subsequent determination of additional control measures; and
- **Risk Control** - Judgement and endorsement of specific control measures to be implemented and managed through the Port Marine SMS.

The risk assessment processes is described in detail in the following sections of this document.

6.1 Marine Risk Assessments

The Maritime Risk Assessment Procedure employs a comprehensive Microsoft Excel spreadsheet as its primary tool. This tool facilitates the precise computation of the Overall Risk factor associated with each hazard that has been identified, in four primary areas:

- People
- Property
- Environmental
- Business

These potential risks are evaluated in a rational and systematic manner, adhering to the risk assessment process as outlined by the International Maritime Organization's (IMO) Formal Safety Assessment.

Upon completion of each evaluation cycle, the risk assessments undergo a thorough review to ensure accuracy and relevance. After this review, assessments are then converted into secure PDF format to maintain data integrity.

Vessels alongside - Small Ports, Harbours & Piers - NRA-SP-0001															
Hazard <small>What can go wrong (Event leading to a consequence)</small>	Causes <small>How can it go wrong</small>	Controls <small>Preventative & Reactive (What action & how frequent)</small>	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Overall Risk Assessment Score		
			Likelihood	Overall Risk				AV Hazard Score (Worst Credible)	Likelihood	Overall Risk				AV Hazard Score (Most Likely)	
				People	Property	Environment	Business			People	Property	Environment			Business
Contact	Technical Failure Human Error Environmental Conditions Failure of Aids to Navigation Jetty Obstruction	Pre-Arrival Checklist (as required) Port Marine Safety Code - MSMS Byelaws & General Directions CERS (as required) Weather Forecasting / Tidal Predictions Weather Parameters Emergency Plans / OPRC Port Information Notice to Mariners Marine Circulars Towage (if/as required) Nav Aids Fendering Emergency Services	2 Negligible	2 Major	10 Major	10 Major	8 Serious	7.5	2	6 Major	10 Major	10 Major	10 Major	9.00	9.13

Fig showing Marine Risk Assessment for contact with vessels alongside.

6.2 Risk Assessment Creation

In practice the key features of the risk assessment method are:

- Identification of all Hazards likely to impact navigational safety;
- Continuous review of those hazards already identified;
- Identification of control methods which can be introduced to reduce the likelihood of the hazard occurring (reducing the risk to the lowest reasonable level, the ALARP principle); and
- Continuous review of control measures already identified.

Each risk assessment is assessed against likelihood and severity of the hazard occurring. The hazard is identified, causes are considered within the assessment, followed by the allocation of Risk Control Options (RCOs) both in terms of existing RCOs and possible future RCOs.

6.2.1 Planned Periodic Reviews

All risk assessments are reviewed annually. The process will take account of consultation with relevant staff, port users and external bodies where appropriate.

6.2.2 Post-Incident Reviews

In addition to regular reviews of existing hazard scenarios a post-incident review will take the form of an immediate review of the hazard that led to the incident. This will include the causes of the event, and the risk control measures which were in place, and if necessary a re-scoring of the overall risk. It is likely that unless changes are made to controls, the risk score will increase and a judgement will have to be made as to whether this is acceptable.

To positively contribute to navigational safety, the lessons learned from post-incident reviews must be effectively promulgated.

6.2.3 New Risk Assessments

New risk assessments may become necessary for a number of reasons:

- A significant change in operational procedures (for example, new vessel or type of vessel, new cargo, new berth);
- As a result of routine reviews/consultation, it becomes apparent that a hazard exists but has not yet been considered; and
- Following an accident/incident, a new hazard is identified.

In these cases, a new risk assessment will be completed, the Harbour Master will oversee (in collaboration with all stakeholders) a full risk assessment from the initial stage. After taking into consideration (and recording) existing control measures, an overall risk score will be generated. If this score is not acceptable a comment will be noted and new control measures introduced. The assessment can then be reviewed as soon as the new measures are in place, and the risk re-assessed until such time as it becomes acceptable.

It may become apparent that the only way to reduce the risk to an acceptable level is to remove the hazard completely (for example, cease the hazardous operation).

6.3 Hazard Scenario Ranking

Once the risk assessment has been populated with hazard scenarios, the resulting risk level from each identified hazard scenario is determined by numerically comparing the potential severity of the consequences (against people, property, planet and port) and the likelihood of that hazard scenario occurring. Hazard scenarios are then ranked according to their numerically scored risk level. It is the principle aim of the ongoing hazard scenario review process to actively manage the risk control measures associated with each hazard scenario and attempt to reduce the level of risk, and therefore the ranked score, at each review.

6.4 SIC Risk Control Measures

Any activity (especially a marine operation) will involve some element of risk. Risk can be reduced to an acceptable level which is 'ALARP' by introducing robust control measures to ensure the activity is carried out as safely as possible, and in a 'controlled' manner. Risk Control Options (RCO) measures can be placed into two broad categories; documentary and hardware.

6.4.1 SIC Documentary Risk Controls

Satisfactory implementation of documentary risk controls are clearly evidenced by accessible and auditable documents. These controls set out how tasks should be done to keep risks to a minimum, and will include:

- Formalised marine training and assessment, including systems to make sure all staff receive appropriate training, and that such training is properly recorded. This is recorded in a Training Matrix;
- Regulatory Framework, including Local Harbour Acts, Byelaws and Directions;
- Accurate Charts and other Navigational Information, including the proper promulgation of such documents, as well as tidal and weather information, navigation warnings, weather advice and other information required by Harbour users;
- Operational Manuals and Guidelines, as appropriate for each port or set of ports (for example, SIC Small Ports);
- Operating Procedures, giving specific instructions for individual tasks;
- Emergency Plans and Procedures, as may be required at each location; and
- Notices to Mariners, giving general navigational guidance and advice.

6.4.2 SIC Hardware Risk Controls

Hardware risk controls include physical systems that may be required to provide information to the Harbour Master, Marine Staff and users to allow safe navigation and use of a port. The following items are not common to all SIC Ports, and are scalable depending on the size and complexity of port operations. Such systems may include:

- Radio Communication, appropriate to the facilities, with the ability to communicate with vessels such as, commercial and leisure craft;
- Vessel Traffic Services (VTS) equipment suitable to the size, scale and marine operations of the harbour;
- Traditional Aids to Navigation (for example, buoyage, lights); and
- Moorings and anchorages, especially for use in emergency when other port based facilities (docks, quays and piers) may not be available.

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Appendix A Structure Diagram Shetland Islands Council (SIC)

Ports and Harbours

