North Sunderland Harbour Port and Navigation Risk Assessments

Introduction

This North Sunderland Harbour Navigational Risk Assessment document has been compiled to formally identify all the marine hazards within the jurisdiction of the Port. As a part of the Safety Management System, a full assessment of the hazards has been carried out against a standard of acceptability. Where appropriate, risk reducing control measures have been put in place to eliminate or reduce the risk to as low as reasonably practicable (ALARP). As with any Safety Management System, there needs to be a robust and regular monitoring and review system in place to fully support the validity of the Navigation Risk Assessment.

For the purposes of this document the definition of “hazard” and “risk” are defined below.

“Hazard”: A potential source of harm, loss or injury.

“Risk”: The probability of suffering harm or loss and is a measure of the frequency and consequence of a particular hazard.

North Sunderland Harbour Marine Hazards

The following Marine Hazards were identified:

- Collision: Contact with another vessel when both are underway.
- Collision with fixed object: Vessel making contact with a fixed object, either port infrastructure or moored vessel.
- Grounding: Vessel making contact with sea bed or an underwater obstruction.
- Breakout: Vessel mooring or anchor failure.
- Bunkering / Pollution: Potential for oil pollution / damage to the environment.
- Fire: Potential for injury to persons and property.
- Man Overboard.
- Slips, Trips and Falls:
    - On the dock side.

  - Using ladders.
  - Passenger trip boat embaration / disembarkation.
  - Public Slipway - slip trips and falls.
  - Diving Boats.
- Vehicles vs Pedestrians
  - Slipway – supervision and access.
  - NSH roadways.
- NSH Fridges.
- Lifting
  - Cargo.
  - Forklift.
  - Boat Lift.

Vessel Types

The following vessels or vessel types have been identified as operating within North Sunderland Harbour and while all are exposed to the same hazards, each have their unique risk levels, requiring the equivalent unique control measures to mitigate the risk.

1. Fishing Vessel.
2. “Tripping” Passenger Boat.
3. Diving Boat / RIB.
4. RNLI “Shannon” Class and “D” Class Lifeboats.
5. Leisure and Small Craft Under 50m.

North Sunderland Harbour Navigational Risk Assessment Methodology

For the purposes of the North Sunderland Harbour Navigation Risk Assessment, the methodology adopted is described below;

1. Risk is assessed by first assigning a value to the likelihood of the event occurring within the next 5 years using the left hand table below.
2. A value is then given to the likely severity of the consequence of the event using the right hand table below.
3. The two values are then multiplied to give a risk score for that particular hazard on the assumption that no control / mitigation measures are applied - this is the **'Inherent or Uncontrolled Risk."**
4. The control / mitigation measures are then applied and the risk score re-calculated to give the final **'Residual Risk.'**
5. Finally the risk score is assigned one of the five action levels:
    a. "No action" – risk ALARP.
    b. "Monitor" – risk ALARP.
    c. "Action" – find better mitigation measures.
    d. "Urgent Action" and "Stop" – do not proceed.

The risk classification indicates the magnitude and acceptability of the risk and determines whether the task can be performed. If the residual risk level cannot be mitigated such that it is at the ALARP level or below (scoring 12 or less) then either additional mitigating / control measures will be required or the activity suspended.

The individual and overall risk assessment should be kept under continual and periodic review. Any incident that is relevant to a particular risk assessment should trigger a review of the scoring of the risk assessment and especially the mitigating measures applied.

North Sunderland Harbour Risk Assessments
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Risk Rating Calculator

Likelihood that hazardous event will occur	
1	very unlikely
2	unlikely
3	fairly likely
4	likely
5	very likely

Consequence of hazardous event	
1	insignificant – no injury
2	minor – minor injuries needing first aid
3	moderate – up to three days' absence
4	major – more than seven days' absence
5	catastrophic – death

Risk Rating	Action
20-25	Stop Activity and Take Immediate Action
15-20	Urgent Action
8-12	Action
3-6	Monitor
1 -2	No Action – ensure controls are maintained and reviewed

Navigation Risk Assessment - Embedded Risk Control Measures

There will be a number of standard risk control measures that can be assumed to apply to the entire range of port risk assessments – in essence they are embedded into the framework of the port.

Number	Control Measure
1	The port employs competent people with suitable experience.
2	The port resources the harbour staff sufficiently to deliver their tasks.
3	The port complies with the Port Marine Safety Code.
4	Port staff and Commissioners receive regular professional training.
5	The port has sufficient and relevant powers to enforce compliance.
6	A resourced port maintenance and estate survey plan is in place.
7	A resourced marine hydrography and survey regime is in place.
8	Fishing vessels comply with MCA guidance on equipment and manning.
9	Issuing of North Sunderland Harbour Local Notice to Mariners.
10	Compliance and integration of the NDC Emergency Response Plan.
11	Marine Pollution Response Plan - Tier 2 oil spill contractor retained.
12	Compliance with UK Maritime Legislation & STCW Training.
13	Awareness of EA flood alerts/negative tidal surge warnings.
14	Harbour and port user awareness and compliance with IMO guidelines.
15	Regular and useful Stakeholders Group meetings.
16	Compliance with duties as a LLA - Trinity House Aids to Navigation.
17	Tripping vessels comply with MCA guidance for Class 6 passenger vessels.
18	Lifting equipment is LOLER compliant.

Risk Assessments

The following Marine Risk Assessments (MRA) have been made for North Sunderland Harbour. Each individual bullet will be a separate risk assessment:

1. MRA 1 - **Slips, Trips and Falls on the Dockside**:
    - Port staff falls from NSH Quays.
    - Member of public falls from NSH Quays.
    - Port user falls from port ladder.
    - Passenger falls on public embarkation slipway.
    - Passenger falls between vessel and slipway while embarking.
    - Port user slips on public slipway.
    - Diver / fisherman slips on boarding steps while loading / embarking.
    - RNLI crew slip during launch or recovery.

2. MRA 2 - **Oil Spill**:
    - Small quantity of Marine Gas Oil (MGO)[1] is released into the harbour during bunkering.
    - Incident causes a large quantity of MGO to be released into the harbour.
    - As a result of an incident outside the harbour (collision or grounding in the North Sea) a large quantity of MGO or Heavy Fuel Oil (HFO)[2] is washed into the harbour on the tide.

3. MRA 3 - **Vessel Breaks Moorings**:
    - Fishing vessel or tripping vessel breaks her moorings in the harbour.
    - Vessel at anchor outside the port drags anchor.
    - Leisure vessel on a mooring in the “Fluke Hole” breaks mooring.

4. MRA 4 - **Collision**:

[1] Marine Gas Oil – or light fuel such as Diesel / Petrol. Typically degrades through biologic or agitation action with 48 hours.
[2] Heavy Fuel Oil – Thick, black and viscous. Long persistence and very sticky.

- Vessel collides with another vessel when both are underway in the harbour or approaches to the harbour.
- RNLI vessel “on task” collides with other vessel in harbour or approaches.

5. MRA 5 – **Allision**:
    - Vessel makes contact with a fixed object, either port infrastructure or moored vessel.

6. MRA 6 – **Grounding:**
    - Vessel makes contact with sea bed or an underwater obstruction in the harbour or approaches.
    - RNLI vessel “on task” grounds due to squat at low water.

7. MRA 7 – **Fire**:
    - Vessel catches fire alongside or in approaches to harbour.

8. MRA 8 – **Man Overboard:**
    - Person overboard from fishing vessel in harbour or approaches.
    - Person overboard from trip boat in harbour or approaches.
    - RNLI crew fall over board while “on task.”

9. MRA 9 – **Vehicles vs Pedestrians:**
    - Trailer, boat or vehicle out of control on the public slipway.
    - Pedestrian is hit by vehicle on NSH road / jetty / quayside.
    - Pedestrian is hit by cargo being handled on NSH jetty quayside.
    - Pedestrian or vehicle is hit by RNLI launch trailer during emergency launch.

10. MRA 10 – **NSH Fridges**:
    - Person locked inside fridge.
    - Fridges left open.

11. MRA 11- **Lifting & Cargo Operations on the Quays**:

- Forklift collides with person working on dock side.
- Overloaded forklift topples itself and cargo onto person below
- Cargo piled on jetty is blown or knocked over onto person below.
- Member of the public gains access to the dock area while cargo is being worked.
- NSH crane hoist fails with cargo falling onto person below.
- Privately owned boat lift fails and injures persons nearby.

Risk Assessment Action List

The following list has emerged for the risk assessment process as actions for checking that they are inplace or if not, for urgent implementation.

MRA 1

- All port staff undertake ENG 1 or ML5 or similar examinations to ensure they are fit.
- All port staff wear safety footwear.
- Guardrail and armco barriers are surveyed 2 yearly and a regular programme of maintenance & replacement in place.
- Port staff are first aid trained.
- Harbour lifebuoys are surveyed and inspected monthly.
- Ladders are cleaned by port staff regularly to avoid marine growth.
- Ladders are surveyed 2 yearly and a regular programme of maintenance & replacement in place.
- Tripping boat risk assessment and operating procedures are approved by Harbour Master each season.
- Slipway is cleaned / jet washed weekly in summer months by harbour staff. Monthly in winter.
- Prior to embarkation each passenger is scrutinized for physical ability and assistance offered if required for boarding.
- Prior to going onto slipway passengers are briefed by boat crew.
- Passengers for embarkation in trip boats are closely supervised by boat crew.
- Slipway is not used 1 hour each side of low water (non slippy).
- Embarkation process uses 2 crew members to hand passengers on board - one on vessel and one on slipway.
- When gap between vessel and slipway is more than 50cm, a gangway / boarding plank is used.
- The 2 x port boarding steps are cleaned by port staff regularly to avoid marine growth.
- The 2 x boarding steps are surveyed 2 yearly and a regular programme of maintenance & replacement in place.

MRA 2

- Tier 1 oil spill response equipment is available in the harbour office and at the bunkering point to deal with minor spills.
- Tier 1 equipment is inspected and updated monthly by harbour staff.
- Regular training in Tier 1 and Tier 2 responses iaw OSRP schedule.
- An approved method of bunkering is agreed, publicised and enforced.
- Record of incidences kept, trends and repeat offenders identified.
- Bunkering equipment is maintained, inspected and approved annually.
- Only trained personnel to use the bunkering equipment

MRA 3

- Bollards and fairleads are inspected annually by harbour staff.
- NSH mooring policy states minimum number of lines to be used to secure a vessel.
- NSH mooring policy allocates berths to specific vessels.
- Moorings in “Fluke Hole” are licensed by NSH.
- License requires moorings to be inspected annually.
- Vessel owners are recommended to secure their vessels using wire ropes or chain.

MRA 4

- NSH see vessel insurance, survey and crew qualifications annually.
- Requirement for local traffic service / vessel control by NSH reviewed annually.
- All vessels call on VHF channel XX on departure from berth and 2 minutes from entrance.
- Speed limit in harbour and within 200 yds of entrance is 3 knots.
- Vessels equipped with AIS should be transmitting when under way.
- In restricted visibility only 1 vessel is permitted to move within the harbour.
- RNLI will broadcast on VHF Ch 16 when leaving or approaching NSH.

MRA 6

- NSH has a hydrographic and survey policy that requires the harbour to be surveyed every 2 years.
- The survey results dictate the requirement for dredging and maintaining safe depths in the harbour.
- Inner harbour dries at low water, so any obstruction entering the water from the jetties will be relatively easy to locate and remove.
- Vessels using the harbour typically have a draught of 2.5m or less.

MRA7

- Commercial Vessels and fishing vessel crews are suitably qualified, trained and regularly exercised in firefighting on ships.
- Fishing & Commercial vessels are governed by MCA regulations for fire prevention, detection and suppression equipment, and it is regularly serviced.
- NSH see vessel insurance, crew qualifications and firefighting equipment and capability – annually.
- Seahouses fire service is familiar with challenges of fighting fire on vessels.
- There are fire hydrants and hoses on all quays and jetties in NSH.
- The fire hydrants and hoses are regularly maintained and replaced.
- Port staff are trained in first aid fire-fighting techniques.

MRA 8

- Vessels are crewed by suitably qualified professionals.
- Fishing & Commercial vessels governed by MCA regulations for navigation equipment, serviceability and crew fitness and manning levels.
- NSH see vessel insurance, survey and crew qualifications annually.
- Speed limit in harbour and within 200 yds of entrance is 3 knots – vessel movement minimal.
- Fishermen all wear lifejackets when under way.
- Fishing vessels practice recovery of MOB regularly.
- All jetties and quays have life rings – regularly serviced and maintained.
- Passengers received full safety briefing before departure.
- Passengers are fully supervised when underway.
- Tripping vessels governed by MCA regulations for passenger safety, lifesaving equipment, serviceability and crew training for MOB recovery.
- Tripping vessels practice recovery of MOB regularly.
- Tripping vessels have high freeboard and railings.
- RNLI inshore LB on call at 15 mins notice.

MRA 9

- Access to slipway is controlled by NSH staff.
- Only single launch or recovery permitted.
- Members of public not allowed access to slipway or commercial quaysides.
- Slipways cleaned periodically by NSH staff.
- Speed limit on NSH road is 5mph.
- NSH road / Slipway is monitored by CCTV and byelaw enforcement action.
- Trip boat passengers are carefully marshalled by trip boat staff.
- Option to install speed humps remains open.
- Option to install protected walkways remains open.
- Option to install speed camera sign remains open.
- Monitor number of instances / close calls.
- NSH licences individual commercial operators to work cargo.
- Hard hat and appropriate PPE is required when working cargo.
- All hoists, the forklift and cranes are LOLER compliant and tested regularly.
- Hoist, crane and forklift are driven by qualified personnel.
- Moving vehicles on public roadways have a banksman.
- RNLI staff are trained in launching techniques.
- 2 x RNLI banksmen are in attendance for each launch.
- NSH road is closed for launch and recovery of RNLI vessels.
- RNLI personnel wear appropriate PPE.
- RNLI launching does not break NSH speed limit of 5 mph.

MRA 10

- Access to Fridges controlled by NSH staff.
- Loud “Locked Inside” alarm installed on NSH Fridges.
- 2 person operation only permitted for NSH Fridges.
- CCTV monitors inside and outside of NSH fridges.
- Loud “Fridge Open” alarm installed on NSH Fridges.

MRA 11

- Members of public not allowed on commercial quaysides.
- NSH licences individual commercial operators to use forklift.
- Hard hat and appropriate PPE is required when using forklift.
- Forklift and Boatlift lifting equipment is LOLER compliant and tested regularly.
- Forklift Hoist Boatlift is driven by qualified personnel.
- Forklift Boatlift has banksman when working cargo.
- Forklift has reversing beeper.
- NSH licenses individual operators to work and store cargo on jetty.
- Cargo storage in monitored by CCTV.
- Commercial operators are trained in cargo handling.
- NSH licences individual commercial operators to use the boat lift on production of insurance and operators’ certificate.
- NSH road is closed when boatlift is operating.
- NSH licences individual commercial operators to use hoists.