Comprehensive Risk Assessment and Mitigation Plan

**Electronic Interference in Gulf and Strait of Hormuz**

Date: 17 June 2025

**Identified Risks**

|  |  |  |
| --- | --- | --- |
| Risk ID | Risk Description | Impact Category |
| R1 | AIS/GPS Spoofing or Loss of Signal | Navigation, Collision |
| R2 | Collision with other vessels due to loss of positional awareness | Safety, Human Life, Property |
| R3 | Grounding due to incorrect positioning or delayed maneuvering | Hull Integrity, Pollution |
| R4 | Oil pollution from hull breach or grounding | Environmental, Legal |
| R5 | Cyber interference targeting navigation/control systems | Cybersecurity, Safety |
| R6 | Security threats: interference masking unlawful boarding/piracy | Security, Crew Safety |
| R7 | Delay in response due to comms failure | Emergency Response |

**Navigational Safety**

|  |  |  |  |
| --- | --- | --- | --- |
| Task | Responsibility | Status | Mitigation |
| Conduct detailed voyage planning with manual waypoints plotted on paper charts | Master / 2O | ☐ | Refer SOP / Master's Standing Orders |
| Increase bridge manning during transit | Master | ☐ | Refer SOP / Master's Standing Orders |
| Use radar, visual bearings, parallel indexing, and dead reckoning to fix position | OOW | ☐ | Refer SOP / Master's Standing Orders |
| Use echo sounder and depth contours to cross-check charted position | OOW | ☐ | Refer SOP / Master's Standing Orders |
| Establish safe speed and maintain increased CPA | Master | ☐ | Refer SOP / Master's Standing Orders |
| Keep engines on standby during critical legs of transit | Chief Engr | ☐ | Refer SOP / Master's Standing Orders |

**Security and Cyber Risk Mitigation**

|  |  |  |  |
| --- | --- | --- | --- |
| Task | Responsibility | Status | Mitigation |
| Inform UKMTO prior to entry and maintain regular reporting | Master | ☐ | Refer SOP / Master's Standing Orders |
| Secure AIS broadcasting settings as per CSO/Master risk assessment | Master / CSO | ☐ | Refer SOP / Master's Standing Orders |
| Limit external communications and disable USB ports on bridge systems | ETO | ☐ | Refer SOP / Master's Standing Orders |
| Isolate navigation and propulsion systems from non-secure networks | ETO / CE | ☐ | Refer SOP / Master's Standing Orders |
| Implement watch routines with regular upper deck patrols | SSO | ☐ | Refer SOP / Master's Standing Orders |
| Ensure secure stowage of all pilot ladders, grapnels, and external access | Deck Dept. | ☐ | Refer SOP / Master's Standing Orders |

**Pollution and Environmental Risk Mitigation**

|  |  |  |  |
| --- | --- | --- | --- |
| Task | Responsibility | Status | Mitigation |
| Conduct bunker and sludge tank integrity check prior to entry | Chief Engr | ☐ | Refer SOP / Master's Standing Orders |
| Keep SOPEP equipment and oil spill kits ready and accessible | Chief Officer | ☐ | Refer SOP / Master's Standing Orders |
| Review vessel oil discharge monitoring and control systems for operability | 2O / CE | ☐ | Refer SOP / Master's Standing Orders |
| Review MARPOL compliance and records for last port state inspection | Master / C/O | ☐ | Refer SOP / Master's Standing Orders |
| Establish oil spill notification and emergency drill protocol | Master / C/O | ☐ | Refer SOP / Master's Standing Orders |

**Emergency Preparedness and Contingency**

|  |  |  |  |
| --- | --- | --- | --- |
| Task | Responsibility | Status | Mitigation |
| Conduct table-top drills simulating GPS/AIS outage | Master | ☐ | Refer SOP / Master's Standing Orders |
| Maintain full access to printed chart folios, route lists, tide tables | 2O | ☐ | Refer SOP / Master's Standing Orders |
| Test and confirm functioning of all GMDSS and backup comms | ETO | ☐ | Refer SOP / Master's Standing Orders |
| Confirm emergency contact list (UKMTO, Flag, Operator, CSO) onboard | Master | ☐ | Refer SOP / Master's Standing Orders |
| Prepare contingency anchorage or safe haven options pre-voyage | Master | ☐ | Refer SOP / Master's Standing Orders |
| Test ship’s steering gear, backup power, and emergency generator | CE / EO | ☐ | Refer SOP / Master's Standing Orders |

**Notes**

- All actions shall be documented in the Bridge and Engine Room Logbooks.
- Daily Risk Review Meetings must be held during transit through affected waters.
- Bridge Team must maintain high alert status, particularly during night or poor visibility conditions.