



**Maritime Operations Safety &
Security (MOSS) Wing**
*Casualty Investigation and Emergency
Response Division*

Training Manual

**Directorate General of Maritime Administration,
Ministry of Ports, Shipping and Waterways**

2026

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List of Acronyms and Abbreviations

1. AIS – Automatic Identification System
2. Addl. DG – Additional Director General
3. BoI – Bureau of Immigration
4. CBIC – Central Board of Indirect Taxes and Customs
5. CLC – Civil Liability Convention
6. CMG – Crisis Management Group
7. CMT – Crisis Management Team
8. CS – Chief Surveyor
9. CSS – Chief Ship Surveyor
10. DG Comm Centre – Directorate General Communication Centre
11. DGMA – Directorate General of Maritime Administration
12. DG(MA) – Director General of Maritime Administration
13. DGMA – Directorate General of Maritime Administration
14. DSC – Digital Selective Calling
15. EEZ – Exclusive Economic Zone
16. EPIRB – Emergency Position Indicating Radio Beacon
17. ETV – Emergency Towing Vessel
18. FIR – First Information Report
19. GIS – Geographic Information System
20. GISIS – Global Integrated Shipping Information System
21. GMDSS – Global Maritime Distress and Safety System
22. H&M – Hull and Machinery
23. HNS – Hazardous and Noxious Substances
24. ICG – Indian Coast Guard
25. IFC-IOR – Information Fusion Centre – Indian Ocean Region
26. IG – International Group (of P&I Clubs)
27. IMAC – Information Management and Analysis Centre
28. IMCRC – Inter-Ministerial Crisis Response Committee
29. IMO – International Maritime Organization
30. IN – Indian Navy
31. IOPC Funds – International Oil Pollution Compensation Funds

32. ISPS Code – International Ship and Port Facility Security Code
33. LEG Committee – Legal Committee (IMO)
34. LRIT – Long-Range Identification and Tracking
35. MAS – Maritime Assistance Service
36. MbPA – Mumbai Port Authority
37. MEPC – Marine Environment Protection Committee (IMO)
38. MEA – Ministry of External Affairs
39. MMD – Mercantile Marine Department
40. MMDAC – Mercantile Marine Domain Awareness Centre
41. MoPSW – Ministry of Ports, Shipping and Waterways
42. MRCC – Maritime Rescue Coordination Centre
43. MSC – Maritime Safety Committee (IMO)
44. MS Act – Merchant Shipping Act
45. NA – Nautical Advisor to the GOI
46. NAIS – National Automatic Identification System
47. NCMC – National Crisis Management Committee
48. NDMA – National Disaster Management Authority
49. NDC – National Data Centre
50. NDRF – National Disaster Response Force
51. NMSC – National Maritime Security Coordinator
52. NOS-DCP – National Oil Spill Disaster Contingency Plan
53. OSRO – Oil Spill Response Organisation
54. PAN-PAN – Urgency Signal under GMDSS
55. PI – Preliminary Inquiry
56. P&I – Protection and Indemnity
57. PSC – Port State Control
58. RCC – Rescue Coordination Centre
59. RPSL – Recruitment and Placement of Seafarers Licence
60. SAR – Search and Rescue
61. SDMA – State Disaster Management Authority
62. SECURITE – Safety Signal under GMDSS
63. SOLAS – International Convention for the Safety of Life at Sea
64. SPCB – State Pollution Control Board
65. SRR – Search and Rescue Region

- 66. SSAS – Ship Security Alert System
- 67. STCW – International Convention on Standards of Training, Certification and Watchkeeping for Seafarers
- 68. VDR – Voyage Data Recorder
- 69. VHF – Very High Frequency
- 70. VSMC – Very Serious Marine Casualty
- 71. VTS – Vessel Traffic Services

List of Definitions

1. Marine Casualty

An event or sequence of events directly connected with the operation of a ship that results in death, serious injury, loss of a person, loss or abandonment of a ship, major damage to a ship, collision, grounding, stranding, disabling of a ship, damage to marine infrastructure, or serious environmental harm.

2. Very Serious Marine Casualty

A marine casualty involving the total loss of a ship, loss of life, or severe damage to the marine environment.

3. Marine Incident

An event connected with the operation of a ship that endangered, or could have endangered, the safety of the ship, persons on board, or the environment, but did not result in serious damage or loss.

4. Near Miss

An unsafe situation or event that did not cause injury, damage, or pollution but had the potential to do so if circumstances had been slightly different.

5. Marine Violation

An act or omission that does not amount to a casualty or incident but constitutes non-compliance with maritime laws or regulations, such as operating outside permitted limits or breach of labour, safety, or quarantine requirements.

6. Preliminary Inquiry (PI)

The first formal inquiry conducted after a reported marine casualty to collect basic facts, evidence, and statements, and to recommend immediate safety actions.

7. Marine Safety Investigation

A structured investigation carried out to determine the causes and contributing factors of a marine casualty or incident, with the sole objective of preventing future occurrences and improving safety.

8. Inquiry Officer

A Surveyor nominated by the Mercantile Marine Department to conduct a Preliminary Inquiry or investigation into a marine casualty or incident.

9. Flag State

The country under whose flag a ship is registered and whose laws apply to the ship, regardless of where the ship is operating.

10. Coastal State

The country in whose territorial waters, contiguous zone, or Exclusive Economic Zone a marine incident or casualty occurs.

11. Port State

The country whose port a ship enters or intends to enter, and which exercises control over the ship while it is within port limits.

12. Substantially Interested State (SIS)

A country that is not the Flag or Coastal State but has a significant interest in a marine casualty, such as involvement of its nationals, ownership interests, or environmental impact.

13. Emergency Response

Actions taken immediately after a marine incident to protect life, prevent pollution, ensure navigational safety, and stabilise the situation.

14. Emergency Towing Vessel (ETV)

A specialised vessel deployed to assist ships in distress by providing towage or support to prevent grounding, collision, or pollution.

15. Search and Rescue (SAR)

Operations conducted to locate and assist persons, ships, or aircraft in distress at sea.

16. Crisis Management Team (CMT)

A senior-level team constituted within DGMA to manage very serious marine casualties requiring multi-agency coordination and strategic decision-making.

17. Inter-Ministerial Crisis Response Committee (IMCRC)

A high-level committee activated for marine incidents of national or transboundary significance to ensure coordinated action across ministries and agencies.

18. Maritime Assistance Service (MAS)

A shore-based service designated to receive requests from ships in difficulty and coordinate assistance before the situation escalates into a distress scenario.

19. Long-Range Identification and Tracking (LRIT)

An international ship tracking system that provides long-range position information of certain ships through satellite communication.

20. Mercantile Marine Domain Awareness Centre (MMDAC)

The operational centre within DGMA responsible for maritime monitoring, LRIT data management, and communication support for incident response.

21. Directorate General Communication Centre (DG Comm Centre)

The 24/7 communication hub of DGMA that receives distress alerts, incident reports, and safety-related information from ships and other authorities.

22. Voyage Data Recorder (VDR)

Shipboard equipment that records navigational data, audio communications, and sensor information for use during casualty investigations.

23. Automatic Identification System (AIS)

A shipborne system that automatically transmits a vessel's identity, position, course, and speed to assist in navigation and traffic monitoring.

24. Global Maritime Distress and Safety System (GMDSS)

An international communication system that enables ships to send automated distress, urgency, and safety alerts using radio and satellite technologies.

25. Pollution Incident

A marine incident involving actual or threatened discharge of oil, chemicals, or other harmful substances into the marine environment.

26. Wreck

A sunken, stranded, or abandoned ship or part thereof that may pose a danger to navigation, the environment, or coastal interests.

27. Salvage

Operations undertaken to assist a ship or property in danger at sea, including towing, refloating, firefighting, or pollution prevention actions.

28. Protection and Indemnity (P&I) Insurance

Insurance that covers third-party liabilities arising from ship operations, such as crew injury, pollution damage, cargo claims, and wreck removal.

29. Non-International Group (Non-IG) P&I Insurance

P&I insurance provided by insurers that are not members of the International Group of P&I Clubs, accepted in India subject to government approval.

30. Hull and Machinery (H&M) Insurance

Insurance that covers physical damage to the ship, its machinery, and equipment.

31. Cargo Insurance

Insurance taken by cargo owners to cover loss or damage to goods during sea transport.

32. Pollution Liability Insurance

Insurance that provides financial cover for pollution response and cleanup costs beyond standard P&I or statutory limits.

33. Global Integrated Shipping Information System (GISIS)

An online platform maintained by the International Maritime Organization for reporting marine casualties, investigations, and safety data.

34. Fair Treatment of Seafarers

The principle that seafarers involved in marine accidents must not be unfairly detained, criminalised, or denied access to communication, legal support, or welfare during investigations.

1. Introduction

Maritime operations involve inherent risks due to weather, navigation, machinery, human factors, and the movement of hazardous cargo. When something goes wrong at sea, the consequences can affect human life, the marine environment, coastal communities, and national interests. Marine incidents therefore require timely reporting, coordinated response, clear decision-making, and structured investigation.

The Directorate General of Maritime Administration (DGMA), under the Ministry of Ports, Shipping and Waterways, is India's national maritime administration. Among its various functions, DGMA is responsible for oversight of marine incident response and investigation in line with national law and international obligations. The Casualty Investigation and Emergency Response Division of DGMA plays a central role in this responsibility.

This training manual has been prepared to help officers and staff understand how the Casualty Investigation and Emergency Response Division functions, how marine incidents are handled from the first alert to closure, and how different agencies and systems work together during such events. The focus of this manual is awareness, clarity, and consistency, rather than technical or legal detail.

1.1 Purpose of the Manual

The purpose of this manual is to provide a clear and practical introduction to the work of the Casualty Investigation and Emergency Response Division for officers, staff, and duty teams.

Specifically, the manual aims to:

- Explain the basic concepts related to marine incidents and casualties
- Familiarise staff with the roles and responsibilities of the Casualty Investigation and Emergency Response Division
- Describe how information flows during an incident and who does what
- Sensitise staff to coordination requirements with national and international agencies
- Support uniform understanding and handling of incidents across shifts and postings

This manual is intended as a **training and reference document**. It does not replace the Merchant Shipping Act, 2025, rules, notices, or Standard Operating Procedures, but helps staff understand how those instruments are applied in practice.

1.2 Scope and Intended Users

This manual is intended for:

- Officers posted to the Casualty Investigation and Emergency Response Division
- Supporting staff and duty officers

- Personnel assigned to monitoring, communication, coordination, or documentation roles
- Newly inducted officers and staff who may interact with casualty-related work

The manual is written for readers who may not have a nautical or engineering background. Technical assessments, legal interpretation, and specialist operational decisions are handled by designated officers and external agencies, and are covered through separate procedures and guidelines.

1.3 Overview of the Casualty Investigation and Emergency Response Division

The Casualty Investigation and Emergency Response Division functions as the nodal unit within the MOSS Wing of DGMA for matters related to marine incidents and casualties. Its role spans the full lifecycle of an incident, including:

- Receipt and assessment of incident information
- Coordination during emergencies with national agencies
- Regulatory oversight of response actions
- Support to casualty investigation and reporting
- Interface with insurers, salvors, ports, and international bodies

The Branch works closely with internal DGMA units such as the DG Communication Centre and the Mercantile Marine Domain Awareness Centre, and externally with agencies such as the Indian Coast Guard, Indian Navy, Port Authorities, State Maritime Boards / Authorities, Coastal State Administrations, and the International Maritime Organization.

The Casualty Investigation and Emergency Response Division of the MOSS Wing supports DGMA in fulfilling its responsibilities as:

- Flag State for Indian-registered vessels worldwide
- Coastal State for incidents occurring within Indian maritime zones
- Port State for foreign vessels calling at Indian ports

While operational response at sea is led by agencies such as the Indian Coast Guard and Indian Navy, the Casualty Investigation and Emergency Response Division provides regulatory coordination, information management, decision support, documentation, and follow-up. The Branch also supports communication with the Ministry of Ports, Shipping and Waterways during significant incidents.

This manual is intended to build a shared understanding among all staff involved in casualty-related work. As experience is gained, staff are encouraged to relate the guidance in this manual to real cases, circulars, and lessons learned from past incidents, thereby strengthening institutional

2. Organisational Structure

This chapter explains the organisational structure of the Casualty Investigation and Emergency Response Division, established under the Maritime Safety & Security (MOSS) Wing of the Directorate General of Shipping (DGMA). The Division is responsible for maritime casualty investigation, emergency response coordination, monitoring of vessel movements, insurance and compensation matters, and salvage and wreck removal oversight.

The Division functions within the overall administrative control of the Maritime Operations Safety & Security (MOSS) Wing and supports national maritime safety objectives, statutory obligations, and India's commitments under international maritime conventions.

2.1. Casualty Investigation and Emergency Response Division Organogram

The Casualty Investigation and Emergency Response Division functions under the overall supervision of the Nautical Advisor to the Government of India, ensures alignment of the Division's work with national policy, international obligations and directions of the Ministry of Ports, Shipping and Waterways.

The Division is headed by a Deputy Nautical Advisor (Dy. NA – Casualty Investigation and Emergency Response), who is responsible for the day-to-day administration, coordination, and operational supervision of all branches under the Division.

The Dy. NA is supported by two Nautical Surveyors, each entrusted with responsibility for two functional branches to ensure effective supervision, technical oversight, and administrative continuity.

Casualty Investigation and Emergency Response Division



Figure 1 Branched under the Casualty Investigation and Emergency Response Division, Maritime Operations, Safety & Security (MOSS) Wing

The Casualty Investigation and Emergency Response Division consists of four functional branches, as shown above.

The Nautical Surveyor (Emergency Response and Salvage & Wreck Branch) is responsible for day-to-day management of the Casualty Investigation and Emergency Response Division. This role includes operational decision-making, coordination with internal divisions and external agencies, and supervision of incident monitoring, response actions and investigations.

Two Master Mariners support the Nautical Surveyors and handle specialised functional areas:

- One Master Mariner oversees matters related to the Long-Range Identification and Tracking (LRIT) System, supporting vessel tracking, position monitoring and data analysis for incident assessment.
- The second Master Mariner is responsible for coordination with the Directorate General Communication Centre (DG Comm Centre), which functions as the 24×7 communication hub for receiving distress alerts, casualty reports and safety-related information.

The LRIT System and DG Comm Centre are supported by dedicated Radio Officers and Radio Personnel, who ensure continuous watchkeeping, monitoring, data handling and communication support. These personnel form the operational backbone for real-time information flow, enabling timely escalation of incidents and informed decision-making by the Casualty Investigation and Emergency Response Division.

2.2.Functional Linkages with Other Divisions

The Casualty Investigation and Emergency Response Division maintains strong functional linkages with key DGMA divisions and centers to ensure seamless marine incident handling from alert to resolution. These connections enable rapid information flow, technical support, and coordinated action.

MMDAC (Maritime Monitoring and Data Analysis Centre) provides real-time LRIT satellite tracking of Indian vessels, alerting the Branch on position anomalies or distress signals for initial risk assessment and response tasking. DGComm Centre acts as the 24/7 communication hub, receiving initial reports from masters, and relaying them instantly to Casualty Officer in charge for escalation to the Indian Coast Guard or to the officers for deployment of ETV.

3. Casualty and Safety Overview

This chapter outlines the fundamental concepts and classifications used in the management, reporting and investigation of marine casualties and incidents. It provides the definitions adopted under the IMO Casualty Investigation Code (Resolution MSC.255(84)), the Merchant Shipping Act, 2025 and other applicable national legislation. A clear and standardised understanding of these terms is essential for ensuring consistent assessment, coordinated response and compliance with India's obligations as a Flag, Coastal and Port State. The chapter also summarises the principal types of incidents reported to national authorities and explains the jurisdictional framework under which such incidents are handled.

3.1. Concepts of Marine Casualty, Incident, and Near Miss

The definition of Marine Casualty, Very Serious Marine Casualty and Marine Incident are derived from the Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (IMO Resolution MSC.255(84)) (IMO Casualty Investigation Code) available at [https://wwwcdn.imo.org/localresources/en/OurWork/MSAS/Documents/Res.MSC.255\(84\)CasualtyInvestigationCode.pdf](https://wwwcdn.imo.org/localresources/en/OurWork/MSAS/Documents/Res.MSC.255(84)CasualtyInvestigationCode.pdf).

3.1.1. Marine Casualty

A marine casualty refers to an event, or sequence of events, directly connected to the operation of a ship that results in one or more of the following outcomes as defined in Clause 2.9 of the IMO Casualty Investigation Code and reflected in the Merchant Shipping Act, 2025 under Section 231, Part XI:

- ▶ Death or serious injury to a person.
- ▶ Loss of a person from a ship.
- ▶ Loss, presumed loss or abandonment of a ship.
- ▶ Material damage to a ship.
- ▶ Stranding, grounding, disabling of a ship, or collision involving a ship.
- ▶ Material damage to marine infrastructure that poses a risk to the safety of individuals, the ship, or other vessels.
- ▶ Severe environmental damage, or the potential for such damage, resulting from the condition or operation of a ship.

3.1.2. Very Serious Marine Casualty

A very serious marine casualty, as per Clause 2.22 of the Casualty Investigation Code, involves the total loss of the ship, a death, or severe damage to the environment.

3.1.3. Marine Incident

A marine incident, as defined in Clause 2.10 of the Casualty Investigation Code and Section 224(a) of the Merchant Shipping Act, 2025, refers to an event connected to the operation of a vessel that endangered, or if not addressed would have endangered, the safety of the vessel, persons onboard, or the environment. Deliberate actions intended to cause harm are excluded.

3.1.4. Marine Violation

A marine violation refers to an act, omission, or event that does not meet the threshold of a marine casualty or incident but constitutes a breach of maritime law or regulation. This includes violations relating to permitted operating areas, discovery of prohibited items, non-compliance with the Maritime Labour Convention, and breaches of quarantine requirements.

3.1.5. Near Miss

A near miss refers to an unsafe event that did not result in injury, damage, or pollution but had the potential to do so. Near misses provide important indicators of operational and systemic risks.

3.2. Interface with Flag, Coastal, and Port State Functions

3.2.1. Flag State Responsibilities

India exercises Flag State responsibilities over vessels registered under the Indian flag. These responsibilities arise from international conventions and national legislation. As a Flag State, India is required to:

- Ensure that its vessels comply with international safety, environmental protection and certification requirements.
- Conduct or coordinate safety investigations into marine casualties and incidents involving Indian-flagged vessels anywhere in the world, in accordance with the IMO Casualty Investigation Code (MSC.255(84)).
- Submit casualty reports and safety investigation findings to the IMO and other relevant bodies.
- Take corrective measures, including regulatory or operational improvements, based on investigation outcomes.

Flag State responsibilities apply irrespective of where the incident occurs.

3.2.2. Coastal State Responsibilities

India acts as a Coastal State for incidents that occur within its maritime zones, as defined under the Territorial Waters, Continental Shelf, Exclusive Economic Zone and Other Maritime Zones Act, 1976. Coastal State responsibilities include:

- Monitoring, receiving and responding to incidents occurring within territorial waters, the contiguous zone, the exclusive economic zone and the designated Search and Rescue Region (SRR).
- Coordinating operational response with the Indian Coast Guard, Indian Navy, port authorities and relevant State agencies.
- Protecting the marine environment, managing pollution threats and ensuring safe navigation in coastal waters.
- Taking measures to prevent and mitigate hazards arising from disabled or drifting vessels that pose risks to coastal communities or infrastructure.

Coastal State responsibilities are triggered by the location of the incident, regardless of the vessel's flag.

3.2.3. Port State Responsibilities

As a Port State, India has responsibilities related to foreign vessels calling at Indian ports or operating within port limits. These include:

- Conducting Port State Control (PSC) inspections to verify compliance with safety, pollution prevention and manning standards.
- Supporting casualty or incident investigations by providing access to the vessel, operational records, VTS/AIS data and port infrastructure.
- Ensuring that damaged or distressed vessels entering port do not endanger port operations, personnel or infrastructure.
- Coordinating with immigration, customs, health and security agencies where required.

Port State responsibilities apply when a foreign vessel enters or intends to enter an Indian port.

3.2.4. Substantially Interested State (SIS)

Under the IMO Casualty Investigation Code, a Substantially Interested State is a State that, has a significant connection to a marine casualty or incident, including being the flag State or coastal State, suffering serious environmental damage, facing actual or potential serious harm to its territory or offshore installations, or experiencing loss of life or serious injury to its nationals as a result of

the casualty. A SIS has a significant interest in the outcome of a safety investigation. A State may be considered substantially interested when:

- Its nationals (crew, passengers or others) are killed or seriously injured in the incident.
- The casualty involves a vessel owned, operated or managed by an entity based in that State.
- The marine environment of that State is threatened or affected.
- The incident occurs within or near areas where the State has maritime or economic interests.
- The State has relevant technical expertise or information that may assist the investigation.

A Substantially Interested State is entitled to:

- Participate in the investigation, subject to the lead State's approval.
- Receive factual information and contribute to analysis.
- Comment on draft investigation reports prior to publication.

However, the responsibility to lead the investigation rests with the Flag State or, in certain cases, the Coastal State as determined by the Code.

4. Core Areas of Work- Casualty Investigation and Emergency Response Division

This chapter provides a structured overview of the major operational areas handled by the Casualty Investigation and Emergency Response Division during marine incidents and casualties. These include initial incident response, investigation and reporting, coordination during emergencies, basics of claims and liability, and engagement with national agencies. Detailed procedures for emergency response, salvage oversight, claims handling and inter-agency coordination appear in subsequent chapters. The purpose of this chapter is to give new officers and non-technical staff a clear understanding of the sequence of activities that unfold when an incident occurs and the institutional framework that supports these processes.

4.1. Incident Initial Response

4.1.1. Reporting Requirements and Information Flow

Under Section 231(2) of the Merchant Shipping Act, 2025, any marine casualty must be reported immediately in any case within maximum of 24 hours by the ship-owner, master, pilot, harbour master, operator, or any person in charge of the vessel.

While *marine incidents* (less severe events) do not carry the same statutory reporting requirement under Part X, they are expected to be reported promptly to enable risk assessment and early response.

Reports may originate from:

- Distressed vessels or vessels witnessing an incident,
- Shipowners, operators, RPSL agencies and agents,
- Port authorities and VTS centres,
- Indian Coast Guard and Indian Navy units,
- Foreign flag administrations,
- Families of crew members,
- Coastal residents reporting to local police (who must escalate to DGComm or MRCCs).

The DGComm Centre serves as the central point for receiving such information through its published email and telephone contacts.

4.1.2. Initial Actions by the Casualty Investigation and Emergency Response Division

Once a report is received, the Casualty Investigation and Emergency Response Division undertakes the following basic actions:

1. **Record key details** including vessel identity, location, nature of incident and persons affected.
2. **Conduct a preliminary risk assessment** to determine the urgency of response.
3. **Coordinate with MRCC, ICG or Port Authorities** depending on incident location and severity.
4. **Notify senior officers**, including the Nautical Advisor and Chief Surveyor, particularly if the incident has potential to escalate into a marine casualty or very serious marine casualty.

In reference to the emergency response the following SOPs may be adhered to:

- SOP of Handling a Crisis and its Management 2021 and
- SOP Cyclone 2021
- Disaster Management Plan and SOP for Casualty and Cyclone, 2022
- SOP for conduct of Preliminary Inquiry (P.I) and Investigation 2022
- SOP of Handling a Crisis and its Management, 2024

4.1.3. Activation of the Crisis Management Team (CMT)

For **very serious marine casualties** or events requiring multi-agency coordination, the **Crisis Management Team (CMT)** is activated.

The CMT is chaired by the **Director General of Maritime Administration (DG(MA))** and includes:

- Nautical Advisor (NA)
- Chief Surveyor (CS)
- Additional Director General (Addl. DG)
- Chief Ship Surveyor (CSS)
- Principal Officers of the jurisdictional MMDs
- Nautical Surveyor (Casualty & Response)
- Deputy Director General (Crew)

Technical experts from IRS or other specialised bodies may be co-opted depending on the nature of the event.

Functions of the CMT include:

- Providing technical advice to guide operational decisions,
- Recommending measures to minimise risks to life, environment and property,
- Coordinating with external authorities,
- Issuing periodic situation updates to MoPSW,
- Overseeing structured public communication and media engagement.

4.1.4. Inter-Ministerial Crisis Response Committee (IMCRC)

For incidents that pose **national-level, catastrophic or transboundary risks**, the **IMCRC** may be convened.

It includes senior representatives from:

- MoPSW (Addl. Secretary and JS Ports),
- DGMA (Directorate General of Maritime Administration),
- Ministry of External Affairs,
- Ministry of Home Affairs,
- Ministry of Earth Sciences,
- Directorate General of Hydrocarbons,
- Indian Coast Guard,
- Indian Navy,
- DGMA (DDG Crew and NS CAR).

The IMCRC ensures unified decision-making, resource mobilisation and engagement with foreign governments when required.

4.2. Casualty Investigation and Reporting

Marine casualty investigations are mandated under international conventions (UNCLOS Article 94, SOLAS, MARPOL, MLC) and Part XI of the Merchant Shipping Act, 2025. The purpose of such investigations is to determine causal factors, identify safety gaps and recommend preventive measures.

4.2.1. Initiation of Investigation

Upon receiving a report of a marine casualty:

- The **Principal Officer** of the jurisdictional MMD nominates a **Surveyor as Inquiry Officer** to conduct a preliminary inquiry in instances of very serious and serious marine casualties
- If a Surveyor receives credible information independently, they must immediately inform the DGMA Casualty Investigation and Emergency Response Division and proceed with the inquiry.

4.2.2. Conduct of Preliminary Inquiry

Basic elements include:

- Boarding the vessel or visiting the site,
- Inspecting the ship, machinery or equipment,

- Collecting records such as logbooks, certificates, plans, medical records, and VDR data,
- Examining relevant persons and issuing summons where required,
- Ensuring no obstruction to the Inquiry Officer's lawful duties.

The inquiry must produce:

1. **Preliminary Inquiry Report**, and
2. **Recommendations** for immediate safety measures.

4.2.3. Safety Investigation Report

The final report typically includes:

- Summary of facts,
- Vessel and crew details,
- Narrative of events,
- Analysis of mechanical, human or organisational contributors,
- Findings and safety recommendations.

Reporting must follow IMO's harmonised reporting procedures (MSC-MEPC.3/Circ.4/Rev.1).

4.2.4. Fair Treatment of Seafarers

Investigations must follow IMO Res. A.987(24) and LEG.3(91), ensuring seafarers' rights, welfare and legal protections are upheld.

4.3. Emergency Response and Salvage Coordination

Emergency response and salvage coordination ensure protection of life, prevention of pollution and safety of navigation. Although detailed procedures are in later chapters, the following outlines the early roles and responsibilities.

4.3.1. Initial Coordination

Key national actors include:

- **Indian Coast Guard** – leads SAR and pollution response,
- **Indian Navy** – provides deep-sea and offshore support as requested,
- **Port Authorities** – assist with berthing, anchorage and movement of vessels,
- **Coastal State and District Authorities** – assist with onshore resources and permissions.

The Casualty Investigation and Emergency Response Division provides regulatory oversight, supports communication between agencies and ensures compliance with the Merchant Shipping Act, 2025.

4.3.2. Ready Reckoner for Agency Roles

During emergencies:

- DGMA coordinates national-level maritime response.
- ICG leads on-scene maritime safety, SAR and pollution control.
- Navy supports major offshore response or deep-sea emergencies and surveillance and supplements the efforts of ICG
- Maritime Boards provide port-area support for non-major ports.
- Pollution Control Boards monitor environmental impacts.
- Customs and Immigration facilitate entry of salvage teams and specialised equipment.
- SDMA and NDMA assist when shoreline or large-scale impacts are expected.

4.3.3. Role of the Casualty Investigation and Emergency Response Division

- Maintain situation updates,
- Support CMT and IMCRC decision-making,
- Liaise with salvors, insurers, port authorities and environmental bodies,
- Ensure early documentation and evidence preservation for subsequent investigation.

4.4. Claims, Liability and Compensation (IOPC, P&I and Others)

Marine incidents involving pollution, loss of life, or property damage may trigger liability regimes governed by international conventions and insurance arrangements. At the initial stage, officers only need to understand the following:

4.4.1. IOPC Funds

Applicable mainly to oil pollution from tankers (>2000MT) carrying persistent oil. Early notification and basic documentation from the incident are essential.

4.4.2. P&I Clubs

P&I insurers support shipowners with:

- Crew claims,
- Pollution liabilities,
- Wreck removal,
- Collision damage,
- Third-party compensation.

4.4.3. Hull & Machinery and Other Insurers

These insurers cover physical damage to the vessel and other operational losses.

4.4.4. Role of Casualty Investigation and Emergency Response Division at Initial Stage

- Notify relevant insurers or IOPC mechanisms when required,
- Facilitate basic data flow,
- Preserve documents and records that may affect claims.

4.5.Coordination with Other National Agencies and Stakeholders

Marine incidents require coordinated action across central and state authorities. The following provides an overview of agency roles, with detailed responsibilities discussed later.

4.5.1. Key National Agencies

- **DGMA (DGMA):** National nodal authority for maritime emergencies, MAS functions, incident reporting and casualty investigation.
- **Indian Coast Guard:** Leads SAR, pollution response and maritime surveillance.
- **Indian Navy:** Supports major offshore or deep-sea emergencies.
- **State Maritime Boards:** Facilitate response in non-major ports.
- **Port Authorities:** Act as nodal agencies for incidents within port limits.
- **State Disaster Management Authority:** Coordinates onshore response and mobilisation.
- **State Pollution Control Board:** Conducts environmental monitoring and sampling.
- **NDMA:** Coordinates national-level disaster response when required.
- **Customs and Immigration:** Provide expedited clearance of foreign personnel, salvage experts and emergency equipment.

4.5.2. Function of the Casualty Investigation and Emergency Response Division in Inter-Agency Coordination

- Provide regulatory interpretation and support,
- Facilitate structured communication among agencies,
- Support the CMT and IMCRC,
- Ensure compliance with statutory obligations,
- Maintain documentation for investigation and reporting.

5. MMDAC – LRIT and DG Comm Centre

This chapter explains the core systems that support the monitoring and communication functions of the Directorate General of Maritime Administration. It describes the mandate of the Mercantile Marine Domain Awareness Centre (MMDAC), the basic concepts of Long-Range Identification and Tracking (LRIT) and the DG Comm Centre, and how information flows from an initial alert to operational action. It also outlines how MMDAC coordinates with Maritime Rescue Coordination Centres (MRCCs), NAVAREA coordinators and other centres, and briefly introduces key information sources such as AIS, GMDSS and VTS. A clear understanding of these systems is important for all staff in the Casualty Investigation and Emergency Response Division, as they form the operational backbone for monitoring incidents and supporting response.

5.1.Mandate and Functions of MMDAC

The **Mercantile Marine Domain Awareness Centre (MMDAC)** brings together:

- the **DGComm Centre**, and
- the **Long-Range Identification and Tracking National Data Centre (LRIT NDC)**,

into a single operational unit at DGMA. It was created to improve real-time awareness of ship movements and to support incident reporting and coordination for India's 11,098 km coastline and adjacent island territories

Mandate of MMDAC:

- Act as DGMA's central maritime monitoring and communication hub
- Serve as India's **Maritime Assistance Service (MAS)** point of contact under IMO Resolution A.950(23).
- Operate the **LRIT National Data Centre** for Indian-flagged ships and authorised foreign ships.
- Provide verified information on ship positions, incident reports and alerts to the Casualty Investigation and Emergency Response Division and other authorities.

It is sufficient to understand that MMDAC is the **“eyes and ears”** of DGMA at sea: it receives information, monitors ships and passes incident details to the right agencies.

5.2.LRIT: Concept, Architecture and Use in Casualty Context

Long-Range Identification and Tracking (LRIT) is an IMO-mandated system that enables Flag, Coastal and Port States to receive long-range position reports from certain ships. It was established

through amendments to SOLAS Chapter V, regulation 19-1, adopted by IMO Resolution MSC.202(81).

LRIT applies to, among others:

- Passenger ships (including high-speed craft),
- Cargo ships of 300 gross tonnage and above,
- Mobile offshore drilling units on international voyages.

These ships send their position to their Flag State several times a day using satellite communication.

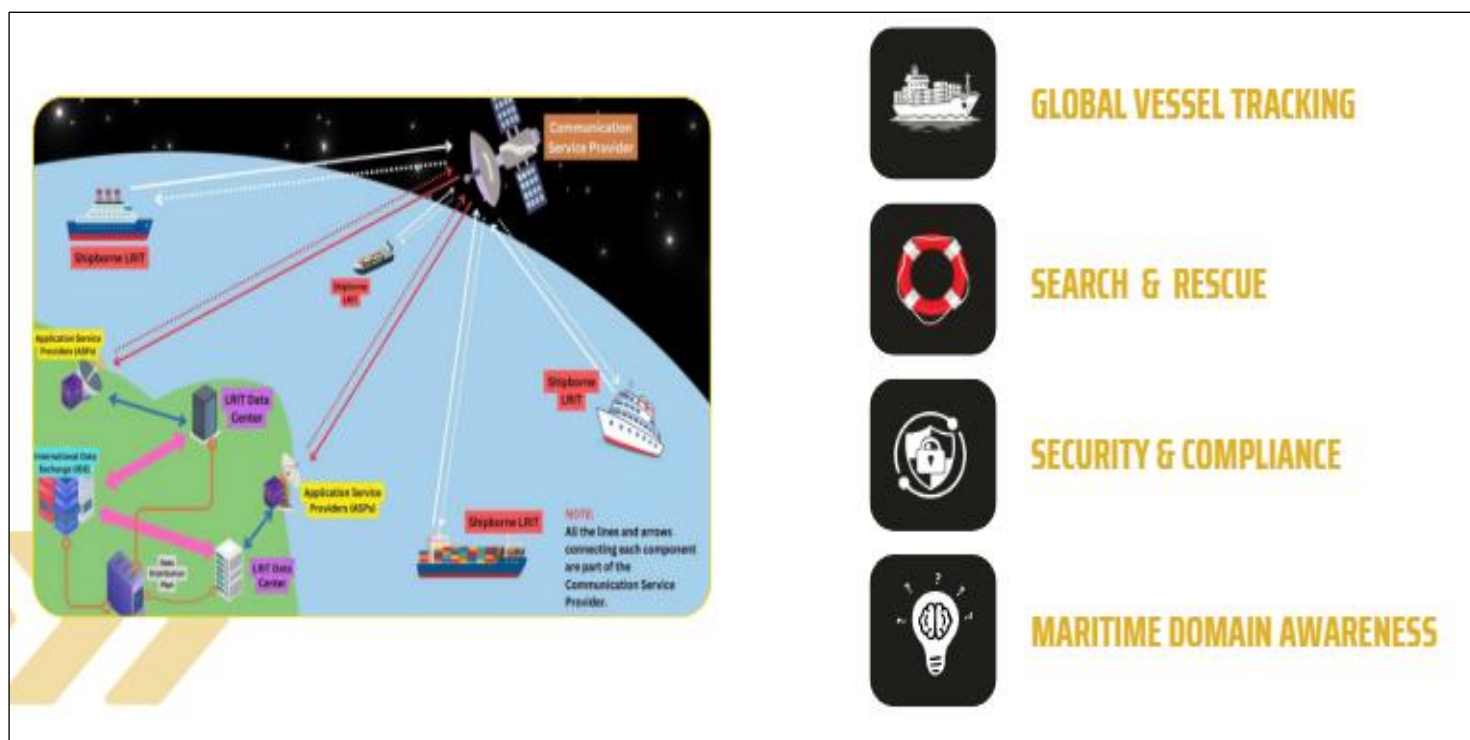


Figure 2 Long-Range Identification and Tracking (LRIT) primary functions

5.2.1. Indian LRIT National Data Centre (NDC)

- Located at DGMA, Mumbai and operational since 2009 as India's LRIT NDC.
- Receives and stores LRIT position data for Indian-flagged vessels worldwide and, when authorised, for foreign vessels up to a defined distance from the Indian coast.
- Shares LRIT information with Indian Navy, Indian Coast Guard and other authorised agencies.

India's NDC also provides LRIT services to Sri Lanka and Maldives under a regional arrangement, demonstrating that the system is scalable to support neighbouring flag administrations.

For the Casualty Investigation and Emergency Response Division, LRIT is used to:

- Confirm the last known position and track of a ship involved in an incident,
- Identify nearby ships that could assist,
- Support risk assessment during monsoon and severe weather conditions.

5.3.DG Comm Centre: Communication Set-up and Watchkeeping

The **DG Comm Centre** is DGMA's 24x7 communication and monitoring centre. It is formally designated as India's **Maritime Assistance Service (MAS)** in line with IMO Resolution A.950(23).

It serves as a single contact point for ships needing assistance, especially in non-distress situations that do not immediately require search and rescue but may develop into serious incidents.

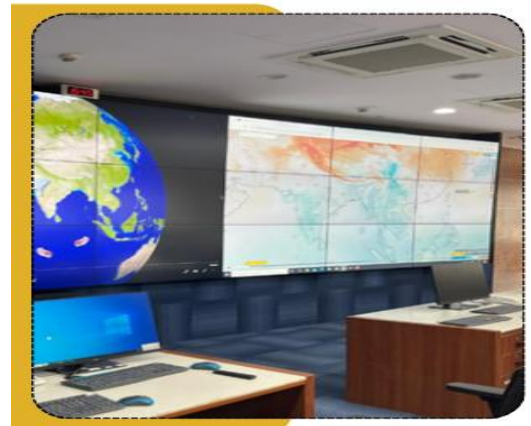


Figure 3 DG Comm Centre

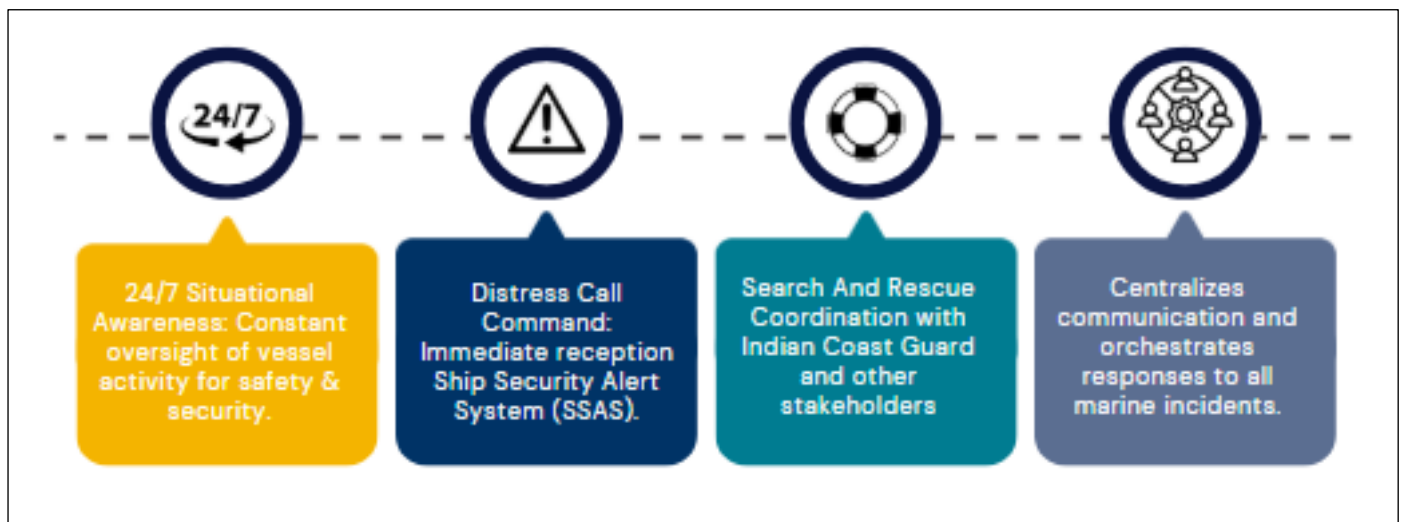


Figure 4 Functions of DG Comm Centre

5.3.1. Set-up and Operations

- Commissioned on 1 July 2004 in Mumbai following implementation of the ISPS Code Operates 24 hours a day, 365 days a year, staffed by trained personnel.
- Receives information through:
 - Dedicated email addresses (including Ship Security Alert System – SSAS),
 - Telephone hotlines,

-Functions Relevant to the Casualty Investigation and Emergency Response Division

- First receiver of many incident, security and weather-related reports.
- Maintains continuous communication with ships, owners, MRCCs and other authorities.

- Issues situation updates to the Casualty Investigation and Emergency Response Division during developing incidents.

5.4. Information Flow: From Initial Alert to Operational Tasking

Information flow describes how an incident report received at MMDAC is checked, shared and converted into action by the competent authority. It is important to understand the sequence, not the technical details.

Typical Sequence

1. Initial Alert

- Received by DGComm from a ship (email, phone, SSAS), MRCC, port authority, owner, coastal police or other source.

2. Verification and Logging

- Duty staff confirm basic details: ship name, position, nature of incident, persons affected.
- Incident is recorded in DG Comm Center logs and internal systems.

3. Cross-check with Monitoring Systems

- LRIT and AIS/NAIS are checked to confirm vessel position and movement.
- Weather alerts and navigational warnings are reviewed if relevant.

4. Notification to Authorities

- Casualty Investigation and Emergency Response Division is informed where a marine casualty or serious risk is indicated.
- MRCC (Indian Coast Guard) is informed or already engaged for distress/SAR situations.
- Port Authority, Navy and others are notified as required by location and severity.

5. Operational Tasking

- Based on established protocols, the competent authority (e.g. MRCC for SAR, Port Authority within port limits) tasks assets such as Coast Guard units, tugs, ETVs or port resources.
- MMDAC continues to relay updates between the ship and authorities.

The key point is that MMDAC manages the early flow of information, while the Branch focuses on assessment, coordination and later investigation.

5.5.Coordination with MRCCs, NAVAREA Coordinators and Other Centres

Marine incidents are rarely handled by one organisation alone. MMDAC works within a wider network that includes search and rescue centres, navigational warning coordinators and maritime security centres.

5.5.1. Coordination with MRCCs

- **Maritime Rescue Coordination Centres (MRCCs)**, operated by the Indian Coast Guard, lead search and rescue within India's SAR Region.
- Distress alerts through GMDSS are routed to MRCCs, which coordinate rescue units.
- MMDAC and MRCCs share information to ensure that safety, environmental and regulatory aspects are addressed together.

5.5.2. Coordination with NAVAREA Coordinators

- India, through the National Hydrographic Office, is the **NAVAREA VIII coordinator** under the World-Wide Navigational Warning Service.
- NAVAREA warnings may be issued for wrecks, drifting hazards or restricted areas following casualties.
- MMDAC provides incident information that supports timely and accurate navigational warnings.

5.5.3. Other Centres

- **Maritime domain awareness and fusion centres** such as Information Management and Analysis Centre (IMAC), Information Fusion Centre – Indian Ocean Region (IFC-IOR), use data from MMDAC for broader maritime security and situational awareness.
- Port Vessel Traffic Services (VTS) centres provide local traffic information useful during port-area incidents.

5.6.Common Information Sources (AIS, GMDSS, Satellite Alerts, VTS, etc.)

This section briefly introduces the main technical systems used by MMDAC. Staff are not expected to operate these systems, but should recognise their purpose.

5.6.1. Automatic Identification System (AIS / NAIS)

AIS is a shipborne system that automatically broadcasts a vessel's identity, position, course and speed. Under SOLAS Chapter V, regulation 19, AIS is required on many ships and is used for traffic

monitoring and collision avoidance. The National AIS (NAIS) network along the Indian coast provides shore-based AIS data to DG Comm and other authorities.

5.6.2. Long-Range Identification and Tracking (LRIT)

LRIT provides long-range position reports from certain ships via satellite, in accordance with SOLAS V/19-1 and IMO Resolution MSC.202(81). It complements AIS by covering deep-sea areas beyond Very High Frequency (VHF) range.

5.6.3. Global Maritime Distress and Safety System (GMDSS)

GMDSS is an international system using radio and satellite technologies (e.g. DSC, EPIRB, NAVTEX) to support distress alerts and safety broadcasts. SOLAS requires GMDSS equipment on most international trading ships.

5.6.4. Vessel Traffic Services (VTS)

VTS centres monitor and organise vessel movements in and around ports and busy coastal approaches to enhance safety and efficiency. VTS data (e.g. radar, AIS, CCTV) may be requested for incidents within port approaches.

5.6.5. Weather and Satellite Inputs

MMDAC receives monsoon and cyclone warnings from the India Meteorological Department and other authorised sources. Such information is important for assessing drift, risk of grounding and timing of response.

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6. Regulatory and Legal Framework

The Casualty Investigation and Emergency Response Division of the Directorate operates under the Merchant Shipping (MS) Act, 2025, and was previously governed by the Merchant Shipping Act, 1958 which covered marine casualties, investigations, emergency response, and salvage.

The Merchant Shipping Act, 2025 now applies as the primary law. It modernizes the framework with dedicated Part X (Marine Incident & Emergency Response), Part XI (Investigation and Inquiry on Marine Casualties), and Part XII (Wreck & Salvage), incorporating clearer roles for DGMA, response mechanisms, and enabling provisions for better integration with coastal states and agencies.

Supporting rules, such as the - Merchant Shipping (Marine Incident & Emergency Response) Rules and Merchant Shipping (Wreck & Salvage) Rules, provide detailed procedures under the 2025 Act. Staff must use these for daily tasks like incident reporting, investigations, and coordination.

6.1. Merchant Shipping Act, 2025 – Key Provisions Relevant to Casualty Investigation and Emergency Response Division

The Merchant Shipping Act, 2025 provides enabling provision for the Central Government for specific duties related to emergency response, investigation, wreck and salvage.

6.1.1. Part X: Marine Incident & Emergency Response

Part X is a newly added section in the Merchant Shipping Act, 2025, specifically designed to strengthen India's emergency response to marine incidents. It is to provide procedure to ensures faster coordination to save lives, protect the environment, and minimize damage, addressing gaps in the old - Act.

The Act enables the assignment of a Nodal Authority for coordinating emergency responses. Primary response parties (ship owner or master, seafarers of the concerned vessel) are defined in the act, with powers to notify any other party as a Primary response party. The Act also provides powers to develop national and regional plans, SOPs, and procedures for reporting incidents, resource deployment, and investigation procedure.

The Act provides for vessel owners to maintain compulsory insurance or financial security to cover emergency response costs. Ship owner, manager, operator, company, pilot, harbour master, master, or other person in charge of the vessel are required to report incidents immediately to DGComm Centre, and follow DGMA directions during operations.

6.1.2. Part XI: Investigation and Inquiry on Marine Casualties

The Part establishes the framework for investigating marine casualties to determine causes and prevent future incidents. The Directorate is responsible to conduct investigations whenever serious casualties occur, such as loss of life, significant damage to vessels, or major pollution events.

Investigation is conducted based on Standard Operating Procedures, drafted as per internal procedures and international standards, as amended.

The findings may result in safety recommendations aimed at improving regulations, operations, and crew training to enhance maritime safety. The Directorate coordinates closely with other national (flag state, port state, etc.) and international agencies during these investigations to ensure compliance with IMO conventions and best practices.

6.1.3. Part XII: Wreck & Salvage

Part XII of the Act details powers and duties for wreck and salvage to keep seas safe and ensure fair rewards. The Casualty Investigation and Emergency Response Division assists DGMA in coordinating these activities during marine incidents.

For wrecks, DGMA holds powers to appoint a Receiver of Wreck to oversee recovery, marking, and disposal alongside port authorities. Masters and owners have a strict duty to report wrecks right away if they threaten navigation, lives, or the environment. DGMA determines hazards –, then directs locating, marking with buoys, and removal measures, with cost recovery from owners who must maintain compulsory insurance or financial security. Ship owners can claim their wrecks only after settling all dues.

On salvage, operations shall be monitored by DGMA or port authorities in high-risk cases, with clear duties for salvors to act fast, and owners/masters to cooperate fully. The Act prescribes provisions for rights to rewards. The Act also provides for retention of salvors, for which the criteria shall be prescribed by DGMA. The Director General also has the power to resolve disputes between shipowners and salvors before the parties go to mediation or courts for adjudication.

6.2. Key International Instruments

The Directorate relies on key IMO conventions ratified by India to manage marine casualties consistently with global standards. These instruments, integrated into the Merchant Shipping Act, 2025, guide investigations, emergency response, pollution control, wreck removal, and salvage operations.

- **SOLAS (International Convention for the Safety of Life at Sea, 1974 as amended)** sets mandatory safety rules for ships, including life-saving appliances, fire protection, and navigation equipment. Ships must maintain GMDSS for distress signals, with masters required to report serious casualties to DGMA immediately in any case within maximum of 24 hours. The Branch uses SOLAS-compliant data from Voyage Data Recorders (VDR), AIS, and LRIT during investigations to analyze causes like structural failures or procedural lapses.
- **MARPOL (International Convention for the Prevention of Pollution from Ships, 1973/1978)** regulates operational and accidental pollution from oil, chemicals, sewage, and garbage. In casualties involving spills, DGMA enforces immediate reporting, coordinates cleanup with Coast Guard and IOPC Funds (for persistent oils carried as cargo), and ensures compliance with Annex I (oil) and Annex II (noxious substances) response plans.
- **SAR Convention (International Convention on Maritime Search and Rescue, 1979)** defines global SAR regions and coordination between flag states, coastal states, and rescue centers. DGMA through MMDAC and DGComm Centre receives distress alerts, classifies incidents, and tasks primary responders like Indian Coast Guard for efficient life-saving operations.
- **Nairobi International Convention on the Removal of Wrecks, 2007** requires owners to remove hazardous wrecks posing risks to navigation or environment, with compulsory insurance. DGMA assesses wreck hazards, orders surveys/marketing/removal under Part XII of the Act, and recovers costs directly from insurers.
- **1989 International Convention on Salvage** modernizes salvage law by prioritizing environmental protection alongside property rescue. Salvors earn rewards based on success, skill, and risk.

6.3. IMO Casualty Investigation Code

The Casualty Investigation Code, adopted by IMO Resolution MSC.255(84) and made mandatory under SOLAS Chapter XI-1 Regulation 6, provides international standards for investigating marine casualties and incidents to prevent future occurrences rather than assign blame. It requires flag states like India, through DGMA Casualty Investigation and Emergency Response Division, to conduct marine safety investigations into every “very serious marine casualty” and recommends probes for other serious events involving injury, stranding, collision, or pollution.

Investigations focus on collecting evidence (VDR, AIS, witness statements), analysing causal factors, and issuing safety recommendations without implying liability; reports are protected from court use to encourage openness. The Code mandates prompt notification to substantially interested states (flag, coastal, etc.) with details like ship name, location, and consequences, and promotes cooperation while ensuring investigator independence.

DGMA aligns Part XI of the Merchant Shipping Act, 2025 with this Code, using GISIS for reporting and sharing findings to improve global maritime safety.

6.4.Guidelines, Notices, Circulars and SOPs

The Casualty Investigation and Emergency Response Division issues guidelines, Standard Operating Procedures (SOPs), notices, and circulars to ensure uniform handling of marine casualties. These documents operationalize the Merchant Shipping Act, 2025 and IMO standards, providing step-by-step instructions for reporting, response, investigation, and coordination.

SOPs detail workflows from initial alert receipt at DGComm Centre or MMDAC, through situation assessment, stakeholder activation, to closure and lessons learned. They include checklists for evidence preservation, inter-agency communication, and ETV/salvage deployment.

Guidelines and Notices clarify procedures for compliance, issuance of advisories, notification of initiatives, etc.

Circulars and IMO Reporting Circulars share lessons from past incidents, update reporting formats, and seek Branch inputs for IMO submissions. Staff must check the DGMA website regularly for updates and apply them immediately to maintain compliance and safety.

7. Emergency Response and Salvage

The DGMA holds a central coordination and advisory role in India's marine emergency response framework. Through DGComm Centre and MMDAC, DGMA receives initial alerts via LRIT/emails/telecommunication channels, assesses incidents, and activates tailored plans/SOPs to guide rapid, unified action while ensuring compliance with master/owner obligations.

The Casualty Investigation and Emergency Response Division coordinates with agencies involved in the emergency response or salvage operations. Its advisory leadership minimizes risks to lives, environment, and navigation, bridging immediate response, following which the post-incident investigation is conducted by the Branch.

7.1. National Emergency Response Architecture for Marine Incidents

India's national emergency response architecture for marine incidents follows a coordinated, tiered structure under the National Oil Spill Disaster Contingency Plan (NOS-DCP) and related frameworks, with the Indian Coast Guard designated as the nodal authority for search and rescue (SAR), oil spills, and hazardous and noxious substances (HNS) spills via its Crisis Management Plan for HNS Spill at Sea. The Directorate plays a vital coordination and advisory role, leveraging provisions in Part X (Marine Incident & Emergency Response) and Part XII (Wreck & Salvage) of the Merchant Shipping Act, 2025 to guide responses through established plans and SOPs.

DGMA activates its response via DGComm Centre and MMDAC for initial alerts, providing flag state oversight by advising on LRIT tracking, master obligations, and resource deployment while coordinating with Indian Coast Guard, Indian Navy, shipowners, salvors, state maritime authorities, ports, and other stakeholders. This ensures unified action with ICG leading on-scene operations with ships, aircraft, and pollution response teams from its four regional centres, while DGMA facilitates owner compliance, ETV/salvage contracts, and inter-agency telecons to minimize escalation.

The tiered system classifies incidents by severity: Tier 1 (minor, local resources via ports/states), Tier 2 (regional ICG-led with national assets), Tier 3 (major, apex-level with international aid if needed), overseen by National Crisis Management Committee (NCMC) and Crisis Management Group (CMG). Regional and District Oil Spill Plans integrate seamlessly, validated through annual drills like NATPOLREX. Casualty Investigation and Emergency Response Division transitions from response coordination to investigation handover post-stabilization, logging outcomes for GISIS and SOP refinement.

7.2.Types of Marine Emergencies (pollution, collision, grounding, fire, wreck, etc.)

Marine emergencies vary by cause and impact, requiring coordination under various circumstances as may be necessary:

- **Pollution (oil/chemical/HNS spills):** From tank ruptures or leaks during collisions/groundings; triggers NOS-DCP, ICG cleanup lead, DGMA owner liability enforcement.
- **Collisions:** Ship-to-ship or ship-to-object impacts causing structural damage, fires, or sinkings; immediate SAR via DGComm to ICG.
- **Groundings:** Vessels stranded on reefs/shoals risking hull breach and environmental release; DGMA tasks ETVs for refloating/salvage.
- **Fires/Explosions:** Engine room, cargo, or accommodation blazes; demands boundary cooling, evacuation, multi-agency firefighting.
- **Wrecks/Sinkings:** Total losses or abandonments endangering navigation; Part XII marking/removal orders by DGMA.
- **Heavy Weather Damage:** Structural failures or losses from cyclones/storms; stability assessments and towing coordination.
- **Machinery Breakdowns:** Propulsion/steering failures requiring emergency tows; LRIT monitoring via MMDAC.
- **Man Overboard/Occupational Accidents:** Falls, entrapments needing rapid SAR; logged as near-misses for prevention.

7.3.Internal and External Communication Chains

Effective communication chains ensure rapid information flow during marine emergencies, starting from initial alerts and flowing through DGMA hubs to response agencies. The Casualty Investigation and Emergency Response Division relies on these protocols under Merchant Shipping Act, 2025 Section 231(2), which mandates notification within 24 hours by shipowners, masters, or persons in charge. Response timelines shall be referred to from the Marine Incident and Emergency Response Plan.

DGComm Centre operates as the 24/7 primary hub for all reports involving Indian-flagged vessels (regardless of location), any vessel in Indian waters, or incidents affecting Indian nationals. Upon receipt, it initiates notification protocols and assigns a unique incident identifier for seamless tracking across agencies.

After initial notification, DGComm escalates the report to concerned agencies including MRCCs, Indian Coast Guard, Navy, Port Authorities, and others as relevant. The reporting party must then submit a First Information Report (FIR) **immediately in any case within maximum of 24 hours** to provide detailed incident facts.

Pollution incidents require simultaneous reporting to the Indian Coast Guard's Pollution Response Cell. Foreign-flagged vessel incidents in Indian EEZ escalate to the Ministry of External Affairs. Cases involving mass casualties or passenger vessels go to the National Maritime Crisis Coordination Centre (NMCCC) and National Disaster Response Force (NDRF) as applicable.

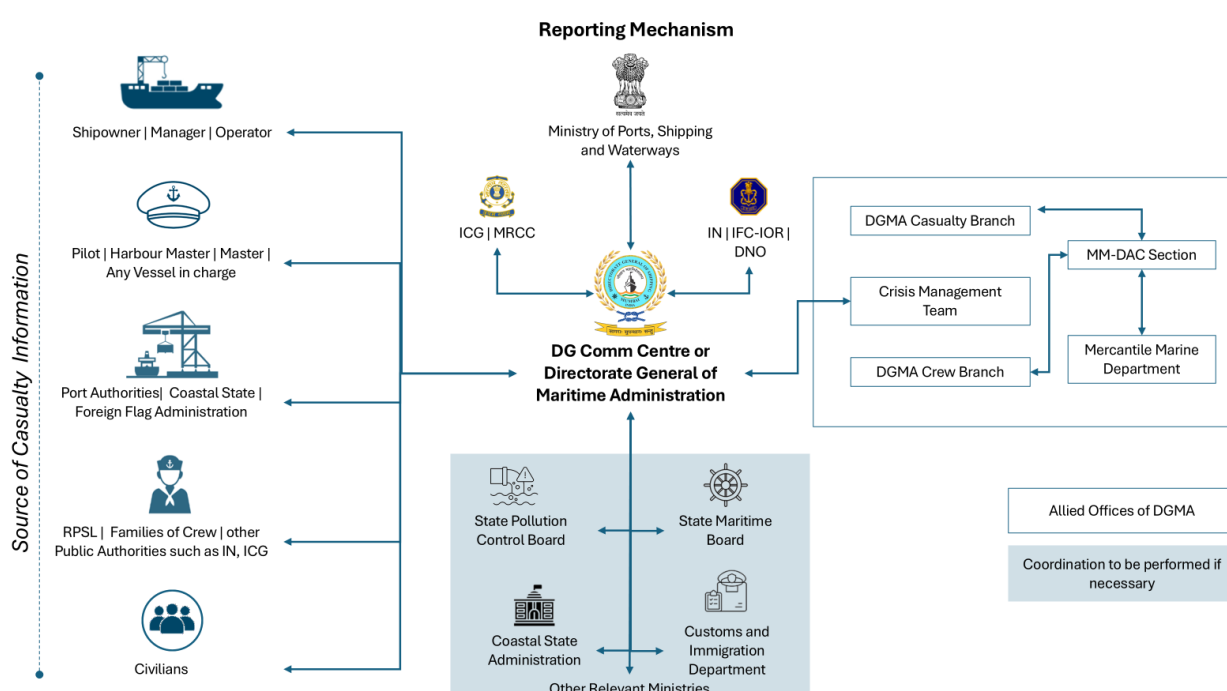


Figure 5 Reporting Mechanism at time of Marine Incidents

7.4.Interface with National Contingency Plans and Coastal Plans

DGMA integrates its Marine Incident and Emergency Response Plan developed under Merchant Shipping Act, 2025 Part X with national frameworks to ensure cohesive action during casualties. This plan outlines DGMA coordination via DGComm/MMDAC, SOPs for alerts, advisories to shipowners/salvors, and handover to primary responders, aligning with ICG-led operations for seamless flag state oversight.

Indian Coast Guard's National Oil Spill Disaster Contingency Plan and Crisis Management Plan for HNS Spills at Sea form the core for pollution/SAR responses, with ICG as nodal authority activating Tier 1-3 structures. DGMA interfaces by providing LRIT data, owner compliance directives, and ETV salvage inputs, tested in NATPOLREX exercises.

State-level NDMA contingency plans, managed via State Disaster Management Authorities (SDMAs), address shoreline impacts, activating district administrations, pollution boards, fisheries departments, and law enforcement for cleanup/evacuation. DGMA' forthcoming Coastal State Advisory will guide states on reporting, resource pooling, and legal roles.

Port Disaster Contingency Plans cover Tier 1 spills/fires within harbour limits, mandating OSRO equipment and mutual aid. DGMA reviews/approves these via notices, ensuring alignment with national plans and compulsory insurance for rapid claims processing.

7.5. Response Timelines and Required Actions

DGMA enforces strict response timelines under Merchant Shipping Act, 2025 Section 231(2) and Marine Incident and Emergency Plan, ensuring rapid escalation from alert to action. DGComm Centre, manned 24/7, receives initial reports immediately via GMDSS/email/phone, assigns incident IDs, and relays to Casualty Investigation and Emergency Response Division, ICG/MRCC, and stakeholders within minutes for verification and classification.

7.6. Interaction with Salvors and Industry

The DGMA Casualty Investigation and Emergency Response Division plays a pivotal role in assessing, coordinating, and approving salvage plans during marine emergencies, as empowered under Merchant Shipping Act, 2025 Part XII. Upon incident alert via DGComm, the Branch evaluates owner-nominated or salvors' capabilities, requiring submission of detailed plans covering risk assessments, equipment deployment, timelines, environmental safeguards, and cost estimates within hours of tasking.

DGMA coordinates operations with salvors, ICG on-scene commanders, Navy, ports, and P&I clubs, providing LRIT/AIS data and stability inputs while mandating hourly progress reports. Plans undergo rigorous DGMA review for compliance with Nairobi Wreck Removal and 1989 Salvage Conventions before approval, with modifications imposed if risks to navigation, lives, or environment persist; DGMA can direct operations if owners delay.

Industry interaction ensures pre-arranged contracts (mandatory per MS Notice 11/2025), verified insurance, and post-operation audits for reward claims.

8. Emergency Towing Vessel (ETV) Deployment

This chapter explains the concept of Emergency Towing Vessels (ETVs) and their role in India's marine emergency response system. It provides a basic overview of what ETVs are, why they are deployed, how national arrangements are structured, the typical trigger situations for deployment, and how coordination with other authorities is managed.

A clear understanding of these aspects helps staff in the Casualty Investigation and Emergency Response Division to follow the decision-making process and appreciate how ETV deployment supports the wider objective of preventing marine casualties and pollution close to the coast.

8.1. Concept of ETVs and Their Role

An **Emergency Towing Vessel (ETV)** is a vessel equipped and maintained to provide towage and related support to ships in distress. ETVs are designed to assist ships that have lost propulsion or steering, suffered structural damage, or are drifting in a manner that may lead to grounding, collision or pollution.

The primary objectives of ETVs are to:

- prevent disabled vessels from grounding or colliding with other ships or offshore structures;
- reduce the risk of oil spills and other pollution arising from such incidents; and
- stabilise the situation until permanent salvage or repair arrangements can be made.

Internationally, the use of ETVs aligns with the principles in the International Maritime Organization (IMO) Resolution A.950(23) on Maritime Assistance Services, which encourages coastal States to maintain the capability to support ships in difficulty and prevent escalation of incidents.

For India, the risk of drifting and grounding is heightened during the monsoon seasons on both coasts, when rough sea and wind conditions can quickly move a disabled vessel towards the shoreline or sensitive areas. ETV deployment is therefore an important preventive measure in the overall casualty management framework.

8.2. National ETV Deployment Framework and MOUs

The national approach to ETV deployment is based on Government decisions to ensure preventive towage capability along high-risk coastal stretches.

8.2.1. Policy Foundation

- The **2010 Cabinet Secretariat directive** recognised the absence of towage/salvage capacity at sea and mandated preventive deployment of ETVs.
- Following this, the **Ministry of Ports, Shipping and Waterways (MoPSW)** approved strategic ETV deployment on the West Coast, later expanded to the East Coast.

8.2.2. Implementation by DGMA

- The Directorate General of Maritime Administration was tasked to deploy ETVs through international chartering via Shipping Corporation of India (SCI), considering cost-effectiveness and operational flexibility.
- Since **2011**, ETVs have been deployed annually during monsoon seasons through charter work orders via port authorities under MoPSW oversight.

8.2.3. Financial and Operational Framework

- India follows a **seasonal charter model**, balancing preparedness with cost efficiency.
- A **revised cost-sharing mechanism**, involving shipowners and other stakeholders, has been implemented to reduce government expenditure.

8.2.4. MOUs and Institutional Arrangements

- Deployment agreements typically include:
 - Availability requirements
 - Response time obligations
 - Towing capability standards
 - Crew competency requirements
- Coordination MOUs with Coastal States, Port Authorities, and the Coast Guard define communication and operational roles during distressed vessel events.

8.3. Trigger Criteria and Decision-Making for ETV Deployment

Timely deployment of ETVs is crucial to prevent escalation of marine incidents. The Casualty Investigation and Emergency Response Division plays a key role in evaluating information and advising on deployment when required.

8.3.1. Core Trigger Situations

ETV deployment may be considered when a vessel experiences or is likely to experience:

1. **Loss of propulsion or steering** while drifting towards the coast or traffic lanes.
2. **Grounding risk**, based on drift analysis, weather, and proximity to shore.
3. **Fire or explosion**, affecting vessel stability or navigability.
4. **Collision or near-collision**, resulting in structural or machinery failure.
5. **Severe weather conditions**, especially during monsoon, where timely towage can prevent escalation.
6. **Oil pollution risk**, including tankers carrying hazardous cargo.

Incident types mentioned in national casualty statistics reinforce the relevance of these triggers (152 casualties in 2023–24; 19 fire/explosion, 15 collision incidents)

8.3.2. Decision-Making Process

1. **Initial Alert** received through DGComm, MRCC, Port Authority, or shipowner.
2. **Situation Assessment** using AIS, LRIT, GMDSS, weather reports, and VTS inputs.
3. **Risk Evaluation** considering:
 - Drift direction and speed
 - Weather and sea conditions
 - Proximity to coastline or sensitive areas
 - Cargo type and environmental sensitivity
4. **Consultation with Stakeholders:**
 - Indian Coast Guard (SAR/pollution)
 - Port authorities
 - Naval units (if relevant)
5. **Recommendation by the Duty Officer/Casualty Investigation and Emergency Response Division** to deploy/not deploy.
6. **Formal Tasking** through designated operational channels (Port Authority / vessel operator under charter).

Decisions should adhere to the principle of **preventive intervention**, as stressed in the Cabinet directives and IMO MAS framework.

8.4. Coordination with ETVs, Indian Navy, Coast Guard, and Coastal States

Effective coordination is essential to ensure that ETV deployment leads to timely assistance and safe management of the situation.

Coordination with Indian Coast Guard (ICG)

- ICG is the lead agency for SAR and pollution response.
- ETVs operate in support, not in replacement, of ICG functions.
- MRCCs provide distress information, broadcast navigational warnings, and coordinate on-scene activities.
- Communication should be continuous during towing operations, especially if pollution or SAR risk exists.

Coordination with Indian Navy

- The Navy provides:
 - Hydrographic inputs
 - Escorting support
 - Maritime security oversight
- Navy units may also assist in monitoring vessel drift patterns through maritime domain awareness systems.

Coordination with Coastal States

- Coastal State Maritime Boards and Pollution Control Agencies:
 - Provide local port coordination
 - Assist with berthing arrangements for the distressed vessel
 - Monitor environmental risks
- Coastal State representatives participate in joint assessment calls when grounding or pollution risk exists.

Coordination with Port Authorities

- As chartering agencies for ETVs (e.g., MbPA and ChPA), ports manage deployment readiness.
- Ports ensure compliance with MOU provisions, crew readiness, fuel availability, and technical capability of chartered ETVs.

Role of the Casualty Investigation and Emergency Response Division

- Maintain situational awareness and provide technical and regulatory guidance.
- Ensure legal compliance under Merchant Shipping Act 2025 (marine incident response obligations).
- Document all decisions and actions in the casualty management system.

9. Investigation and Inquiry Procedures

This chapter summarises how marine casualties and incidents are investigated under international conventions and the Merchant Shipping Act, 2025. The purpose is to familiarise staff with the essential concepts, steps and responsibilities involved in a marine safety investigation, without going into technical detail.

India must investigate accidents involving its ships as required by UNCLOS Article 94, SOLAS, MARPOL, Load Line, STCW, MLC, and the IMO Casualty Investigation Code (MSC.255(84)). These responsibilities are implemented nationally through Part XI of the Merchant Shipping Act, 2025.

9.1. Purpose and Framework of Marine Investigations

Marine casualty investigations help determine what happened, why it occurred and how similar events can be prevented. The findings support improvements in safety practices and ensure compliance with India's obligations as a Flag, Coastal and Port State.

The Merchant Shipping Act, 2025 requires that:

- marine casualties are reported to DGMA immediately in any case within maximum of 24 hours;
- a Preliminary Inquiry (PI) is conducted by a nominated Inquiry Officer; and
- a Marine Safety Investigation Report is prepared when a full investigation is warranted.

These processes follow the IMO Casualty Investigation Code and associated guidelines.

9.2. Basic Investigation Process

a) Initiation and Appointment

When a casualty is reported, the jurisdictional **Mercantile Marine Department (MMD)** nominates a **Surveyor** as the Inquiry Officer. If a Surveyor learns of an incident independently, the information must be immediately shared with the Casualty Investigation and Emergency Response Division and DGComm, and preliminary steps may begin.

b) Preliminary Inquiry (PI)

The Preliminary Inquiry gathers essential facts and evidence. Typical activities include:

- boarding the vessel or visiting the site when feasible;
- inspecting the vessel, equipment and relevant certificates;
- reviewing logbooks, communication records, insurance documents and Voyage Data Recorder (VDR) data;

- taking statements from the master, crew or other persons involved; and
- issuing summons where necessary, followed by legal action for non-compliance.

The PI concludes with the **Preliminary Inquiry Report** and recommended safety actions.

c) Safety Investigation Report

If a detailed investigation is required, a Marine Safety Investigation Report is prepared. It generally includes:

- a factual summary of the event;
- details of the vessel and crew;
- a narrative of the sequence of events;
- analysis of mechanical, human or organisational factors; and
- findings and recommendations to prevent recurrence.

The report must align with IMO MSC-MEPC.3/Circ.4/Rev.1 and other harmonised reporting formats.

9.3.Participation of Substantially Interested States

Under the IMO Casualty Investigation Code, another country may participate if it has a legitimate interest in the case for example, if its nationals were injured or its environment is at risk. India participates as a **Substantially Interested State (SIS)** in such circumstances, following a standard procedure developed by DGMA. The lead investigating State remains responsible for completing the final report.

9.4.Handling of Evidence and Confidentiality

During the investigation, the Inquiry Officer may collect:

- written statements;
- communication records related to the ship's operation;
- medical or private information relevant to those involved;
- analysis notes; and
- VDR data or other digital evidence.

All evidence must be handled carefully and used solely for safety investigation purposes.

9.5.Fair Treatment of Seafarers

Seafarers involved in an investigation must be treated fairly in accordance with **IMO Resolution A.987(24)** and **Resolution LEG.3(91)**. This means:

- they must not be criminalised for cooperating;

- they should have access to communication, legal support and consular assistance; and
- they should not be detained unnecessarily.

Ensuring fair treatment is a mandatory requirement during all inquiries.

9.6. Training for Investigation Personnel

DGMA provides structured training for officers involved in casualty investigations. This includes:

- Casualty Investigation training aligned with IMO practices;
- Port State Control (PSC) training; and
- refresher programmes to maintain uniform investigation standards.

Training ensures consistency, professionalism and transparency across all MMD units and supports continuous improvement in investigation quality.

10. Roles of Other Agencies Integrated with DGMA

This chapter provides an overview of the main national and state-level agencies that work with the Directorate General of Maritime Administration (DGMA) in managing marine incidents and casualties. It explains, in brief, how these agencies support search and rescue, maritime security, pollution response, disaster management and information sharing.

A basic understanding of these roles helps recognise which agency is responsible for which function and how DGMA interfaces with them during an incident.

The Directorate General of Maritime Administration, under the Ministry of Ports, Shipping and Waterways (MoPSW), is the national nodal authority for marine incident management, maritime safety regulation, casualty response coordination, implementation of international conventions, maritime assistance services, marine pollution reporting and investigation into marine incidents and casualties involving Indian and foreign vessels in Indian jurisdiction.

10.1. Inter-Ministerial Crisis Response Committee (IMCRC)

The **Inter-Ministerial Crisis Response Committee (IMCRC)** is convened when an incident has national, catastrophic or transboundary implications, such as a major oil spill of national significance, a large-scale salvage operation or a foreign flag vessel incident with substantial Indian interest.

Key Characteristics:

- Chaired by senior officers of the Ministry of Ports, Shipping and Waterways (MoPSW) with participation from DGMA, Ministry of External Affairs, Ministry of Home Affairs, sectoral ministries and defence agencies.
- Provides strategic direction, approves major policy and operational decisions, and facilitates resource mobilisation.
- Ensures that all concerned ministries work in a coordinated manner during a complex marine emergency.

DGMA represents the maritime administration in the IMCRC and provides technical and regulatory inputs to support Committee decisions.

10.2. National Maritime Security Coordinator (NMSC) Interface

The **National Maritime Security Coordinator (NMSC)** functions within the National Security Council Secretariat and is the Government's principal adviser on maritime security matters.

Key Aspects:

- The NMSC provides overall guidance on maritime security policy and coordinates between civilian and military maritime agencies, including the Indian Navy, Indian Coast Guard, DGMA, ports and other ministries.
- For major incidents with security or strategic dimensions (e.g. terrorism, large-scale disruption of shipping routes, hybrid threats), the NMSC ensures that operational and regulatory actions are aligned.
- DGMA may be required to share situational updates, casualty information and regulatory assessments with the NMSC through MoPSW, particularly where incidents affect national maritime security or energy security.

It is sufficient to understand that the NMSC provides high-level security coordination above the line ministries, including DGMA.

10.3. Indian Coast Guard (ICG)

The **Indian Coast Guard (ICG)** is the primary maritime safety, security and pollution-response agency in India's maritime zones.

Key Characteristics:

- Conducts maritime surveillance and leads **Search and Rescue (SAR)** operations, including medical evacuation.
- Responds to oil spills and other marine pollution incidents under the National Oil Spill Disaster Contingency Plan (NOS-DCP).
- Protects offshore installations, artificial islands and other maritime infrastructure.
- Assists other enforcement agencies, including Customs, in anti-smuggling and related operations.
- Coordinates closely with DGMA, the Indian Navy and Coastal State authorities when marine incidents occur.

For many incidents, the Indian Coast Guard is the **first operational responder** at sea.

10.4. Indian Navy (IN) and Information Fusion Centre – Indian Ocean Region (IFC-IOR)

10.4.1. Indian Navy (IN)

The **Indian Navy** supports marine incident and emergency response, particularly offshore, in the high seas and in defence-sensitive areas.

Key Characteristics:

- Provides ships, aircraft and specialised technical support for major marine casualties on request from civil authorities.
- Supports search and rescue operations in offshore and remote locations.
- Issues and updates navigational warnings (NAVAREA VIII) through the Indian Naval Hydrographic Department.
- Contributes to maritime domain awareness through the Information Management and Analysis Centre (IMAC) at Gurugram.

The Indian Navy is often involved when incidents occur beyond the Exclusive Economic Zone (EEZ), when the scale of the incident is large or when defence-related considerations are present.

10.4.2. Information Fusion Centre – Indian Ocean Region (IFC-IOR)

The **Information Fusion Centre – Indian Ocean Region (IFC-IOR)** is a regional maritime security and information-fusion centre hosted by the Indian Navy at Gurugram. It was established in 2018 to enhance maritime domain awareness in the Indian Ocean Region.

Key functions:

- Collects, fuses and analyses shipping information (“white shipping”), including commercial vessel movements and maritime incidents, from multiple national and international sources.
- Shares maritime security information and situational updates with partner countries and regional/multinational centres to build a common maritime picture.
- Hosts International Liaison Officers from partner nations, strengthening real-time information exchange.

Key Characteristics:

- IFC-IOR’s information fusion outputs can support awareness of broader regional context during significant incidents involving Indian or foreign vessels in the Indian Ocean Region.
- DGMA may receive or provide incident-related information that is also reflected in IFC-IOR reports and updates, particularly where incidents have a security dimension, involve piracy, armed robbery, irregular migration or other non-traditional threats.

IFC-IOR is a **regional information hub** that complements national efforts to maintain maritime domain awareness.

10.5. Coastal State Administration

The **Coastal State Administration** comprises the State Government departments, District Collectors and relevant State Secretaries in coastal States and Union Territories.

Key Characteristics:

- Coordinates between national maritime agencies (DGMA, Indian Coast Guard, Indian Navy) and district/local authorities.
- Provides fast-track administrative approvals for emergency actions such as use of landing points, storage sites and other local facilities.
- Mobilises state-level resources and local assets for onshore response, evacuation support and crowd management.
- Issues local advisories or restrictions to coastal communities where required.

The Coastal State Administration is the **primary onshore governmental interface** during incidents that affect coastal areas.

10.6. State Disaster Management Authority (SDMA)

The **State Disaster Management Authority (SDMA)** is responsible for disaster management at the state level under the Disaster Management Act, 2005.

Key Characteristics:

- Coordinates state-level preparedness and emergency mobilisation in coastal areas.
- Deploys state disaster response units, medical teams and shelter facilities where onshore impacts are expected or realised.
- Supports shoreline clean-up and rehabilitation actions when pollution or damage affects coastal infrastructure.
- Integrates marine incidents into wider state disaster response plans, when the magnitude warrants.

10.7. State Pollution Control Board (SPCB)

The **State Pollution Control Board (SPCB)** is the environmental regulator for water, air and land pollution in the State.

Key Characteristics:

- Assesses environmental impact on coastal waters and shoreline areas affected by spills or discharges.
- Conducts sampling and monitoring, and advises on containment, clean-up and remediation measures.
- Ensures compliance with environmental regulations during salvage, decontamination and disposal of contaminated materials.
- Works with DGMA, Indian Coast Guard, Port Authorities and other agencies under national and state pollution-control frameworks.

SPCB ensures that environmental aspects of the casualty are **addressed and documented**.

10.8. State Maritime Boards

State Maritime Boards are responsible for the administration of non-major ports and associated coastal infrastructure in several maritime States.

Key Characteristics:

- Facilitate the movement and berthing of response vessels, salvage craft and support units in non-major ports and anchorages.
- Provide port assets such as tugs, pilot boats and basic pollution-response equipment where available.
- Coordinate with DGMA, Indian Coast Guard, District Administration and State Departments when incidents occur near or within non-major port limits.

State Maritime Boards help ensure **rapid local support** in smaller and regional ports.

10.9. National Disaster Management Authority (NDMA)

The **National Disaster Management Authority (NDMA)** is the apex national body for disaster management under the Ministry of Home Affairs.

Key Characteristics:

- Provides strategic oversight and national-level coordination when marine incidents escalate into major disasters.
- Mobilises the National Disaster Response Force (NDRF) for onshore rescue, evacuation or hazardous material containment where needed.
- Issues guidelines and standard protocols for disaster risk reduction and response in coastal zones.
- Facilitates inter-ministerial coordination across central ministries, States and security agencies during large-scale maritime disasters.

10.10. Indian Customs Authority

The **Indian Customs Authority**, under the Central Board of Indirect Taxes and Customs (CBIC), regulates cross-border movement of goods and certain services at ports.

Key Characteristics:

- Acts on information related to customs violations received through DGMA or the Directorate General Communication Centre (DG Comm Centre), while ensuring fair treatment of seafarers in line with relevant IMO guidelines.

- Facilitates expedited customs clearance of emergency equipment, pollution-response gear and salvage apparatus arriving from domestic or foreign sources.
- Processes relaxations and permissions under the Customs Act where casualty situations require special handling of cargo, bunkers or stores.
- Enables quick entry and movement of specialist personnel linked to response or investigation activities.

Customs clearance is often **critical to avoid operational delays** in high-severity incidents.

10.11. Immigration Authority

The **Immigration Authority**, operating under the Bureau of Immigration (BoI), manages the entry and exit of foreign nationals at ports and airports.

Key Characteristics:

- Provides expedited immigration clearance for foreign salvage teams, technical experts, investigators and crew.
- Facilitates visa relaxations or on-arrival permissions during serious emergencies where foreign assistance is required, subject to Government approval.
- Coordinates with DGMA, Customs and Port Authorities to ensure immigration processes do not delay urgent response actions.
- Supports crew disembarkation, repatriation and replacement procedures where needed.

10.12. Port Authorities

Port Authorities manage major ports and port operations within their jurisdiction.

Key Characteristics:

- Act as the **nodal operational agency** for incidents within port limits, including berths, anchorages and port approaches.
- Mobilise port resources such as tugs, fire-fighting units, emergency response teams and pollution-control equipment.
- Ensure safety and security in port waters, including imposing temporary movement restrictions, if required.
- Provide vessel and crew information, as well as Vessel Traffic Service (VTS) and Automatic Identification System (AIS) data, to DGMA and other agencies to support investigations.
- Facilitate boarding, inspection and survey activities by DGMA, Indian Coast Guard and other authorities.

11. Aspects Related to International Maritime Organisation

11.1. International Maritime Organization

The Convention establishing the International Maritime Organization (IMO) was adopted in Geneva in 1948 and IMO first met in 1959. The IMO's main task has been to develop and maintain a comprehensive regulatory framework for shipping and its remit today includes safety, environmental concerns, legal matters, technical co-operation, maritime security and the efficiency of shipping.

A specialized agency of the United Nations with 172 Member States and three Associate Members, IMO is based in the United Kingdom with around 300 international staff.

IMO's specialized committees and sub-committees are the focus for the technical work to update existing legislation or develop and adopt new regulations, with meetings attended by maritime experts from Member Governments, together with those from interested intergovernmental and non-governmental organizations.

The result is a comprehensive body of international conventions, supported by hundreds of recommendations governing every facet of shipping. These include:

- a. Measures aimed at the prevention of accidents, including standards for ship design, construction, equipment, operation and manning - key treaties include SOLAS, the MARPOL Convention for the prevention of pollution by ships and the STCW Convention on standards of training for seafarers.
- b. Measures which recognize that accidents do happen, including rules concerning distress and safety communications, the International Convention on Search and Rescue and the International Convention on Oil Pollution Preparedness, Response and Co-operation.
- c. Conventions which establish compensation and liability regimes - including the International Convention on Civil Liability for Oil Pollution Damage, the convention establishing the International Fund for Compensation for Oil Pollution Damage and the Athens Convention covering liability and compensation for passengers at sea.

Inspection and monitoring of compliance are the responsibility of Member States, but the IMO's Member State Audit Scheme is expected to play a key role in enhancing implementation of IMO standards.

IMO has an extensive technical co-operation programme, which identifies needs among resource-shy Members and matches them to assistance, such as training. IMO has founded three advanced level maritime educational institutes in Malmö, Malta and Genoa.

The Organization consists of an Assembly, a Council and five main Committees: the Maritime Safety Committee; the Marine Environment Protection Committee; the Legal Committee; the Technical Co-operation Committee and the Facilitation Committee and a number of Sub-Committees support the work of the main technical committees.

11.2. IMO Engagement

The Directorate (Casualty Investigation and Emergency Response Division) engages with the International Maritime Organization (IMO) as part of India's wider role as an IMO Member State and elected Council member, supporting the development and implementation of global rules on safety, environmental protection, and casualty investigation. Through the Directorate, India participates in IMO committees such as the Maritime Safety Committee (MSC) and Marine Environment Protection Committee (MEPC), where inputs on casualty trends, safety lessons, and national experience are used to shape SOLAS, MARPOL, the Casualty Investigation Code, and related instruments.

For day-to-day work, the Casualty Investigation and Emergency Response Division supports IMO engagement by preparing casualty statistics, marine safety investigation reports, and draft positions for delegations. These outputs feed into IMO reporting obligations via GISIS, responses to IMO circulars, and submissions on specific casualties or safety issues, ensuring that India's investigations and emergency response practice are aligned with international standards while also reflecting national interests.

11.3. IMO Reporting Circulars

IMO Reporting Circulars are official notices issued by the IMO Secretariat to share information on marine casualties, near-misses, and safety lessons with all Member States, promoting global awareness and preventive action. They align with the Casualty Investigation Code and SOLAS requirements, distributed via GISIS modules for standardized data collection and analysis.

The Casualty Investigation and Emergency Response Division contributes by providing inputs on Indian-registered vessel incidents, including summaries of investigations, root causes (e.g., human error, equipment failure), and safety recommendations. DGMA reviews draft circulars from IMO, coordinates comments or endorsements, and disseminates them internally to update SOPs, training, and circulars to shipping companies.

Staff monitor GISIS for new circulars, log them in case files, and apply lessons to ongoing casualties for example, referencing a circular on container fire risks during investigations. This ensures India's casualty handling evolves with international best practices.

11.3.1. Types of Casualty-Related Circulars

The Casualty Investigation and Emergency Response Division reviews and contributes for the very serious marine casualty and serious marine casualty circulars. These circulars are issued to share lessons learned, categorized by purpose under the Casualty Investigation Code and GISIS modules to these for Indian incidents.

- **Very Serious Marine Casualty (VSMC) Circulars** summarize major events like total ship losses or multiple fatalities, including preliminary facts, photos, and interim safety advice; DGMA submits VSMC details within 30 days via GISIS Module 7.
- **Serious Marine Casualty Circulars** cover significant incidents such as strandings, collisions, or serious injuries, focusing on causal factors and recommendations; used for trend analysis across Member States.

11.4. Global Integrated Shipping Information System (GISIS)

The IMO Global Integrated Shipping Information System (GISIS) is a secure online platform that collects, shares, and analyses maritime data from Member States to support safety, security, and environmental protection under IMO conventions. Casualty Investigation and Emergency Response Division staff use designated modules like Marine Casualties and Incidents to report very serious casualties, serious incidents, and near-misses within strict timelines, including details on ships, causes, and lessons learned.

GISIS enables real-time data exchange for global trend analysis, such as recurring navigation errors or equipment failures, helping DGMA update SOPs and contribute to IMO circulars. Access requires DGMA credentials; reports must follow standardized templates to ensure quality and interoperability with tools like LRIT and AIS.

11.4.1. Relevant Modules

GISIS Modules relevant to the Casualty Investigation and Emergency Response Division focus on casualty reporting, safety data, and incident analysis to meet IMO obligations under SOLAS and the Casualty Investigation Code. Staff access these via secure DGMA logins for mandatory submissions and global benchmarking.

Module 7: Marine Casualties and Incidents handle reporting of very serious marine casualties (VSMC: deaths, total losses), serious casualties (injuries, major damage), and equivalent incidents (near-misses). Requires details like ship particulars, event description, causes, and safety recommendations within 30 days; feeds IMO Reporting Circulars.

Module 8: Marine Safety Investigations collects preliminary and final investigation reports, including root cause analysis and lessons learned, protected from legal use. DGMA uploads aligned with Part XI of the MS Act reports here for international sharing and trend monitoring.

Module 9: Flag State Performance tracks casualty statistics by flag to evaluate safety records; India uses this for performance audits and IMO submissions. Module 6: Port State Control links detentions related to casualties, aiding prevention efforts.

Other modules like LRIT (Module 5) integrate with MMDAC for real-time vessel tracking during incidents.

11.4.2. User Roles and Data Entry Protocols

DGMA Casualty Investigation and Emergency Response Division staff hold designated GISIS user roles such as National Focal Point (NFP), Data Entry Officer, and Investigator, assigned via IMO registration with unique credentials for secure access. NFPs oversee submissions; others enter case-specific data under supervision to maintain accuracy and audit trails.

Data entry follows strict IMO protocols: use standardized templates in Modules 7-9 with mandatory fields (ship IMO number, incident date/location, casualties, damage description). Enter preliminary reports within 24-30 days for VSMC, finals within 12 months; validate via checklists before submission—no edits post-approval without IMO request.

Protocols emphasize data quality: cross-check with LRIT/AIS/VDR evidence, avoid liability statements, upload attachments (photos, reports) securely. Regular DGMA training ensures compliance; errors trigger re-submissions and internal reviews to protect India's flag performance metrics.

11.4.3. Data Quality and Validation

GISIS demands high data quality to enable reliable global analysis of casualty trends and safety improvements; Casualty Investigation and Emergency Response Division submissions must be accurate, complete, and timely to uphold India's IMO reputation. Poor data leads to rejected reports, queries from IMO, or flawed circulars affecting national safety metrics.

Validation occurs at three levels: internal checks use DGMA checklists to verify fields like IMO numbers, coordinates, and cause codes against LRIT/AIS/VDR evidence before entry. Pre-submission review by NFP ensures no liability language, consistent terminology, and full attachments (photos, prelim reports). IMO validation flags incompletes or inconsistencies post-upload, requiring corrections within 7 days.

Staff maintain audit trails by logging sources and changes; annual DGMA quality audits review 10% of submissions. Tools like GISIS data quality reports help identify recurring errors for training focus.

11.5. GMDSS in Casualty Context

The Global Maritime Distress and Safety System (GMDSS) is an IMO-mandated satellite and radio communication network under SOLAS Chapter IV, designed for ships to send automated distress alerts, safety messages, and coordinate rescues worldwide. It replaces traditional Morse code with reliable digital systems like Inmarsat, VHF DSC, and EPIRBs, ensuring alerts reach shore authorities even without radio operators on watch.

11.5.1. Logging and Handling Alerts

DGComm Centre logs all GMDSS alerts in real-time using digital recorders and standardized forms, capturing timestamp, signal type (MAYDAY/PAN-PAN/SECURITE), ship identity, position, and message details for audit and investigation use. Casualty Investigation and Emergency Response Division accesses these logs within minutes via secure internal portal.

Alert Handling Process: Verify signal authenticity (avoid hoaxes via DSC acknowledgment); classify priority and relay distress to IGC/MRCC instantly, urgency to standby watch, safety to MMDAC for monitoring. Escalate to Casualty Investigation and Emergency Response Division if Indian flag or Indian waters involved.

Logging Protocols: Maintain immutable records with audio transcripts, DSC printouts, and metadata; store 12 months minimum per SOP-Casualty. Branch extracts excerpts as evidence for GISIS Module 7 reports and Part XI investigations, ensuring chain-of-custody.

12. IOPC Funds and Related Regimes

The International Oil Pollution Compensation (IOPC) Funds are three intergovernmental organizations—the 1992 Fund, the Supplementary Fund, and the 1971 Fund (for legacy cases)—that provide compensation for oil pollution damage from tanker spills of persistent oils in Member States. Established after the 1967 Torrey Canyon incident exposed gaps in liability regimes, they operate under IMO-adopted conventions: the 1992 Civil Liability Convention (CLC), the 1992 Fund Convention, and the 2003 Supplementary Fund Protocol. India is a Member State of the 1992 Fund, with 115 states participating overall.

12.1. Overview of the IOPC Fund System and Conventions

The Funds are financed by post-incident levies on entities receiving >150,000 tonnes of contributing oil annually by sea in Member States (460 contributors to 1992 Fund, 260 to Supplementary). Assemblies of Member State governments meet twice yearly to approve payments, policy, and budgets; since 1978, they have handled 158 incidents, paying over £675 million (US\$900 million) for cleanup, property damage, economic losses (fisheries/tourism), and environmental reinstatement. Claims follow the Claims Manual criteria: quantifiable pollution-related losses with evidence like invoices and assessments.

The system channels claim through governments or directly, prioritizing swift interim payments without admitting liability. Services include workshops, HNS Convention support, and online tools like incident maps tracking open cases.

12.2. Roles of DGMA and Casualty Investigation and Emergency Response Division in Fund Incidents

Within this framework, the Directorate General of Maritime Administration (DGMA) acts as India's main interface with the IOPC Funds, both as flag State for Indian tankers and as the competent authority for spills in Indian waters. The Casualty Investigation and Emergency Response Division supports DGMA by handling the technical and investigative aspects of Fund-related incidents: receiving early information from DGComm/Coast Guard, assessing whether the incident could fall within the Fund regime, preserving key evidence, and coordinating with other national agencies so that the factual picture of the incident is clear.

This role extends to training and preparedness, with member states joining IOPC workshops and drills to align response with Fund protocol. By maintaining independence between safety

investigations and compensation processes, DGMA ensures both prevention lessons and victim support advance simultaneously with the IOPC Funds.

12.3. Incident Notification and Reporting Requirements

Incident notification and reporting to the IOPC Funds follow a structured process. After a significant oil spill, the shipowner and its P&I Club are normally the first to notify the Funds, but the coastal State is also expected to inform the Secretariat with details of the ship, location, type and estimated quantity of oil, and the scale of potential damage.

DGMA consolidates such information and channels a unified report, followed by regular updates on response progress and claim estimates. Timely reporting activates Fund resources like expert advisors, preventing delays in compensation levies and assessments.

12.4. Documentation, Evidence, and Claims Support

Documentation and evidence are central to the IOPC compensation process, and the Funds have a detailed Claims Manual and sector-specific guidance that set out what is required. Claimants must demonstrate the extent of their pollution-related losses using records such as clean-up contracts and invoices, fishing or tourism income data, environmental monitoring reports, and photographs or maps of oiled areas.

The Casualty Investigation and Emergency Response Division contributes by sharing pollution survey results, and other technical material that can corroborate the circumstances and impact of the spill, while remaining neutral on the merits of individual claims so as not to prejudice either the investigation or the compensation process. This support helps aggregate national claims efficiently, enabling interim payments to flow quickly to affected parties.

12.5. Interaction with Owners, Insurers, P&I Clubs, and the IOPC Secretariat

Throughout an IOPC Fund case, there is close interaction between DGMA, shipowners, their P&I Clubs, hull and liability insurers, and the IOPC Secretariat. The P&I Club usually takes the lead on behalf of the owner in managing claims up to the CLC limit, arranging financial security and liaising with the Funds once that limit may be exceeded.

DGMA maintain a cooperative but independent relationship, providing factual updates and clarifications to both the P&I Club and the IOPC Secretariat, participating in missions or technical meetings where necessary, and facilitating contact with national authorities and affected

communities so that compensation can be processed efficiently and transparently. Regular engagements, such as joint workshops, strengthen these ties for future incidents.

13. Protection and Indemnity (P&I) and Other Insurers

13.1. Overview of P&I Insurance

Protection and Indemnity insurance is a crucial component of marine risk management, designed to cover extensive third-party liabilities arising from the operation of vessels. These liabilities include, loss of life or injury to crew and passengers, damage to cargo, pollution and environmental harm, wreck removal, and fines or penalties under international maritime law. Unlike Hull & Machinery (H&M) insurance, which addresses physical damage to the ship itself, P&I cover is complex, high-risk, and typically insured through mutual insurer clubs given the potential magnitude of claims involved.

Internationally, the P&I insurance sector is predominantly controlled by the International Group of P&I Clubs (IGI Group), which collectively underwrites approximately 90% of the world's ocean-going tonnage. The Indian maritime sector, in contrast, commands a modest share of global shipping (approx. 1%) and consequently relies entirely on foreign P&I insurers.

13.2. Overview of Non-International Group (Non-IG) P&I Insurance

Most ships worldwide are insured by International Group (IG) P&I Clubs, whose insurance is widely accepted by ports and authorities. However, some ships are insured by non-International Group (non-IG) P&I insurers, which include smaller insurance providers, commercial insurers, and in some cases government-supported entities.

In recent years, international sanctions, particularly those related to Russia, have affected the availability of IG P&I insurance for certain trades. Ships carrying Russian oil could not obtain insurance from IG P&I Clubs due to sanctions compliance. This created difficulties for countries that depend on such cargo for energy needs.

To avoid disruption to essential imports, the Directorate General of Maritime Administration (DGMA) examined and approved certain non-IG P&I insurers after due checks. By early 2025, nineteen non-IG insurers were permitted to provide valid P&I cover for ships calling at Indian ports, as allowed under Indian port entry rules.

While this approach provides flexibility, it also requires caution. Insurance documents issued by non-IG insurers may need closer verification by port authorities and the Casualty Investigation and Emergency Response Division. There may also be concerns about the ability of some non-IG insurers to meet large claims in serious incidents involving pollution or wreck removal. These aspects are important during emergency response and salvage coordination.

13.3. Overview of Other Insurance Arrangements (hull, cargo, pollution liability)

Besides P&I clubs that cover third-party liabilities like crew claims and wreck removal, shipowners maintain separate insurance for hull, cargo, and pollution to protect direct assets during casualties. The Casualty Investigation and Emergency Response Division liaises with these insurers for evidence, cost recovery, and compliance under the Merchant Shipping Act, 2025.

Hull Insurance covers physical damage to the ship, machinery, and equipment from perils like collisions, groundings, fires, or storms. Insurers pay for repairs or total loss; DGMA verifies certificates during investigations and coordinates salvage to minimize claims while ensuring safety.

Cargo Insurance protects goods in transit against loss or damage from marine risks, theft, or non-delivery, held by cargo owners or shippers. The Branch requests cargo manifests and insurer details for incident analysis, especially in collisions affecting multiple vessels.

Pollution Liability Insurance (distinct from P&I/IOPC) provides standalone cover for oil spills or hazardous releases beyond standard limits, often required for high-risk cargoes. Owners must show financial security; DGMA enforces cleanup directives with direct insurer recovery.