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MSC-MEPC.3/Circ.3
18 December 2008

CASUALTY-RELATED MATTERS*
REPORTS ON MARINE CASUALTIES AND INCIDENTS

**Revised harmonized reporting procedures – Reports required under
SOLAS regulation I/21 and MARPOL, articles 8 and 12**

1 The Maritime Safety Committee, at its seventy-second session (17 to 26 May 2000) and the Marine Environment Protection Committee, at its forty-fourth and forty-fifth sessions (6 to 8, 10 and 13 March 2000 and 2 to 6 October 2000 respectively) approved an MSC/MEPC circular (MSC/Circ.953 – MEPC/Circ.372) on Reports on marine casualties and incidents – Harmonized reporting procedures, amalgamating and harmonizing the procedures for reporting casualties to the Organization contained in existing MSC and MEPC circulars.

2 The Marine Environment Protection Committee, at its fifty-eighth session (6 to 10 October 2008) and the Maritime Safety Committee, at its eighty-fifth session (26 November to 5 December 2008) approved amendments to MSC-MEPC.3/Circ.1.

3 Under SOLAS regulation I/21 and MARPOL articles 8 and 12, each Administration undertakes to conduct an investigation into any casualty occurring to ships under its flag subject to those conventions and to supply the Organization with pertinent information concerning the findings of such investigations.

4 The reporting formats contained in the annexes to this circular replace the reporting forms contained in MSC 59/33, annex 3 regarding Damage cards, MSC/Circ.224 regarding Intact stability casualty records, MSC/Circ.388 on Fire casualty records, MSC/Circ.433 on Reports on investigations into serious casualties, MSC/Circ.559 on Incidents involving dangerous goods or marine pollutants in packaged form, MSC/Circ.621 on Guidelines for the investigation of accidents where fatigue may have been a contributing factor and COM/Circ.70/Rev.1 Questionnaire on the maritime distress system. The reporting format on Incidental spillages of harmful substances of 50 tonnes or more has been added, as such reports are considered necessary when investigating a casualty or an incident (MARPOL, articles 8 and 12); however, this does not replace the one-line entry report required by the annual mandatory report under MARPOL, article 11 (MEPC/Circ.318, Part 1).

* In order to facilitate the identification and retrieval of information circulated by means of joint MSC-MEPC circulars, from now on such information will be disseminated through the following circular series:

- 1 Organization and methods of work, as MSC-MEPC.1/Circ...
- 2 General matters, as MSC-MEPC.2/Circ...
- 3 Casualty-related matters, as MSC-MEPC.3/Circ...
- 4 Port State control-related matters, as MSC-MEPC.4/Circ...
- 5 Survey and certification-related matters, as MSC-MEPC.5/Circ...
- 6 National contact points for safety and pollution prevention and response, as MSC-MEPC.6/Circ...
- 7 Human element-related matters, as MSC-MEPC.7/Circ....

5 For the purpose of reporting information to the Organization, ship casualties are classified as “very serious casualties”, “serious casualties”, “less serious casualties” and “marine incidents”. Administrations are requested to submit data for all “very serious casualties” and “serious casualties”^{*}.

Where there are important lessons to be learned from “serious casualties”, “less serious casualties” and “marine incidents”, full investigation reports should be submitted along with the additional information indicated in annex 3.

Information should also be provided in accordance with annex 10, for all casualties involving life-saving appliances whether or not there are injuries or loss of life or whether used for drills or emergencies, notwithstanding paragraph 7 below.

* “Very serious casualties” are casualties to ships which involve total loss of the ship, loss of life, or severe pollution, the definition of which, as agreed by the Marine Environment Protection Committee at its thirty-seventh session (MEPC 37/22, paragraph 5.8), is as follows:

“Severe pollution” is a case of pollution which, as evaluated by the coastal State(s) affected or the flag Administration, as appropriate, produces a major deleterious effect upon the environment, or which would have produced such an effect without preventive action.

“Serious casualties” are casualties to ships which do not qualify as “very serious casualties” and which involve a fire, explosion, collision, grounding, contact, heavy weather damage, ice damage, hull cracking, or suspected hull defect, etc., resulting in:

- immobilization of main engines, extensive accommodation damage, severe structural damage, such as penetration of the hull under water, etc., rendering the ship unfit to proceed^{*}, or
- pollution (regardless of quantity); and/or
- a breakdown necessitating towage or shore assistance.

“Less serious casualties” are casualties to ships which do not qualify as “very serious casualties” or “serious casualties” and for the purpose of recording useful information also include “marine incidents” which themselves include “hazardous incidents” and “near misses”.

* The ship is in a condition, which does not correspond substantially with the applicable conventions, presenting a danger to the ship and the persons on board or an unreasonable threat of harm to the marine environment.

6 Administrations are urged to submit data as indicated below.

Information to be submitted per casualty class

<i>Information to be sent in accordance with the type of casualty</i>	<i>Very serious casualties</i>	<i>Serious casualties</i>	<i>Less serious casualties</i>	<i>Marine incidents</i>
<i>Annex 1 of the attached reporting format</i>	<i>To be provided within 6 months after the casualty in all cases</i>	<i>To be provided within 6 months after the casualty in all cases</i>	<i>May be provided if there are important lessons to be learned</i>	<i>May be provided if there are important lessons to be learned</i>
<i>Annexes 2 and 3 of the attached reported format, as well as other relevant annexes</i>	<i>To be provided at the end of the investigation in all cases</i>	<i>To be provided at the end of the investigation in all cases</i>	<i>May be provided if there are important lessons to be learned</i>	<i>May be provided if there are important lessons to be learned</i>
<i>Full investigation report</i>	<i>To be provided at the end of the investigation in all cases</i>	<i>May be provided if there are important lessons to be learned</i>	<i>May be provided if there are important lessons to be learned</i>	<i>May be provided if there are important lessons to be learned</i>

Very serious casualty

preliminary information as indicated in **annex 1***

information as indicated in **annexes 2 and 3, as well as other relevant annexes**

a full investigation report in all cases

Serious casualty

preliminary information as indicated in **annex 1***

information as indicated in **annexes 2 and 3, as well as other relevant annexes**

a full investigation report only in cases of important lessons to be learnt regarding IMO regulations

* To be submitted within six months of the casualty date unless complete information is submitted within this time limit.

Less serious casualty and marine incident

information as indicated in **annexes 1, 2 and 3, as well as other relevant annexes**, only in cases of important lessons to be learnt regarding IMO regulations

a full investigation report only in cases of important lessons to be learnt regarding IMO regulations

Information to be submitted for casualties/incidents as indicated below

Information from casualties involving dangerous goods or marine pollutants in packaged form on board ships and in port areas	→ annex 4
Damage cards and intact stability records	→ annex 5
Fire casualty record	→ annex 6
Global Maritime Distress and Safety System (GMDSS)	→ annex 7
Fatigue as a contributory cause to maritime accidents – Fatigue factors data compilation sheet	→ annex 8
Incidental spillage of liquids of 50 tonnes or more	→ annex 9
Life-saving appliance casualty record	→ annex 10

7 Member Governments are invited to give effect to the Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (resolutions A.849(20) and A.884(21) or MSC.255(84) and MSC-MEPC.3/Circ.2) when conducting investigations into marine casualties and incidents.

8 Member Governments are requested to use the present circular when reporting on marine casualties and incidents, and to make ample use of the electronic data exchange and reporting facilities available through the IMO Global Integrated Shipping Information System (GISIS) (<http://gisis.imo.org/Members>), as described in circular letter No.2892 – Access to IMO web services, including GISIS and IMODOCS.

9 The present circular supersedes MSC-MEPC.3/Circ.1.

List of annexes

- ANNEX 1: SHIP IDENTIFICATION AND PARTICULARS
Indicates the information to be submitted in all casualty reports.
- ANNEX 2: DATA FOR VERY SERIOUS AND SERIOUS CASUALTIES
Indicates information to be supplied on “very serious” and “serious” casualties.

- ANNEX 3: SUPPLEMENTARY INFORMATION ON VERY SERIOUS AND SERIOUS CASUALTIES
Additional information required for “very serious” and “serious” casualties.
- ANNEX 4: INFORMATION FROM CASUALTIES INVOLVING DANGEROUS GOODS OR MARINE POLLUTANTS IN PACKAGED FORM ON BOARD SHIPS AND IN PORT AREAS
This form may be applicable for marine casualties as defined as well as marine incidents.
- ANNEX 5: DAMAGE CARDS AND INTACT STABILITY CASUALTY RECORDS
This form may apply to “very serious” and “serious” casualties.
- ANNEX 6: FIRE CASUALTY RECORD
This form may apply to “very serious” and “serious” casualties.
- ANNEX 7: QUESTIONNAIRE RELATED TO THE GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM
This form may apply to “very serious” and “serious” casualties.
- ANNEX 8: FATIGUE AS A CONTRIBUTORY FACTOR TO MARITIME ACCIDENTS – FATIGUE FACTORS DATA COMPILATION SHEET
This form will apply where fatigue is deemed to be a contributory factor in the casualty.
- ANNEX 9: INCIDENTAL SPILLAGES OF HARMFUL SUBSTANCES OF 50 TONNES OR MORE
This form relates to incidents involving harmful substances. The report is considered necessary when investigating a casualty or an incident (MARPOL, articles 8 and 12), however this does not replace the one-line entry report required by the annual mandatory report under MARPOL, article 11 (MEPC/Circ.318, Part 1).
- ANNEX 10: LIFE-SAVING APPLIANCE CASUALTY RECORD
This form is for all casualties involving life-saving appliances, adding any other information which would provide lessons to be learned concerning the use of this equipment.

ANNEX 1

SHIP IDENTIFICATION AND PARTICULARS

Administrations are urged to supply the ship identification information listed in this annex for all marine casualty reports submitted to the Organization.

SHIP PARTICULARS

1 IMO Number:

2 Name of Ship:

3 Flag Administration:

4 Type of Ship:

- | | | |
|-----|--|--------------------------|
| .1 | Liquefied Gas Tanker | <input type="checkbox"/> |
| .2 | Chemical Tanker | <input type="checkbox"/> |
| .3 | Oil Tanker | <input type="checkbox"/> |
| .4 | Other Liquids (non-flammable) Tanker | <input type="checkbox"/> |
| .5 | Bulk Dry (general, ore) Carrier | <input type="checkbox"/> |
| .6 | Bulk Dry/Oil Carrier | <input type="checkbox"/> |
| .7 | Self-Discharging Bulk Dry Carrier | <input type="checkbox"/> |
| .8 | Other Bulk Dry (cement, woodchips, urea and other specialized) Carrier | <input type="checkbox"/> |
| .9 | General Cargo Ship | <input type="checkbox"/> |
| .10 | Passenger/General Cargo Ship | <input type="checkbox"/> |
| .11 | Container Ship | <input type="checkbox"/> |
| .12 | Refrigerated Cargo Ship | <input type="checkbox"/> |
| .13 | Ro-Ro Cargo Ship | <input type="checkbox"/> |
| .14 | Passenger/Ro-Ro Cargo Ship | <input type="checkbox"/> |
| .15 | Passenger Ship | <input type="checkbox"/> |
| .16 | High-Speed Craft | <input type="checkbox"/> |
| .17 | Other Dry Cargo (livestock, barge, heavy cargo, etc.) Carrier | <input type="checkbox"/> |
| .18 | Fish Catching Vessel | <input type="checkbox"/> |
| .19 | Fish Factory Ship/Fish Carrier | <input type="checkbox"/> |

- | | | |
|-----|------------------------|--------------------------|
| .20 | Offshore Supply Ship | <input type="checkbox"/> |
| .21 | Other Offshore Ship | <input type="checkbox"/> |
| .22 | Research Ship | <input type="checkbox"/> |
| .23 | Towing/Pushing Tug | <input type="checkbox"/> |
| .24 | Dredger | <input type="checkbox"/> |
| .25 | Other Activities Ship | <input type="checkbox"/> |
| .26 | Non-Propelled Ships | <input type="checkbox"/> |
| .27 | Other Ships Structures | <input type="checkbox"/> |

5 Type of service:

- International
- Short international
- Coastal sea trade
- Inland waters
- Other, please state:
- Not reported

6 Were any voyage related restriction limits placed on the ship? Explain:

7 Gross Tonnage:

8 Length overall:

9 Classification Society:

10 Registered Shipowner:

11 Ship Manager/Operator:

12 Previous names:

13 Previous Flag:

14 Previous Class Society:

15 Date of contract/keel laid/delivery:

16 Date of major conversion:

17 Deadweight:

18 Hull material:

- .1 steel
- .2 light alloy
- .3 ferrocement
- .4 wood
- .5 GRP
- .6 composite materials

19 Hull construction:

- .1 single hull
- .2 double hull
- .3 double bottom
- .4 double sides
- .5 mid deck
- .6 other

20 Propulsion Type (type, fuel, etc.): Steam Diesel Other

- .1 Bunkers:
Heavy Fuel Oil (HFO) Medium Fuel Oil (MFO) Marine Diesel Oil (MDO)

21 Nature of cargo (e.g., oil, dry bulk and goods under the IMDG Code):

22 Building yard: _____

23 Hull number: _____

24 Date of total loss/constructive total loss/scrapping: _____

25 Number of Crew on ship's certificate: _____

26 Number of Passengers on ship's certificate: _____

27 Number of persons onboard at the time of the casualty/accident:

- .1 Crew: _____
- .2 Passengers: _____
- .3 Others: _____

PRELIMINARY CASUALTY DATA

28 Date and time (local onboard):

29 Position/location:

30 Initial event*:

- collision
- stranding/ grounding
- contact
- fire or explosion
- hull failure/ failure of watertight doors/ports, etc.
- machinery damage
- damages to ship or equipment
- capsizing/ listing
- missing: assumed lost
- accidents with life-saving appliances
- other

31 Consequences:

- total loss of the ship
- ship rendered unfit to proceed**
- ship remains fit to proceed***
- pollution
- loss of life
- serious injuries

32 Summary of events:

* For an explanation of the terms below see annex 2.

** The ship is in a condition, which does not correspond substantially with the applicable conventions, presenting a danger to the ship and the persons on board or an unreasonable threat of harm to the marine environment.

*** The ship is in a condition, which corresponds substantially with the applicable conventions, presenting neither a danger to the ship and the persons on board nor an unreasonable threat of harm to the marine environment.

ANNEX 2

DATA FOR VERY SERIOUS AND SERIOUS CASUALTIES

CASUALTY DATA

1 Date and local time of casualty: (24 hr clock) (dd/mm/yyyy):

2 Position of casualty (Latitude, Longitude):

3 Location of casualty:

- | | | |
|------|----------------------------------|--------------------------|
| 3.1 | At berth | <input type="checkbox"/> |
| 3.2 | Anchorage | <input type="checkbox"/> |
| 3.3 | Port | <input type="checkbox"/> |
| 3.4 | Port approach | <input type="checkbox"/> |
| 3.5 | Inland waters | <input type="checkbox"/> |
| 3.6 | Canal | <input type="checkbox"/> |
| 3.7 | River | <input type="checkbox"/> |
| 3.8 | Archipelagos | <input type="checkbox"/> |
| 3.9 | Coastal waters (within 12 miles) | <input type="checkbox"/> |
| 3.10 | Open sea | <input type="checkbox"/> |

4 Pilot on board:

5 Type of casualty (initial event):

- | | | |
|-------|--|--------------------------|
| 5.1 | Collision: striking or being struck by another ship (regardless of whether under way, anchored or moored). | <input type="checkbox"/> |
| 5.1.1 | IMO Number of other ship involved. (not coded) | |
| 5.1.2 | Name of other ship involved. (not coded) | |
| 5.2 | Stranding or grounding: being aground, or hitting/touching shore or sea bottom or underwater objects (wrecks, etc.). | <input type="checkbox"/> |

- 5.3 Contact: striking any fixed or floating object other than those included in No.1 or 2.
- 5.4 Fire or explosion.
- 5.5 Hull failure or failure of watertight doors, ports, etc.: not caused by Nos.1 to 4.
- 5.6 Machinery damage: not caused by Nos.1 to 5, and which necessitated towage or shore assistance.
- 5.7 Damages to ship or equipment: not caused or covered by Nos.1 to 6.
- 5.8 Capsizing or listing: not caused by Nos.1 to 7.
- 5.9 Missing: assumed lost.
- 5.10 Accidents with life-saving appliances.
- 5.11 Other: all casualties which are not covered by Nos.1 to 10.

6 Type of subsequent events:

- 6.1 Collision: striking or being struck by another ship (regardless of whether under way, anchored or moored).
 - 6.1.1 IMO Number of other ship involved. (not coded)
 - 6.1.2 Name of other ship involved. (not coded)
- 6.2 Stranding or grounding: being aground, or hitting/touching shore or sea bottom or underwater objects (wrecks, etc.).
- 6.3 Contact: striking any fixed or floating object other than those included in No.1 or 2.
- 6.4 Fire or explosion.
- 6.5 Hull failure or failure of watertight doors, ports, etc.

- | | | |
|------|---|--------------------------|
| 6.6 | Machinery damage which necessitated towage or shore assistance. | <input type="checkbox"/> |
| 6.7 | Damages to ship or equipment. | <input type="checkbox"/> |
| 6.8 | Capsizing or listing. | <input type="checkbox"/> |
| 6.9 | Missing: assumed lost. | <input type="checkbox"/> |
| 6.10 | Accidents with life-saving appliances. | <input type="checkbox"/> |
| 6.11 | Other: all events which are not covered by Nos.1 to 10. | <input type="checkbox"/> |

7 Consequences of the casualty:

7.1 Consequences to the ship involved in the casualty:

- | | | |
|-------|---------------------------------|--------------------------|
| 7.1.1 | Total loss | <input type="checkbox"/> |
| 7.1.2 | Ship rendered unfit to proceed* | <input type="checkbox"/> |
| 7.1.3 | Ship remains fit to proceed** | <input type="checkbox"/> |

7.2 Consequences related to human beings:

- | | | |
|-------|--|-------|
| 7.2.1 | Number of dead or missing crew | _____ |
| 7.2.2 | Number of dead or missing passengers | _____ |
| 7.2.3 | Number of other dead or missing persons | _____ |
| 7.2.4 | Number of crew being seriously*** injured in the casualty | _____ |
| 7.2.5 | Number of passengers being seriously*** injured in the casualty | _____ |
| 7.2.6 | Number of other persons being seriously*** injured in the casualty | _____ |

* The ship is in a condition, which does not correspond substantially with the applicable conventions, presenting a danger to the ship and the persons on board or an unreasonable threat of harm to the marine environment.

** The ship is in a condition, which corresponds substantially with the applicable conventions, presenting neither a danger to the ship and the persons on board nor an unreasonable threat of harm to the marine environment.

*** Incapacitated for 72 hours or more.

7.3 Consequences to the environment (pollution):

7.3.1 Oil in bunkers:

7.3.1.1	Type of oil	Quantity spilled
<input type="checkbox"/>	Heavy fuel	_____
<input type="checkbox"/>	Diesel	_____
<input type="checkbox"/>	Lube oils	_____
<input type="checkbox"/>	Other	_____

7.3.2 Oil cargo:

7.3.2.1	Type of oil (not coded)	Quantity spilled
<input type="checkbox"/>	Crude oil	_____
<input type="checkbox"/>	Persistent refined oil products	_____
<input type="checkbox"/>	Non-persistent refined oil products	_____
<input type="checkbox"/>	Others	_____

7.3.3 Chemicals in bulk:

Category (Appendix I to Annex II of MARPOL)

		Quantity in tons spilled
<input type="checkbox"/>	X	_____
<input type="checkbox"/>	Y	_____
<input type="checkbox"/>	Z	_____
<input type="checkbox"/>	OS	_____

7.3.4 Dangerous Goods in packaged form:

Class (IMDG Code)	Proper Shipping Names	UN numbers	Quantity lost overboard
1 <input type="checkbox"/>	_____	_____	_____
2 <input type="checkbox"/>	_____	_____	_____
3 <input type="checkbox"/>	_____	_____	_____
4.1 <input type="checkbox"/>	_____	_____	_____
4.2 <input type="checkbox"/>	_____	_____	_____
4.3 <input type="checkbox"/>	_____	_____	_____
5.1 <input type="checkbox"/>	_____	_____	_____
5.2 <input type="checkbox"/>	_____	_____	_____
6.1 <input type="checkbox"/>	_____	_____	_____
6.2 <input type="checkbox"/>	_____	_____	_____
7 <input type="checkbox"/>	_____	_____	_____
8 <input type="checkbox"/>	_____	_____	_____
9 <input type="checkbox"/>	_____	_____	_____

8 Primary causes of the initial event:

Coding principle:

- a The human element is a complex multi-dimensional issue that affects maritime safety and marine environmental protection. It involves the entire spectrum of human activities performed by ships' crews, shore based management, regulatory bodies, classification societies, shipyards, legislators and other relevant parties.
- b Effective remedial action following maritime casualties requires a sound understanding of the human element involvement in accident causation. This comes by the thorough investigation and systematic analysis of casualties for contributory factors and the causal chain of events.

8.1 Internal causes (related to the ship where the casualty occurred):

8.1.1 Human violations or errors by the crew:

- .1 Human violations
- .2 Human error

- 8.1.2 Human violations or errors by the pilot:
 - .1 Human violations
 - .2 Human error
- 8.1.3 Structural failures of the ship:
- 8.1.4 Technical failure of machinery/equipment including design errors:
 - .1 Failure of propulsion machinery
 - .2 Failure of essential auxiliary machinery
 - .3 Failure of steering gear
 - .4 Failure of closing arrangements or seals
 - .5 Failure or inadequacy of navigational equipment
 - .6 Failure of bilge pumping
 - .7 Failure of electrical installation
 - .8 Failure or inadequacy of communication equipment
 - .9 Failure or inadequacy of lifesaving appliances
 - .10 Ship design errors (i.e. insufficient stability)
 - .11 Other
- 8.1.5 The ship's cargo:
 - .1 Cargo shifting
 - .2 Fire or explosion in cargo
 - .3 Improper stowage of cargo
 - .4 Spontaneous combustion
 - .5 Cargo liquefaction
 - .6 Other
- 8.2 External causes (outside the ship):**
 - 8.2.1 Another ship or ships (improper actions, etc.)
 - 8.2.2 The environment:
 - .1 Heavy sea
 - .2 Wind
 - .3 Currents or tides
 - .4 Icing
 - .5 Ice conditions
 - .6 Restricted visibility

- 8.2.3 Navigational infrastructure:
 - .1 Failures in aids to navigation
 - .2 Inaccurate charts or nautical publications
 - .3 Charts or nautical publications unavailable for the sea
 - .4 VTS
- 8.2.4 Criminal acts:
- 8.2.5 Other “external” causes (i.e. not associated with the ship itself):
 - .1 Tug boat operations
 - .2 Failure or incorrect operation of shore equipment or installation
 - .3 Other than .1 and .2
- 8.3 Unknown causes:**
- 9 Violations and error types:**
 - 9.1 Violation (deliberate decision to act against a rule or plan):**
 - 9.1.1 Routine (cutting corners, taking path of least effort, etc.)
 - 9.1.2 Necessary (due to inadequate tools or equipment, improper procedures or regulations)
 - 9.1.3 “For kicks” (thrill seeking, to alleviate boredom, macho behaviour)
 - 9.1.4 Exceptional (taking risks to help people in distress, lack of system knowledge)
 - 9.2 Slip (unintentional action where failure involves attention):**
 - 9.2.1 Incorrect operation of controls or equipment
 - 9.2.2 Left/Right, reversal
 - 9.2.3 Failure to report due to distraction
 - 9.2.4 Other
 - 9.3 Lapse (unintentional action where failure involves memory):**
 - 9.3.1 Forgetting to report information
 - 9.3.2 Failure to advise Officer on the Watch
 - 9.3.3 Other

9.4 Mistake (an intentional action where there is an error in the planning process; there is no deliberate decision to act against a rule or procedure):

9.4.1 Error in judgement

9.4.2 Inappropriate choice of route

9.4.3 Deciding not to pass on information

9.4.4 Failure to respond appropriately

9.4.5 Other

10 Underlying factors:

10.1 Liveware:

10.1.1 Physiological:

.1 Fatigue

.2 Stress

.3 Alcohol/illegal drug

.4 Prescription medicine

10.1.2 Psychological:

.1 Excessive workload

.2 Communication

.3 Standards of personal competence

.4 Lack of familiarity or training

.5 Panic and fear

.6 Boredom

.7 Mental and emotional disorders

10.1.3 Physical:

.1 Hearing problem

.2 Visual problem

.3 Injuries and illness

.4 Less than adequate medical fitness

10.1.4 Others:

- 10.2 Hardware:**
- 10.2.1 Equipment not available
- 10.2.2 Ergonomics
- 10.2.3 Design failures (other than ergonomics)
- 10.2.4 Maintenance and repair
- 10.2.5 Other
- 10.3 Software:**
- 10.3.1 Company policy and standing orders
- 10.3.2 Less than adequate operating procedures and instruction
- 10.3.3 Management and supervision
- 10.3.4 Other
- 10.4 Environment:**
- 10.4.1 Ship movement/Weather effects
- 10.4.2 Noise
- 10.4.3 Vibration
- 10.4.4 Temperature/Humidity
- 10.4.5 Less than adequate manning
- 10.4.6 Other

ANNEX 3

**SUPPLEMENTARY INFORMATION ON VERY SERIOUS
AND SERIOUS CASUALTIES**

To assist completion of marine casualty analysis, in addition to the information in annexes 1 and 2, the following information is required:

1 Principal findings and form of casualty investigation:

2 Action taken:

3 Findings affecting international regulations:

4 Assistance given (SAR operations):

ANNEX 4**INFORMATION FROM CASUALTIES INVOLVING DANGEROUS GOODS OR
MARINE POLLUTANTS IN PACKAGED FORM
ON BOARD SHIPS AND IN PORT AREAS**

This report is a supplement to the report made by the master in accordance with guidelines and general principles adopted by the Organization by resolution A.851(20) in case of an incident involving dangerous goods, harmful substances and/or marine pollutants in packaged form on board ships and in port areas.

The information should be provided in case of:

- an accident with loss of life, injury or damage to ship or property; or
- an accident, where an unsafe situation, an emergency or loss has occurred involving dangerous goods in packaged form and marine pollutants.

The information should be provided by the Administration carrying out the investigation, if necessary in consultation with other parties involved (e.g., authorities of ports of loading, transit or discharge, etc.) and forwarded to the International Maritime Organization together with recommendations, if considered necessary, for rectifying any detected deficiencies.

The summary and recommendations of any subsequent investigations should also be reported to the Organization.

**INFORMATION FROM INVESTIGATION OF INCIDENTS INVOLVING
DANGEROUS GOODS OR MARINE POLLUTANTS IN PACKAGED FORM****1 Cargo(es) involved**

1.1 Proper Shipping Name: UN Number: IMO Hazard Class* :

1.2 Name and address of manufacturer, or consignor, or consignee:

* Data should be provided only if not supplied otherwise.

- 1.3 Type of packaging/container:

- 1.4 Quantity and condition of goods:

- 1.5 Stowage/Securing arrangements:

- 2 Pollution – goods lost overboard (yes/no):
If yes:
 - 2.1 Quantity of goods lost:

 - 2.2 Lost goods floated or sank:

 - 2.3 Lost goods released from packaging (yes/no):

- 3 Brief account of the sequence of events* :

- 4 Extent of damage* :

* Data should be provided only if not supplied otherwise.

- 5 Emergency response measures taken:

- 6 Comments on compliance with applicable convention/recommendation requirements:

- 7 Comments on effectiveness of applicable convention/recommendation requirements:

- 8 Measures/recommendations to prevent recurrence:

- 9 Further investigation (yes/no)* :

* Data should be provided only if not supplied otherwise.

ANNEX 5

DAMAGE CARDS AND INTACT STABILITY CASUALTY RECORDS

Card No Number of files to this casualty
 (If more than one damage, please complete another sheet with description of that penetration)

Date and place° of casualty (category and details)
 (harbour, quay wall ; river, channel ; coastal waters ; open sea ; other)

Nature of casualty (category and details)
 (capsize ; collision ; fire/explosion ; grounding ; heavy weather ; loss ; other)

Nature of damage (category and details)
 (dent/deformation ; breakage/crevice ; strong deformation ; other)

Damaged Ship.

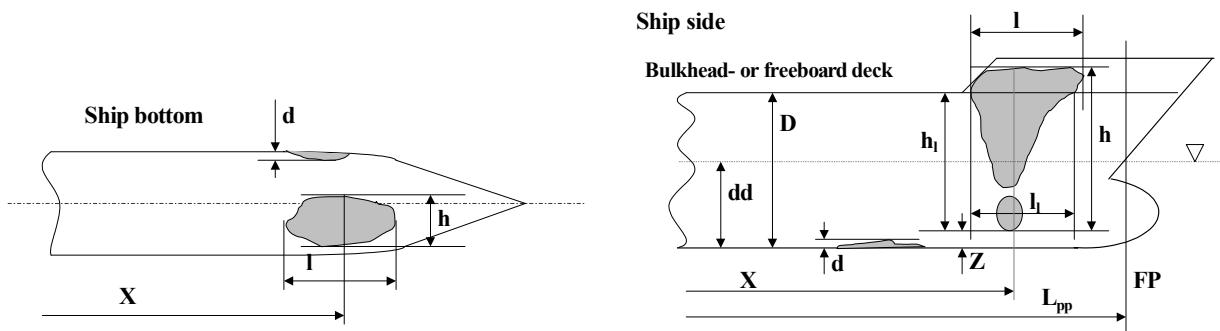
Ship Name° IMO No.

Type* (category and details)
 (Bulk Carrier ; Gen. Cargo ; Container ; Fishing ; Passenger + Pass/Cargo ; RoRo, Car Carrier, Ferry, Car Ferry ; Service Ship + Specialised ; Tanker ; other)

Length between perpendiculars* L_{pp} = L_{oa} = Moulded breadth* B =

Moulded depth* D =

Draught before damage: amidships d_i = (or fore d_i = aft d_i =)



Dimensions and location of damage (see sketches above).

Ship side Damage position
 (portside ; starboard ; bottom) (fore ship ; afterbody ; cargohold ; rudder ; engineroom ; other)

Position (height) with reference to WL Damage type (position No)
 (damage extends: 1=below and above; 2=above but not below; 3= below but not above; 4= within - the physical limits of the ship structure)

Distance from AP to centre of damage* X =

Distance from base line to the lower point of damage* Z =

Length of l = Height of h = Penetration d =

damage* l_i = damage* h_i = of damage* d_i =

dd_{mid} = dd_{fore} = dd_{aft} = (draughts after damage)

$dd_{mid\ calc}$ =

Hole in ship: Yes No

Struck vessel: Yes No

Ship to ship collision: Yes No

Striking vessel: Yes No

Notes:

(If damage extends above bulkhead/freeboard deck, additional dimensions should be given for the part located below this deck, these being marked with suffix “?”)

NOTES

1. Damage cards should be completed for decked, steel seagoing ships 25 m in length and over, for all breaches of the hull causing flooding of any compartment (collisions, stranding, etc.)
2. The term “damaged ship” refers to the ship for which this card is being completed.
3. A sketch showing location of damage and of main transverse bulkheads would be desirable.
4. Depth D should be measured to the bulkhead deck in passenger ships and to the freeboard deck in non-passenger ships or to the uppermost completed deck, if bulkhead or freeboard deck are not specified.
5. In the case of collision with another ship, it is desirable to fill in damage cards for both ships.
6. All measurements should be given in metres.
7. Data marked with an asterisk (*) are the most important.
8. The provision of data marked (°) is optional.

INTACT STABILITY CASUALTY RECORD

Length between perpendiculars* L_{pp} = _____
Breadth moulded* B = _____ Depth moulded* D = _____
Draught amidships to assigned loadline or subdivision line d _____ or forward _____ and aft _____
Service conditions (light or loaded, with approximate percentage of cargo, stores, fuel and passengers) _____

Type of cargo, if any _____ disposition _____ stowage factor _____
Deck cargo, if any _____ type _____ quantity _____
Quantity of ballast water, if any _____
Sea and wind conditions at time of casualty: sea* _____ wind* (Beaufort scale) _____
Wind velocity u _____ Wind pressure p_v _____
Wave length _____ Wave height h_w _____
Direction of wind relative to ships head _____ (degrees)
Direction of waves relative to ships head _____ (degrees)
Speed of ship at time of casualty V _____ knots
Name, length and height of enclosed superstructures and deck-houses above the deck to which D was measured _____

Bilge keels: Width^(o) _____ Longitudinal extent^(o) _____
Depth of bar keel, if any^(o) _____
Was water trapped on deck? _____ If so, indicate the extent _____
Were all vulnerable openings effectively closed at time of casualty? _____

Was icing a contributory factor to casualty? _____
Was the vessel under action of helm at time of casualty? _____
Were any special instructions relative to this ship in existence, concerning the maintenance of stability, e.g., filling tanks, etc.? _____

Were any voyage limits and/or weather restrictions imposed for the vessel? _____

Were any particular circumstances related to the casualty? _____

Give short description of casualty¹ _____

Note:

¹ Data should be provided only if not provided otherwise.

General Particulars		For ship in fully loaded homogenous arrival condition (with 10% stores, fuel, etc.)	For ship in condition at time of loss
Draught (amidships)	d		
Displacement*	Δ		
Centre of gravity above moulded base line*	KG		
Metacentric height (uncorrected)*	GM		
Distance between the transverse metacentre and centre of buoyancy	BM		
Reduction in GM due to any free surface of liquids*			
Block coefficient of fineness of displacement*	δ		
Coefficient of fineness of midship section	β		
Coefficient of fineness of waterplane	α		
Height of centre of buoyancy above moulded base line	KB		
Lateral area of ships profile (including erections, etc.) exposed to wind	A_v		
Distance between centre of lateral area of ships profile exposed to wind and corresponding waterline			
Estimated rolling period (P-S-P) (in seconds) ^(o)	T_r		
Rated amplitude of roll (maximum)	θ_r		
Angle of heel for immersion of uppermost continuous deck			
Righting levers (GZ) based upon centre of gravity (G) corrected for any free surfaces, for the following angles of heel:*			
	0°		
	10°		
	20°		
	30°		
	40°		
	50°		
	60°		
	70°		
	80°		
	90°		
Maximum righting lever	GZ_m		
Angle of maximum stability	θ_m		
Angle of vanishing stability	θ_v		
Lightship Displacement $\Delta_0 =$	Centre of gravity above moulded base line $KG_0 =$		
NOTES FOR INTACT STABILITY CASUALTY RECORD			
1. Casualty records to be completed for all seagoing passenger ships, sea-going cargo ships of 25 metres in length and over, and sea-going fishing vessels of 15 metres in length and over, in respect of both losses of ships and cases in which dangerous heeling occurred due to unsatisfactory intact stability, including those cases where loss or heeling of the ship was due to shifting of cargo.	2. Depth D should be measured to the bulkhead deck in passenger ships and to the freeboard deck in non-passenger ships (or to uppermost completed deck, if bulkhead or freeboard deck is not specified.)	3. The metric system should be used for all measurements.	4. Data marked with an asterisk (*) are the most important.
	5. The provision of data marked (°) is optional.	6. It is desirable to attach a sketch of statical stability curves, drawn for both the below loading conditions, using the following scales: (i) 20 mm for every 10° angle of inclination. (ii) 10 mm (or 20 mm) for every 0.1 metre of righting lever.	

ANNEX 6

DATA FOR VERY SERIOUS AND SERIOUS CASUALTIES

FIRE CASUALTY RECORD

In addition to supplying the information requested in this annex, Administrations are urged to also supply the information listed in other relevant annexes of MSC-MEPC.3/Circ.3, in particular the information contained in annex 1 (ship identification and particulars).

1 Operational Condition of Ship:

- Loading
- Unloading
- Awaiting departure
- Under repair (afloat or dry dock)
- Other, please state: _____
- Not reported

2 Local conditions when fire was discovered: _____

.1 Time (local onboard) at which fire was discovered (daylight or darkness):

.2 Wind force (Beaufort scale and direction): _____

.3 State of sea (and code used): _____

3 Part of ship where fire broke out: _____

4 Probable cause of fire: _____

.1 Briefly describe on-board activities that were contributing factors (cargo operations, maintenance, hot work, etc.):

.2 Probable cause of ignition:

5 Explain how persons onboard were alerted:

6 Means by which fire was initially detected:*

- Fixed fire detection system
- By ships crew or passenger
- Not known

* A '✓' is to be inserted, as appropriate.

7 Briefly, describe the performance of structural fire protection (fire resisting and fire retarding bulkheads, doors, decks, etc.) with respect to:

- .1 Containment and extinguishment of any fire in the space of origin: _____
- .2 Protection of means of escape or access for fire fighting: _____
- .3 Adequacy of structural fire protection: _____

8 Ship's portable fire-extinguishing equipment used (foam, dry chemical, CO₂, water, etc.):

9 Fixed fire-extinguishing installations: _____

- .1 At site of origin of fire (specify the type): _____
- .2 Adjacent areas (specify the type): _____
- .3 Were fixed fire-extinguishing systems used in an attempt to extinguish the fire?

- .4 Did the use of fixed fire-extinguishing systems contribute to the extinguishment of the fire? _____

10 Briefly explain the action taken by the crew to contain, control and suppress fire and explosion in the space of origin:

11 Was outside assistance provided (e.g., fire department, other ship, etc.) and, if so, what equipment was used:

12 Determine qualifications and training of all ship's crew involved in the incident, not only the fire-fighting operations, but also any related actions that may have contributed to the fire (see item 4):

13 Report on whether company or industry procedures, including hot work procedures, were in place and relevant to the operation concerned:

14 If the procedures were in place, were they correctly implemented?

15 Time taken to fight fire from first alarm:

- .1 To control the fire: _____
- .2 Once controlled, to extinguish the fire: _____

16 Total duration of fire: _____

- 17 Damage caused by fire:
- .1 Loss of life, or injuries to personnel:
 - .2 To the cargo:
 - .3 To the ship:
 - .4 Release of pollutants:
- 18 Was there any failure of the fire-fighting equipment or systems when used?
If yes, were the equipment and/or system maintenance records up to date (e.g., servicing)?
- 19 Was there an adequate supply of air on board for self-contained breathing apparatus or was outside assistance needed to supply such air?
- 20 Observations and comments:

ANNEX 7

**QUESTIONNAIRE RELATED TO THE
GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM**

1 The purpose of this questionnaire is to enable the Sub-Committee on Radiocommunications and Search and Rescue to assess the effectiveness of the global maritime distress and safety system and to recommend improvements where necessary.

2 Member Governments are urged to complete the questionnaire in respect of distress and safety incidents occurring to ships under their flag, adding any other information which, at their discretion, would provide lessons to be learned concerning the application of the global maritime distress and safety system.

3 In addition, Member Governments are encouraged to pass any relevant information they may possess on casualties concerning foreign ships to the country in which such ships are registered.

.1 (a) GMDSS sea area or sea areas for which radio equipment was installed:

(b) Date and time of incident (UTC): _____

.2 Brief description of:

(a) GMDSS sea area: _____

(b) weather conditions during SAR operations: _____

.3 Description of distress and safety radiocommunications, including particulars of the following items:

(a) means of communication (radiotelegraphy, radiotelephony, INMARSAT SES, DSC, EPIRB) and frequencies used for:

distress alert by ship: _____

distress relay by RCC: _____

SAR Coordinating communications: _____

(b) use of alarm signal: _____

(c) contents of distress message: _____

(d) RCC(s), ships, coast station or coast earth stations which acknowledged distress message (state time and position): _____

(e) language difficulties: _____

.4 If the ship was abandoned, description of distress radiocommunications and location signals from survival craft: _____

.5 If a satellite EPIRB or EPIRB was used for alerting and/or locating survivors, give details (frequency, type of activation, etc.) and which LUT/CES or coast station received the alerting signal: _____

.6 Description of on-scene radiocommunications, including surface/air communications: _____

.7 Any unusual, or additional, radiocommunication aspects, apparent shortcomings and/or lessons to be learned: _____

ANNEX 8

**FATIGUE AS A CONTRIBUTORY FACTOR TO MARITIME ACCIDENTS
FATIGUE FACTORS DATA COMPILATION SHEET**

This compilation sheet should be completed and submitted with each maritime accident investigation report where fatigue has been identified as a contributory factor. The compilation sheet should indicate the cause of the identified fatigue. See MSC/Circ.621 for guidelines for the investigation of accidents where fatigue may have been a contributing factor.

Fatigue identified in this accident was caused by (Check all factors that apply):

- | | | |
|---|---|-------|
| 1 | Management/regulatory factors | |
| | Contractual arrangements | _____ |
| | Work and rest periods | _____ |
| | Manning levels | _____ |
| | Watchkeeping practices | _____ |
| | Assignment of duties | _____ |
| | Shore-ship-shore support and communication | _____ |
| | Management policy | _____ |
| | Voyage planning | _____ |
| | Recreational facilities | _____ |
| 2 | Ship factors | |
| | Level of automation | _____ |
| | Reliability of equipment | _____ |
| | Motion characteristics | _____ |
| | Vibration, heat and noise levels | _____ |
| | Quality of working and living environment | _____ |
| | Cargo characteristics/requirements | _____ |
| | Ship design | _____ |
| 3 | Crew factors | |
| | Period on board | _____ |
| | Experience/training | _____ |
| | Crew composition, cohesiveness, and relationships | _____ |
| | Crew competency and quality | _____ |
| | Personal problems and condition | _____ |
| 4 | External factors | |
| | Weather | _____ |
| | Port conditions | _____ |
| | Ice conditions | _____ |
| | Density of vessel traffic | _____ |

ANNEX 9

INCIDENTAL SPILLAGES OF HARMFUL SUBSTANCES OF 50 TONNES OR MORE

The following additional information should be submitted for each incident involving spillage of 50 tonnes or more of harmful substances. See annexes 1 and 2 of this circular for information to be submitted on vessel identification and casualty specifics. One copy of the report should be retained by the reporting Administration, one copy to be sent to the flag Administration, and one copy to be sent to the International Maritime Organization.

This reporting format on Incidental spillages of harmful substances of 50 tonnes or more has been added, as the report is considered necessary when investigating a casualty or an incident (MARPOL, articles 8 and 12), however this does not replace the one-line entry report required by the annual mandatory report under MARPOL, article 11 (MEPC/Circ.318, Part 1).

Part 1

To be completed by the reporting Administration

1 Was the date of the incident known or estimated? _____

2 Location of the incident (select one of the following):

- | | | |
|----|---|--------------------------|
| .1 | in inland waters | <input type="checkbox"/> |
| .2 | in the territorial sea | <input type="checkbox"/> |
| .3 | within the exclusive economic zone | <input type="checkbox"/> |
| .4 | outside the exclusive economic zone,
in international waters | <input type="checkbox"/> |

3 Reporting Administration: _____

Report completed by: (Administration and address)

Part 2

Information to be supplied by the reporting Administration and/or the flag Administration

4 Action taken by reporting Administration:

.1 Response to the spill:

- .1 no action
 - .2 clean-up efforts
 - .3 salvage efforts
 - .4 other, i.e.
-

.2 Legal action:

- .1 no action
 - .2 action to be taken by flag Administration
 - .3 pending
 - .4 action taken by reporting Administration, i.e.
-

.3 Measures/recommendations to prevent recurrence:

.4 Additional information:

Direct Natural Resource Damages

- Loss of wildlife:
- Impact on birds
 - Impact on marine mammals
 - Impact on fish
 - Impact on other marine life, including invertebrates
- Loss of fisheries:
- Fin fish
 - Shellfish
 - Fish farming
- Damage to marine environment:
- Damage to shore environment:
- Habitat Degradation:
- Soft Habitats (salt marshes, mangroves, mudflats)
 - Shoreline (Beaches)
 - Rocky Coasts/Reefs, including coral

Part 3

To be completed by the flag Administration:

5 Legal action taken by flag Administration:

- .1 no action
 - .2 pending
 - .3 action taken, i.e.
-

ANNEX 10

LIFE-SAVING APPLIANCE CASUALTY RECORD

The purpose of this casualty record is to enable the gathering and collation of statistical data on both novel and traditional life-saving appliances, in order that the safety of these appliances may be assessed and improvements made if necessary on the basis of reliable risk information.

Administrations are urged to supply the additional information listed in this annex for all casualties involving life-saving appliances, adding any other information which would provide lessons to be learned concerning the use of life-saving appliances.

1 Location of casualty:

(See annex 2, items 3.1-3.10)

.1 Was the ship: underway in port at anchor

2 Local conditions:

2.1 Local time (24-hr clock):

Daylight Darkness

2.2 Wind force (Beaufort scale):

2.3 Wave height (observed):

2.4 Sea Temperature: _____ °C

2.5 Air temperature: _____ °C

2.6 Ice conditions Yes No

2.7 Warm Climates Yes No

3 Type of life-saving appliance involved:

3.1 Inflatable liferaft: Capacity: _____ POB: _____

.1 Davit launched Yes No

3.2 Marine Evacuation System (MES):

.1 Vertical Slide

3.3 Lifeboat Capacity: _____ POB: _____

.1 Davit launched Free fall

- 3.4 Buoyant apparatus
- 3.5 Ship's rescue boat
- 3.6 Launching appliances Capacity: _____ POB: _____
- 3.7 Other: _____ Capacity: _____ POB: _____

4 Type of personal life-saving appliance used:

- 4.1 Immersion suit
- 4.2 Lifejacket
- 4.3 Personal Flotation Device (PFD), other than Lifejacket
- 4.4 Anti-exposure suit
- 4.5 Lifebuoy

5 Reason for deployment of life-saving appliance:

- 5.1 Emergency evacuation/abandonment
- 5.2 Crew training
- 5.3 Deployment as required by regulations
- 5.4 Approval Trials (give details)

6 Nature of casualty/incident:

(See annex 1, paragraph 30)

7 Details of injuries/fatalities:

- 7.1 Number of life-saving appliance-related fatalities
Crew: _____ Passengers: _____ Others: _____
- 7.2 Number of life-saving appliance-related injuries
Crew: _____ Passengers: _____ Others: _____

8 Other relevant details:

9 Description of causes/contributing factors:

(see annex 2, paragraph 10)

APPENDIX

GUIDANCE FOR PREPARING THE LIFE-SAVING APPLIANCES CASUALTY RECORD

The following examples could be taken into account when preparing the description of contributing factors for the purpose of entering the life-saving appliances casualty record:

Design factor examples:

- 1 The design made it hard for people to carry out reasonable tests.
- 2 The design provided no means to detect predictable hazard conditions.
- 3 Use of the design was vulnerable to predictable human failings.
- 4 The design was inadequately specified for the required duty.
- 5 Operation of the design was vulnerable to circumstances.
- 6 Release mechanism design problems.

Human factor examples:

- 1 Inadvertent operation of equipment.
- 2 Inadequate maintenance of equipment.
- 3 Communication failures.
- 4 Lack of familiarity with equipments and associated controls.
- 5 Unsafe practices during drills and inspections.
