SHIPBOARD OIL POLLUTION EMERGENCY PLAN

UNIVERSITY OF WASHINGTON, SCHOOL OF OCEANOGRAPHY

Prepared by
O'Brien's Response Management Inc.

University of Washington, School of Oceanography
SOPEP Distribution Record

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RECORD OF REVIEW

This plan was issued in this new format in June, 2012. All changes thereto are as indicated in the table below.

This plan will be reviewed annually as per procedures in Section 5 (Plan Review and Update Procedures).

Rev. No.	Sections	Issue Date	Brief Details	Entered By:
0	Distr. Rec Rec. of Rev Sec 5 App B	06/27/2012	New Issue – **Thomas G. Thompson**	DB
0	TOC Introduction Sec 1, 2, 3, 4 App A1 Lead Page App A2 Lead Page	06/27/2012	New Issue	DB

INTRODUCTION

1. This plan is written in accordance with the requirements of Regulation 37 (formerly Reg. 26) of Annex I of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78).

2. The purpose of the plan is to provide guidance to the Master and officers on board the ship with respect to the steps to be taken when a pollution incident has occurred or is likely to occur.

3. The plan contains all information and operational instructions required by the Guidelines*. The appendices contain names, telephone, telex numbers, etc., of all contacts referred to in the plan, as well as other reference material.

4. This plan has been approved by ***Flagstate Administration*** and, except as provided below, no alteration or revision shall be made to any part of it without the prior approval of the Flagstate Administration or Class on their behalf.

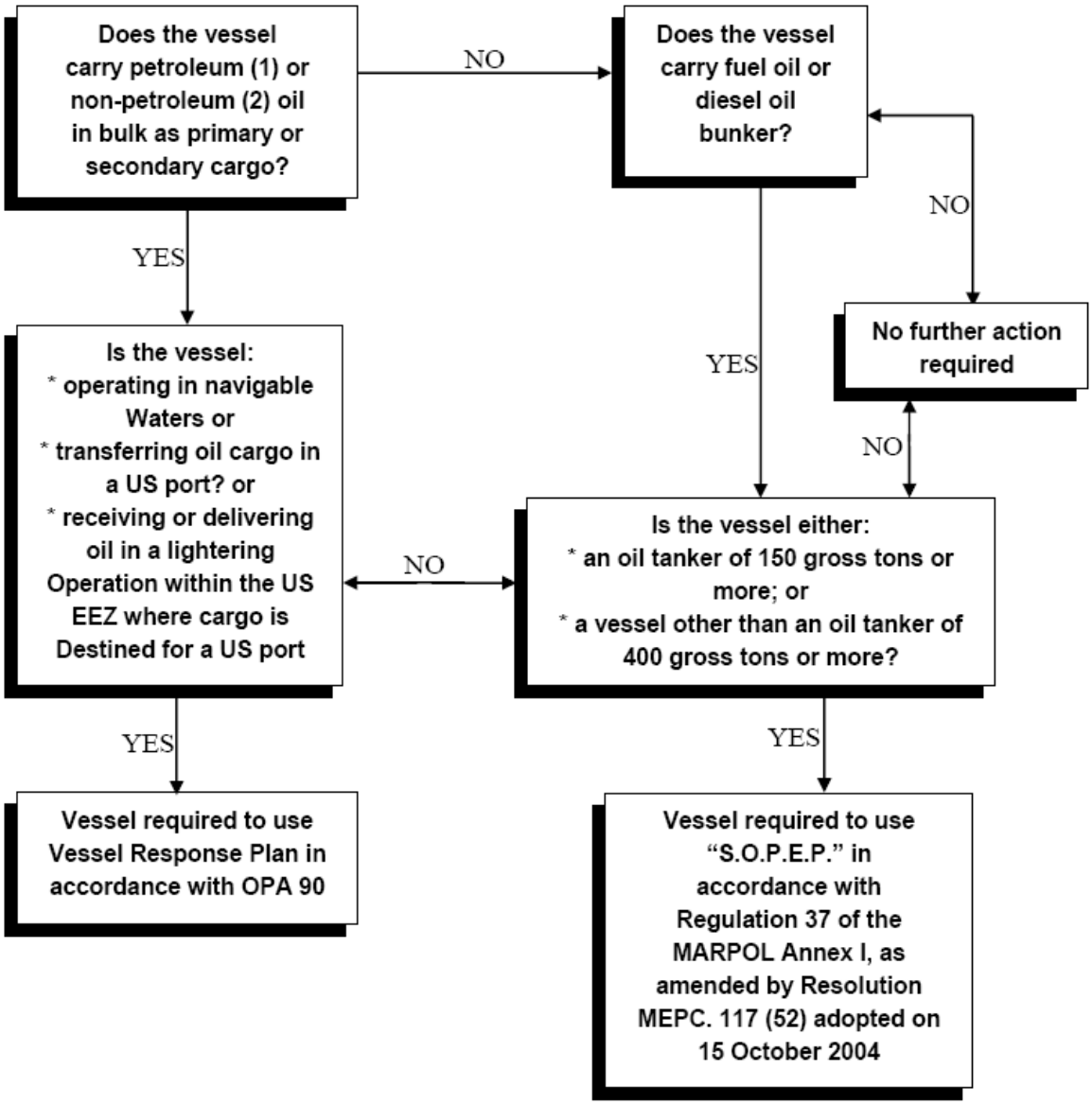
5. Changes to Section 5 and the appendices (Non-Mandatory Provisions of the Plan) will not be required to be approved by the Flagstate Administration or Class. The appendices should be maintained up to date by the owners, operators and managers.

6. This plan will be regularly reviewed and updated as necessary. Revision will be the responsibility of the owner/operator.

7. Following an incident in which the plan has been activated, there will be a thorough review of its effectiveness.

* "Guidelines for the development of the Shipboard Oil Pollution Emergency Plans", [IMO Resolution MEPC.54(32); adopted on March 6, 1992; and Resolution MEPC.86(44), adopted on 13 March 2000]

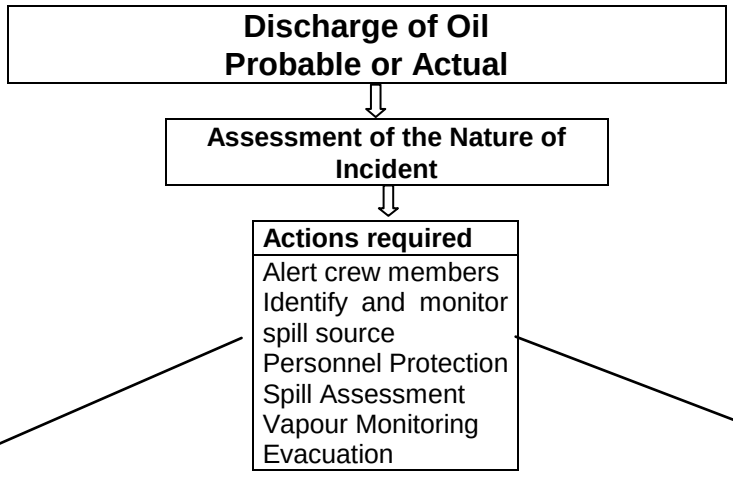
RESPONSE PLAN REQUIREMENTS



1. Any petroleum-based oil including, but not limited to, petroleum fuel, oil, sludge, oil refuse and oil mixed with wastes other than dredged soil.

2. Any non-petroleum based oil including, but not limited to animal and vegetable oils.

This flow diagram is an outline of the course of action that shipboard personnel should follow in responding to an oil pollution emergency based on the guidelines published by the Organization. This diagram is not exhaustive and should not be used as a sole reference in response. Consideration should be given for inclusion of specific references to the Plan. The steps are designed to assist ship personnel in actions to stop or minimize the discharge of oil and mitigate its effects. These steps fall into two main categories – reporting and action.



<table>
<tr><td>REPORTING</td><td colspan="2">ACTION TO CONTROL DISCHARGE</td></tr>
<tr><td>By Master and/ or designated crew member</td><td colspan="2">Measures to minimize the escape of oil and threat to the marine environment</td></tr>
<tr><td rowspan="3">When to report
All probable and actual spills
How to report
- By quickest means to coastal radio station
- Designated ship movement reporting station or
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- By quickest available means to local authorities
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- Get vapours off deck
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- Internal cargo transfer operations
- Emergency ship-to-ship transfers of cargo and/ or bunker
- Set up shipboard response for:
· Leak sealing
· Fire fighting
· Handling of ship-board response equipment (if available)</td></tr>
<tr><td colspan="2">↓</td></tr>
<tr><td colspan="2">STEPS TO INITIATE EXTERNAL RESPONSE
- Refer to Costal Port State listings for local assistance
- Refer to ship interest contact list
- External clean-up resources required
- Continued monitoring of activities</td></tr>
</table>

PREDICTION OF OIL SPILL MOVEMENT

Prediction of oil spill movement by vector addition

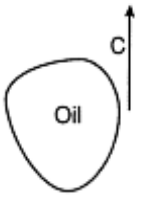
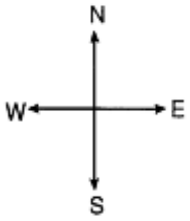


Figure 1 - Current only

Current to the north at 0.5 mph



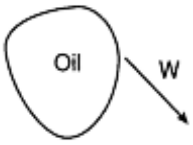


Figure 1 - Wind only

Wind from northwest at 15 mph
Wind effect = 15 mph x .034 = 0.5 mph

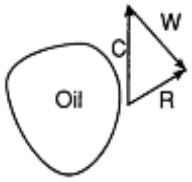
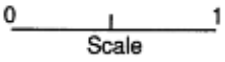


Figure 1 - Current and Wind

Combined effect of current and wind
1. Add vector W to vector C by moving its tail to the head of vector C, maintaining magnitude and direction
2. Draw resultant vector R to head of vector W to show actual direction and magnitude - northeast at 0.3 mph



SECTION 1

PREAMBLE

1.0 PREAMBLE

This Shipboard Oil Pollution Emergency Plan is provided to assist the vessel Master and crew in dealing with an unexpected discharge of oil. Its primary purpose is to set in motion the necessary actions to stop or minimize the discharge and to mitigate its effects. The Plan is in the working language of the vessel personnel, which is English.

Effective planning ensures that the necessary actions are taken in a structured, logical, safe and timely manner.

The plan makes use of flowcharts and checklists to guide the Master through the various actions and decisions which will be required in an incident response. The charts and checklists provide a visible form of information, thus reducing the chance of oversight or error during the early stages of dealing with an emergency situation.

The plan is designed to link into the company's corporate system for dealing with oil pollution emergencies; and the Master will be backed up on-scene by management appointed personnel as the circumstances and the position of the vessel at the time of the incident, deem necessary.

For any plan to be effective it has to be:

- backed by a commitment by shore-side and vessel personnel;
- familiar to those with key functions on board the ship;
- reviewed and updated regularly; and
- tested for viability in regular drills

Training and Drills in implementation of the shipboard mitigation procedures must be held at regular intervals. Similarly, Drills in the communications procedure will be necessary to verify that the Company's corporate plan is also effective.

Without interfering with the shipowners' liability, some coastal States consider that it is their responsibility to define techniques and means to be taken against an oil pollution incident and approve such operations which might cause further pollution, i.e., lightening. States are in general entitled to do so under International Convention relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969 (Intervention Convention)."

SECTION 2

REPORTING REQUIREMENTS

2.0 GENERAL

Article 8 and Protocol I of MARPOL 73/78 require that the nearest coastal state should be notified of actual or probable discharges of oil to the sea. The intent of the requirement is to ensure that coastal states are informed without delay of any incident giving rise to pollution, or threat of pollution, of the marine environment, as well as the need for assistance and salvage measures, so that appropriate action may be taken.

If the ship is involved in a pollution incident, reports must be made to:

- Nearest Coastal State
- Port/National authority, if vessel is in port
- Ship interest contacts, e.g. vessel owner/operator, qualified individual etc.

Note: Refer to Appendix A of this Plan for geographic specific reporting information for the coastal states/ports.

Flow charts, indicating the reporting procedure to be followed in accordance with the MARPOL are given at the end of this section.

2.1 WHEN TO REPORT

2.1.1 ACTUAL DISCHARGE

An initial incident report to the nearest coastal State is required whenever there is:

- a discharge of oil above the permitted level for whatever reason, including those for the purpose of securing the safety of a ship or saving life at sea; or
- a discharge during the operation of the ship a discharge of oil in excess of the quantity or instantaneous rate permitted under the present Convention or applicable marine pollution regulations.

2.1.2 PROBABLE DISCHARGE

Although an actual discharge may not have occurred, an initial incident report is required if there is the probability of a discharge. In judging whether there is such a probability, and thus, whether a report must be made, the following factors should be taken into account:

- the nature of damage sustained by the ship;
- failure or breakdown of machinery or equipment which may adversely affect the ability of the ship to maneuver etc.;
- the location of the ship and its proximity to land or other navigational hazards;
- present weather, tide, current and sea state;
- expected weather conditions;
- traffic density;
- morale, health and ability of the crew on board to deal with the situation.

As a general guide, the Master should make a report in cases of:

- damage, failure or breakdown which affects the safety of the ship or other shipping: examples of such situations are collision, grounding, fire, explosion, structural failure, flooding, cargo shifting;
- failure or breakdown of machinery or equipment which results in impairment of the safety of navigation: examples are breakdown of steering gear, propulsion, electrical generating system, essential shipborne navigational aids.
- Assistance, if required, must be sought from the owner/operator.

2.1.3 ASSISTANCE

Although the vessel may not have been directly involved in an incident, the Master of any ship who provides, or may have been requested to engage in an operation to render assistance or undertakes salvage is required to report.

An incident report should be made, and reported, as detailed in items A, B, C (or D), E, F, L, M, N, P, Q, R, S, T, U, X of the Standard Reporting format.

The Master should keep the Coastal States informed of all developments.

2.2 HOW TO REPORT

The initial report of the actual or potential incident should be transmitted by the quickest available means to the responsible authorities of the nearest coastal state or the Rescue Co-ordination Center (RCC) via the appropriate shore radio station, telex or fax. If the vessel is within or near to an area for which a vessel reporting system has been established, reports should be transmitted to the designated shore station of that system.

The preferred method of initial communication in reporting an actual or probable pollution incident if by voice via:

- INMARSAT (SATCOM)
- MF/HF or VHF coast station
- Cellular or shore telephone

The initial verbal report shall always be confirmed by telex or faxed report to the coastal states or port authorities and operating company to ensure that confusion is minimized. Always request confirmation of receipt of any hard copy report transmitted.

If for any reason the verbal reporting is not possible, the report shall be sent by telex or fax to which ever contact can be reached with a request that the message be re-transmitted, if necessary, to the coastal states and/or local authorities and that this retransmission is confirmed.

The following additional information should be sent to the owner or operator either at the same time as the initial report or as soon as possible thereafter:

- Further details of damage to ship and equipment.
- Whether damage is still being sustained.
- Disposition of cargo on board and quantities involved.
- Number of casualties.
- Damage to other vessels or property.
- Time (GMT) assistance was requested and time (GMT) assistance expected to arrive at the scene.
- Name of salvor and type of salvage equipment.
- Whether further assistance is required.
- Priority requirements for spare parts and other materials.
- Details of outside parties advised or aware of the incident.
- Any other important information.
- Date/Time of next follow-up report.

2.3 INFORMATION REQUIRED

Contents of Initial Reports

The format and content of an initial incident report is given below. The format is consistent with the General Principles for Ship Reporting Systems and Ship Reporting Requirements , including Guidelines for Reporting Incidents involving dangerous goods, harmful substances and/or Marine Pollutants, adopted as Resolution A.851(20), as amended by MPEC .138(53) adopted on 22 July 2005 by the International Maritime Organization (IMO), and USCG.

(Note: The reference letters in the listing below do not follow the complete alphabetical sequence as certain letters are allocated to information required for other reporting formats).

The report should contain the following information:

Label	Function	Explanation
Name & Address	Addressee	To whom Message is Sent
MP Or Give Full Name	Type of Report	Marine Pollution Report Or Any Other Report
AA	Ship	Name, Flag, Call Sign or Ship Station Identity, Official & IMO Numbers, MMSI Number, Inmarsat Number, reporting party/Master's name
BB	Date & Time of Event	A six [6] Digit Group Giving Day of Month [First Two Digits] Hours and Minutes [Last Four Digits Plus Either UTC Or Time Zone Used.
CC Or DD	Position	A Four [4] Digit Group Giving Latitude in Degrees & Minutes Suffixed with N or S & a Five [5] Digit Group Giving Longitude in Degrees & Minutes Suffixed With E Or W Or True Bearing [First 3 Digits] & Distance [State Distance] In Nautical Miles From Clearly Identified Landmark [State Name Of Landmark]
EE	Course	True Course As Three [3] Digit Group
FF	Speed	In Knots & Tenths of A Knot Expressed As A Three [3] Digit Group
LL	Route Information	Details of Intended Track
MM	Radio Communications	State In Full The Names Of The Radio Stations & Frequencies Guarded / VHF Channels, Ship's Fax and Satellite or Cell Phone Number. MF SSB, HF SSB, INMARSAT MES.
NN	Time of Next Report	Date & Time of Report to the FOSC or COTP (Expressed As In BB)
OO	Maximum Present Draught In Meters	Four [4] Digit Group Giving Meters & Centimeters
PP	Cargo/Bunkers Onboard – May Be Included In [RR] As Relevant	Correct Technical Name of Goods + UN Number. Name Of Consignee Or Consignor. Quantity & Condition of the Cargo/Bunkers.
QQ	Defects / Damages / Deficiencies / Other Limitations	Current Condition Of Vessel and Ability To Transfer Cargo / Ballast / Fuel.
RR	Description Of Pollution Or Possible Overboard Discharge	Correct Technical Name of Goods + UN Number. Name of Consignee Or Consignor. Total Quantity Onboard and Quantity Lost. Overall Impact of the Spill and Whether Or Not Loss of Cargo Is Continuing. Information On Movement of Lost Cargo. Cause of Loss of Cargo. INCLUDE SEPARATE ATTACHMENT.
SS	Weather Conditions	Brief Description Of Prevailing Weather & Sea Conditions
TT	Ship's Representative and/or Owner	Name & Telephone Number Of Vessel's Q.I. + Full Name, Address & Numbers For Owner / Operator / Manager / Charterer / Agent and/or Local Correspondent.
UU	Ship Size & Type	Details of the Ships Overall Length, Greatest Breadth, Draught and Type. All details to be entered in meters (m)
XX	Miscellaneous	Number of Crew Onboard + Details Of Any Injuries Actions Being taken With Regards To The Discharge & Movement Of the Ship. Assistance Or Response Which Have Been Requested and/or Provided By Others. Names Of Any Other Vessels Involved in Either the Incident, Assistance or Salvage. Discuss Actions to Mitigate Situation. Details of P&I Club and Local Correspondent. Any Other Information That Can be Provided., If The Report Is Made By An Assisting Vessel, State Actions Planned.

Vessel Spill Incident Reporting Form

ACTUAL INCIDENT: Yes____No____ DRILL: Yes____No____

TO:
Fax:
Email:
Phone:

AA (ship name, IMO #, call sign, flag, reporting party/Master's name and MMSI, INMARSAT MES.)

BB (date & time of event) ____ ____ ____ ____ ____ ____ UTC (Zulu)
D D H H M M

CC (position, latitude, longitude)
____ ____ ° ____ ____ ' **N** **S**
d d m m
-OR-
____ ____ ____ ° ____ ____ ' **E** **W**
d d d m m

DD (bearing, distance from landmark)
____ ____ ° Brg
d d
Distance nm from

EE (true course) ____ ____ ____ °T
d d d

FF (speed in knots) .

LL (intended track) ____ ____ ____ °
d d d

MM (radio station(s) and frequencies guarded, ship fax number, satellite or cell phone number and VHF, MF SSB, HF SSB, INMARSAT MES)

NN (date and time of next report to FOSC or COTP) ____ ____ ____ ____ ____ ____ UTC (Zulu)
D D H H M M

PP (type and quantity (units) of cargo/bunkers on board)

QQ (brief details of defects/damages)

RR (Include attachment of brief details of pollution, including estimated amount of loss)
Estimated quantity lost: _____
Technical name: _____ UN/IMDG number, if known: _____ Still leaking? _____ Yes or _____ No

SS (brief details of weather and sea conditions)
WIND direction _____ SWELL direction _____
speed _____ kts height _____ m

TT (contact details of ship's owner/operator/agent)

UU (ship size and type)
Length: _____ (m) Breadth: _____ (m) Draught: _____ (m) Type: _____

XX (additional information—***ATTACH ADDITIONAL SHEETS, IF NECESSARY***)

Brief details of incident and reporting party:

Need for outside assistance:

Actions taken to correct/mitigate the situation:

Number of crew, injuries, or fatalities: _____ Crew _____ Injuries _____ Fatalities

Details of P&I Club and local correspondent:

Spill Location:

City _____ State _____ County (if known) _____

Note: The alphabetical reference letters in the following format are from "General principles for ship reporting systems and ship reporting requirements, including guidelines for reporting incidents involving dangerous goods, harmful substances and/or marine pollutants" adopted by the International Maritime Organization by resolution A851 (20). The letters do not follow the complete alphabetical sequence as certain letters are used to designate information required for other standard reporting formats, e.g. those used to transmit route information. **Resolution A.851(20),as amended by MPEC.138(53) adopted on 22 July 2005.**

Follow Up Reports

Once the vessel has transmitted an initial report, further reports should be sent at regular intervals to keep those concerned informed of developments

Follow up reports to coastal states should always be in the style given in Section 2.3, and should include information about every significant change in the vessel's position, condition, the rate of the release and spread of oil, weather conditions, and details of agencies notified and clean-up activities.

Follow-Up reports shall contain information regarding measures/steps taken by the Master towards the safety of the vessel and crew and the protection of the marine environment.

Note: If no outside assistance is required, this should be clearly stated.

2.4 WHOM TO CONTACT

(Refer to Appendix A)

Coastal State & Port Contacts

In order to expedite response and minimize damage from a pollution incident, it is essential that appropriate coastal States should be notified without delay. This process is begun with the initial report required by Article 8 and Protocol I of the convention. Guidelines for making this report are provided in Section 2.3 of this Plan.

Contact Information of agencies or officials of administrations responsible for receiving and processing reports is listed in Appendix A and B of this Plan.

Proper notification to local port authorities/agencies shall speed-up response activities.

The Master shall obtain details concerning local reporting procedures from the reference documents carried on board - eg. Guide to Port Entry, Coastal Pilots, and other information publications.

If an oil spill or a substantial threat of a spill, occurs when the vessel is in port, the Master shall immediately activate the vessel's Oil Pollution Prevention Team and report the incident. Precise details of whom to notify locally should be obtained on arrival and shall include the following:

- Terminal
- Local fire department (in case of explosion and/or fire)
- Agent
- Port Authority
- The vessel's local P & I representative (P & I Club List of Correspondents is filed in special box onboard the ship)
- Owner/manager
- Charterer
- Clean-up contractor

Note: For United States ports, notification to be made as per Appendix A "US Contacts" of this Plan.

Ship Interest Contacts

The Plan provides contact details of all parties with an interest in the vessel.

A list of ship interest contacts is detailed in Section 5 which also indicates the order of priority for notifying those concerned on a 24 hour basis.

All reports and copies of messages sent to coastal states and/or port authorities, should also be sent to the company.

Duplication of reports to be avoided.

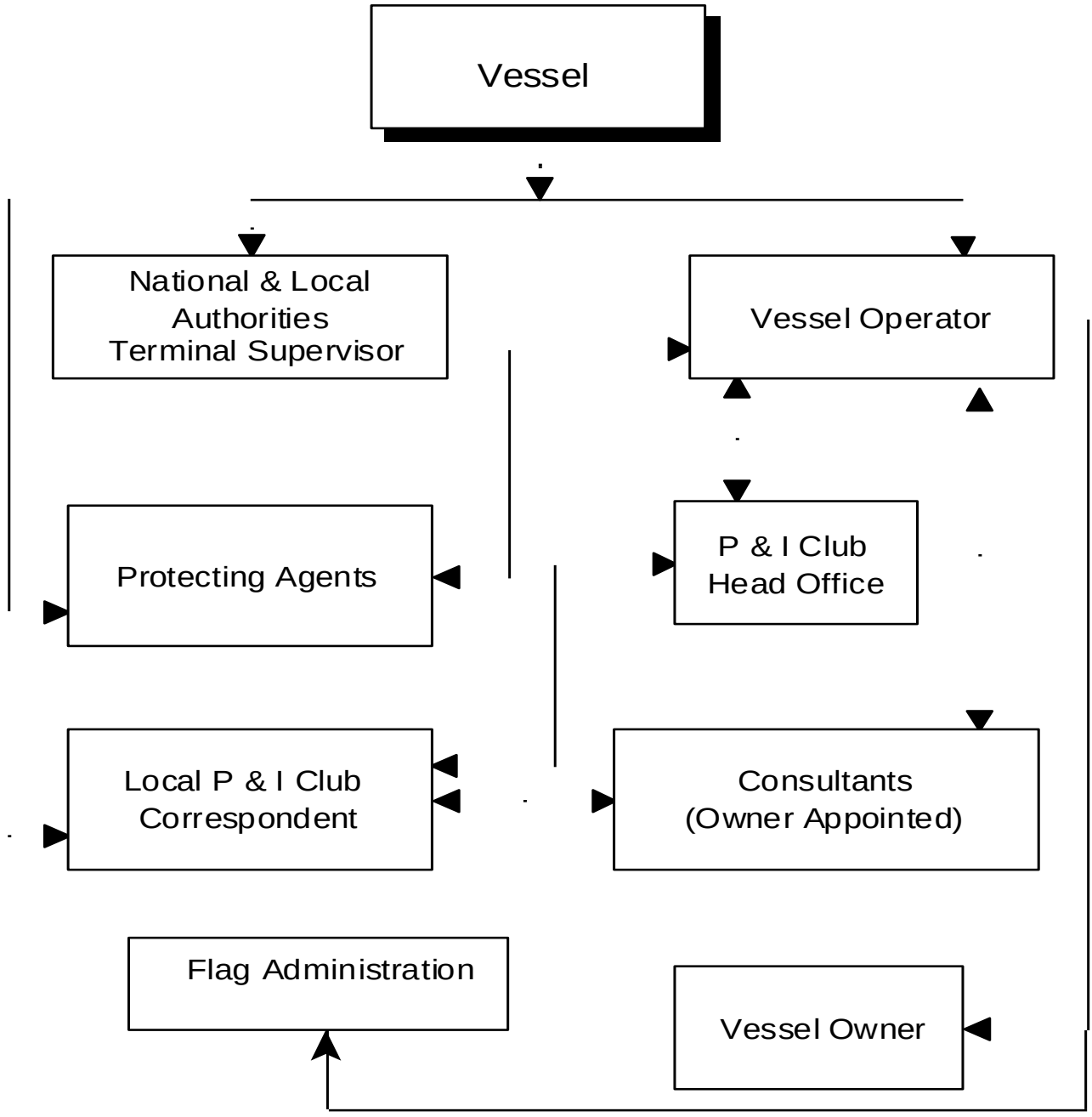
Delay or Difficulty in Establishing Contact

If for any reason, the Master suffers an unacceptable delay in contacting the responsible authority or any other required contact by direct means, the Master should contact:

- the nearest Rescue Coordination Center (RCC) on 2187.5 Khz, 4207.5 Khz, 6312 Khz, 8414.5 Khz, 12577 Khz, 16804.5 Khz
- the nearest coast radio station on channel 70, or
  Distress signal only on 2182 Khz.

The Master should request assistance with making the required essential reports to activate the necessary assistance needed.

2.5 REPORTING PROCEDURE FOR OIL SPILL INCIDENTS WITHIN PORT LIMITS (Except USA Ports)

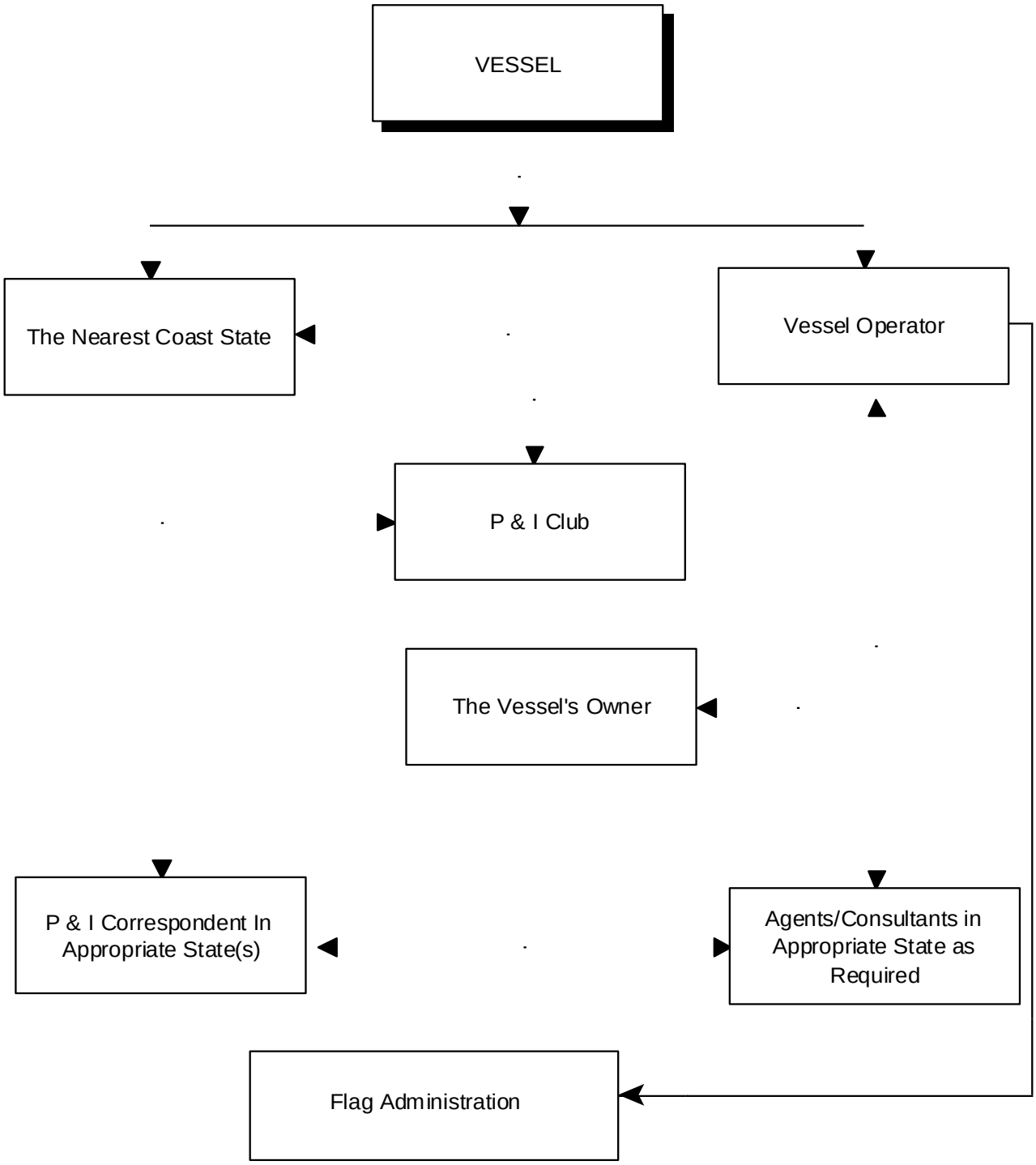


When within port limits, the Master must notify:

1) the National & Local authorities
2) the vessel operator

The vessel should also notify local response agencies, such as the local P&I Club correspondent, in order to speed response.

2.6 REPORTING PROCEDURE IF OIL SPILL INCIDENT OCCURS AT HIGH SEAS



When outside of port limits, the Master must notify:

1) the nearest Coast State
2) the vessel operator

The vessel operator must notify applicable response agencies, such as the P&I Club.

2.7 MASTER'S NOTIFICATION CHECKLIST

	Contacts	Notified By:	Date	Time	Remarks
1	Coastal States Contact (See Appendix A)				
2	Local or Terminal Authorities				
3	In USA/CANADIAN Ports: Qualified Individual				
4	Vessel Operator (See Section 5)				
	Vessel Owner (See Appendix B)				
5	Local Agent				
6	P & I Club (See Appendix B)				
7	Shore Based Damage Stability Service: (if applicable)				
8	Charterers (See Appendix B)				
9	Classification Society (See Appendix B)				
10	Other Surveyors Hull & Machinery (See Appendix B)				
11	Other Legal Representatives				
12	Flag Administration				

SECTION 3

STEPS TO CONTROL DISCHARGE

Whenever an oil spill occurs, it is the duty of the person finding the spill to immediately inform the Master or Responsible Officer. That person should call out the vessel's Pollution Prevention Team (See 3.7). Remember that an oil spill may create a fire or explosion hazard, requiring safety precautions to be observed.

3.1 OPERATIONAL SPILLS OF OIL

The most likely operational spill will result from:

- Pipeline leakages, including transfer hoses
- Cargo tank or bunker tank overflows
- Hull leakages

3.1.1 Pipeline Leakage During Discharging or Loading of Oil Cargoes, or During Bunkering

It is important for the master and/or response team members to review and be fully familiarized with the cargo/fuel oil data sheets (located in the ship's office and/or cargo control room) for product specifics and safety guidelines.

Measures to be implemented immediately:

- Stop all cargo and bunkering operations, and close manifold valves
- Sound the emergency alarm, and initiate emergency response procedures
- Inform terminal/ loading master/ bunkering personnel about the incident

Further measures:

- Consider whether to stop air intake into accommodation and non-essential air intake to engine room.
- Consider mitigating activities such as decontamination of personnel who have been exposed.
- Locate source of leakage, and begin clean-up procedures
- Drain affected section of pipeline into an empty or slack tank (e.g. the slop tank or another cargo tank)
- Prepare portable pumps where it is possible to transfer spilled liquid into a slack or empty tank
- If the source of the leakage is located in the pumproom at the sea valves the necessary measures must be taken to relieve the pressure from the relevant section of the pipeline.

If the spilled liquid is contained on board and can be handled by the Pollution Prevention Team then:

- Use sorbents and permissible solvents to clean up liquid spilled on board.
- Ensure that any residues collected, and any contaminated absorbent materials used in the clean up operation are stored carefully prior to disposal.

After dealing with the cause of the spill it may be necessary to obtain permission from local authorities or the terminal (or both) to continue normal operations**.**

3.1.2 Tank Overflow During Loading Or Bunkering

It is important for the master and/or response team members to review and be fully familiarized with the cargo/fuel oil data sheets (located in the ship's office and/or cargo control room) for product specifics and safety guidelines.

Measures to be implemented immediately:

- Stop all cargo and bunkering operations, and close manifold valves
- Sound the emergency alarm, and initiate emergency response procedures
- Inform terminal/ loading master/ bunkering personnel about the incident

Further measures:

- Consider whether to stop air intake into accommodation and non-essential air intake to engine-room.
- Consider mitigating activities such as decontamination of personnel who have been exposed.
- Reduce the tank level by dropping cargo or bunkers into an empty or slack tank
- Prepare pumps for transfer of cargo/bunkers to shore if necessary
- Begin clean up procedures
- Prepare portable pumps if it is possible to transfer the spilled liquid into a slack or empty tank.

If the spilled liquid is contained on board and can be handled by the Pollution Prevention Team then:

- Use sorbents and permissible solvents to clean up the liquid spilled on board.
- Ensure that any residues collected, and any contaminated absorbent materials used in the clean up operation are stored carefully prior to disposal.

After dealing with the cause of the spill it may be necessary to obtain permission from local authorities or the terminal (or both) to continue normal operations.

3.1.3 Hull Leakage

It is important for the master and/or response team members to review and be fully familiarized with the cargo/fuel oil data sheets (located in the ship's office and/or cargo control room) for product specifics and safety guidelines.

If oil is noticed on the water near the vessel during cargo or bunkering operations and cannot be accounted for, the possibility of hull leakage should be suspected.

Measures to be implemented immediately:

- Stop all cargo and bunkering operations, and close manifold valves, tank valves and pipeline master valves
- Sound the emergency alarm, and initiate emergency response procedures
- Inform terminal/ loading master/ bunkering personnel about the incident.

Further measures:

- Use the Pollution Prevention Team in an attempt to locate the source of leakage
- Consider mitigating activities such as decontamination of personnel who have been exposed.
- Consider whether to stop air intake into accommodation and non-essential air intake to engine-room
- If the source of the leak is not readily identified on deck or above the waterline, consider the use of a diver to assist in locating the leak
- When appropriate, reduce the inert gas pressure to zero.

When the source of leakage is identified:

- Reduce the head of bunker oil by dropping or pumping liquid into an empty or slack tank
- Consider the possibility of pumping water into the leaking tank to create a water cushion to prevent further loss of oil that is less dense than water.
- If the leakage is located below the waterline, call in divers for further investigation.

If it is not possible to identify the actual tank:

- The level of liquid in the tanks in the vicinity of the suspected area should be reduced. Remember to consider the effect on hull strength and stability of the vessel.

<u>After dealing with the cause of the spill it may be necessary to obtain permission from local authorities or the terminal (or both) to continue normal operations.</u>

It is possible that failure of machinery, such as the oily water separating equipment or the oil discharge monitor, can cause an operational discharge while at sea in excess of that permitted. In such an incident the discharge should be stopped immediately and the correct report made. It is generally acknowledged that no clean up is possible by the ship, but the shore authorities can often respond more effectively to a spill in its early stages.

3.1.4 Vessels equipped with deck spill dump valves

- System to be tested prior arrival to ensure it is liquid filled to prevent “blow-out” in case of operation. (Check to be included in arrival checklist).
- In case of deck spill flowing towards the dump valve on any side of the vessel, the valve shall be opened to allow the deck spill to drain directly into the slop tank.
- The person opening the dump valve shall not leave the valve until he is released or the dump valve is closed.
- As soon as deck is cleared of spilled oil, the dump valve shall be cleaned. Note: Chemicals used for deck cleaning shall not be allowed to drain into the slop tank.
- The quantity of received oil in the slop tank from a deck spill should be recorded in the ORB II.

3.2 SPILLS RESULTING FROM CASUALTIES

In the event of a casualty the master's first priority is to ensure the safety of the ship's personnel and to initiate action to prevent the incident from getting worse.

If the casualty involves grounding, breaching of the outer hull, or other structural damage for which calculations of stability and damaged longitudinal strength are beyond the ship's resources, assistance must be sought from shore.

It may be necessary to transfer all or part of the cargo to another ship. The ICS/OCIMF publication "Ship to Ship Transfer Guide (Petroleum)" describes procedures to be followed in such a case. For liquefied gas carriers it is appropriate to refer to the sister publication “Ship to Ship Transfer Guide (Liquefied Gas). A copy is held on board, and the master should encourage officers to familiarise themselves with the contents. When arranging a rendezvous, the master should ensure that the lightering vessel would also follow the same procedures.

The following casualty situations are dealt with:

- Grounding
- Stranding/Wrecked
- Fire/Explosion
- Collision (with a fixed or a moving object)
- Hull Failure
- Excessive List
- Containment System Failure
- Submerged or Foundered
- Hazardous Vapour Release

3.2.1 Grounding

Refer to Cargo/Fuel Oil Data Sheets (located in the ship's office and/or cargo control room) for product specifics and safety guidelines.

If the ship runs aground, the following steps should be taken immediately:

- Sound the emergency alarm, muster the crew, and initiate emergency response procedures
- Eliminate all avoidable sources of ignition and ban all smoking on board
- Consider whether to stop air intake to accommodation and non-essential air intake to the engine-room
- In the case of a noxious liquid substance, consider what protection from vapour or liquid contact is necessary for the response team and for other crewmembers.
- Reduce the inert gas pressure to zero

Further action

- Carry out a visual inspection of the ship to determine the severity of the situation
- Take soundings around the ship to determine the nature and gradient of the seabed
- Check difference in the tidal ranges at the grounding site
- Evaluate tidal current in the grounding area
- Take soundings of all cargo, ballast and bunker tanks and check all other compartments adjacent to the hull: ullage plugs should not be opened indiscriminately as loss of buoyancy could result
- Compare present tank soundings against departure soundings
- Evaluate the probability of additional release of oil.

Further information on the action to be taken when a ship is aground is contained in the ICS/OCIMF publication "Peril at Sea and Salvage - A Guide for Masters".

Having assessed the damage that the vessel has sustained, and taking into account the effects of hull strength and stability, the master should decide whether or not any action can be taken to avoid further spillage, such as:

- Transfer of cargo and bunkers internally. If the damage is limited, for example to one or two tanks, consideration should be given to transfer of liquid from damaged to intact tanks.
- Isolate all cargo and bunker tanks to reduce further loss due to hydrostatic pressure during tidal changes.
- Review existing and forecast weather conditions, and whether they will adversely affect the ship.
- Evaluate the possibility of transferring cargo to barges or other ships, and request such assistance accordingly.
- Trimming or lightening the vessel sufficiently to avoid damage to intact tanks, thereby avoiding additional pollution from spillage of oil or noxious liquid substances.

If the risk of additional damage to the ship by attempting to refloat it by its own means is assessed to be greater than by remaining aground until assistance has been obtained, the master should try to prevent the ship from moving from its present position by;

- Using anchors
- Taking in ballast in empty tanks (if possible)
- Reducing longitudinal strength on the hull by transferring cargo internally. Attention should be given to hull strength and damage stability information, referring to the classification society if necessary. Care must be taken over the compatibility of noxious liquid substances with tank type, material of construction and tank coating.

3.2.2 Stranding/Wrecked

Refer to Cargo/Fuel Oil Data Sheets (located in the ship's office and/or cargo control room) for product specifics and safety guidelines.

If the ship is stranded/wrecked, the following steps should be taken immediately:

- Sound the emergency alarm, muster the crew, and initiate emergency response procedures
- Eliminate all avoidable sources of ignition and ban all smoking on board
- Consider whether to stop air intake to accommodation and non-essential air intake to the engine-room
- In the case of a noxious liquid substance, consider what protection from vapour or liquid contact is necessary for the response team and for other crewmembers.
- Reduce the inert gas pressure to zero

Further action

- Carry out a visual inspection of the ship to determine the severity of the situation
- Take soundings around the ship to determine the nature and gradient of the seabed
- Check difference in the tidal ranges at the stranding/wrecked site
- Evaluate tidal current in the stranding/wrecked area
- Take soundings of all cargo, ballast and bunker tanks and check all other compartments adjacent to the hull: ullage plugs should not be opened indiscriminately as loss of buoyancy could result
- Compare present tank soundings against departure soundings
- Evaluate the probability of additional release of oil.

Further information on the action to be taken when a ship is stranded/wrecked is contained in the ICS/OCIMF publication "Peril at Sea and Salvage - A Guide for Masters".

Having assessed the damage that the vessel has sustained, and taking into account the effects of hull strength and stability, the master should decide whether or not any action can be taken to avoid further spillage, such as:

- Transfer of cargo and bunkers internally. If the damage is limited, for example to one or two tanks, consideration should be given to transfer of liquid from damaged to intact tanks.
- Isolate all cargo and bunker tanks to reduce further loss due to hydrostatic pressure during tidal changes.
- Review existing and forecast weather conditions, and whether they will adversely affect the ship.
- Evaluate the possibility of transferring cargo to barges or other ships, and request such assistance accordingly.
- Trimming or lightening the vessel sufficiently to avoid damage to intact tanks, thereby avoiding additional pollution from spillage of oil or noxious liquid substances.

If the risk of additional damage to the ship by attempting to refloat it by its own means is assessed to be greater than by remaining stranded/wrecked until assistance has been obtained, the master should try to prevent the ship from moving from its present position by;

- Using anchors
- Taking in ballast in empty tanks (if possible)
- Reducing longitudinal strength on the hull by transferring cargo internally. Attention should be given to hull strength and damage stability information, referring to the Technical Department of the Vessel's Operator if necessary. Care must be taken over the compatibility of noxious liquid substances with tank type, material of construction and tank coating.

3.2.3 Fire/Explosion

Refer to Cargo/Fuel Oil Data Sheets (located in the ship's office and/or cargo control room) for product specifics and safety guidelines.

If an explosion or a fire occurs on board:

- Sound the emergency alarm, deploy the ship's fire emergency team(s) and follow the emergency procedures
- Determine the extent of the damage, and decide what damage control measures can be taken
- Determine whether there are casualties
- Request assistance as deemed necessary

3.2.4 Collision (with a fixed or moving object)

Refer to Cargo/Fuel Oil Data Sheets (located in the ship's office and/or cargo control room) for product specifics and safety guidelines.

If a collision occurs:

- Sound the emergency alarm and initiate emergency procedures.
- Determine whether there are casualties.

The master should assess the situation for pollution purposes as follows, taking action where appropriate:

- Decide whether separation of the vessels may cause or increase the spillage of oil.
- If any cargo or bunker tanks are penetrated, reduce the risk of further spillage by isolating penetrated tanks or transferring liquid to slack or empty tanks.

Having assessed the damage and dealt with imminent danger, consideration of further action for repair or cargo transhipment should be done in conjunction with appropriate authorities, in order to facilitate pollution control.

3.2.5 Hull Failure

Refer to Cargo/Fuel Oil Data Sheets (located in the ship's office and/or cargo control room) for product specifics and safety guidelines.

If the ship suffers severe structural hull failure:

- Sound the emergency alarm and muster the crew
- Reduce speed or stop to minimise strength on the hull
- Assess the immediate danger of sinking or capsize
- Initiate damage control measures
- Reduce the inert gas pressure to zero.

The master should then assess the situation for pollution purposes as follows:

- If immediate action is necessary to jettison cargo, inform the appropriate parties in accordance with Section 2 of this plan
- Consider whether offloading of oil that is necessary in order to maintain stability can wait until another ship or a barge is available
- If the change in stability and strength cannot be calculated on board, contact the Technical Department of the Vessel's Operator and arrange for the necessary calculations to be carried out
- Consider the forecast weather conditions and the effect they may have on the situation.

Having assessed the damage and dealt with imminent danger, consideration of further action for repair or cargo transhipment should be done in conjunction with appropriate authorities, in order to facilitate pollution control.

3.2.6 Excessive List

Refer to Cargo/Fuel Oil Data Sheets (located in the ship's office and/or cargo control room) for product specifics and safety guidelines.

If excessive list occurs rapidly and unexpectedly it may be due to:

- Failure of the hull plating
- Failure of an internal bulkhead between compartments
- Shift of cargo
- Flooding of a large space such as the engine room, where free surface can cause a list
- Damage through grounding or collision
- Incorrect operational procedures.

Steps to be taken immediately:

- Stop any cargo, bunkering or ballast operations in progress, and close all tank valves and pipeline master valves
- Sound the emergency alarm and muster the crew
- If under way, reduce speed or stop
- Establish the reason for the list.

Further measures:

- Sound all tanks and compare soundings with departure soundings
- If immediate action is necessary to jettison cargo, inform the appropriate parties in accordance with Section 2 of this plan
- Consider whether offloading of oil that is necessary in order to maintain stability can wait until another ship or a barge is available
- If possible, take corrective action to rectify the situation.

Having assessed the damage and dealt with imminent danger, consideration of further action for repair or cargo transhipment should be done in conjunction with appropriate authorities, in order to facilitate pollution control.

3.2.7 Containment System Failure

Refer to Cargo/Fuel Oil Data Sheets (located in the ship's office and/or cargo control room) for product specifics and safety guidelines.

If there has been an internal failure of the bunker oil or cargo containment system, other than pipeline leakage, it is likely that it will be detected by another symptom such as an excessive list, a tank overflow or external hull leakage, often preceded or accompanied by a loud or unusual noise. Advice on initial reaction in each case will be described under other sections. However, once a failure of the internal containment system has been identified, there may be additional responses that can be taken to avoid or mitigate a spill of oil.

Steps to be taken immediately:

- Stop any cargo, bunkering or ballasting operations in progress, and close all tank valves and pipeline master valves
- If under way, consider reducing speed or stopping
- If in port, consider evacuation of non-essential personnel

Further measures:

- Determine the extent of the damage, and decide what damage control measures can be taken
- Assess the possibility of pollution from leakage of oil
- If oil has spilled, inform the appropriate parties in accordance with Section 2 of this plan
- If immediate action is necessary to jettison cargo, inform the appropriate parties in accordance with Section 2 of this plan
- Consider whether offloading of oil that is necessary in order to maintain stability can wait until another ship or a barge is available
- Crew will muster at their allocated muster stations for further instructions
- Consider whether the level of liquid in the tanks associated with the system failure should be reduced. Remember to consider the effect on hull strength and stability of the vessel.

If the spilled liquid is contained on board and can be handled by the Pollution Prevention Team then:

- Use sorbents and permissible solvents to clean up the liquid spilled on board.
- Ensure that any residues collected, and any contaminated absorbent materials used in the clean up operation are stored carefully prior to disposal.

3.2.8 Submerged or Foundered

Refer to Cargo/Fuel Oil Data Sheets (located in the ship's office and/or cargo control room) for product specifics and safety guidelines.

If the ship is wrecked to the extent that it is in imminent danger of foundering or being completely or partially submerged, safety of the lives of the crew will take priority over preventing pollution. It is likely that the event that caused the sinking will have led to some surface pollution already. However, if time allows, it may be possible to take some measures that will limit subsequent spillage.

Steps to take immediately:

- Sound the emergency alarm and initiate emergency procedures.

The following actions may be considered, if there is no risk to the safety of the crew, and time allows:

- Inform the appropriate parties in accordance with Section 2 of this plan
- Close all tank valves and pipeline master valves
- Screw down or lock shut any tank vent valves
- Close vent flaps and watertight openings in the cargo area
- Alert other ships and navigational authorities to the presence of pollutants
- Crew will muster at their allocated muster stations for further instructions

3.2.9 Hazardous Vapour Release

Refer to Cargo/Fuel Oil Data Sheets (located in the ship's office and/or cargo control room) for product specifics and safety guidelines.

For oil tankers and cargo ships at sea, it is unlikely that a significant marine pollution hazard will be created solely by vapour release. In port the main problem with such an event is safety of the crew and nearby shore personnel in a flammable or toxic atmosphere.

Steps to take immediately:

- Sound the emergency alarm
- Stop any cargo, bunkering or ballasting operations in progress, and close all tank valves and pipeline master valves
- Eliminate possible sources of ignition
- If under way, consider altering course to create the best wind flow, or reducing speed or stopping
- If in port, consider evacuation of non-essential personnel
- If in port, alert shore and terminal personnel, and the crew of craft alongside
- Crew will muster at their allocated muster stations for further instructions

Further measures

- Establish the reason for the hazardous vapour release
- If possible, take corrective action to rectify the situation.

3.3 PRIORITY ACTIONS

Top priority shall in all cases of casualty be put on the safety of the persons onboard and to take actions to prevent escalation of the incident.

Immediate consideration should be given to protective measures against fire, explosions and personnel exposure to toxic vapor.

Detailed information about the damage sustained to the ship and its containment system has to be obtained. On the basis of the information the Master can decide next actions for the protection of lives, the ship, the cargo and the environment.

The Master should take into account the following when he is determining whether salvage assistance will be needed or not:

- Nearest land or hazard to navigation
- Vessel's set and drift
- Estimated time of casualty repair
- Determination of nearest capable assistance and its response time.

Detailed information about the cargo must be available and is to be referred to for further actions regarding the cargo.

In case of necessary movement of cargo within the ship careful consideration is to be given to hull strength and stability as well as to the compatibility of all material (cargo, tanks, coating, piping) in view of any transfer actions planned.

Plans/tables about the location and specification of the current cargo as well as bunkers and ballast have to be readily available.

Information about current cargo/bunker/ballast distribution and the Data Sheets for the carried cargo substances are available onboard and in the offices of the Operator.

3.4 MITIGATING ACTIVITIES

If safety of both the ship and the personnel has been addressed, the Master can initiate the following:

3.4.1 Assessment and Monitoring Requirements

The Master proceeds with the following actions:

- Assesses the damage immediately and decides whether outside assistance is required or the situation can be dealt with by the means available on board.
- Sends an urgency or distress call, as appropriate, in case outside assistance is required. The coastal station contacts the nearest Rescue Co-ordination Centre (RCC) automatically. However, the master may also contact the RCC directly, if possible. If the vessel participates in the AMVER system, he immediately notifies it.
- Obtains the accurate position of the vessel and distance from shallow waters;
- Assess weather condistions, tide and the state of the sea; and
- Foresees the movement of the oil spill and examines whether it is likely to affect the shore.

3.4.2 Personnel Protection Issues

- Protective equipment -

  In the event of a casualty, the Master's first priority is to ensure the safety of **personnel**. For the protection of the crew members who are engaged in loading and discharging operations, the ship must have onboard all suitable protective equipment consisting of large aprons, special gloves with long sleeves, suitable footwear, coverall of chemical-resistant material, and light-fitting goggles or face shields. The protective clothing and equipment cover all skin so that no part of the body is unprotected.

  Work clothes and protective equipment is kept in easily accessible places and in special lockers. Such equipment should not be kept within accommodation spaces, with the exception of new, unused equipment and equipment which has not been used since undergoing a thorough cleaning process.

  Protective equipment should be used in any operation, which may entail danger to personnel.

  - Threats to Health and Safety

Cargoes may be harmful if the liquid comes in contact with the skin, if their vapors are inhaled or if the liquid is swallowed. The seriousness of the effect depends on both the physical properties of the cargo and on its toxicity or irritant nature.

Absorption of a cargo, through the skin, depends on the solvent nature of the cargo. If the cargo cannot pass readily through the skin, no skin absorption hazard exists even if the liquid is a poison.

The *inhalation* hazard of a cargo depends primarily on its volatility. A cargo which is not volatile at normal handling temperatures may not produce sufficient vapour to be dangerous, even if the cargo is inherenlty poisonous.

Additional information about the three ways in which a cargo may be harmful, viz. By skin contact, by inhalation or by ingestion, and the precautions necessary when hazards exist are given in "Tanker Safety Guide for Chemcials" Volume 1 Ch. 9.

Reference should be made to the Material Safety Data Sheets of the particular cargo and the IMO publication of "Medical First Aid Guide for Use in Accidient Involving Dangerous Goods".

3.4.3 Physical Properties of the Substance

(Section 3.4.3 applies to tank vessels only; please disregard for nontank vessels.)

- ***Solubility*** – (see also relevant data sheet)

The solubility of a substance is water at a specified temperature with the relation to the maximum weight of a substance which will dissolve in a given weight of water, in the presence of undissolved substance. The value is usually expressed as the number of grams of substance dissolving in 100 grams of water.

In the case of liquid dissolving in liquid, the term “miscibility“ is often used instead of “solubility“. Ethanol dissolved in water, at ordinary temperatures and in all proportions, is said to be completely miscible. A hydrocarbon and water, on the other hand, are immiscible. Aniline and water are partially miscible.

- ***Solidification***

The properties of the substance should be obtained from the shipping document. The following are the definitions of solidifying and high viscosity substance.

“Solidifying Substance“ means a petroloeum based substance which;

  - In the case of a substance with a melting point equal to or greater than 15 degrees C, is at a temperature, at the time of unloading, of less than 5 degrees C above its melting point; or

  - In the case of a substance with a melting point equal to or greater than 15 degrees C, is at a temperature, at the time of unloading, of less than 10 degrees C above its melting point.

- ***Density*** – see relevant data sheet

Specific density of the cargo may affect its pumpability. Captain should refer to the onboard copy of the Procedures and Arrangements Manual.

- ***Water Reactivity***

The data sheet indicates if a dangerous reaction is possible between a chemical and water. If such a reaction is possible, “double“ separation between the chemical and water is recommended.

Double separation involves:

- double skin as provided by a double bottom and side cofferdam between the cargo and the sea,

AND

- a cofferdam or similar void space (which may be empty cargo compartment) to separate the tank containing the cargo from tanks containing water,

OR

- at least one compartment loaded with a cargo which is compatible with the cargo in question and with water,

AND

- pipelines serving the cargo tank should be independent from lines serving any tank containing water and should not pass through any tank containing water, or vice versa unless the pipeline is in a tunnel or similar arrangement,

AND

- vent systems serving the tanks containing the cargo should be independent from vent systems serving tanks containing water (see also Section 3.3 “Priority Actions“)

- ***Compatibility***

Refer to “Tanker Safety Guide Volume 1“ and Cargo/Fuel Oil Data Sheets (located in the ship’s office and/or cargo control room) for product specifics and safety guidelines.

- ***Containment and Other Response Techniques***

The Master should, as soon as possible, request the correct chemical name of the cargo to be loaded. If this cargo is not adequately covered by a data sheet, sufficient additional information relevant to its safe carriage should be obtained.

The Master and all those concerned should use the data sheet and/or any other relevant information to acquaint themselves with all characteristics of each cargo to be loaded. If relevant information pertinent to its safe carriage is not available, loading should be refused.

- Moorings: Moorings should be properly tended so as to keep the vessel securely alongside.
- Emergency Towing-Off Wires: Towing-off wires, positioned fore and aft, should be ready for use without adjustment should the ship need to be towed away in case of fire or other emergency.
- Notices: Permanent notices should be displayed in conspicuous places on board, indicationg where smoking and naked lights are prohibited.

- ***Isolation Procedures***

Refer to "Tanker Safety Guide Volume 1" and Cargo/Fuel Oil Data Sheets (located in the ship's office and/or cargo control room) for product specifics and safety guidelines.

- ***Decontamination of Personnel***

  It should be impressed on all personnel involved in cargo handling operations that they should wash thoroughly, especially before eating or smoking. Any contamination of the skin or eyes, no matter how slight, should be flushed away immediately with copious quantities of water, preferably fresh. Delay may be dangerous.

  Personnel should also be advised to vacate the area if they feel any symptoms of vapor exposure and to keep a regular watch for symptoms in others. Emergency treatement, correct for nearly all chemicals is:

  - Remove victim to fresh air,
  - If breathing has stopped, or is weak or irregular, give artificial resuscitation.

  Personnel should be provided with suitable protective clothing to safeguard against contact with harmful cargo that may be grapped in scale and sediment.

- ***Disposal or Removed Oil and Clean Up Materials***

  Oil on deck should be collected using empty drums/cans and portable pumps and drain into slop tanks and/or use the drop valves if fitted. Then clean the deck using dispersant, sorbent pad and rags. Bag up oil waste for disposal ashore.

3.5 LIGHTERING - TRANSFER OF BUNKER/CARGO

If the ship has sustained extensive structural damage, it may be necessary to transfer all or part of the cargo/ bunker to another ship.
In Ship-to-Ship-transfer operations involving a specialized service ship, the Master of that ship will normally be in overall charge.
In the case of non-specialized ships the Master or other person in overall charge of the operation should be mutually agreed and clearly established by the Masters concerned prior to the start of operations.
The actual bunker/cargo transfer should be carried out in accordance with the requirements of the receiving ship.
In all cases each Master remains responsible for the safety of his own ship, its crew, cargo/ bunker and equipment and should not permit their safety to be jeopardized by the action of the other Master, his owner, regulatory officials or others.

The Ship-to-Ship-transfer operations should be coordinated with the appropriate responsible local Authority.

When selecting the area of operation the Master(s) should consider the following points

- The need to notify and obtain the agreement of any responsible authority

- The destinations of the ships concerned
- The shelter provided, particularly from sea and swell
- The sea area and depth of water, which should be sufficent for manoeuvring during mooring, unmooring and transfer operations and allow a safe anchorage if operations have to be undertaken at anchor
- The traffic density
- The weather conditions and the weather forecasts

Further, before commencing Ship-to-Ship transfer operations each ship should carry out, as far as possible, appropriate preparations like:

- Pre-mooring preparations of the ships
- Positioning of fenders if such equipment is available on board
- Mooring equipment arrangements
- Checking the communication channels between the two ships

In addition to the general principles of Ship-to-Ship operations as aforementioned the Master should take note of supplemented instructions issued by the company.
Those supplemented information is located in the ship’s office as well as the office of the Operator.

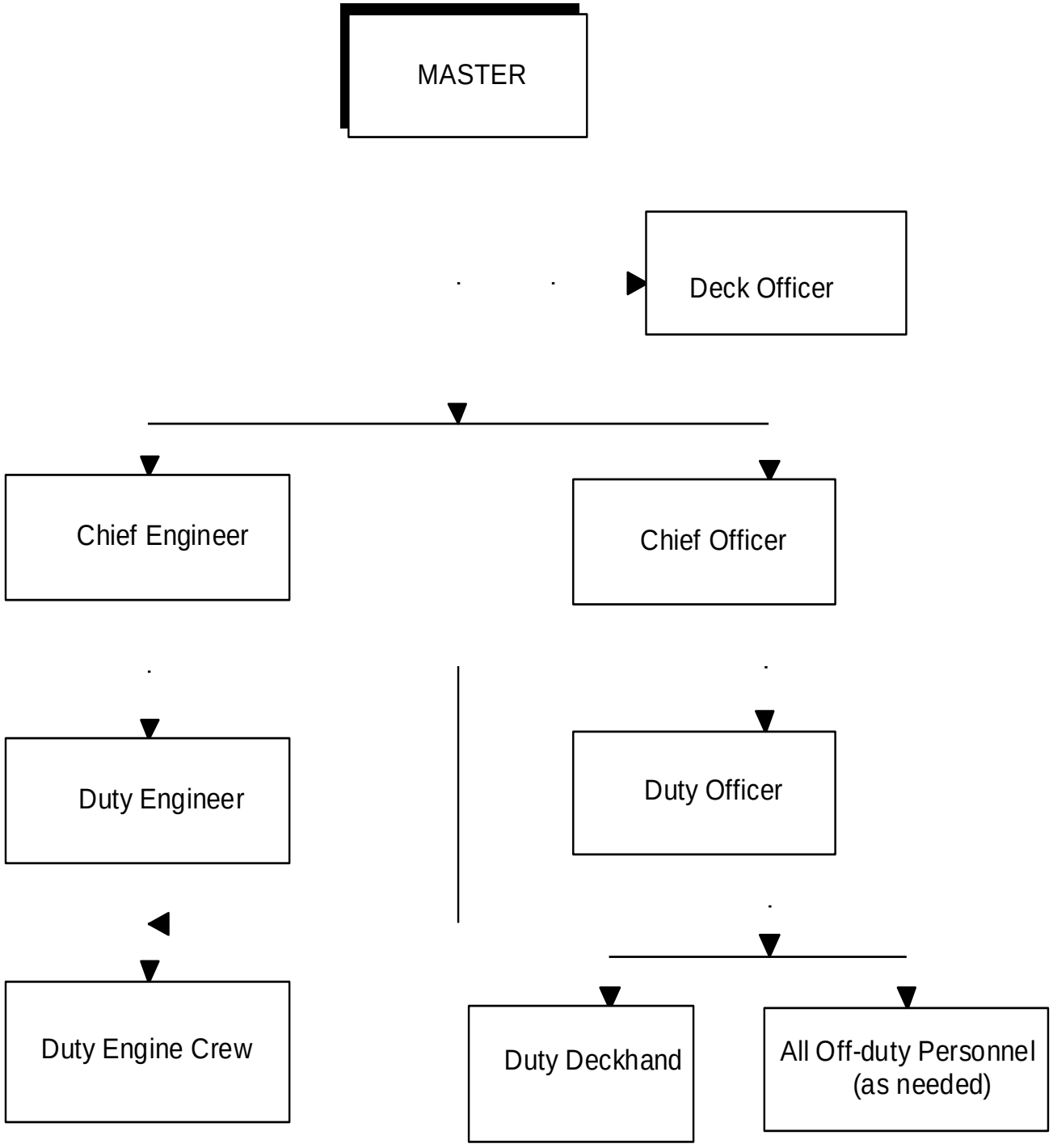
3.6 STABILITY AND HULL STRENGTH CONSIDERATIONS

When performing shipboard spill prevention and mitigating measures as a result of a casualty, damage stability and hull strength shall be considered prior to commencement of any transfer. Reference material is available in the Master's office and with vessel operator's head office.

The Master shall request shore-based assistance, if required. Cargo/bunker and internal transfer procedures may begin only after vessel’s overall longitudinal strength, strength and stability calculations have been made for the current conditions of the vessel and all parameters are within acceptable limits. Vessel crews shall be trained and qualified to perform basic stability and strength evaluations.

Plans and programs to perform salvage, stability and hull strength assessments, including general arrangements and amidships sections plans, line tables, tank tables, load lines assignments, and light ship characteristics can also be accessed on a 24-hour basis by calling the Technical Department of the vessel operator.

3.7 VESSEL'S POLLUTION PREVENTION TEAM



3.7.1 General Responsibilities

The following crew members are in charge in the event of a spill – actual or probable – to bring the accident under control, limit outflows, organize onboard clean-up procedures and determine the additional manpower needed.

General Responsibilities	
RANK	DUTIES
Master	Overall in charge of operation on board. Report incident as required (section 2 of this plan). Remains as owner's senior representative until relieved by the Owner's Representative or Qualified Individual.
Deck Officer	Secretary to Master. Transmit and receive reports as ordered by Master. Keep log of all events and progress (if no General Operator, the Chief Steward will fill this position).
Chief Officer	In charge of deck operation. Shall keep Master informed and updated on the situation and the results from action taken to limit outflow.
Chief Engineer	In charge of bunker operation. Organize on board clean-up equipment. Start fire/foam pump as required.
Deck Duty Officer	**Tank overflow (Bunkering):** Open up to empty or slack tank. Alert and inform Chief Officer of situation. Mobilize off duty crew as necessary. Mobilize deckhands to the best position for keeping escaping oil from running over the vessel's sides. Mobilize fire fighting squad, as needed, when Chief Officer takes charge on deck.
Engine Crew	Limit outflow by operating pumps/valves. Assist Chief Engineer. Make sure that the portable pumps are properly rigged and tested. Recover free flowing oil on deck by operating portable pumps.
Duty Engineer	Prepare for fire fighting. Assist Chief Engineer. Ensure sufficient pressure to deck for portable pumps.
Duty Deckhand	If oil leakage is detected, sound alert immediately by all possible means. Inform Officer on duty immediately. Open valves for portable pump(s) to an available empty tank and start pump(s).
Duty Deckhand	Position sorbent material (booms) to prevent any oil from reaching the railing. Commence clean up by using the on board spill clean-up equipment.

3.8 COMPATIBILITY OF SUBSTANCE WHEN UNDERTAKING INTERNAL TRANSFERS AND PHYSICAL PROPERTIES

Prior to the mixing of cargoes residues, residue or residue/water mixtures in any cargo tank reference must be made to the compatibility guide contained in the U.S. Coast Guard publication 46 CFR part 150 (Appendix II). Should the residues not be compatible, then they must not be contained in the same tank.

3.8.1 Water Reactivity

The Data Sheets indicate if a dangerous reaction is possible between a chemical and water. If such a reaction is possible, “double” separation between the chemical and water is recommended.

“Double” separation involves: -

(1) double skin as provided by a double bottom and side cofferdam between the cargo and the sea;

AND

(2) a cofferdam or similar void space (which may be an empty cargo compartment) to separate the tank containing the cargo from tanks containing the water

OR

at least one compartment loaded with a cargo which is compatible with the cargo in question and with water;

AND

(3) pipelines serving the cargo tank should be independent from lines serving any tank containing water and should not pass through any tank containing water, or vice versa unless the pipeline is in a tunnel or similar arrangement;

AND

(4) vent systems serving the tanks containing the cargo should be independent from vent systems serving tanks containing water.

3.9 CARGO TRANSFER FROM SHIP TO SHIP (STS)

Direct transfer between ships may take place while observing the recommended precautions for loading or discharging. Special attention should be given to communications. Co-ordination of this activity may be undertaken by the Coastal state, as such operation may be specific to its jurisdiction. Another factor is weather conditions and the following additional precautions should be taken:

(a) main engines and associated auxiliary machinery should be ready for immediate use,

(b) adequate fenders should be provided between the two ships,

(c) hose to manifold flange connections should be arranged so rapid release in an emergency,

(d) the ships should be positioned so that flammable or toxic vapor released by one cannot enter the boiler room or galley of the other, or cause dangerous concentrations bout the decks,

(e) if static generating cargo is being handled, transfer hoses should be of the internally bonded type; or the hose flanges, including intermediate ones, should be externally bonded,

(f) specific hull to hull bonding is unnecessary and undesirable,

(g) prior agreement should be reached as to which ship is in charge of the operation.

3.10 CARGO TRANSFER BETWEEN SHIP AND BARGE

The transfer of cargo between ship and barge alongside should be carried out only in favorable weather conditions. The rate of transfer should be controlled according to the nature and size of the barge.

Before transfer begins, the responsible officer should satisfy himself that the barge personnel are fully conversant with the nature and hazards of the cargo being transferred and with the safety precautions that should be observed in the interest of both parties.

The following precautions, in addition to those set out for safe handling, should be observed:

(a) barge moorings should be of such a nature that the barge can be quickly released in an emergency,

(b) operations should be stopped immediately in any respect the tank barge fails to comply with safety requirements,

(c) tank barges should be removed from alongside as soon as possible after having completed loading or discharge.

SECTION 4

NATIONAL AND LOCAL CO-ORDINATION

Prompt and effective co-ordination between the vessel and coastal state or other involved parties is vital in mitigating the effects of a pollution incident or threat of a pollution incident.

It is recognized that in most countries oil spills can be tackled most effectively from shore based organizations. Usually a government agency or port authority takes charge in the co-ordination and organization of the clean-up response and recover the costs afterwards. In case of operational spills which occur in port during bunkering operations the facility operators may have booming or clean-up resources at hand. In every case the spiller is expected to co-operate fully and pay reasonable costs of clean-up and any damage caused, up to a specified limit as determined by the local authorities.

4.1 ORGANIZATION AND RESPONSIBILITY FOR RESPONSE

The response action of vessel depends on the vessel's location at the time of imminent/threat of pollution incident. If the vessel is within a coastal state boundary then it would be necessary to notify National, State and Local governments of the incident to activate a quick response. In case of high seas incidents, under the terms of International Convention relating to intervention on high seas in cases of oil pollution casualties, 1969 (The Intervention Convention) a coastal state is authorized to intervene on high seas against the wishes of the ship and cargo owners to the extent necessary to prevent, mitigate or eliminate grave and imminent danger to the coastline or related interests from pollution or threat of pollution following a marine casualty. In this context "related interest" include tourism, fishing and other marine resources and wildlife.

A number of developing nations lack both specialized resources and contingency plans and may rely on help from a variety of sources outside the country to assist with clean-up. In such cases it may be in the owner's best interest to seek an active involvement in the spill response operation. However, it should be recognized that the actual response adopted by a country to a particular incident will depend upon a number of factors such as the exact location, the type and quantity of oil involved and the owner of both the ship and the cargo.

4.2 NATIONAL CO-ORDINATION

Vessel to notify national authority in case of any spill within any coastal region. In case of high seas incident, depending on the predicted or estimated impact area, the closest coastal state. Additionally the Regional Co-ordination Center (RCC) must be activated. National Authority must be notified to activate the response activity.

4.3 STATE CO-ORDINATION

Within the national boundaries of a country the various regional states may have their own requirements or regulations. To comply with the requirements the vessel must notify the Regional State Authority.

4.4 LOCAL PORT/HARBOR CO-ORDINATION

All oil terminal ports or harbor authorities have local response organizations which will respond quickly to any spill or threat of spill. It is normally a requirement to inform the local harbor/port control authority. The local port may have additional VTS, fire and pollution control monitoring agency to isolate a waterway and may have contingency plan for evacuation of vessel to sea.

The specific reporting format for each country vary and the requirements may be obtained from (but not limited to) the following Publications:

- Coast-Pilots
- Guide to Port Entry (Including National Requirements)
- IMO Routing Requirements
- Radio Reporting Requirements (ALRS Volumes)
- Reporting Requirements as marked on Charts.
- VTS requirements (Vessel Traffic System)
- IMO and ICS Publications

It is recommended that in passage-planning the various reporting format of Areas to be transited and local port/harbor emergency numbers be taken into account as part of contingency planning prior to each voyage or port entry. Over a period of time, depending of vessels trading pattern, list of port/state reporting requirements should be compiled and retained on board for ready reference.

SECTION 5

ADDITIONAL INFORMATION

5.1 SHIP INTEREST CONTACTS

5.1.1 Vessel Manager / Operator

University of Washington, School of Oceanography
Box 357940
Seattle, WA, USA, 98195
Tel: (206) 543-5062

Emergency Contact	Office Phone	Office Fax	Mobile Phone	Secondary Phone
Douglas Russell	(206) 543-5062	(206) 543-6073	(206) 321-5320	(206) 854-8463
William Rall	(206) 221-6920	(206) 221-6970	(206) 910-9176	(510) 846-6549
Richard O'Connell	(206) 543-5648	(206) 543-6073	(206) 399-9198	(360) 412-7467

Shoreside Spill Response Coordinator: In accordance with Subparagraph 19.3.4 of MEPC 44/20 Annex 8, the above Emergency Contacts have been appointed by the Owner/Operator to be shore-based persons who will guide the Master in requesting and coordinating initial response actions and mobilizing shoreside response personnel and equipment.

5.1.2 Local Agent

Varies from voyage to voyage as dictated by the vessel operator/owner/charterer

5.1.3 Classification Society

See Appendix B *Vessel Specific Information*

Note: For Local/Country/Port listing of Classification Society representatives, please refer to the directory of branch offices available in the owner/operator head office.

5.1.4 P&I Club

See Appendix B *Vessel Specific Information*

Note: For Local/Country/Port listing of P&I Club representatives, please refer to the P&I Club directory of correspondents, a copy of which is available on board.

5.1.5 Other Insurance Representatives or Surveyors

Contact through P&I Club Representative

5.1.6 U.S.A. Contractors

5.1.6.1 Qualified Individual and Response Manager

Primary:

O'Brien's Response Management Inc. *Duty Qualified Individual*
Telephone: 24 hours +1-985-781-0804
Facsimile: +1-985-781-0580
Email: commandcenter@obriensrm.com

Alternate:

O'Brien's Response Management Inc. *Alternate Duty Qualified Individual*
Telephone: 24 hours +1-713-470-1139
Facsimile: +1-985-781-0580
Email: commandcenter@obriensrm.com

The following shall serve as Qualified Individuals:

James L. O'Brien	Ben Benson	Ed Turner
Chris Gregory	K. Tim Perkins	Dan Sobieski
Rod Dillon	Bud Kline	Jim Morris
Nick Benson	Mary Jurczak	Mike Sutcliffe
Josh Dubach	Aaron Holton	

Initial emergency or spill notification must be made by telephone. The numbers below are guarded 24 hours a day.

Facsimile: +1-985-781-0580 Telex: 49617361 OOPS UI Email: commandcenter@obriensrm.com

5.1.6.2 *Response Manager*

O'BRIEN'S RESPONSE MANAGEMENT INC.
Slidell Office:
Telephone: +1-985-781-0804 **24 hours**
Facsimile: +1-985-781-0580
Telex: 49617361 OOPS UI
Email: commandcenter@obriensrm.com

Contact Information for Correspondence (Non-Emergency)

O'BRIEN'S RESPONSE MANAGEMENT INC.
New Jersey Office:
103 MORGAN LANE, SUITE 103
Plainsboro, NJ 08536, USA
Telephone: +1-609-275-9600 (During Normal Business Hours, Monday – Friday)
Facsimile: +1-609-275-9444
Email: inquiry@obriensrm.com

5.1.6.3 Response Contractors

Some coast states require ships to have contracts with response contractors when ships enter into certain ports.

EMERGENCY SERVICES

Function	Name of Institution	Means of Contact
Salvage	*Donjon/SMIT an OPA '90 Alliance*	Tel: +1-703-299-0081 Fax: +1-703-299-0085
Vessel Firefighting		Tel: +1-703-299-0081 Fax: +1-703-299-0085
Emergency Off loading		Tel: +1-703-299-0081 Fax: +1-703-299-0085

5.2 TRAINING

Vessel personnel shall be assigned responsibilities for spill mitigation consistent with their assigned position and duties associated with day-to-day operation of the vessel.

The Master shall provide vessel personnel with orientation training on the SOPEP. Quarterly, the vessel Master shall conduct plan implementation training in conjunction with regularly scheduled vessel safety-meetings and drills.

All members of the crew receive training in their responsibilities in the following areas:

- Notification requirements and procedures.
- Communication system(s) used for the notifications.
- Procedures to mitigate or prevent any discharge or a substantial threat of a discharge resulting from:
  - Operational activities associated with internal or external cargo/bunker transfers
  - Grounding or stranding
  - Collision
  - Explosion or fire
  - Hull Failure
  - Excessive list
  - Equipment failure
- Actions to take, in accordance with designated job responsibilities, in the event of an operational spill.

5.3 TRAINING RECORDS

All Crew Training shall be recorded, and records of such training (related to the implementation of this plan, pollution prevention, vessel casualties or emergencies, spill mitigation and clean-up aboard the vessel) will be kept on-board the vessel and maintained for **three (3) years** following the completion of training.

5.4 DRILL PROGRAM

Regular drills involving vessel personnel will ensure that the SOPEP can be implemented rapidly and effectively. It is the responsibility of the Master to ensure that drills are conducted in accordance with the company policy. The intent of the drill program is to enhance the preparedness of the vessel's crew.

Emergency procedure drills on board vessels must be conducted quarterly as a minimum requirement. These drills should include one or more emergency procedures for oil spill mitigation or casualty response. Examples: Tank overflow pipe leakage, fire, collision, grounding, etc. These drills must be logged in the vessel's log.

5.5 UNANNOUNCED DRILLS

Periodic unannounced emergency procedure drills are recommended to be conducted by the vessel Master in order to evaluate the crew's preparedness and results of training.

5.6 ENTIRE PLAN DRILL

Within a three (3) year cycle, all elements of this Plan shall be exercised in a drill and the records of all such drills shall be established and furnished to the Vessel Manager for their records.

5.6.1 Annual Drill Planning Standards

Possible scenarios should be looked into for the purpose of an exercise. An example of a exercise is listed below.

The bulk carrier *Neversa*il is enroute northbound up the Mississippi River to the Cargill Grain terminal facility to load a cargo of 50,000 tonnes corn. The following information needs to be considered for the exercise:

- Ship characteristics
- Fuel oil configuration in tanks
- Weather and tide conditions
- Chart of the Mississippi River Area with any other area being traversed
- Sensitive area in Mississippi River from the Area Plan
- Sensitive area priorities

The exercise must simulate telephone communications with the Master of the vessel, the Qualified Individual (QI) and others that the Home Office Team would call during a major oil spill. The exercise groups must:

- Determine the notification that should be made and who will make them
- Set up the organizational structure of the Home Office Team
- Prepare initial and follow-up media statements
- Assess the situation, potential magnitude and extent of the spill, cost of the spill and the major issues involved in the accident
- Develop action plans for selected incident issues
- Determine response strategies and compare to the actual response strategies used

On completion of such an exercise a review must be conducted to evaluate the performance of all elements in the plan and areas of improvement.

5.6.2 Salvage

The drill scenario will contain information on what the crew's responsibilities are in a casualty where a vessel is partially or fully disabled, and what constitutes dangerous conditions. A decision process outlined in the drill scenario that will aid the master in determining when salvage assistance should be obtained. The decision process should include, but not be limited to the following:

1. Nearest land or hazard to navigation
2. Vessel's set and drift;
3. Location and time of impact with hazard based on vessel's s set and drift;
4. Estimated time of casualty repair; and
5. Determine of the nearest capable assistance and its response time (i.e or tug assistance, the time it will take to get on scene and secure the tow). When a casualty occurs to a vessel underway that rescues its maneuverability, the master needs to determine his window of opportunity considering the response time of assistance, regardless of the estimated time of repair. It would not be prudent to hesitate in calling for assistance when time needed to repair something goes beyond the window of opportunity.

5.7 SHIPBOARD RESPONSE EQUIPMENT TO MITIGATE AN OIL DISCHARGE

The equipment and resources maintained on board to clean up operational deck-spills are:

Type	**Location**	**Use**
Scupper plugs	Deck Store	Plug all scuppers before any cargo or fuel movement
Sorbents and Sawdust	Deck Store	Smaller leaks, deck cleaning and wipe-offs
Protective clothing	Deck Store	Personal Protection
Non-sparking, Shovels, mops Scoops, buckets, Brooms	Deck Store	Deck cleaning
Lined big-bags	Deck Store	Storage of soiled sorbents
Emulsifiers	Deck Store	Deck cleaning (must never be allowed to go overboard)

5.8 CREW RESPONSIBILITIES FOR RECORD-KEEPING AND SAMPLING

The prime consideration for the Master during a shipboard incident is the safety of the crew, followed by the safety of the vessel. Whenever a vessel spills oil overboard, the crew shall draw a representative sample from on-board. Also, the crew shall obtain a sample of the spilled oil off the surface of the water, provided this can be done safely. Wherever possible, take pictures and/or video of important factors documenting the event.

Record-keeping and Sampling

Action To Be Taken	Master	Chief Officer	Watch Officer
Log a spill or substantial threat of spill by recording the following:			
Time, location and details of event	●		●
Notifications made (to whom)	●		●
Action taken by crew	●		●
Assistance received (by whom)	●		●
Time authority transferred to Qualified Individual	●		●
Document spill by photos or video		●	
Gather oil samples:			
Take duplicate samples from multiple locations		●	●
If possible, take samples from locations where oil is observed on water		●	●
Seal samples and mark with date and location		●	
Have a non-crew member authenticate samples (e.g. USCG, Harbor Master, etc.)		●	
Submit samples as directed by QI or Co. Office	●		

5.9 PLAN REVIEW AND UPDATE PROCEDURES

The plan must be reviewed periodically.

Amendments to the Mandatory Provisions of the Plan must be resubmitted to the Flagstate Administration. Amendments to Non-Mandatory Provisions of the Plan do not require prior approval.

Any changes to the Plan required by the Flagstate Administration must be entered in the Plan and listed in RECORD OF REVIEW.

Revisions/Amendments requiring Flagstate Administration approval are to be submitted in the following specific situations:

- A change in the owner or operator of the vessel.
- A significant change in the vessel's configuration that affects the information contained in the Plan.
- A significant change in the vessel's emergency response procedures; or
- Any other significant changes that affect the implementation of the Plan.

5.10 PUBLIC AFFAIRS POLICY

In the event of a serious incident, disaster or emergency, proper handling of Public Relations and media is of great significance.

From the outset of any major disaster or emergency, the newspapers, radio, television and media personnel are likely to converge on the scene of the incident. This can be quite intimidating to the vessel's crew. The first reports from the scene will generally be vital in placing the incident in perspective, lessening the spread of misinformation, and setting the tone of continuing media coverage. Mishandling or speculative information given to the media during an emergency can seriously damage a company's reputation and lead to expensive lawsuits, claims, loss of image and business goodwill.

On the other hand efficient public relations can help by making sure the public gets facts, thereby creating a positive atmosphere.

The vessel's crew must not make any comment on the incident, its cause, or the damages involved. The company's Public Affairs policy forbids any unauthorized spokespersons from making any statements to the media.

As such, Masters, Officers and Crew are advised NOT to respond to any media inquiries and to refer all inquiries to the Company.

All inquiries from the media will be directed to the Company who will have appointed a Media Representative to act as spokesperson for the Company.

SHIPBOARD OIL POLLUTION EMERGENCY PLAN

Appendix A1 – Coastal State & Port Contacts

Attached is the list of National Operational Contact Points (NOCP) as issued by the International Maritime Organization (IMO). The NOCP list is updated periodically and updates are available from the IMO Website www.imo.org.

As updates are made available, the list shall be issued to vessels either via email or in some other electronic or hardcopy format and shall replace the superseded version without the necessity to indicate change on the Record of Review and Changes.

SHIPBOARD OIL POLLUTION EMERGENCY PLAN

Appendix A – US Contacts – COTP Zones

NOTE: VESSELS WITH VRPs, PLEASE REFER TO YOUR APPENDIX A - COTP / GEOGRAPHIC SPECIFIC APPENDICES. ALL OTHER VESSELS, PLEASE REFER TO ATTACHED.

Attached is the list of contact details for all U.S. Captain of the Port (COTP) Zones. These contacts are to be used, should the need arise, while in U.S. Waters.

As updates are made available, the list shall be issued to vessels either via email or in some other electronic or hardcopy format and shall replace the superseded version without the necessity to indicate change on the Record of Review and Changes.

Thomas G. Thompson

APPENDIX B

VESSEL SPECIFIC INFORMATION

Thomas G. Thompson

VESSEL'S PRINCIPAL CHARACTERISTICS

Vessel Name:	Thomas G. Thompson	Ex_Name:	N/A
LR/IMO Number:	8814419	Off. Number:	976826
Inmarsat Numbers:	Sat B: 336634510 (tel)		
Email:	captain@thompson.ocean.washington.edu		
Vessel Type:	Research Vessel		
Call Sign:	KTDQ		
Flag:	USA	P.O.R.:	Seattle
Built:	1991		
Builder:	Halter Marine Inc.		
Length Overall:	274.00 ft	Length B.P.:	243.00 ft
Breadth MLD:	53.00 ft	Depth:	26.50 ft
Summer Draft:	19.00 ft	Summer DW:	896
GRT:	3051	NRT:	1499
Service Speed:	12.50 knots		

Operating Data

Main Engine:	Caterpillar 3508TA
Towing Arrangement:	In Accordance with OCIMF

Owner: **US Department of Navy**
Contact details as per Section 5.1

Ship's Drawings: The following is located ashore at the Owner/Operator Head Office (Technical Department) and in the ship's office.

1. The General Arrangement and Capacity Plan
2. The Midship Section Plan and Shell Expansion
3. Damage and Stability Data
4. Fuel Piping Plan

Thomas G. Thompson

Classification: **American Bureau of Shipping (ABS)**
American Bureau of Shipping (ABS Americas)
24 hour Tel: +1-281-877-6000 / 877-6344 / 877-6405
AOH Tel: +1-281-877-5800
Fax: +1-281-877-6338; Email: abs-amer@eagle.org; Tlx: 6732233 ABS

USA Contact: **ABS Americas - New Jersey**
Tel: +1-201-333-5470; Fax: +1-201-985-0371
AOH Tel: +1-201-333-5470 voice mail
Mr. Mark Stanton - Eastern Dist. Manager

P&I Club: **Water Quality Insurance Syndicate**
80 Broad Street, 21st Floor
New York, New York 10004
Phone: +1-212-292-8700
Fax: +1-212-292-8716
Emergency Hotline: 800-736-5750

Navigatiors Insurance Company
2 Minister Court, 7th Floor
Mincing Lane
London EC3R 7BB, United Kingdom

Underwriters at Loyds, London
London EC3M 5NR
T: +44 (0)20 7886 9000
F: +44 (0)20 7488 1848

National Casualty Ins. Co.
TBA

H&M Provider: **US Department of Navy – Office of Naval research**
Tel: +1-703-696-4530