**GUIDANCE FOR THE CLASSIFICATION AND CONSTRUCTION**

**PART 7. CLASS NOTATION**

# VOLUME H
# GUIDANCE FOR THE CLASS NOTATION
# EMERGENCY RESPONSE SERVICE
# (ERS)
# 2013 EDITION

## BIRO KLASIFIKASI INDONESIA

# GUIDANCE FOR THE CLASSIFICATION AND CONSTRUCTION

## PART 7. CLASS NOTATION

# VOLUME H
# GUIDANCE FOR THE CLASS NOTATION
# EMERGENCY RESPONSE SERVICE
# (ERS)
# 2013 EDITION

**Biro Klasifikasi Indonesia**
Jl. Yos Sudarso No. 38-40, Tanjung Priok
Jakarta 14320
www.klasifikasiindonesia.com
rules@klasifikasiindonesia.com

The following Guidance come into force on 1st July 2013

# Foreword

This Guidance contains the technical requirements and criteria that meet international regulatory requirements for vessel emergency response. BKI has issued this *Guidance for Emergency Response Service* to provide owners/operators with a description of the process for the issuance of the **ERS** notation to an BKI-classed vessel. The BKI ERS program provides emergency technical services for owners/operators whose enrolled vessel experiences an incident that may affect the stability or structural strength of the vessel or require the rapid provision of technical analytical services.

Effective 4 April 1995; MARPOL 73/78 Annex I, Regulation 26 requires a Shipboard Oil Pollution Emergency Plan (SOPEP) for all tankers of 150 gross tons or more and all other vessels of 400 gross tons or more. The "Guidelines for the Development of Shipboard Oil Pollution Emergency Plans", IMO MEPC 54 (32), advises that detailed guidance to the vessel's master should be provided to take stability and stress into consideration when taking actions to mitigate the spillage of oil or to free the vessel from aground. While it does not require, it strongly suggests, that when there is excessive damage, consultation with shore-based technical assistance is appropriate before taking any action that may jeopardize the vessel.

As of 1 January 2007; MARPOL 73/78 Annex I, in accordance with resolution MEPC.117 (52), Regulation 37.4 requires that all oil tankers of 5,000 tons deadweight or more shall have prompt access to computerized, shore-based damage stability and residual structural strength calculation programs. The BKI ERS Program is designed to fulfill the requirements of the above regulations.

The ISM Code, Section 8, requires the company to establish procedures to respond to potential emergency shipboard situations, including the use of drills and exercises to prepare for those emergencies. The ERS program can be a valuable resource augmenting a company's emergency preparedness program.

The BKI ERS service is available and can be called upon 24 hours a day. In the event of a vessel incident, a vessel enrolled in the BKI ERS program will be given urgent attention by BKI. An essential element of the BKI ERS program is that BKI will provide a response team when the service is activated by the Client, the members of which understand their responsibilities and have collected and pre-processed the technical information likely to be needed in the event of an incident, thereby saving many critical hours of data preparation and testing.

The BKI Emergency Response Service team includes engineers able to support the Client in the aftermath of an incident by performing strength and stability calculations using information provided by the Client or vessel relating to the load distribution and damaged condition of the vessel. For BKI -classed vessels, Surveyor approval remains a requirement for the subsequent evaluation of damage and repair or when a Conveyance Certificate is to be issued. The Emergency Response Service is directed by a Team Leader. The Team Leader may draw on the other team members and on staff from within the BKI organization as deemed necessary to assist in responding to the incident. These co-opted team members may cover disciplines such as, but not limited to, naval architecture, structural analysis, stability calculations, machinery and mechanical systems, and survey.

Ultimate responsibility for decisions taken to improve the survivability of the vessel resides with the Client and vessel captain, and the information and reports provided as part of the BKI Emergency Response Service are intended solely to support this decision-making process.

This page intentionally left blank

# Table of Contents

This page intentionally left blank

# Section 1
# General

## A. Scope and Application

**1.** In accordance with MARPOL Regulation I/37(4), as circulated by Resolution MEPC.117(52), oil tankers of 5,000 dwt or more require access to shore-based damage stability and residual structural strength calculations from 1 January 2007.

**2.** BKI will consider vessels enrolled in the BKI Emergency Response Service (ERS) program to be in compliance with MARPOL 1/37(4).

**3.** Effective 4 April 1995; MARPOL 73/78 Annex I, Regulation 26 requires a Shipboard Oil Pollution Emergency Plan (SOPEP) for all tankers of 150 gross tons or more and all other vessels of 400 gross tons or more. The "Guidelines for the Development of Shipboard Oil Pollution Emergency Plans", IMO MEPC 54 (32), advises that detailed guidance to the vessel's master should be provided to take stability and stress into consideration when taking actions to mitigate the spillage of oil or to free the vessel from aground. While it does not require, it strongly suggests, that when there is excessive damage, consultation with shore-based technical assistance is appropriate before taking any action that may jeopardize the vessel.

**4.** Vessel's enrolled in the BKI ERS program will be provided with such consultative support in the event of an incident.

**5.** Upon a Client's request, BKI will provide rapid response damage assessment support to the Client. Initially, a rapid response file will be developed which will include the vessel's hard copy drawing information and/or the electronically stored data to consider a damaged condition of the vessel.

**6.** The BKI ERS team is activated when the Client notifies BKI through direct verbal communication at the 24-hour emergency number requesting assistance with a vessel incident.

**7.** The time from the initial activation of the BKI ERS team and the provision of specific damaged stability and strength guidance is dependent on:

– Receipt of vessel information such as loading conditions and on-site damage assessment,

– Criticality of the situation, and

– The complexity of the problem.

**8.** The ERS Program does not cover Salvage Engineering, class surveys, or surveys in connection with repairs, damages, conversions, compliance with outstanding recommendations, extensions, lay-up or reactivation, modifications/alterations, riding ship, change of flag, or new installations.

**9.** When requested by a flag Administration, BKI is obliged to provide details of its evaluations and files.

**10.** When a vessel is classed by BKI, BKI Survey Division will be advised that the ERS team is evaluating damage on an BKI-classed only vessel. The BKI ERS team will review the most recent status of the vessel available in the BKI records.

**11.** The BKI ERS team will communicate response activity to BKI Survey Division for consideration.

However, a survey by Class Surveyors continues to be a requirement for subsequent evaluation of damage and repairs or when a Conveyance Certificate is to be issued.

**12.** BKI does not act as a principal in the matter of salvage or repairs. BKI can only act in an advisory capacity, leaving it always to the Client to accept or reject such recommendations as BKI may make. BKI has no authority to order or contract for repairs, salvage, or other matters.

## B. Basic of Notation

**1.** To receive the **ERS** class notation, the requirements in this Guidance are to be complied with.

**2.** This Guidance has been developed with the objective of promoting a Emergency Response Service program for BKI-classed vessels. The requirements as specified in this Guidance are additional to all other relevant requirements of BKI Rules and Guidelines. BKI-classed vessels in compliance with these guidance will be assigned a class notation **ERS**, Emergency Response Service, and will receive an enrollment certificate from BKI.

## C Enrollment of Vessels Classed by Other Societies

**1.** Vessels classed by other Societies may enroll in the BKI ERS program provided all enrollment requirements have been met. Enrollment will be demonstrated by the issuance of the BKI ERS certificate.

**2.** Non-BKI classed vessels are not eligible for the **ERS** Class notation. Vessel owners are responsible for contacting the relevant Classification Society for survey instructions when required.

# Section 2

# Documentation

## A. Definitions

**1.** The following definitions are applicable to the **ERS** notation.

**1.1** *Vessel* means any eligible vessel as defined in Section 1,C of this Guidance. Other vessels such as but not limited to drilling units, offshore installations, platforms, submersibles, or marine structures owned, operated, controlled, or managed by the Client, which are presented to BKI for enrollment in the BKI Emergency Response Service Program will be considered on a case by case basis.

**1.2** *Client* means owner, operator, or manager who controls the vessel.

**1.3** *Emergency Response Service (ERS)* consists of the following tasks, as appropriate:

– The development of a database of pertinent aspects of the vessel's structure, materials, machinery, and equipment.

– Development of a computer model of the vessel that will allow for damage stability and residual strength analysis.

– Evaluation of salvor's or owner's or owner's representatives' plans for off-loading, ballasting or cargo transfer sequences to improve residual stability and reduce hull girder stresses, and ground force reaction

– Calculation of the bending and shear stresses caused by pinnacle loads from grounding or stranding.

– Calculation of the residual hull girder strength based on the reported extent of damage.

– Calculation of residual stability when the vessel's compartments are breached.

– Calculation of hull girder strength in damaged condition with wave loading.

– Calculation of hull girder ultimate strength.

– Calculation of local strength in the damaged area.

– Calculation of local buckling and ultimate strength.

– Other calculations as appropriate for the vessel's condition.

**1.4** *Request for Enrollment* is a completed and written request to BKI from the Client's Designated Person, unless the vessel has been automatically enrolled as noted in Section 1,C. Client's signature or that of the designated person on the request will serve as a request for enrollment.

**1.5** *Designated Persons* are individuals who may make requests for services on behalf of the Client, as identified in the initial enrollment request.

**1.6** *Certificate of Enrollment* is the notification sent by BKI to the Client advising that the vessel's drawings have been compiled and/or the computer stability and structural model is completed and that BKI is in a position to respond. It is at this point that the vessel is considered to be fully enrolled in the BKI ERS program.

**1.7** *Annual Subscription* is the fee charged to maintain an active file for a single vessel in the BKI ERS program. For new vessels classed with BKI and automatically enrolled as noted in Section 1,C, the first year fee is not applied.

## B. Client Duties

**1.** When requesting damage assessment, the Client is obliged to present all details of the exact location of the vessel, the circumstances causing the damage and any damage or divers' reports and photos available. Details must include the possibility of pollution and status of crew and main and auxiliary machinery.

**2.** When requesting damage assessment, the Client is obliged to contact all interested parties, such as the vessel's classification society, if other than BKI, underwriters, P&I Club, salvors, coastal State administration and flag Administration.

**3.** When requesting damage assessment, it is the Client's obligation to provide BKI with the vessel's most recent classification status if the vessel is not classed with BKI.

**4.** It is understood and agreed that the rapid response function depends heavily on the accuracy and extent of the information in the BKI ERS database, as well as the incoming information supplied during an incident. Upon initiation of an agreement with BKI, the Client will provide to the assigned BKI ERS team the information as set out in Section 2,C, which will be used for developing the vessel's computer stability and structural model. The assigned BKI ERS team will also consider the use of a computer model not developed by BKI, provided that the Client provides to BKI upon request copies of all drawings used in the creation of the model, as well as authorization for BKI to undertake a verification of the accuracy of the model.

## C. Plans and Data to be Submitted

The following plans and information are to be submitted, if not already available:

### 1. Hull Geometry and Compartments

– Lines Plan or Hull Offsets or Electronic Data file

### 2. Booklets

– Class Approved Trim and Stability Manual.

– Class Approved Loading Manual.

– Lightship Weight Distribution*

– Total Lightship Weight, LCG and VCG*

– Allowable values of Bending Moment and Shear force*

* *Note:* May be included in the Trim & Stability Manual or Loading Manual

### 3. Plans

– General Arrangement

– Capacity Plan

– Midship Section

– Shell Expansion

– Construction Profile and Deck Plans

– Transverse Bulkhead in midship section plus collision bulkhead plus bulkhead forward of engine room

– Docking Plan Fore End Construction

– Aft End Construction

– Engine Room and Inner Bottom Construction

**4. Additional Information**

– Vents and Overflows

– Cargo Piping Diagram

– Approved Damage Stability Calculations

– Fire/Damage Control Plan

– Bilge and Ballast Piping Diagram

– Pumping Curves (Cargo, Ballast, and Bilge)

– CSR-models or other class models as applicable

Client has a continuing obligation to notify BKI of all changes, additions, and deletions from or to the structure, materials, machinery, and equipment of the vessel.

## D. Database Preparation

**1.** The plans and data for each vessel will be used by BKI to create the computerized ERS Model.

**2.** The computer-generated hydrostatics will be compared to the hydrostatics in the class-approved Trim and Stability Manual to verify the accuracy of the hull model.

**2.1** The vessel is compartmentalized into holds, tanks, and other discrete compartments using the general arrangement, capacity plan and, as necessary and available, construction plans. The volumes and centers of gravity of the computer-generated compartment data are then compared with corresponding values from the capacity plan or table.

**2.2** The lightship weight distribution and centers of gravity are input. The Allowable Shear Force and Bending Moment values are also input.

**2.3** Three hull girder sections are modeled: one midship section, one within the forward cargo space, and one within the aft cargo space. The section modulus is compared to a class-approved calculation.

**2.4** The accuracy of the computer model is then verified by duplicating two or more loading conditions from the vessel's loading manual and comparing the results of displacement, trim, draft, righting arm, and still water bending moment and shear force curves to those in the approved loading manual.

## E Types of Response Analyses

**1.** The BKI ERS team can be called upon to perform analyses of a vessel's residual strength and stability in the aftermath of many possible incidents. Initial data received in the early hours following an incident may be inaccurate and/or limited. This information, however, can be used to make initial decisions relating to the response. As the incident progresses and more information is received, the assigned BKI ERS team may update previously provided recommendations based on the more comprehensive analyses. Some more common examples of required analyses are:

**1.1** Assessment of residual stability with breached compartments, taking into account the rate of cargo outflow and sea water ingress, free surface effects, and the reported actual loading condition of the vessel;

**1.2** Calculation of still-water bending moments and shear forces acting on the vessel's damaged

# Section 3

# ERS Program

## A. Activating/Notifying ERS Team

To activate the ERS team, the Client is to establish verbal communication.

24-hour Emergency Numbers

Jakarta - Indonesia

Primary: (+62) 21 - 43901973

Alternate: (+62) 21 - 4301017

Email ers@klasifikasiindonesia.com

The *ERS Notification Bridge Card* (see Appendix 1) provides a summary of instructions when notifying BKI of the need to activate the BKI ERS team.

### 1. Office Hours

The normal office hours are as listed below. During these normal office hours, a member of the BKI ERS team can be expected to answer the primary emergency telephone. If personnel are temporarily unavailable, the line will automatically transfer to the answering service that will assist the caller until the response personnel can be contacted.

Monday through Friday 7:30 am to 4:30 pm (07.30 to 16.30) – Jakarta Time

### 2. After Office Hours

After office hours and holidays, the call will be answered by the BKI ERS answering service. The caller will be asked for a contact name, vessel's name, call back number, and location. The caller will be asked if he or she wishes to be transferred directly to one of the ERS personnel. If the caller does not have time and wants to be called back, the answering service will locate a team member who will call back as soon as possible. Every effort is made to maintain a response time of less than 30 minutes. In the unlikely event that a call back is not received within 30 minutes, the original call should be repeated.

### 3. After Voice Notification

All inquiries, requests or information made or provided verbally during the telephone conversation are to be followed up in hard copy. The initial report and information is to be sent by fax or e-mail to:

Fax: (+62) 21-43901974

E-mail: ers@klasifikasiindonesia.com

## B. Prosedure for Reporting Incident

### 1. General

**1.1** The initial alerting of BKI of the incident is of primary importance. A simple notification that there has been an incident will help the Response Team make preparations in case they are needed.

**1.2** Once initial reporting has been done, it remains important to follow up with additional information as it becomes available so that the Response Team can provide timely assistance to the vessel. It is therefore important to maintain a direct line of communication and to provide the requested information.

**1.3** The first section of the form *Condition Before Incident – REPORT 1* (see Appendix 2) should be used to transmit this information, although any format containing the same information will be accepted. In general, the main elements of the incident are to be provided. These should include but are not limited to the following:

– Port, date, and time of departure

– Port of planned arrival

– Location, date and time of incident

– Any change in vessel position or orientation from time of incident to time of notification

– Communications information (primarily MarSat or telephone numbers) direct to vessel (if preferred)

– Communications information to vessel's manager or emergency command site

– Type of incident (collision, grounding, explosion, etc.) and extent of damage to the vessel

– Speed and direction of travel at time of incident

– Type of cargo carried

– Special cargo information

– Environmental conditions

– Tidal information if available

## 2. Loading Condition Before the Incident

**2.1** It is important to provide the vessel's loading condition at the beginning of the voyage as well as prior to the incident and the corresponding draft readings for that load condition. This may be in the form of the existing departure loading plan or use the form *Condition Before Incident – REPORT 1* in Appendix 2. This is important to validate the BKI ERS computer model to provide an acceptably close approximation to the actual condition of the vessel immediately prior to the incident.

**2.2** Any changes in the load condition since the departure, such as fuel and water quantities, changes in ballast or fuel transferred, are to be provided. Drafts observed, if available, in the current condition are to be provided.

*Notes:*

– In the vessel's loading portion of Report No. 1, note that there are places for the input of the tankages in "Weight", "% Full" and "Volume." Only <u>one</u> of these units is necessary. The preferred unit is the weight of the cargo in each tank, but if the information is available in either of the other two forms, it will be accepted. If the vessel uses ullages and soundings exclusively for all tanks then the vessel should provide the appropriate tables for the Response Team's use.

– As the density for cargoes and fuels vary greatly, it is always necessary to provide the particular density for the item listed.

## 3. Collision/Damage Condition

**3.1** The following information is to be provided using *Collision/Damage Condition – REPORT 2* from Appendix 2 or other means as available:

– Provide draft readings and angle of list. Record at regular intervals and report any change.

– Sound all tanks and voids at regular intervals and report any differences from initial as-damaged loading condition. Report any liquid levels (increase or decrease). If the levels are increasing or decreasing, try to establish the rate of change by sounding the tanks at defined intervals.

– Provide a list of all known tanks that are damaged, noting whether the flooding is from the sea or from other tanks.

– Provide wind, sea, tide, and other weather conditions.

– Provide any relevant details that could be associated with the structural integrity or stability of the vessel.

## 4. Grounding

**4.1** The details of the grounding are to be reported, if applicable, using *Grounding Condition – REPORT 3* in Appendix 2 or other means as follows:

– Provide vessel's exact location by latitude and longitude and/or distance and direction from known landmark.

– Provide vessel's heading and note if heading changes or remains constant. Provide a sketch of vessel's location relative to the channel or other known bottom features or landmarks.

– Provide tide data including times and heights for at least the next 72 hours and include the tide information at the time of the grounding.

– Provide estimate of portion of hull believed to be aground with reference to frames and estimated distances from centerline or side (if possible).

– Provide information on the type of bottom, if possible (e.g., sand, sediment, rock, mud).

**4.2** Record information at regular intervals noting the time and the height of the tide for each set of data as follows:

– Record drafts on both sides of the vessel at the bow, amidships, and aft. Alternatively, measure freeboards along each side.

– Take soundings of water depths around the vessel including forward, aft and several on each side (or as appropriate to the situation).

– Provide diver's underwater survey of grounding contact (if available at a later time).

## 5. Structural Damage

**5.1** Any structural damage known is to be reported using *Structural Damage – REPORT 4* in Appendix 2 or other means as available.

– Report any known or suspected damage below the waterline. Include any tanks or other

compartments that are observed to be flooding. Provide suspected source of flooding, such as hull damage, internal bulkhead damage, piping damage.

– Provide diver's underwater survey of damage, when available.

– It is important to have photos of all damages. If practicable, photos should be accompanied with descriptions of locations and extent of damages. The date and time of all photographs must be noted.

## C. Survey Recommendations

**1.** Analysis results and information data of BKI-classed vessels will be submitted to BKI Survey Division to support recommendations for issuing a Conveyance Certificate for a transit voyage. Recommendations will consider information provided by the Client about the intended transit route, proposed loading condition, and precautionary means for the transit voyage, which may address temporary repairs, available ports of refuge and cargo transfer.

**2.** Surveyors must be called upon to assess the vessel's condition, temporary repairs necessary, and fitness to proceed in consultation with the Client's on-site representative. Ultimate responsibility for decisions taken to improve the survivability of the vessel resides with the Client and vessel captain at all times, and the information and reports provided by the BKI ERS team are intended solely to support this decision- making process.

## D. Client Deliverables

Upon completion of the vessel response, BKI will prepare a report with the information covering the analysis used to support and respond to the vessel incident. Common items included in the report may include:

– Initial Conditions

– Transit and Temporary Repairs

– Further Analysis

# Appendix 1

## ERS Notification Bridge Card

**BKI ERS "Bridge Card"**
***EMERGENCY RESPONSE SERVICE (ERS) NOTIFICATION***
*Damage Stability, Hull Strength Assessment and Other Technical Support*

The BKI ERS program provides ERS services for our client vessels. Contact numbers are as follows:

| | | |
|---|---|---|
| **1. Call** | **24 Hour Emergency Number** | **: +62-21-43901973** |
| | **Backup** | **: +62-21-4301017** |
| **2. After Voice Contact - Send report by Fax or Email** | | |
| | **Fax** | **: +62-21-43901974** |
| | **Email** | **: ers@klasifikasiindonesia.com** |

Do not wait to collect information before calling. Immediately notify BKI and provide additional information when available.

**Information Required in the Event of an Emergency:**

**Departure Loading Condition and Drafts:** The vessel's loading condition at the beginning of the voyage including weight/volume of all cargo, fuel, water, consumables and the corresponding drafts. This may be in the form of vessel's loading plan, if available.

**Cargo and fuel:** Name/type and specific gravity, API°, density or stowage factor.

**Current Loading Condition at time of Incident:** Any changes in cargo or ballast quantities and the amount of all consumables remaining and, if possible, the estimated rates of consumption.

**Condition after casualty:** The vessel's drafts and angle of heel after the casualty. Indicate if these are estimated or actual readings. Indicate if trim and heel are constant or changing with time and at what rate. Any flooding of compartments and accumulations of fire fighting water.

**Damage:** As complete a description as possible of the damage to the vessel. This should include the location of damaged compartments and the extent of structural damage. It is also important to describe how the extent of damage was determined (e.g., by visual examination of the spaces or by tank soundings).

**Grounding:** Measured drafts or freeboards. Take soundings of water depths around the vessel. Provide time and date and tidal height when measurements were taken. Provide local tide height at time and date of grounding and high/low tide information for next 72 hours.

**Location and Weather:** The vessel's location, the weather conditions in the area, the sea state, and the predicted weather and sea conditions for the next 72 hours.
**Contact Information:** Email address, telephone and fax numbers (including back-up information) to set up a communication link between the BKI Response Team and the vessel and/or vessel managers.

This page intentionally left blank

# Appendix 2

## Laporan

*Reports*

**Kondisi Sebelum Kejadian – Laporan 1**
*Condition Before Casualty – Report 1*

**INFORMASI UMUM :**
*GENERAL INFORMATION :*

Nama Kapal : _____
*Vessel Name*

Nomor IMO : _____
*IMO Number*

Galangan Pembangun : _____
*Builder/Hull:*

Nama Penghubung : _____
*Contact Name:*

Nomor Telepon Satelit : _____
*Sat. Phone No.*

No Telepon : _____
*Telephone No*

Nomor Fax : _____
*Fax No.*

Email : _____
*E-mail:*

Pemilik Vessel / Manajer
*Owner Vessel /Manager:*

Nama Penghubung : _____
*Contact Name:*

No Telepon : _____
*Telephone No*

Nomor Fax : _____
*Fax No.*

Email : _____
*E-mail:*

Pelabuhan Asal : _____ Tanggal : _____
*Departure Port* *Date*

Tujuan : _____
*Destination*

## PEMUATAN :
*LOADING:*

### Tangki Muat/ Ruang Muat
*Cargo Tanks / Cargo Holds:*

| Nama Tangki/Ruang Muat<br>*Tank/Hold Name* | Berat (ton)<br>*Weight (tonne)* | % Penuh<br>*% Full* | Isi (M3)*<br>*Volume (M3)** | Kapasitas (M3)*<br>*Capacity (M3)** | Berat Jenis MT/m3<br>*Density MT/m3* |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

### Tangki Bahan Bakar
*Fuel Oil Tanks:*

| Nama Tangki<br>*Tank Name* | Berat (ton)<br>*Weight (tonne)* | % Penuh<br>*% Full* | Isi (M3)*<br>*Volume (M3)** | Kapasitas (M3)*<br>*Capacity (M3)** | Berat Jenis MT/m3<br>*Density MT/m3* |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

### Tangki Minyak Pelumas
*Lube Oil Tanks:*

| Nama Tangki<br>*Tank Name* | Berat (ton)<br>*Weight (tonne)* | % Penuh<br>*% Full* | Isi (M3)*<br>*Volume (M3)** | Kapasitas (M3)*<br>*Capacity (M3)** | Berat Jenis MT/m3<br>*Density MT/m3* |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

**Tangki Minyak Diesel**
*Diesel Oil Tanks:*

| Nama Tangki<br>*Tank Name* | Berat (ton)<br>*Weight (tonne)* | % Penuh<br>*% Full* | Isi (M3)*<br>*Volume (M3)** | Kapasitas (M3)*<br>*Capacity (M3)** | Berat Jenis MT/m3<br>*Density MT/m3* |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

**Tangki Air Tawar**
*Fresh Water Tanks:*

| Nama Tangki<br>*Tank Name* | Berat (ton)<br>*Weight (tonne)* | % Penuh<br>*% Full* | Isi (M3)*<br>*Volume (M3)** | Kapasitas (M3)*<br>*Capacity (M3)** | Berat Jenis MT/m3<br>*Density MT/m3* |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

**Tangki Tolakbara**
*Sea Water Ballast Tanks:*

| Nama Tangki<br>*Tank Name* | Berat (ton)<br>*Weight (tonne)* | % Penuh<br>*% Full* | Isi (M3)*<br>*Volume (M3)** | Kapasitas (M3)*<br>*Capacity (M3)** | Berat Jenis MT/m3<br>*Density MT/m3* |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

## Tangki Lainnya
*Miscellaneous Tanks:*

| Nama Tangki<br>*Tank Name* | Berat (ton)<br>*Weight (tonne)* | % Penuh<br>*% Full* | Isi (M3)*<br>*Volume (M3)** | Kapasitas (M3)*<br>*Capacity (M3)** | Berat Jenis MT/m3<br>*Density MT/m3* |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

## Konstan
*Constants:*

| Item<br>*Item* | Berat (ton)<br>*Weight(tonne)* | Koreksi<br>*Corrections* |
|---|---|---|
| Konstan<br>*Constant* | | |
| Perbekalan<br>*Provision* | | |

* Pada berat jenis = 1
*at a SG = 1.0*

## Sarat
*Drafts:*

| | | | |
|---|---|---|---|
| Haluan<br>*fwd* | | ( m) | |
| Buritan<br>*Aft* | | ( m) | |
| Sudut Oleng<br>*Angle of Heel* | | Derajat<br>*degrees* | (Kiri/Kanan)**<br>*( P / S )* |
| Berat Jenis Air pada Kondisi Sarat di atas<br>*S.G. of water at above draft condition* | | | (tonne/m3) |

** Coret yang tidak perlu
*Delete as appropriate*

**Kondisi Tabrakan/Kerusakan – Laporan 2**
*Collision / Damage Condition – Report 2*

Jenis Kejadian (Tabrakan / Kebakaran / Ledakan / Cuaca Buruk / Es / Lainnya)*
*Type of Casualty: (Collision / Fire / Explosion / Severe Weather / Ice / Other)**

Tanggal: Waktu: (Setempat / GMT*)
*Date:* *Time:* *( Local / GMT* )*

Lokasi : Lintang :
*Location* *Lat*
Bujur :
*Long*
Umum :
*General*

Cuaca :
*Weather*
Angin : Knots
*Wind*
Gelombang : (m)
*Wave*
Pasang Surut : (m)
*Tide*:
Kedalaman Air : (m)
*Water depth*
Prakiraan Cuaca :
*Forecast*

Sarat :
*Drafts*
Haluan : (m)
*Fwd*
Buritan : (m)
*Aft*
Sudut Oleng : Kiri / Kanan *
*Angle of Heel:* *( P / S )**

* Coret yang tidak perlu
*Delete as appropriate*

Penjelasan Umum yang diketahui (sketsa gambar bila perlu)
*General description as known (sketch diagrams as needed):*

This page intentionally left blank

**Kondisi Kandas – Laporan 3**
*Grounding Condition – Report*

Tanggal: Waktu: (Setempat / GMT*)
*Date:* *Time:* *( Local / GMT* )*

Lokasi : Lintang :
*Location* *Lat*
Bujur :
*Long*
Umum :
*General*

**Kondisi Lingkungan**
*Environmental Conditions:*

Angin : Knots
*Wind* .
Gelombang : (m)
*Wave*
Pasang Surut : (m)
*Tide*:
Interval : (m)
*Range*
Ketinggian saat kejadian : (m)
*Level at time of incident*
Kedalaman Air :
*Water depth:*
Berat Jenis : (tonne/m3)
*S.G.*
Perkiraan saat kandas : (m)
*Estimate at grounding*

Jenis dasar pada titik kandas ( pasir / endapan / karang / lumpur* )
*Type of bottom at grounding point: ( Sand / Sediment / Rock / Mud* )*

Prakiraan Cuaca :
*Forecast*

**Sarat : (Perkiraan / Terukur*)**
*Drafts*(Estimated / Measured*)
Haluan Kiri (m)
*Fwd (P)*
Haluan Kanan (m)
*Fwd (S)*
Buritan Kiri (m)
*Aft (P)*
Buritan Kanan (m)
*Aft (S)*
Sudut Oleng Kiri / Kanan *
*Angle of Heel:* *( P / S* )*

* Coret yang tidak perlu
*Delete as appropriate*

**Perkiraan Titik Kandas :**

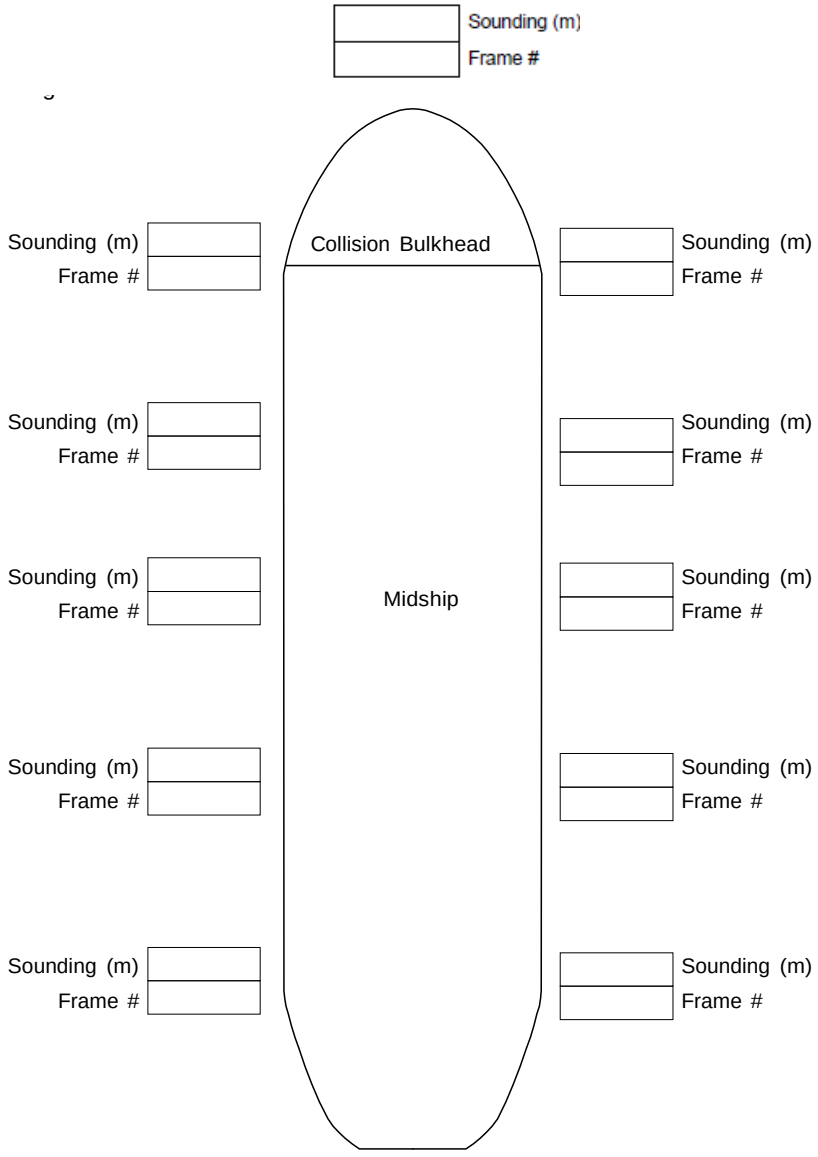
*Estimated Grounding Point*

| | | |
|---|---|---|
| Jarak Titik Sentuh Belakang<br>*Aft. Long. Contact Point* | : | (m) dari (Midship atau AP) |
| Jarak Titik Sentuh Depan<br>*Fwd. Long. Contact Point* | : | (m) dari (Midship atau AP) |
| Lebar Titik Sentuh<br>*Transverse Extent* | : | (m) |

**Silakan isi dalam sketsa berikut dilengkapi informasi sebanyak mungkin ;**
*Please fill in the following sketch with as much information as possible*

| | Kiri<br>*Port* | Kanan<br>*Starboard* |
|---|---|---|
| Sarat Haluan (m)<br>*Fwd. Draft* | | |
| Sarat Buritan (m)<br>*Aft draft* | | |

| | |
|---|---|
| Tanggal Pembacaan<br>*Date of Readings* | |
| Waktu<br>*Time (GMT)* | |
| Arah kapal<br>*Vessel Heading* | |



This page intentionally left blank

**Kerusakan Struktur – Laporan 4**

*Structural Damage – Report 4*

Penjelasan Umum
*General Description:*

Kompartemen yang bocor yang terhubung langsung dengan air laut
*Compartments breached to open water:*

Kompartemen yang terhubung dengan kompartemen lainnya
*Compartments opened to other compartments:*

Lokasi kerusakan struktur (sket diagram dan kirim foto bila perlu)
*Structural damage location (sketch diagrams and submit photos as needed)*

Uraikan tindakan apa saja yang telah dilakukan
*List any actions that have already been taken:*

Tindakan apa yang diusulkan?
*What actions are proposed?*

Catatan : Foto yang dikirim hendaknya dilengkapi dengan penjelasan lokasi dan tingkat kerusakan
*Note: Submitted photos should include descriptions of locations and extent of damages*

This page intentionally left blank