INTERNATIONAL MARITIME ORGANIZATION

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ROLE OF THE HUMAN ELEMENT

Near-miss information

Submitted by Liberia

SUMMARY

Executive summary:	This document provides draft guidance to address near-miss reporting and information based on the lack of near-miss reporting in the industry
Strategic direction:	5.4
High-level action:	5.4.1
Planned output:	5.4.1.1
Action to be taken:	Paragraph 4
Related documents:	MSC-MEPC.7/Circ.4; MEPC 56/17/7 and MEPC 56/23

Background

1 The Human Element Action Plan at annex to MSC-MEPC.7/Circ.4, specifies action plans to be taken by the Organization with regard to the Human Element. One primary issue specified is the need to provide relevant and user-friendly documentation to assist both seafarers and companies to ensure safety and environmental protection. In particular, paragraph 5.1.3 of the annex to MSC-MEPC.7/Circ.4 mentions near-miss reporting where the Human Element is involved as a topic that should be addressed by the Organization.

2 The topic was discussed at length by the Joint MSC-MEPC Working Group on the Human Element at MEPC 56. As noted in paragraph 17.29 of Committee Report, MEPC 56/23, the submission by Liberia (MEPC 56/17/7) forms a basis for consideration at the next session of the Joint MSC-MEPC Working Group on the Human Element.

3 Consequently, Liberia has taken into consideration the comments made at MEPC 56 and prepared draft guidance on near-miss reporting, as set out at annex.

Action requested of the Committee

4 The Committee is invited to consider the information provided on near-miss information as set out at annex and decide as appropriate.

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ANNEX

GUIDANCE ON NEAR MISS REPORTING

1 Introduction

1.1 Why investigate near-misses? Companies must investigate near-misses as a regulatory requirement under the "Hazardous Occurrences" part of the ISM code. Aside from the fact that near-miss reporting is a requirement, it also makes good business and economic sense because it can improve vessel and crew performance and in many cases, reduce costs. In many high hazard industries, prevention of a 300th near-miss is estimated to save 1 life (US$3m), or to prevent a major spill (US$60,000 per tonne), or to avoid major damage to ship equipment or cargo (with associated costs). Additionally, investigating near-misses is an integral component of continuous improvement in quality management systems. Learning the lessons from near-misses should help to improve safety performance since near-misses share the same underlying causes as losses.

For an organization to realize the fullest potential benefits of near-miss reporting, seafarers and onshore employees need to know their organization's definition of a near-miss to ensure that all near-misses are reported.

2 Defining near-miss

2.1 Near-miss: A sequence of events and/or conditions that could have resulted in a loss, or in an outcome with more severe consequences than actually occurred. This loss was prevented only by a fortuitous break in the chain of events and/or conditions. The potential loss could result from human injury, environmental damage, or negative business impact (e.g., repair or replacement costs, scheduling delays, contract violations, loss of reputation).

2.2 Some general examples of a near-miss help to illustrate this definition:

.1 Any event that leads to the implementation of an emergency procedure, plan or response and thus prevents a loss. For example, a collision is narrowly avoided; or a crew member double checks a valve and discovers a wrong pressure reading on the supply side.

.2 Any event where an unexpected condition could lead to an adverse consequence, but which does not occur. For example, a person moves from a location immediately before a crane unexpectedly drops a load of cargo there; or a ship finds itself off-course in normally shallow waters but does not ground because of an unusual high spring tide.

.3 Any dangerous or hazardous situation or condition that is not discovered until after the danger has passed. For example, a vessel safely departs a port of call and discovers several hours into the voyage that the ship's radio was not tuned to the Harbour Master's radio frequency; or it is discovered that ECDIS display's scale does not match the scale, projection, or orientation of the chart and radar images.

2.3 Definitions of near-misses can vary based on trade, local statutes, operating style, and safety culture. Therefore, these matters should be taken into consideration when preparing near-miss definitions.

3 Overcoming barriers to reporting near-misses

3.1 There are many barriers related to the reporting of near-misses. In many cases, near-misses are only known by the individual(s) involved who chose to report or not report the incident. Some of the chief barriers to the reporting of near-misses include the fear of being blamed, disciplined, embarrassed, or found legally liable. These are more prevalent in an organization that has a blame-oriented culture. Other barriers are unsupportive company management attitudes such as complacency about known deficiencies; insincerity about addressing safety issues and discouragement of the reporting of near-misses by demanding that seafarers conduct investigations in their own time.

3.2 These barriers can be overcome by management initiatives such as:

.1 Establishing a blame-free near-miss reporting company culture.

.2 Assuring anonymity for reporting near-misses, both through company policy and by "sanitizing" analyses and reports so that the names of persons associated with a near-miss, are removed and remain confidential.

.3 Ensuring that investigations are adequately resourced.

.4 Following through on the near-miss report suggestions and recommendations. Once a decision has been made to implement, or not implement, the report's recommendations, this decision must be explained to the person who submitted the report and/or the recommendation. Without this feedback reporting will cease, because it will be seen to be a waste of time.

4 The near-miss investigation process

4.1 As a minimum, the following information should be gathered about any near-miss:

.1 Who and what was involved?

.2 What happened, where, when, and in what sequence?

.3 What were the potential losses and their potential Severity?

.4 What was the likelihood of a loss being realized?

.5 What is the likelihood of a recurrence of the chain of events and/or conditions that led to the near miss?

4.2 The answers to these questions will determine if an in-depth investigation is needed, or if a cursory report will suffice. An in-depth investigation is required of those near-misses which are likely to recur and/or which could have severe (or worse i.e. catastrophic) consequences. Examples of severe consequences include one or more serious injuries; a release from a cargo tank causing serious damage to the environment; or major damage to the vessel estimated to cost between US$100,000 – US$10,000,000.

4.3 A low-level investigation with short report is appropriate if the potential consequences are estimated to be minor (e.g., below the damage and/or cost-related thresholds in 4.2). An example of a minor near-miss is when routine maintenance reveals that a gasket was severely worn and that it was the wrong gasket for the equipment.

4.4 Once a decision has been taken to proceed with a full investigation, further decisions are taken about how much staffing is required, who should be responsible, and what resources are required for the investigation to be completed successfully. The main steps in the investigation are:

Gathering near miss information

4.5 Some of the initial questions that should be asked as a part of the information gathering stage of a near-miss investigation include:

.1 Is the risk associated with this near-miss well understood?

.2 Should the potential near-miss consequences be considered an acceptable risk? If a decision has been made that the risk from this near miss is acceptable, then an investigation would not result in any significant changes.

.3 Are adequate safeguards in place to protect the workers and the public against these near-misses? If adequate safeguards are provided, then an investigation would not result in any significant changes.

4.6 Regardless of the nature of the near-miss, the basic categories of data that should be gathered include: people, paper documents, electronic data, physical, and position/location. These data are vital for ensuring that an understanding can be reached about what, how, who, and eventually why the near-miss occurred. Data gathering is done by interviews of key personnel and the collection of physical, position and location data, using such things as photographs, VDR recordings, charts, logs, or any damaged components.

Analyzing Information

4.7 Three tools or techniques commonly used to analyze near-miss data are: causal factor charting, fault tree analysis, and the “Five Whys” technique. Other tools can also be used, such as hazard and operability analysis and components of task analysis.

4.8 Applying data analysis techniques helps to identify information that still needs to be collected to resolve open questions about the near-miss and its causes. This can make the collection of additional data more efficient. The end goal of this activity is to identify all causal factors.

Identifying Causal Factors and Root Causes

4.9 At this point the who, what, where, why, and when of the near-miss is understood, and the human errors, structural/machinery/equipment/outfitting problems, and external factors that led to the near-miss, have been identified. The next step is to better understand the causal factors that contributed to the near-miss so that root causes can be identified. There are a variety of identification methods for this purpose, including taxonomies of causes. These can be used for deep probing past the most evident causes through to underlying root causes of the near-miss.

Developing and Implementing Recommendations

4.10 Any recommendations made need to address all of the identified causal factors to improve organizational and shipboard policies, practices and procedures. Implementing appropriate recommendations is the key to eliminating or reducing the potential for the reoccurrence of similar near-misses or more serious losses.

Completing the investigation

4.11 Completion of the investigation process requires the generation of a report (either brief or extensive, depending on the depth of analysis performed and the extent of risk), and in codifying and storing the information in a way that supports subsequent (long term) trend analysis.

Reporting

4.12 The ultimate objective of near-miss identification, analysis and reporting is to identify areas of concern and implement appropriate corrective actions to avoid future losses. To do so requires that reports are to be generated, shared, read, and acted upon. It may take years for safety trends to be discerned, and so reporting must be archived and revisited on a timely basis.

4.13 Since near miss reports should be trended along with actual casualty or incident reports, there must be consistency in the identification and nomenclature of causal factors across near-miss and casualty/incident reports.

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