

## CHIRP ANALYSIS OF INCIDENT AND NEAR MISS REPORTS RECEIVED 2021-2022

### Introduction

CHIRP improves safety at sea through the provision of a confidential and independent incident and near miss reporting programme. The annual reporting cycle begins 01 April and completes 31 March the following year. This report covers the period 2021-2022.

### Analysis

250 maritime reports were initiated between 01 April 2021 and 31 March 2022. This is more than in previous years however several contained incomplete information or assessed as suspicious and thus rejected. The ratio of the accepted reports (figure 1) was 86% incidents to 14% near misses. It is a CHIRP focus to increase the latter.

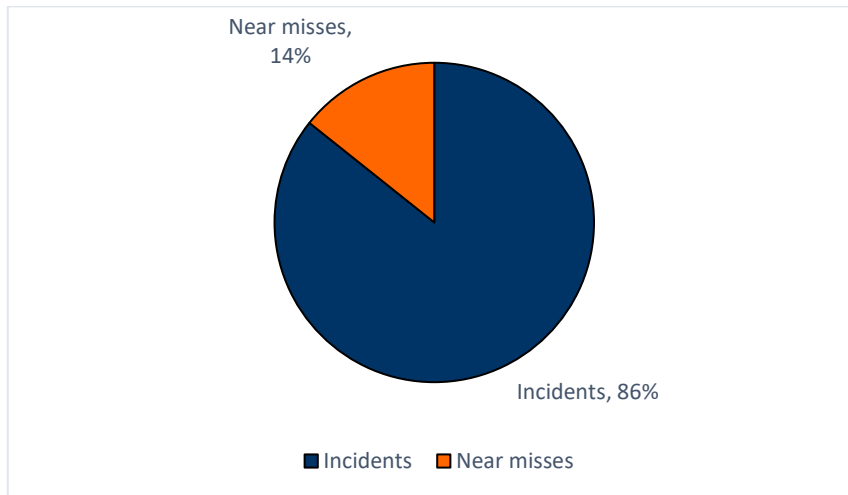


Figure 1: The ratio of incident reports compared to near miss reports

Tragically 10% of incidents resulted in a fatality, a further 32% resulted in non-fatal personal injury, 26% in damage to the vessel and/or equipment and in a further 6% environmental pollution occurred (figure 2).

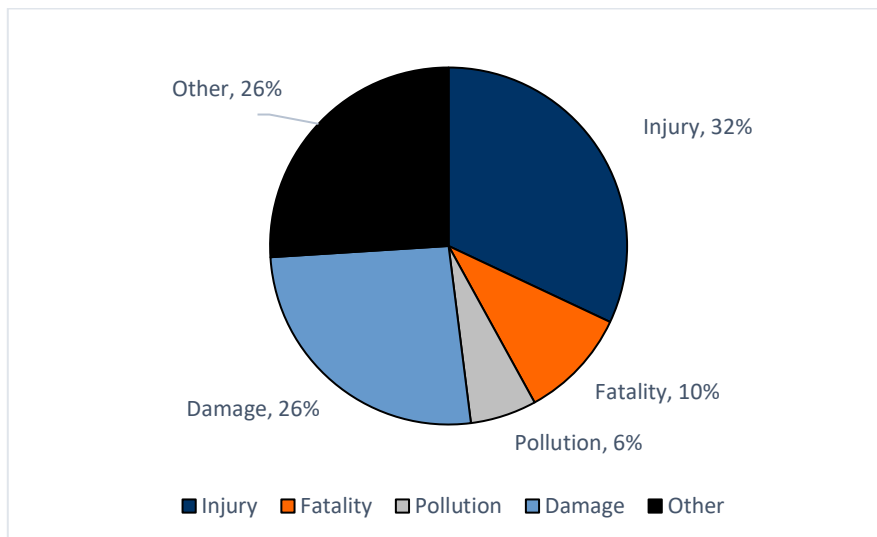


Figure 2: Incident outcomes

The remaining 26% inter alia includes non-damaging disruption to marine operations (eg dragging anchor or unplanned return to harbour) and adverse crew welfare outcomes (retention, mental health).

The most common vessel types mentioned in received reports (figure 3) were tankers (50%), bulk carriers (14%) container vessels (11%) and cargo (10%).

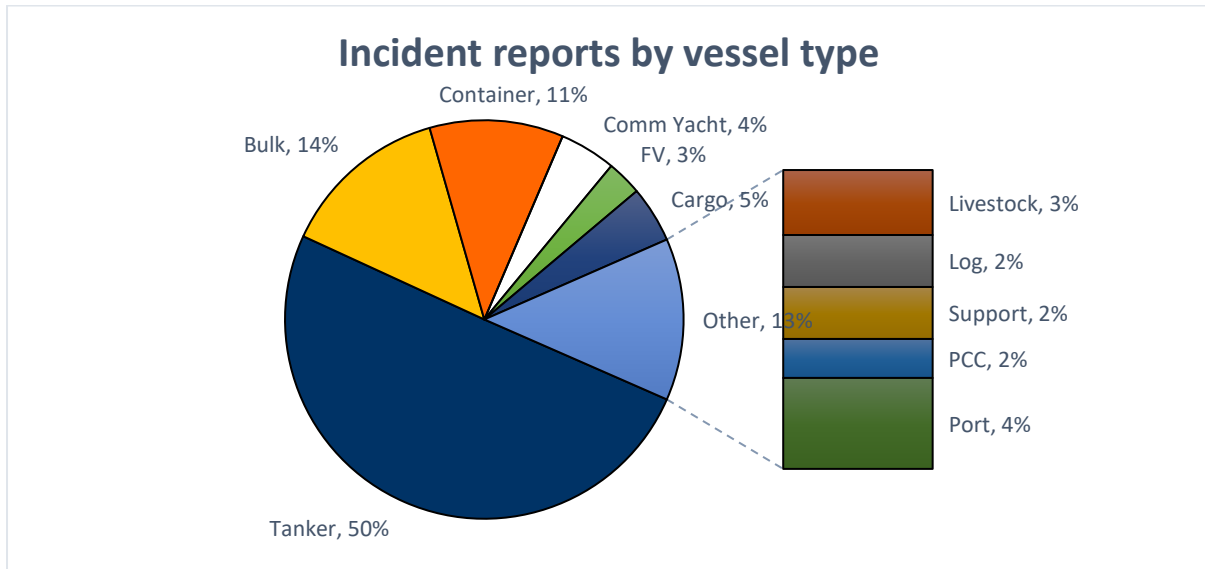


Figure 3: Received reports by vessel type

A comparison of received reports against the global merchant fleet<sup>1</sup> (figure 4) suggests that *CHIRP* should focus on encouraging more reports from the general cargo, bulk cargo and passenger sectors to improve representation of the world merchant fleet.

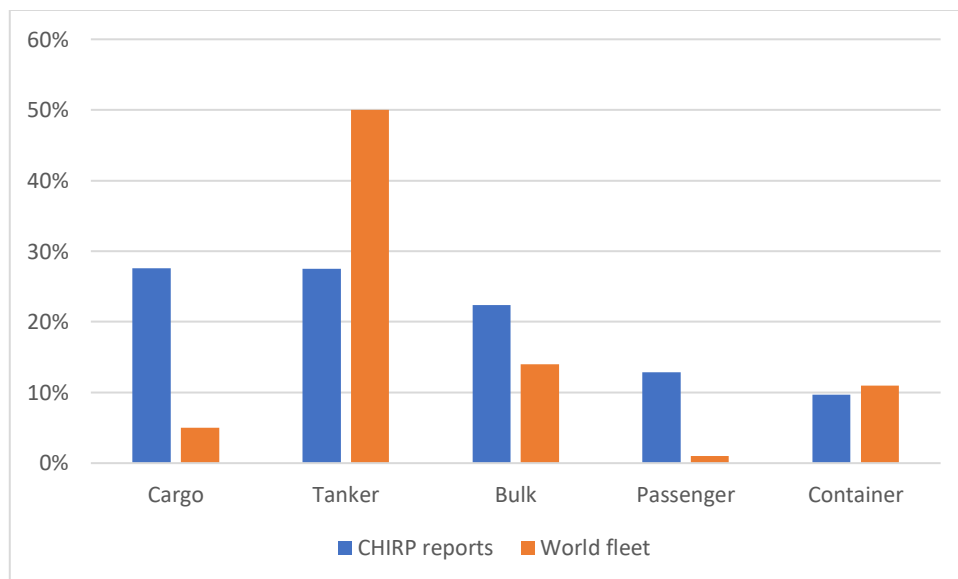


Figure 4: A comparison of received reports against global merchant fleet

Our analysis indicates that the activities most likely to result in an accident or near miss report are:

<sup>1</sup> Source: [www.statista.com](http://www.statista.com)

- Incorrectly rigged, defective or otherwise non-compliant pilot ladders (26%).
- Inshore navigation eg allision, collision and groundings (25%)
- Equipment defects and breakdowns resulting from inadequate maintenance (25%).
- Mooring operations (19%).
- Bunkering (5%).

Most of these incidents occur either in port/harbour or in inshore waters, arguably the locations of greatest vessel congestion and hazard concentration. However, pilot embarkation, passage planning, engineering maintenance and mooring are all *planned* events which can be made safer through an understanding of their common underlying latent causes.

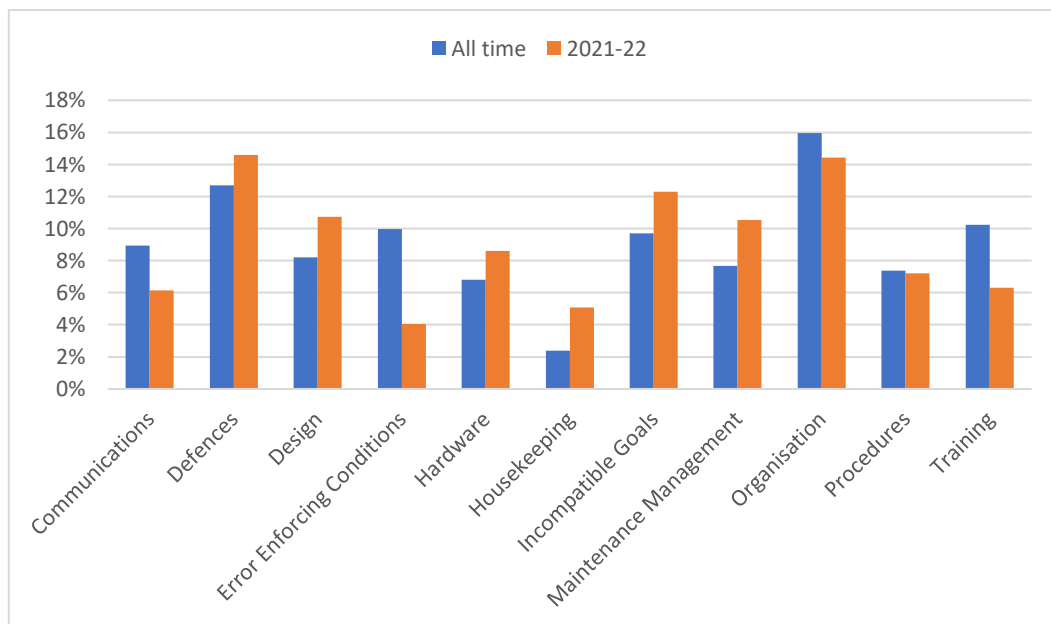


Figure 5: Comparison of 2021-22 latent factor causes vs long-term trend

### Latent causes

CHIRP analysed the 2021-22 reports received against its database of reports which goes back to 2003 in order to contextualise the current reports against the long-term baseline. The top latent causes identified in 2021-22 were:

- **Organisation:** Inadequate planning and co-ordination because of real- or perceived-time pressures. In one incident a vessel was not made aware of the cargo it would embark or disembark until it was almost alongside, which made forward planning impractical.
- **Defences:** There was often an insufficient awareness of the risks either because the risk assessment was inadequate or because there was insufficient time or crew to properly assess the risks. In several incidents this meant that the crew was unprepared to deal with the incident because they had not prepared or briefed an emergency plan.
- **Maintenance management:** Several of the most serious incidents occurred either because routine maintenance had not been correctly carried out, or because equipment was left in a dangerous condition. This is often caused by insufficient crew or because the workload is so high that things get missed.

- **Design:** Vessel and equipment design was commonly cited as an incident cause eg hull designs which prohibit the rigging of SOLAS-compliant pilot ladders. Unlike the aviation sector there are few maritime industry-standard equipment design standards and this also contributed to several incidents.
- **Incompatible goals:** Discrepancies between formal and informal practices (eg taking short cuts).

### Human factors

Safety culture, teamwork and local practices were the most common underlying human factors in 2021-22 (figure 6). These all reflect the attitudes and behaviours of a vessel or organisation’s senior leaders. Although not borne out by the number of received reports, fatigue and distractions are significant problems but are currently vastly under reported.

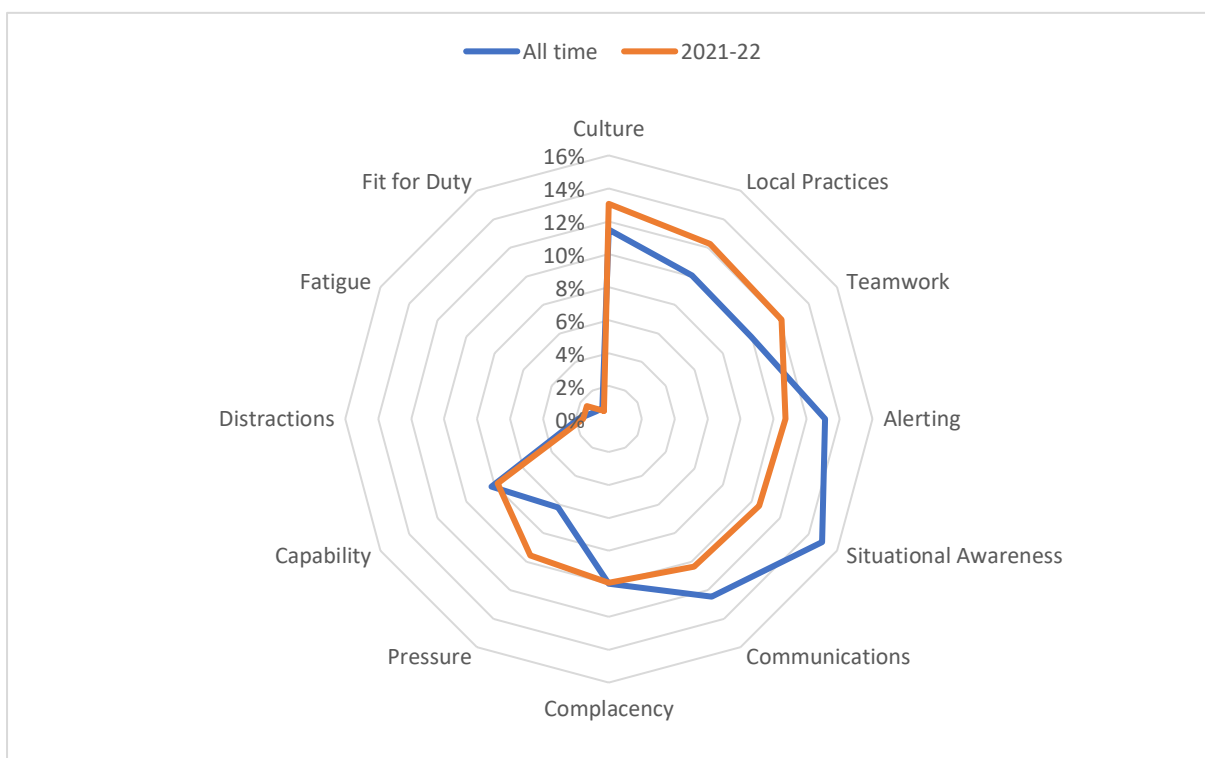


Figure 6: comparison of 2021/22 human factor causality vs long-term trends

### Five ways to improve safety outcomes

CHIRP proposes the following 5 practical priorities which will substantially address the top latent causes and human factors identified in their received reports and which will foster a strong learning culture:

- **Empowering crews to speak up.** Encourage a positive and open reporting culture on board. Instil confidence by celebrating when crew members speak up.
- **Time/capacity.** Although difficult, generate time for proper planning and preparation by giving as much notice as possible about future events.
- **Risk awareness.** Robust risk assessment and planning - even for routine and repetitive tasks – will maintain focus on safety and avoid the risk of complacency.
- **Training.** Pilots are often the first people to notice that a pilot ladder has been incorrectly rigged or is non-compliant. Provide training in the correct maintenance and rigging of ladders.
- **Supervision.** Improved supervision – particularly the signing off of completed tasks (eg routine maintenance, rigged pilot ladders etc) ensures safety standards are maintained.

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19 Apr 22