BSAFE

INCIDENT CASE STUDY No.9

BRITANNIA COMMENTARY | JULY 2021

AS PART OF THE CASE STUDY MATERIAL, THE FOLLOWING COMMENTARY HAS BEEN PREPARED TO FURTHER CONSIDER SOME OF THE KEY ISSUES IN ORDER TO SUPPORT REFLECTIVE LEARNING.

The first two pages of this commentary discuss some of the contributory factors and lessons learned in more detail with particular reference to best practices. The final page graphically illustrates some of the barrier control measures that could have potentially mitigated against the risks associated with the hazards by making use of Britannia's interpretation of the Hierarchy of Barrier Controls triangle as a framework.

FALL OF A HEAVY OBJECT, RESULTING IN INJURY

THE CAUSES OF THIS INCIDENT APPEAR TO BE CONNECTED WITH THE FAILURE OR ABSENCE OF SEVERAL RISK CONTROLS AND SAFETY BARRIERS IN THE SHIP'S SAFETY MANAGEMENT SYSTEM (SMS), AS WELL AS THE INEFFECTIVE SAFETY CULTURE WITH THE INVOLVED PERSONNEL WHICH COLLECTIVELY CONTRIBUTED TO THE INCIDENT.

The contributing factors and lessons learned identified by this case study are discussed below.

RISK ASSESSMENT AND SMS PROCEDURES

The ship's SMS did not contain a risk assessment or a procedure for the stowage and handling of the hatch cover lifting gear. The involved crew were qualified seafarers but they had limited experience with this particular ship. As there was no procedure to follow, they had adopted their own method of carrying out the lifting operation which turned out to overlook some of the inherent risks which contributed to the incident. A systematic and structured assessment should have identified and mitigated these risks.

LIFTING PLAN AND FALL ZONE ASSESSMENT

The ship's SMS did not provide any guidance for the preparation of a lifting plan and the identification of fall zones. Had a fall zone assessment been undertaken, it would have been evident that it was unsafe for the crew to position themselves so close to the suspended load.

NORMALISING THE RISK

The previously experienced snags when attempting to hoist the lifting gear should have prompted a warning and resulted in a Near Miss report, followed by appropriate corrective action. As the crew had been able to resolve the snags without difficulty in the past, this might have reinforced their belief that their actions were not unduly hazardous. Exposure to risk without consequence may result in a misplaced sense of safety and eventually contribute to an incident.

COMPLACENCY

Complacency may lead the involved personnel to take shortcuts to save time or effort. It is likely to become a factor with repeating activities, or when under pressure. As deck preparations for loading had been delayed by weather, the pressing need to complete them apparently contributed to the situation where the involved crew, under time pressure, switched to the previously embedded behaviour which turned out to be unsafe. Incorrect assumptions about the safety of the work environment and the required control measures can also lead to incidents and injuries. This can be avoided by training oneself to take a minute to think about the task, consider what can go wrong, and how to minimise these risks.

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STOP WORK AUTHORITY (SWA)

The operation to hoist the lifting gear was not called to a halt when the A/Bs positioned themselves underneath or close to the suspended load. Any of the crew on deck, including the crane driver, could have stopped the operation, in particular the C/O or the BSN, who were in supervisory roles. Had they intervened, the incident could have been prevented.

This ultimate safety barrier can be supported by implementing a Stop Work Authority (SWA) programme, providing all crew members with the responsibility and obligation to stop work in case of an apparent unsafe condition or behaviour. A successful SWA programme should enable the crew to use this authority without retribution, as a key element of an effective onboard safety culture.

DEDICATED STORAGE AREA

The ship had not been built with a dedicated storage area for the hatch cover lifting gear. Consequently, the crew had developed a local arrangement which appeared appropriate because it was accessible. However, it was evident that this storage arrangement was not appropriate due to a significant number of potential snagging hazards, and that a more suitable alternative was required. A formal risk assessment process would have identified it as an unsuitable location for the stowage of the lifting gear, and prompted a consideration for alternative options.

MAINTENANCE AND LOGGING OF THE LIFTING GEAR

The load fell because the synthetic fibre sling used to lift it parted under tension. It was reasonable to use such a fibre sling as its SWL was more than twice the weight of the load being lifted. However, the fibre sling in use was in a poor condition, with local damage, soiling and illegible identification markings. In result, it should have been discarded.

The ship's Register of Lifting Appliances and Cargo Handling Gear had no record of the cargo hold hatch cover lifting gear, or the fibre sling used at the time of the accident. An accurate register recording the survey, testing and maintenance of all lifting equipment held on board is a vital component of an effective SMS. Such a record, combined with a suitable system of tagging or marking, would have helped to ensure that uncertificated or inadequately maintained lifting equipment is easily identified and isolated to prevent its inadvertent use.

SEE NEXT PAGE FOR HIERARCHY OF BARRIER CONTROLS DIAGRAM

THIS CASE STUDY IS DRAWN FROM THE INVESTIGATION REPORT 11/2020 PUBLISHED BY THE MARINE ACCIDENT INVESTIGATION BRANCH (MAIB) AT:
https://www.gov.uk/maib-reports/fall-of-a-suspended-load-on-general-cargo-vessel-zea-servant-injuring-2-crew

THE PURPOSE OF THIS CASE STUDY IS TO SUPPORT AND ENCOURAGE REFLECTIVE LEARNING. THE DETAILS OF THE CASE STUDY MAY BE BASED ON, BUT NOT NECESSARILY IDENTICAL TO, FACTS RELATING TO AN ACTUAL INCIDENT. ANY LESSONS LEARNED OR COMMENTS ARE NOT INTENDED TO APPORTION BLAME ON THE INDIVIDUALS OR COMPANY INVOLVED. ANY SUGGESTED PRACTICES MAY NOT NECESSARILY BE THE ONLY WAY OF ADDRESSING THE LESSONS LEARNED, AND SHOULD ALWAYS BE SUBJECT TO THE REQUIREMENTS OF ANY APPLICABLE INTERNATIONAL OR NATIONAL REGULATIONS, AS WELL AS A COMPANY'S OWN PROCEDURES AND POLICIES.

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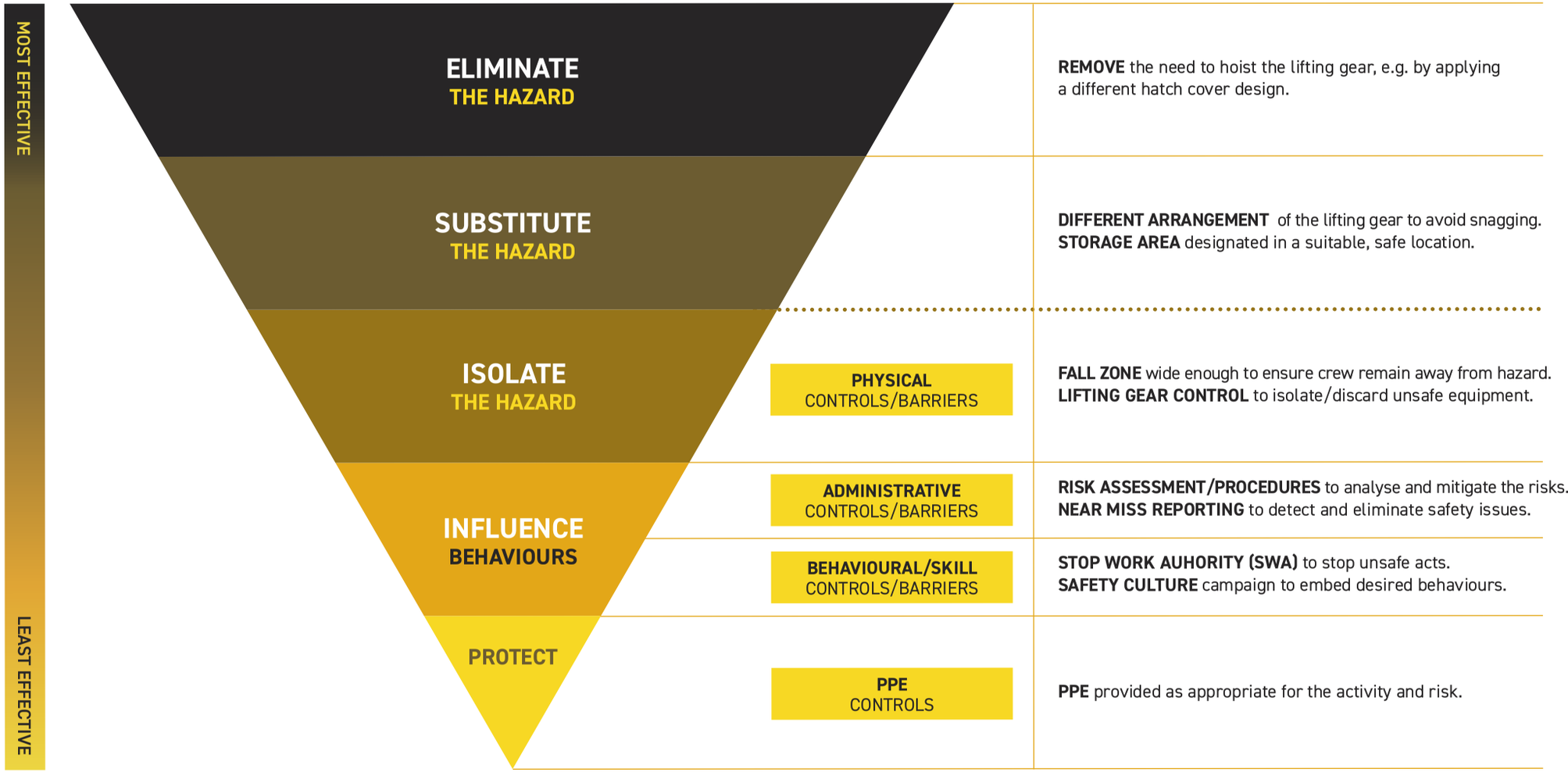
HIERARCHY OF BARRIER CONTROLS



EXAMPLES OF POSSIBLE RISK MITIGATION CONTROL MEASURES RELATED TO THE CASE STUDY

REMOVE the need to hoist the lifting gear, e.g. by applying a different hatch cover design.

DIFFERENT ARRANGEMENT of the lifting gear to avoid snagging.
STORAGE AREA designated in a suitable, safe location.

FALL ZONE wide enough to ensure crew remain away from hazard.
LIFTING GEAR CONTROL to isolate/discard unsafe equipment.

RISK ASSESSMENT/PROCEDURES to analyse and mitigate the risks.
NEAR MISS REPORTING to detect and eliminate safety issues.

STOP WORK AUHORITY (SWA) to stop unsafe acts.
SAFETY CULTURE campaign to embed desired behaviours.

PPE provided as appropriate for the activity and risk.

The suggested barriers/controls above are provided to help generate reflective discussions, and should not be considered as conclusive/definitive or comprehensive for the provided case study.
The risk and control measures relating to any similar scenario or activity must always be appropriately assessed based on the specific onboard arrangement and circumstances.