Risk Assessment — study guide

A risk assessment is only as good as the people who write it and the way it is communicated. This guide covers the team, the process, the matrix and the communication.[1][2]

The team

Personnel in the risk assessment team must be experienced in the type of activity to be carried out, have knowledge of the equipment and systems to be worked on, and be aware of any relevant procedures and industry standards.

Definitions and objectives

The IMO defines risk as the combination of the **frequency/likelihood of occurrence** and the **hazard**. According to the ISM Code, the safety management objectives of a shipping company should be to assess all identified risks to its ships, personnel and the environment and establish appropriate safeguards.

The process

The **five steps of risk management** are: **Identify, Analyse, Assess, Control, Monitor**. In the **Assess** step, the risk level is compared against established risk criteria. When prioritised risks have been controlled and lowered to a tolerable and acceptable level, the remaining risk is called **residual risk**. In a risk matrix, the colour that represents risks in the ALARP (As Low As Reasonably Practicable) region is **yellow**.

Communication

The success of a risk assessment depends a great deal on how effectively it is communicated: a full discussion of the relevant risk assessment should take place during the toolbox talk or pre-job safety meeting; communication is critical to maintaining on-going hazard identification; and the personnel carrying out the task must thoroughly understand the hazards that may be present and the control measures that have been put in place. During the task, if you are uncertain or unsure about **anything**, you must stop the job and ask for advice.

Dynamic review

Continually monitoring and reviewing the risk assessment while the work is ongoing is important because internal and external environments constantly change. Its purposes are to detect changes to risks and risk criteria that may require revision of controls and priorities; to ensure controls are effective and efficient in both design and operation; and to identify the personnel responsible for any "near misses".

Visual tools and records

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A **Bow-tie diagram** gives a visual summary of what can cause an unintentional event or accident and what the resulting events of such an accident could be. Risk assessment records **must** be maintained.

Key facts to remember

- Team: experienced in the activity, know the equipment/systems, aware of procedures and standards.
- Risk = frequency/likelihood of occurrence + hazard (IMO). ISM: assess risks and establish safeguards.
- Five steps: Identify, Analyse, Assess, Control, Monitor. Criterion comparison happens in Assess.
- Residual risk = what remains after controls. Risk-matrix ALARP colour: yellow.
- Communicate fully at the toolbox talk/pre-job meeting; if unsure about anything, stop and ask.
- Monitor to detect changes, check control effectiveness, and identify who owns near misses.
- Bow-tie diagram: causes and consequences of an unintentional event. Keep records.

Sources

1. ISM Code (SOLAS Chapter IX) — risk assessment and safeguards in the safety management system.
2. ISO 31000 — Risk management — Guidelines (risk definition, process and bow-tie representation), with the Code of Safe Working Practices for Merchant Seafarers (COSWP).