Making sense of risk

Marine risk assessment and method statements

Asia Pacific

Liberty

Marine risk assessment and method statements

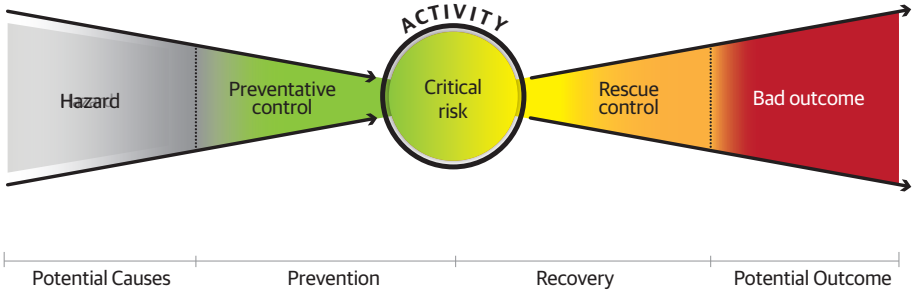
It is essential that a thorough risk assessment be conducted and a comprehensive method statement compiled for any marine operation to ensure that the operation is undertaken with due regard to the safety of workers, equipment and the environment. This technical bulletin explains how to approach a risk assessment for a marine operation and offers shipyard management guidance in writing method statements.

What is the difference between a hazard and a risk?

A hazard is anything with the potential to cause harm; for example, the presence on a vessel in a ship repair yard of fuel oil tanks that have not been not purged (gas freed).

A risk is the likelihood that a hazard will cause a specified harm to someone or something. In the above example, there is a risk of explosion if welding work is done on a fuel oil tank which is not gas free.

The aim is to eliminate risks where practicable, and to reduce the impact of the risks that remain.



Risk assessment, HAZID and HAZOP

As a first step in ensuring operational safety, most marine operations may require a hazard identification study (HAZID), where main hazards are identified and safety measures are reviewed or implemented as required.

A hazard and operability study (HAZOP) is often undertaken following a HAZID, or the review of an existing HAZID. A HAZOP is a systematic examination of a planned or existing process or operation in order to identify and evaluate problems that may represent risks to personnel or equipment, or may prevent efficient operation.

The HAZID and HAZOP phase is also known as the risk assessment phase.

When carrying out the risk assessment, it is crucial to highlight all foreseeable risks arising from, or associated with, the activity being assessed.

The chart below is a simple matrix for characterising risk in terms of probability and severity. The aim is to eliminate risks where practicable, and to implement procedures to reduce the impact of the risks that remain.

A thorough risk assessment should be undertaken before any work begins and should be reviewed by a competent person who is familiar with the work.

A risk assessment review should be conducted when a new activity is to begin or when there is a change of plan or activities which may alter the hazards and risks or introduce new ones.

RISK ASSESSMENT MATRIX

PROBABILITY	SEVERITY			
	Catastrophic (1)	Critical (2)	Marginal (3)	Negligible (4)
Frequent (A)	High	High	Serious	Medium
Probable (B)	High	High	Serious	Medium
Occasional (C)	High	Serious	Medium	Low
Remote (D)	Serious	Medium	Medium	Low
Improbable (E)	Medium	Medium	Medium	Low
Eliminated (F)	Eliminated			

The method statement

A method statement is essentially a written safe system of work that outlines each activity to be carried out; it is the detailed, stage-by-stage outcome of the risk assessment process. An effective method statement should define all the hazards that are likely to be encountered when undertaking a marine operation, and should provide detailed guidance on how to safely carry out the operation.

A method statement should contain sufficient detail such that everyone involved in an operation or activity is clear about what has to be done, the location of the work and the equipment to be used for that activity. Ideally, a method statement should inform all concerned parties not only of the hazards associated with the work but also of the safety precautions that are in place.

A method statement is required and should be produced whenever an activity with a foreseeable hazard or risk is anticipated. In certain cases, method statements for a range of high-risk activities are produced and agreed by both the client and the principal contractor prior to commencement of work.

A method statement should be written by a competent person familiar with the work processes and capable of ensuring that the requirements of the method statement are properly implemented.

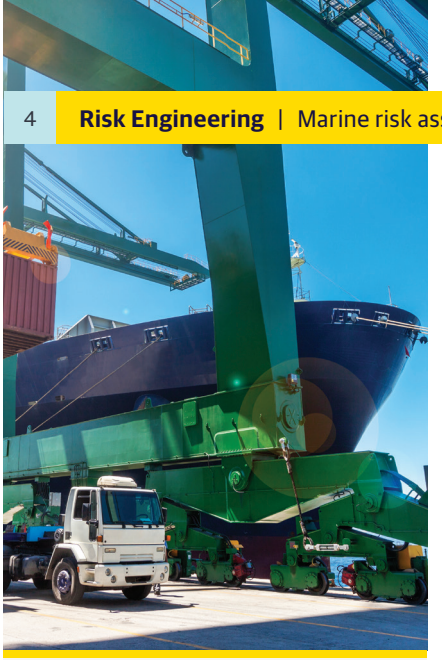
What is included in a method statement?

The method statement needs to be 'work specific' if it is to effectively control the operation or activity.

Although there is no standard format, the following aspects should be considered for marine operations:

- Details of the job to be undertaken
- Sequence of operation
- Permit requirements (such as for access or hot work)
- Personal protective equipment requirements
- Known site hazards (such as chemicals, vehicle movement)
- Access arrangements (for example, for scaffolds and ladders)
- Personnel safety and safety of contractors and site visitors
- Machinery shut down and lock off procedures
- Clear identification of those responsible for supervising the job
- Particulars of both the nominated vessel and principal
- General arrangement drawings for the vessel
- Cargo drawings and specifications as required
- Lifting plan and details of specific lifting equipment
- Lifting capacity calculations

A method statement is required whenever an activity with a foreseeable hazard or risk is anticipated.



- Stowage plan, showing where the cargo will be stowed on board the vessel
- Securing plans and details of specific lashing equipment and sea fastening methods
- Lashing and sea fastening calculations
- Motions and accelerations analysis
- Voyage and weather routing; ports of refuge
- Deck strength checks
- Transport arrangement drawings for inland carriage
- Suitability and stability drawings with calculations for inland carriage
- Calculations for securing of loads during transportation
- Route survey, identifying potential obstructions and reinforcements for inland carriage.

The method statement may also incorporate information and specific requirements outlined by the clients, manufacturers and suppliers of the equipment or property.

In certain cases, the method statement may identify training needs for those carrying out the work or may specify the employment of competent persons or specially-trained operators for certain activities, such as hot works and work in confined spaces.

Want more information?

https://www.hsdirect.co.uk/free-resources/health-and-safety/free-method-statement-template/