



Dienststelle Schiffssicherheit BG Verkehr

ISM-Circular Nr.: 03/2010

Subject: Occupational Health and Safety Management / Risk Assessment

Reference: ISM-Code, Maritime Labour Convention (MLC) Regulation 4.3 – Health and safety protection and accident prevention

Remark: This circular need not be carried on board of ships.

Date: 10.03.2010

Explanatory note:

1. Introduction

The adoption of the Maritime Labour Convention (MLC), 2006 leads to worldwide applicable minimum standards for working and living conditions of seafarers including the purpose to support occupational health and safety on board. According to national law the employers in Germany have to ensure and improve safety and health at work. Furthermore, German shipping companies are obliged to control and arrange ship operation and equipment in such a way to protect crewmembers against any hazards at work. Although there is no direct obligation to implement an occupational health and safety “*management system*”, the basic elements of a management system like the organisation of occupational safety, risk assessment, prevention, documentation and improvement have been demanded for a long time.

It is no new idea in international shipping to ensure and to improve occupational health and safety. Companies have been obliged to implement a safety management system on the basis of the ISM-Code with – among others - the following objectives:

- to provide for safe practices in ship operation and a safe working environment;
- to establish safeguards against any identified risks; and
- to continuously improve safety management skills of personnel ashore and aboard ships.

When the amendment to the ISM-Code comes into force on 01.07.2010 (MSC.273(85), see ISM-Circular 01/2010), the objectives will be:

Safety management objectives of the Company should, inter alia:

.1 ...

.2 assess all identified risks to its ships, personnel and the environment and establish appropriate safeguards; and

.3

This includes the basic elements of occupational health and safety, to **identify any hazards**, to **provide measures** to avoid or minimize hazards and to **monitor the effectiveness** of these measures.

Companies holding a Document of Compliance (DOC) will need appropriate procedures to fulfill the requirements of the ISM-Code.

2. Occupational health and safety management

Since there is a wide range of guidelines supporting companies in implementing an occupational health and safety management system (OHS-MS), reference should be made to the national *Leitfaden für Arbeitsschutzmanagementsysteme* (AMS) of the Bundesministerium für Wirtschaft und Arbeit (BMWA) and especially IMO-Circular MSC-MEPC.2/Circ.3 *Guidelines on the basic elements of a shipboard occupational health and safety programme* (ISM-Circular 08/2006).

For companies maintaining a safety management system according to the ISM-Code it is obvious to integrate the elements of an occupational health and safety management system. Synergies should be used to ensure that OHS objectives are achieved. The above mentioned guidelines give a functional guidance to integrate the elements of OHS-MS in the management system of the company.

The following table describes how the elements of OSH- and safety management systems could be connected. The table is based on the *Leitfaden für Arbeitsschutzmanagementsysteme* (AMS) of the BMWA.

Table 1 – Elements of the guideline *Leitfaden für AMS* connected with the requirements of the ISM-Code considering the requirements of the *Arbeitsschutzgesetz* (ArbSchG)

Leitfaden für AMS		ISM-Code		ArbSchG	
Element	Chapter	Element	Chapter	Requirement	§§
Policy					
Occupational health and safety policy	2.1	Safety and environmental protection policy	2.1	--	--
Occupational health and safety objectives	2.2 2.1.3	Safety management objectives	1.2.2 and 1.2.3	--	--
Organisation					
Provision of resources	2.3	Provision of adequate resources and shore-based support	3.3 and 6.1.3	Responsibility of employer to ensure adequate organisation and resources	§ 3 Abs. 2
Authority and responsibility	2.4	Documentation of responsibilities and authorities of all personnel	3.2		
Participation, rights and duties of employees	2.5	--	--	Participation of employees	§ 16 Abs. 2
Qualification and familiarisation	2.6	Personnel resources familiarisation understanding of rules, regulations, codes, guidelines	6.1 and 6.2 6.3 6.4	Qualification of employees Familiarisation	§ 7 § 12 Abs. 1

Leitfaden für AMS		ISM-Code		ArbSchG	
Element	Chapter	Element	Chapter	Requirement	§§
		identify required training Emergency preparedness	6.5 8.2		
Documentation	2.7	Functional requirements for a SMS Documentation	1.4 11	Availability of documentation - risk assessment - measures - effectiveness of measures	§ 6
Communication and interrelation	2.8	Interrelation of all personnel Working language	3.2 6.6. and 6.7	--	--
Planning and implementation					
First examination	2.9	--	--	--	--
Determination of obligations	2.10	Compliance with rules and regulations	1.2.3	General principles Risk assessment	§ 4 § 5
Determination of workflow	2.11	Plans for shipboard operations Maintenance of ship and equipment	7 10		
Risk assessment	2.12	Provision for safe practices in ship operation and safe working environment Establish safeguards against all identified risks	1.2.2.1 1.2.2.2		
Measures to prevent hazards	2.13.1	Plans for shipboard operations Emergency preparedness Identification of critical equipment	7 8 10.3	General principles Risk assessment Emergency preparedness	§ 4 § 5 § 9
Guidance for failure and emergency situations	2.13.2	Emergency preparedness	8	First Aid and emergency procedures	§ 10
Procurement	2.13.3	--	--	--	
Cooperation with contractors	2.13.4	--	--	--	
Medical prevention	2.13.5	--	--	Medical prevention	§ 11
Change of management	2.14	--	--	--	
Measurement and assessment					
Control of efforts	2.15	--	--	Verification of effectiveness	§ 3 Abs. 1
Analysis	2.16	Reports and analysis of non-conformities, accidents and hazardous occurrences	9.1 and 9.2		
Internal audits	2.17	Internal audits	12.1		
Management review	2.18	Management Review	12.2		
Improvement					
Corrective and preventive action	2.19	Procedures for the implementation of corrective action	9	--	
Steady improvement	2.20	Procedures for the implementation of corrective action	9	--	

*Inter alia, following rules and regulations have been taken into consideration:

- Betriebssicherheitsverordnung
- Lärm- und Vibrationsarbeitsschutzverordnung
- PSA-Benutzungsverordnung
- Gefahrgutverordnung See
- BGV A1
- Jugendarbeitsschutzgesetz
- Mutterschutzrichtlinienverordnung

3. Risk assessment

The core of occupational health and safety on board is the investigation and evaluation of hazards, the determination of adequate measures and the verification of the effectiveness of measures.

Hazard is the possibility of harm without specific requirements to likelihood and severity of the harm. Since any hazard has not always the same effect on safety and health, it has to be

determined which risk is associated with the hazard. Consequence and likelihood of harm indicate how urgently measures have to be implemented in order to avoid hazards.

Risk assessment is already part of the ISM-Code. Element 7, 8 and 10 of the Code demand procedures for the identification of process, situations and equipment, that are relevant for ship safety and environmental protection. Appropriate measures have to be implemented like operational procedures, maintenance and contingency plans.

According to the German occupational legislation *Arbeitsschutzgesetz* the employer has to evaluate hazards and to take appropriate actions to avoid or to reduce them to an acceptable limit. Following items have to be considered:

- design and condition of the working stations,
- the design, choice, operating condition of equipment and technical systems on board,
- process and organisation of work (workflow, working hours, rest hours, responsibility),
- working conditions (climate, lighting, exposition to noise, vibration, ...),
- personal protective equipment,
- group of persons concerned, qualifications, abilities, familiarisation.

Following basic principles should be considered:

- the work process has to be organized in such a way that hazards for life and safety are avoided as far as possible and the remaining hazards remain as slight as possible;
- hazards have to be fought at their roots;
- in all measures the technical, medical and sanitary standards and other work scientific knowledge have to be considered;
- measures have to be planned with the objective to connect technology, organisation of work, other work conditions, social relations and environmental influences on work stations in an appropriate way;
- individual safety measures are subsequent to other measures;
- special hazards for employees with a special need for protection are to be taken into account;
- appropriate instructions for employees.

Determination of hazards:

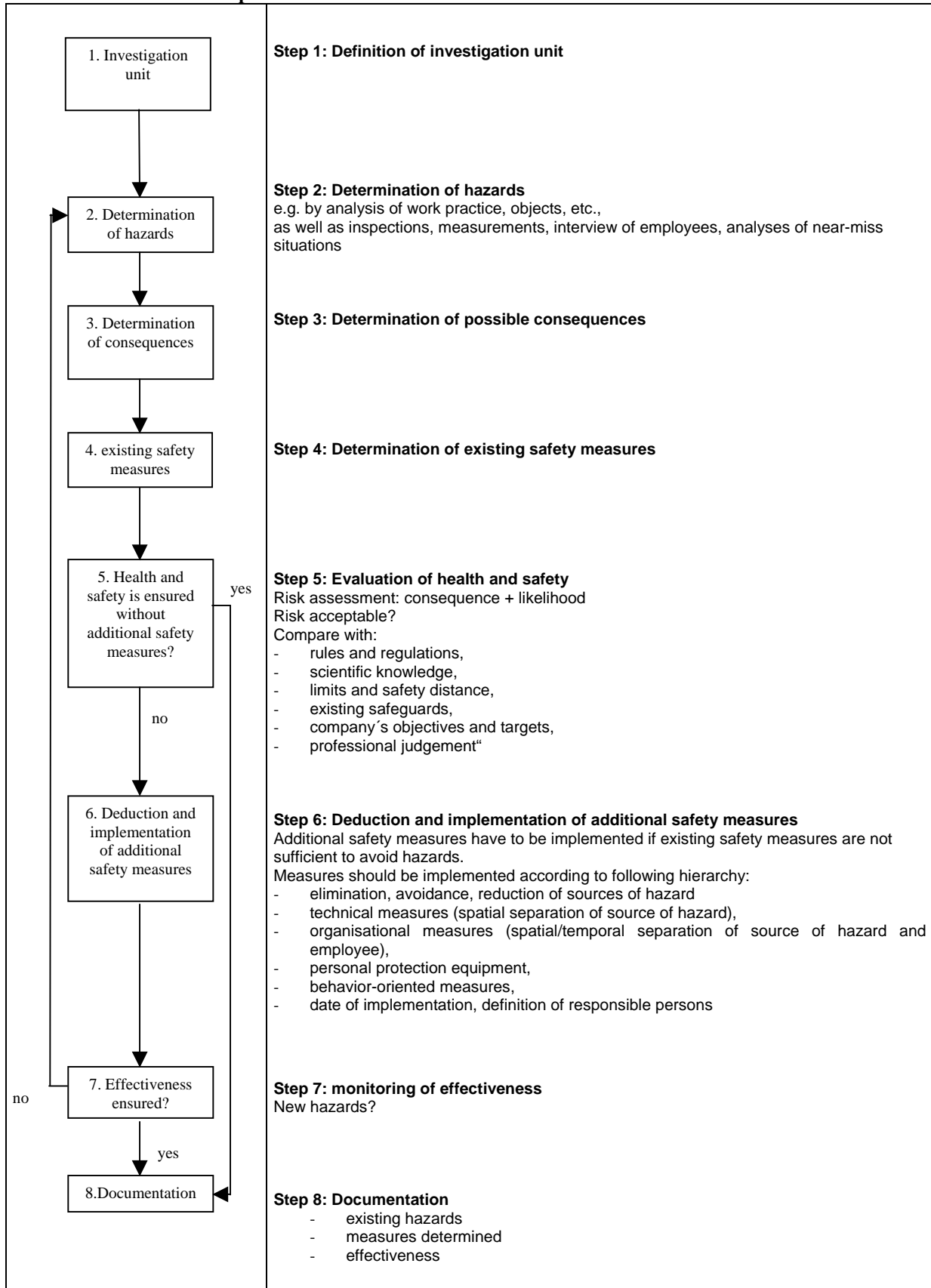
Hazards have to be determined by analysis of harms, accidents and occupational diseases to get information about their causes. The problem of this retrospective reflection is that the event has already occurred. But the knowledge of the causes helps to prevent harm in similar cases.

The predictive analysis of work practices and objects (e.g. machinery) is another possibility to determine hazards. This process should systematically take into consideration all factors of hazards (e.g. mechanical, electrical, chemical, psychological factors, noise, vibration, etc.).

Risk assessment:

After the determination of the hazard the risk should be assessed. In a first step consequences and likelihood of the hazard have to be taken into account (e.g. by a Risk Matrix). In the next step it has to be evaluated if the risk is acceptable. In this process, limits and qualitative requirements of regulations but also the current state of technology and professional judgement have to be considered.

Table 2 – Risk assessment process



Deduction of measures:

Based on the assessment it can be deducted if measures have to be established to eliminate risk or to reduce risk to a tolerable level. The hierarchy mentioned in table 2 Step 6 has to be considered.

Monitoring of effectiveness and documentation

It is the company's obligation to conduct and to document risk assessment. Risk assessment should be repeated periodically in order to ensure the effectiveness of measures. Risk assessment should be conducted in exceptional circumstances, e.g. new equipment, changes in workflow, change of personnel, etc. The procedure how to conduct risk assessment is not prescribed. Procedures like a risk matrix can be used for support.

Table 2 gives an example how to carry out risk assessment. Because of their special knowledge the assessment process should be guided by experts of occupational safety but selected employees should be involved because of their knowledge of the workplace. The acceptance of occupational health and safety will increase if employees are involved in this process.

Safety management system

Companies are invited to adapt their safety and environmental protection policy to the amendment of the ISM-Code and to add appropriate procedures to their safety management system. A procedure containing following items should be integrated in the SMS:

- determination of responsibilities,
- determination of hazards,
- determination and implementation of safety measures,
- monitoring the effectiveness,
- documentation.

The results of the assessment should be kept as additional documentation and should be verifiable.

4. Reference:

Leitfaden für Arbeitsschutzmanagementsysteme, Bundesministerium für Wirtschaft und Arbeit (www.baua.de/de/Themen-von-A-Z/Arbeitsschutzmanagement/Arbeitsschutzmanagement.html)

Ratgeber zur Ermittlung gefährdungsbezogener Arbeitsschutzmaßnahmen im Betrieb, Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (www.baua.de)

MSC-MEPC.2/Circ.3 Guidelines on the basic elements of a shipboard occupational health and safety programme

Action required:

This circular intends to support companies in implementing occupational health and safety measures. Companies are invited to take note of the content and to ensure compliance with national requirements.

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