



Baltic Marine Environment Protection Commission

Expert Group on environmental risks of hazardous
submerged objects
Gothenburg, Sweden, 14-15 October 2015

SUBMERGED 3-2015

Document title	Draft Munitions chapter
Code	3-2
Category	INF
Agenda Item	3 - SUBMERGED Assessment current status
Submission date	12.10.2015
Submitted by	Secretariat
Reference	Outcome of HELCOM SUBMERGED 2-2015, Annex 2

Background

The attached document includes the SUBMERGED Assessment chapter on munitions as drafted by the HELCOM SUBMERGED 2-2015 Meeting.

Action required

The Meeting is invited to take note of the draft and use it as basis of work.

Draft 0 (Annex 2 of HELCOM SUBMERGED 2-2015, 22-23 April 2015 in Bonn, Germany)
HELCOM SUBMERGED report
Section on warfare materials in the Baltic Sea

General structure of contents – wording of individual section headings subject to future refinement

- **Introduction**
 - **Munitions in the Baltic Sea**
 - A general introduction, i.a.:
 - Definition of conventional and chemical munitions (infobox on special terminology: warfare materials, UXO, chemical weapons [CWC], status of white phosphorus)
 - Scope of contamination (relation of amounts: conventional vs. chemical munitions)
 - Short overview of types of munitions and/or containers (bombs, grenades, sea mines, torpedoes, etc.; max. double page infobox)
 - **Former reports**
 - Regarding managerial activities and investigations, i.a.:
 - CHEMU, MUNI (short description)
 - Differences to this report (widened scope)
 - **National activities**
 - Grouped according to MS:
 - Managerial activities (e.g. MSFD) and investigations
 - **International activities**
 - managerial activities and investigations, i.a.:
 - International Mine Action Standard 9.60
 - description of CHEMSEA & most important results (single page infobox)
 - description of MODUM & preliminary results (single page infobox)
 - (results of CHEMSEA and MODUM will be described in more detail in the subsequent chapters)
- **Geographic distribution**
 - **Limits and quality of information**
 - Description of how the presented data was collated
 - especially: 'Disclaimer' regarding incomplete data basis and uncertainties associated with currently available historic information
 - **Introduction of munitions into the Baltic Sea**
 - General description of different pathways of introduction: military activities (exercise, battles), dumping activities (officially designated and unofficial), accidents (emergency dumping, aircrafts, ships) etc.
 - Resulting in: Scattered munitions vs. munitions contained in wrecks (both aircrafts and ships)
 - **Relocation**
 - Post-introduction processes affecting distribution of underwater munitions (and constituents)
 - **Areas of concern**
 - Maps & profiles for special areas of interest (historic context), i.a.:

- thematic map on chemical munitions
 - but also maps and descriptions showing overlap of conventional and chemical munitions distribution and historical context
 - full list of areas will likely be suitable for placing in the annex
- **Environmental issues**
 - (applicable hazards should be described in this chapter => description of likelihood and resulting risk will be addressed under 'risk assessment')
 - **Hazards of intact munitions**
 - To keep in mind that munitions are inherently dangerous, i.a.:
 - detonation: Shockwave, shrapnel, etc.
 - **Deterioration of munitions casings and constituents**
 - (general description)
 - Corrosion
 - Ageing of munitions constituents, e.g.:
 - increased instability of aged explosive formulations
 - formation of sulfur mustard lumps
 - Transformation & degradation
 - **Spreading of munitions constituents**
 - (also recalling relocation as a process promoting subsequent large-scale spreading)
 - General considerations on leaking & spreading (compound-specific considerations to be addressed in the subsequent section), i.a.:
 - Dissolved compounds vs. particles/lumps
 - **Hazards of munitions constituents**
 - Focus on conventional munitions: explosives and white phosphorus
 - Concise description of CWA (refer to MUNI report for more comprehensive information)
- **Risk assessment**
 - (making use of incident descriptions throughout to explain the basis for likelihood estimation)
 - **With regard to humans**
 - Divided according to different user groups (see MUNI report), i.a.: fishermen, construction workers, beach visitors
 - **With regard to the environment**
 - (also taking the introduction of energy [detonation] into consideration)
 - **With regard to maritime infrastructure**
 - i.a. cables, pipelines, offshore wind farms
 - shortly address risks to humans and the environment ensuing from this
- **Remediation/salvage measures**
 - **Principal considerations**
 - (also discussing mitigation measures, e.g. with regard to marine mammals)
 - **Techniques**
 - i.a. action by divers, ROV and other recovery systems
 - **Lessons learned**
 - (From past measures)
- **(Conclusions and recommendations)**
 - (Likely to be placed at the end of the complete SUBMERGED report)