

A selection of resources dealing with Training and Exercising.

Using the MARINER Knowledge Tool



MAKING THE MOST OF THE EXISTENT KNOWLEDGE



MARINER



**ENHANCING HNS PREPAREDNESS
THROUGH TRAINING AND EXERCISING**



Funded by
European Union
Civil Protection and
Humanitarian Aid

MARINER



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INTRODUCTION

The aim of MARINER, a DG ECHO funded project, is to improve planning, preparedness and response to HNS spills by harnessing and capitalising existing HNS knowledge and resources, improving tools for decision making, reinforcing training and exercise capabilities, and increasing awareness and information exchange.

Aligned with its objectives, one of the MARINER tasks was the identification and compilation of existing HNS preparedness and response knowledge generated by EU funded public research, as well as other HNS related resources produced by international organisations dealing with maritime pollution, and make them easily available through a user friendly publicly available database: the [MARINER knowledge tool](#). This online database allows users to search for resources by major HNS theme, organisation, projects, type of output, and funding source. Through a combination of simple and advanced queries, users can have direct access to resources or when appropriate, to the author's website. It currently stores information on 110 research projects and 28 organisations and contains 467 resources with relevance for HNS matters such as contingency planning, response protocols and equipment, environmental monitoring, impact and recovery, HNS characterisation, modelling, risk analysis, and training and exercising among others. The compiled resources include thematic reports, scientific publications, prototypes, software and modelling tools, books, guidelines, databases, services and tools, multimedia and training activities and materials.

With the help of the MARINER Knowledge Tool, and based on a criterion guided selection of HNS resources, this booklet provides an example on how the knowledge generated by expert organisations and EU projects have addressed HNS related issues relevant for "Training and exercising".

A total of 34 resources have been selected keeping in mind the considerations mentioned earlier and the following criteria:

- Free online availability
- No confidentiality restrictions
- Development completed
- No limits in the geographic scope of application or easy adaptability to other areas



- Prioritisation of operational materials vs scientific publications

The selection of resources in this area of knowledge specially target training materials such as learning modules, training packages and modules, exercises, etc., multimedia (videos and websites dedicated to training), dissemination materials such posters and infographics and online platforms showing the basic concepts of HNS and other training information. The selection also include learning guides and materials dedicated to raising awareness.

To facilitate the reading of the booklet, resources have been listed in chronological order (most recent resources appear first) and grouped into 6 different categories according to resource types: guidelines and standards, books and reviews, training activities and learning modules, services and tools, dissemination materials and multimedia. For each resource, a basic description (title, description, source, year of publication, and link to resource) is provided.

MARINER booklets are intended to demonstrate how knowledge can be compiled and clustered to facilitate its uptake. Nevertheless, to get a comprehensive overview of all the resources potentially relevant for the different thematic areas, readers are kindly invited to explore the full content and search functionalities of the [MARINER knowledge tool](#).



GUIDELINES / STANDARDS

Theory and Proactive of Foams in Chemical Spill Response

Summary: The document aims at providing those involved in response operations with background information on the various technical issues associated with the use of foam as a response method. It contains four main sections: (i) the fundamentals of a foam, (ii) foam concentrates, (iii) the production of a finished foam, and (iv) the application of finished foam, and various Annexes, one of which (Annex III) lists common terminology associated with foam use.

Organisations: REMPEC, Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea

Publication year: 2012

Language: English

[Link](#)

Learning guide UNDERSTANDING CHEMICAL POLLUTION AT SEA

Summary: This is a comprehensive guide that specifically targets 12 to 18-year-olds and it is intended as an educational tool to help teachers to prepare lessons on the subject of chemical pollution in the marine environment. It is also an interesting source of information for the general public to better understand this type of pollution.

Organisations: CEDRE, Centre of Documentation, Research and Experimentation on Accidental Water Pollution, and Transport Canada

Publication year: 2012

Language: English and French

[Link](#)



BOOKS / REVIEWS

Are HNS spills more dangerous than oil spills?

Summary: This paper attempts to answer the question 'Are HNS spills more dangerous than oil spills?' by reviewing the current arrangements for prevention, preparedness and response and evaluating these against the potential for serious harm from HNS and lessons learned from past incidents, including knowledge from studies of chemical spills at sea..

Organisations: ITOPF

Publication year: 2009

Language: English

[Link](#)

Review of chemical spills at sea and lessons learnt

Summary: Technical appendix to the INTERSPILL 2009 Conference (Marseille, May 2009) White Paper: "Are HNS spills more dangerous than oil Spills?" compiled by Cedre from Bonn Agreement and Helcom reports and other miscellaneous sources. It provides additional background information on existing international experience on the response to HNS spills and the related response tools and techniques.

Organisations: CEDRE, Centre of Documentation, Research and Experimentation on Accidental Water Pollution

Publication year: 2009

Language: English

[Link](#)



TRAINING ACTIVITY / LEARNING MODULE

Training Package on HNS spill Management

Summary: Powerpoint presentations and posters in pdf format covering training for responders on general aspects of HNS, incident prevention and preparedness, incident response and post-crisis actions. Topics covered include maritime transport, regulations, accident causes, chemical behaviour, marine and shoreline response techniques for the different vessels transporting HNS, responder protection, environmental monitoring, communications and compensation funds.

Project: MARINER, Enhancing HNS preparedness through training and exercising

Publication year: 2018

Language: English

[Link](#)

Training Package on HNS modelling and environmental impact

Summary: A Mediawiki webpage covering different aspects of HNS modelling and environmental impact assessment. The main contents are completed with slide presentations, interviews, articles and manuals.

Project: MARINER, Enhancing HNS preparedness through training and exercising

Publication year: 2018

Language: English

[Link](#)

E-learning: International Health Regulations and HNS maritime incidents

Summary: An interactive e-learning course aimed to train response agencies about WHO International Health Regulations, which relate to major cross-border health emergencies, and how they may apply to large scale maritime HNS incidents.

Project: MARINER, Enhancing HNS preparedness through training and exercising

Publication year: 2018

Language: English

[Link](#)



Oil and Chemical spill response training documents adapted to the MARPOCS regions

Summary: Two level training documents on Oil and HNS spills:

Level1 – Members having knowledge of and supervisory responsibility for oil response planning and operations.

Level2 – Members called upon to make management decisions related to national policy and financial responsibility for oil & HNS spill response activities.

Project: MARPOCS, Multinational Response and Preparedness to Oil and Chemical Spills

Publication year: 2017

Language: English and French

[Link](#)

Enhancing public health awareness, preparedness and response to shoreline maritime chemical incidents

Summary: In collaboration with local partners, PHE and Pembrokeshire County Council organised 3 workshops in UK, Ireland in Spain aiming to enhance working knowledge of all phases of maritime shoreline incident response with a specific focus on public health implications from oil and Hazardous & Noxious Substances, via interactive presentations, e-learning and exercise scenarios.

The presentations and all the documentation used on these sessions is available in English, French, Spanish and Portuguese for further use by interested stakeholders.

Project: ARCOPOLplatform, Platform for improving maritime coastal pollution preparedness and response in Atlantic regions

Publication year: 2015

Language: English, French, Spanish and Portuguese

[Link](#)

E-learning: Principles of environmental toxicology and contamination

Summary: This course provides a broad overview of environmental toxicology and contamination, a multidisciplinary field concerned with the movement of contaminants and their metabolites in the environment and in food chains and the effect of such compounds on living organisms. This course was designed to address the needs of students at different education levels population (Degree, master and PhD students), technicians as well as anyone with a general interest in environmental toxicology issues.

Project: ARCOPOLplatform, Platform for improving maritime coastal pollution preparedness and response in Atlantic regions

Publication year: 2015

Language: English

[Link](#)



Exercises: Tempest series

Summary: The intention of this series of maritime exercises is to exercise and evaluate the immediate and ongoing response of emergency services, maritime agencies and public health organisations to a chemical incident of public health concern. The Tempest exercises are available in an exercise pack.

Project: ARCOPOLplus, Improving maritime safety and pollution response through technology transfer, training & innovation

Publication year: 2014

Language: English

[Link](#)

HNS Training Manual

Summary: This Manual consists of three volumes: Volume 1 is the introductory level of the training course and it has the purpose of giving sufficient preparedness for and response to marine Hazardous Noxious Substance (HNS) incidents to the participating trainees; Volume 2 aims to bring trainees to managerial level, and to provide them with the capacity to function as administrators and/or senior managers that can deal with incidents involving HNS promptly, properly, effectively, and successfully. Finally, volume 3 focuses on the operational level and aims to train students to acquire skills and knowledge for responding to and handling HNS incidents.

Organisations: NOWPAP MERRAC, Northwest Pacific Action Plan - Marine Environmental Emergency Preparedness and Response - Regional Activity Centre

Publication year: 2011

Language: English

[Link](#)

Celtic Coast Exercise

Summary: The aims of the exercise were to test response arrangements/plans to maritime pollution incidents in Dyfed Powys as well as testing the primacy/interaction between the MCA's National Contingency Plan & the CCA. The scenario revolved around a collision between an oil tanker and a container ship just off the Pembrokeshire Coast (Wales, UK)

Project: ARCOPOL, Atlantic Regions' Coastal Pollution Response and Preparedness

Publication year: 2011

Language: English

[Link](#)



SERVICES / TOOLS

Exercise web tool and manual allowing preparation of bespoke local and regional desk-top maritime HNS exercises

Summary: This exercise tool enables planners to prepare and facilitate bespoke exercises for HNS maritime incidents. To use the tool check the Quick Reference Guide and the full Manual available for download on the link below. To access the tool follow the link provided in the Quick Reference Guide (using Google Chrome as your browser) and refer to the Manual for more detailed information on preparing and running exercises. Notice that the manuals are available in English and Spanish, but the tool is in English only.

Project: MARINER, Enhancing HNS preparedness through training and exercising

Publication year: 2018

Language: English (manual in Spanish and in English)

[Link](#)

HNS online Platform

Summary: This HNS online platform provides systematized information of HNS properties and spills response, educational tools, guidelines and protocols, environmental sensitive index for the Portuguese coast and modelling tools. This platform aims to support preparedness and response to accidental spills (including Oil), to foster a more effective decision-making process and response.

Project: ARCOPOLplatform, Platform for improving maritime coastal pollution preparedness and response in Atlantic regions

Publication year: 2015

Areas of knowledge: Environmental monitoring, impact & recovery

Language: English

[Link](#)



DISSEMINATION MATERIALS

ARCOPOLplatform infographics on HNS identification and behaviour and the use of PPEs (Personal Protective Equipment).

Summary: Package of posters and infographics showing HNS hazard pictograms, PPE for operations with HNS and the different HNS behaviours when spilt at sea. It is available in French, English, Spanish and Portuguese.

Project: ARCOPOLplatform, Platform for improving maritime coastal pollution preparedness and response in Atlantic regions

Publication year: 2015

Languages: Spanish, English, French, Portuguese

Spanish:

[Comportamiento de SNPP](#)

[Pictogramas usados en el transporte de SNPP](#)

[Tipos de EPIs \(Equipos de Protección Individual\) para uso en respuesta a químicos](#)

English:

[Behaviour of Hazardous and Noxious Substances spilt at sea](#)

[HNS hazard identification](#)

[Personal Protective Equipment against maritime spills of Hazardous and Noxious Substances \(HNS\)](#)

French:

[Comportement des substances nocives potentiellement dangereuses \(SNPD\)](#)

[Identification de dangers pour substances nocives potentiellement dangereuses \(SNPD\)](#)

[Équipements de protection contre les rejets marins de substances nocives potentiellement dangereuses \(SNPD\)](#)

Portuguese:

[Comportamento das Substâncias Nocivas e Potencialmente Perigosas](#)

[Identificação de perigos das Substâncias Nocivas e Potencialmente Perigosas](#)

[Equipamento de protecção contra derrames marinhos de Substâncias Nocivas e Potencialmente Perigosas](#)



Poster on "Chemical incidents illustrating examples of different types of cargoes"

Summary: Alongside the learning guide "Understanding chemical pollution at sea", this poster presents examples of different types of cargoes.

Organisations: CEDRE, Centre of Documentation, Research and Experimentation on Accidental Water Pollution, and Transport Canada

Publication year: 2012

Language: English and French

[Link](#)

Poster on "Response techniques in case of chemical spills at sea"

Summary: Alongside the learning guide "Understanding chemical pollution at sea", this poster presents examples of different response techniques in case of chemical spills at sea.

Organisations: CEDRE, Centre of Documentation, Research and Experimentation on Accidental Water Pollution and Transport Canada

Publication year: 2012

Language: English and French

[Link](#)



MULTIMEDIA

Video: Dealing with HNS spills at sea

Summary: This video highlights the main aspects to consider when dealing with HNS spills at sea. It shows in a friendly way different techniques that can be used when a HNS spill takes place. The video contains animated frames combined with real images from the field exercises organised in the frame of MARINER project and also during the international exercise SCOPE 2017 and the Spanish national exercise HUELVA 2017.

Project: MARINER, Enhancing HNS preparedness through training and exercising

Publication year: 2018

Language: English and Spanish.

[Link 1](#) and [Link 2](#)

Awareness raising video: HNS spills in the marine environment

Summary: This 6-minute animation video highlights the importance of the role authorities and experts play when facing maritime chemical incidents and how this role helps to reduce environmental and human impacts. The characters are inspired by the MARINER partners.

Project: MARINER, Enhancing HNS preparedness through training and exercising

Publication year: 2018

Language: English

[Link](#)

Video: How to act in case of a HNS spill?

Summary: This animated video presents in 5 minutes how to act in case of a HNS spill happening close to the shore.

Project: ARCOPOLplatform, Platform for improving maritime coastal pollution preparedness and response in Atlantic regions

Publication year: 2015

Language: English

[Link](#)



Understanding chemical pollution at sea, the website

Summary: A website that presents the different response options that can be envisaged in case of an HNS spill at sea through ten original animations, video clips and a quiz for users to test their knowledge. It allows to find out all about chemical spills caused by ships and improve the understanding of the response to chemical spills at sea. This website is part of a series of educational documents produced by Cedre in collaboration with Transport Canada aimed at 12 to 18-year-olds as well as their teachers and the general public.

Organisations: CEDRE, Centre of Documentation, Research and Experimentation on Accidental Water Pollution, and Transport Canada

Publication year: 2012

Language: English and French

[Link](#)

Video explaining the experiments and use of drifters to follow slicks

Summary: The aim of this video is to warn fishermen and other sectors about the use of drifters and their importance in combatting marine pollution.

Project: DRIFTER, HNS, Oil and Inert Pollution: Trajectory Modelling and Monitoring

Publication year: 2010

Language: Spanish

[Link](#)