



**NDRF Summer Conference
22 - 24 AUG, 2007 in Varde, Denmark
in Co-operation with DANDEC**



3 OCT, 2007

**Proceedings of
NDRF Summer Conference 2007**

The conference was organized by Nordic Demining Research Forum (NDRF) and DANDEC. It took place at the Hotel Arnbjerg in Varde, Denmark from 22nd to 24th of August, 2007.

This document includes the actual conference programme and the list of participants.

The document does not include papers of the presentations given at the conference. The papers which have been made available to NDRF can be found in the database associated to the [NDRF HomePage](#). Links to each of the papers are included in the programme tables of this document. A total list of documents including this one can also be downloaded via the "Document" entry on the HomePage be using Keyword "SS07".

The documents are in PDF-format. Therefore, presentations containing animations do not include these in the up-loaded version.

For detailed questions to each of the papers, please refer directly to the author or the person who gave the presentation in question. Addresses, phone numbers and e-mail addresses are included in the participants' list.



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Background:

Each year NDRF organizes a number of MiniSeminars and one Summer Conference which are held at various places in the Nordic countries. The participants are invited to present on-going work and activities related to mine clearance or with a bearing on development and improvement of mine clearing. In this way, NDRF wishes to stimulate research and development through qualified exchange of information. The seminars and conferences included a number of presentations which each lasted 15 to 25 minutes. The aim of the presentations is to stimulate discussions and networking among colleagues each being a professional in his own field.

NDRF's activities, including the annual summer conference, have mainly focused on land mines including UXO as they are remains of war. Similar technologies, techniques, and to some extent organisations may also be used under other circumstances such as removal of and protection against IED (Improvised Explosive Device) and the clearing of military training areas prior to their transfer to civilian use. This becomes even more evident as the actual operations slowly shift from being conducted as aid to contractual operations.

This summer conference had four major topics on the agenda:

1. Cluster Weapons
2. Detection and Systems
3. Mine clearance at Skallingen
4. Reclamation of Land Contaminated by Munitions-Related Activity
5. Operations

Topics:

1. Cluster Weapons

On the initiative of Norway the international society discusses the promotion of a ban on the use of cluster munitions. This session presented the background for a ban, defined and characterized the classes of weapons, the clearance thereof, and discussed alternatives to the use of cluster munitions.

2. Detection and Systems

The aim of this session was to present research and development projects and actual systems and tools aimed for use in mine action and EOD.

3. Skallingen

The peninsula of Skallingen is the last remaining mined area in Denmark from the Second World War. The mine fields were part of the Atlantic wall established against the allied forces. The clearing of the

mine fields was scanty in 1945 – 46, and since then scattered mines have been found on the beaches and in the sand dunes. As a consequence of the Danish ratification of the Ottawa treaty, it was decided to clear the area and make it unconditionally accessible to the public. The area has been divided into four areas of which areas A, B, and C must be cleared from 2006 to 2008.

During this session of the summer conference, presentations outlined background and a priori knowledge, the morphological changes in the area, and the strategy and methods used in the mine clearance operations.

During the summer conference an excursion was made to Skallingen.

4. Reclamation of Land Contaminated by Munitions-Related Activity

Large areas in the Nordic countries and in the world have been contaminated by munitions-related activities such as military training and weapon tests. These activities have caused contamination of vegetation and soil by explosives and chemicals. These remanences may represent a risk for people entering the area and also to the environment.

The result of the change in the political scene is that the need for military training areas has been considerably reduced. Therefore, in the coming years large areas will be transferred to public and civilian use. Before a transfer to civilian use, the areas must be sufficiently cleared and therefore the risk for people and environment must be sufficiently reduced.

The “Reclamation of Land Contaminated by Munitions-Related Activity” represents a large economic burden to the society. Therefore, clearance must be a question of priorities balancing risk, the economical and recreational benefits of the clearing of a certain area, and the cost of the specific clearance operation.

Areas in the Nordic countries to be transferred from military to civilian use amount to several 10,000 hectares. An economically balanced way of executing this will therefore be required in order to avoid overspending and to achieve value-for-money.

Within the EUCLID (European Co-operation for Long term In Defence) of the Western European Armaments Organisation (WEAO) the project Reclamation of Land Contaminated by Munitions-Related Activity (CEPA 14.12) has been conducted from July 2003 to October 2006.

During the summer conference a visit was made to the military training area in Oksbøl.

5. Operations

This session dealt with actual operational activities and events.

Programme:

22nd August, 2007:

Registration	
Welcome and Administrative Information	Bjarne Haugstad Chairman of NDRF Ole Nymann Secretary of NDRF
Introduction to session: Cluster weapons	Chairman: Bjarne Haugstad, FFI
Cluster Weapons and the Oslo Process	Eva Veble Folkekirkenes Nødhjælp
Cluster weapons – use and tests	Ove Dullum, FFI
Alternatives to the use of Cluster weapons	Halvor Ajer, FFI
Humanitarian mine clearance Past, present and future	Guest of Honour: Håvard Bach, GICH
Detection and Systems	Chairman: Jan Larsen, IMM-DTU, DK
Scientific foundations of the DeFuse project- demining by fusion of techniques	Jan Larsen, IMM-DTU
The implementation of the DeFuse Project	Kaj Hörberg, KH Consulting
Supramolecular Chemistry of TetraTTF-Calix[4]pyrroles	Kent A. Nielsen, SDU
Acoustical Identification of Naval Mines (A Coherent Very High Frequency Sonar Model)	Gorm Wendelboe, RESON
MEMS Based Receptor-Free Detection of Explosives	Anders Greve, MIC-DTU
Development: Personal protection equipment (PPE)	Roald Løseth ROFI Industrier AS
Plants as Biosensor	Carsten Meier and Kim Bretting ARESA
Scanshock, - Shock Absorption	Jann Richard Jensen Scanfiber Composit
Conference Dinner	

23rd August, 2007:

Mine clearance at Skallingen	Chairman: Ole Nymann, NDRF
Briefing on Mine Clearance at Skallingen	Erik Willadsen The Danish Coastal Authorities
Skallingen, - Costal Morphology	Signe Marie Ingvarsdén The Danish Coastal Authorities
Mine Clearance and QC at Skallingen	Erik Willadsen The Danish Coastal Authorities
Questions and discussion	
Reclamation of Land Contaminated by Munitions- Related Activity	Chairman: Ole Nymann, NDRF
The Problem: Size, Economy and Priorities	Tod Erik Faye-Schjøll Forsvarsbygg
The Hjerkin Firing Range – Clearance and Reclamation for Public Use	Ole Petter Gundersen Forsvarsbygg
Managing Clearance Operations and their Environmental Impact.	Erik Juel Ellinghaus Bruhn NewTech A/S
Quality Assurance and Residual Risk	Erik K. Lautitzen NIRAS-DEMEX
Departure for Skallingen and Oksbøl Training Range	
Introduction to Minegruppen and Skallingen	Henrik Færch, DANMINAR Bo W. Jørgensen, Per Aarsleff
Visit Skallingen	
Introduction to Oksbøl Training Area	Christian Axelsen, DANDEC
Visit Oksbøl Training Area	
Returned to Arnbjerg	

During our visit to Skallingen we saw a large machine equipped with permanent magnets and used for sorting metal from the sand. Unfortunately, the machine was in a process of modification and was therefore not operating. After the conference NDRF has been contacted by Mr. Thomas Nordstrand Sørensen of TNS-IMEX A/S who has supplied the machine and who is responsible for the maintenance and the construction of the magnetic unit. He did not know about our visit on 27th of August and was therefore not able to demonstrate the operation of this machine. Mr. Sørensen has afterwards sent me the [following](#) and he would like to be in contact with persons who may be interested in further information.

24th August, 2007:

Operations	Chairman: Bjarne Haugstad, FFI
CEN Workshop Agreement for test of personal protective equipment for deminers / Development of Personal Protection Equipment.	Kaj Hörberg, KH Consulting
Just another EOD task in Iraq	Christian Axelsen DANDEC
Transformation of a Humanitarian Mine Action Programme to National Authorities	Emmanuel Deisser, RONCO
Mine Action in Iraq from an NGO perspective	Roger Fasth, DDG
What is new in mechanical demining?	Erik Tollefsen, GICHD
Closing the 10th NDRF Summer Conference	Bjarne Haugstad Chairman of NDRF

Future NDRF Activities:

Activity	Date	Place
NDRF Week-end Seminar: Introduction to Mine Action	6 th to 7 th October, 2007	Hevring, Denmark
NDRF MiniSeminar	25 th October, 2007	FOI, Grindsjön, Sweden
NDRF Seminar Molecular and Odour Detection	24 th January, 2008	DTU, Kgs. Lyngby, Denmark
NDRF MiniSeminar	March, 2008	Denmark
NDRF Summer Conference	27 th to 29 th August 2008	Sweden
NDRF MiniSeminar	October 2008	Norway

List of Abbreviations:

AAU	Ålborg Universitet (DK)
AU	Århus Universitet (DK)
AAUE	Ålborg Universitet, Esbjerg (DK)
DANDEC	Danish Demining Centre (DK)
DCA	Danish Church Aid / Folkekirkens Nødhjælp (DK)
DDG	Danish Demining Group (DK)
DDRE	Danish Defence Research Establishment (DK)
DTU	Danmarks Tekniske Universitet (DK)
FFI	Forsvarets forskningsinstitut (NO)
FOFT	Forsvarets Forskningstjeneste (DK)
FOI	Totalförsvarets Forskningsinstitut (SE)
GICHD	Geneva International Center for Humanitarian De-mining (CH)
HIAS	Hærens Ingeniør og ABC Skole, Danmark (DK)
IMM-DTU	Informatik og Matematisk Modellering – DTU (DK)
JRC	Joint Research Centre, Ispra (I)
MAIC	Mine Action Information Center (USA)
NDRF	Nordic Demining Research Forum
NOKSH	Norsk Kompetansesenter for Specialsøkshun - NOKSH A/S (NO)
NPA	Norwegian Peoples Aid / Norsk Folkehjelp (NO)
NTNU	Norges Teknisk-Naturvidenskabelige Universitet, Trondheim, Norge (NO)
RMA	Royal Military Academy (BE)
RUC	Roskilde Universitets Center (DK)
SDU	SydDansk Universitet (DK)
SRV	Räddningsverket (SE)
SWEDDEC	Totalförsvarets ammunitions- och minröjningscentrum Swedish EOD and Demining Centre (SE)

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