

**DEFENSIE
LA DÉFENSE**



**VOORRANG AAN VREDE
PRIORITE À LA PAIX**

Protocol V on ERW: Influence on clearance operations

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22 Feb 10



- Maj SBH Luc Moerman
- CO DOVO
- 1982-1985 : KKS Laken
- 1985-1989 : KMS 125 TAW
- 1989-1994 : 261 Cie Mun (Lüdenscheid)
- 1994-1995 : Sec Logistiek (Ossendorf)
- 1995-2000 : Log Sch (Doornik) (+ 2^e cyclus)
- 2000-2006 : DOVO Cie Poelkapelle (+ SBH)
- 2006-2010 : ACOS Ops & Trg / J5 EOD
- 2010-201. : DOVO
- Officier Vernieuwer Munitie (BEL)
- Officier OVO (BEL)
- Biological Chemical Munition Disposal (GBR)
- Improvised Explosive Device Disposal (GBR)
- Military Search Advisor (GBR)
- 1994 : Balkans tour (Insp Mun)
- 1997 : UNTAES (Vukovar)
- 2002 : UXO LAO
- 2003 : BOSNIA (Explosive Winter)



Outline

- Framework
- Aim
- Terminology
- Prevention is better than cure
- Clearance as part of the cure
- Case study Lebanon
- Conclusions



YOUR CHOICE. WE CAN TRAIN YOU ON SOME TOUCHY-FEELY GARBAGE, OR WE CAN GO BLOW STUFF UP. WHO WANTS TO BLOW STUFF UP?



Training day at EOD headquarters



Preliminary remarks

- Layman's point of view
- Focus on clearance phase (one step in process):
 - !! Mine action = five complementary group of activities:
 - Mine Risk Education (MRE)
 - Demining (survey, mapping, marking and clearance)
 - Victim Assistance
 - Stockpile Destruction
 - Advocacy (against the use of anti-personnel mines)



Framework

- UN Convention on Certain Conventional Weapons
- Protocol I (non-detectable fragments)
- **Protocol II (mines, booby traps and other devices)**
- Protocol III (incendiary weapons)
- Protocol IV (laser blinding weapons)
- **Protocol V (Explosive Remnants of War)**

Consists of:

- Legally binding Protocol
- Non-legally-binding Technical Annex



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Aim

- **post-conflict** remedial measures of a generic nature

in order to **minimise** the risks and effects of ERW

- generic preventive measures, through voluntary best practices specified in a Technical Annex

for improving the reliability of munitions, and therefore **minimising** the occurrence of ERW



Adjutant Stefaan VAN PETEGHEM was tewerkgesteld bij de Dienst voor Opruiming en Vernietiging van Ontploffingstuigen (DOVO), meer bepaald in het peloton "Ontmanteling van Toxische Munitie" te Poelkapelle. Onze EOD-collega overleed op 03 september 2008 in LEBANON, waar hij als chef van de EOD-ploeg van BELUFIL, slachtoffer werd van een tragisch ongeval tijdens het opruimen van submunitie.

L'adjutant Stefaan VAN PETEGHEM était affecté au Service d'Enlèvement et de Destruction d'Engins Explosifs (SEDEE), plus précisément au peloton "Démantèlement de munitions toxiques" de Poelkapelle. Notre collègue EOD est décédé le 03 septembre 2008 au LIBAN, où il était chef de l'équipe EOD de BELUFIL, victime d'un tragique accident lors de l'enlèvement d'une sous-munition.

Der Adjutant Stefaan VAN PETEGHEM gehörte beim Belgischen KAMPFMITTELRAÜMUNGSBATAILLON (DOVO-SEDEE) zum zug zur "Delabolierung Toxischer Munition" in Poelkapelle. Unser Kollege ist am 3. September 2008 in LIBANON umgekommen, wo er als Führer des EOD-TEAMS von BELUFIL Opfer wurde eines tragischen Unfalls während der Räumung einer Submunition.





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Terminology (Art 2)

Munition

Mines, booby traps
and other devices

ERW

Existing

UXO

AXO

explosive ordnance that has not been used during an armed conflict, that has been primed, fused, armed, or otherwise prepared for use and used in an armed conflict. It may have been fired, dropped, launched or projected and should have exploded but failed to do so. Abandoned explosive ordnance may or may not have been primed, fused, armed or otherwise prepared for use.



Terminology

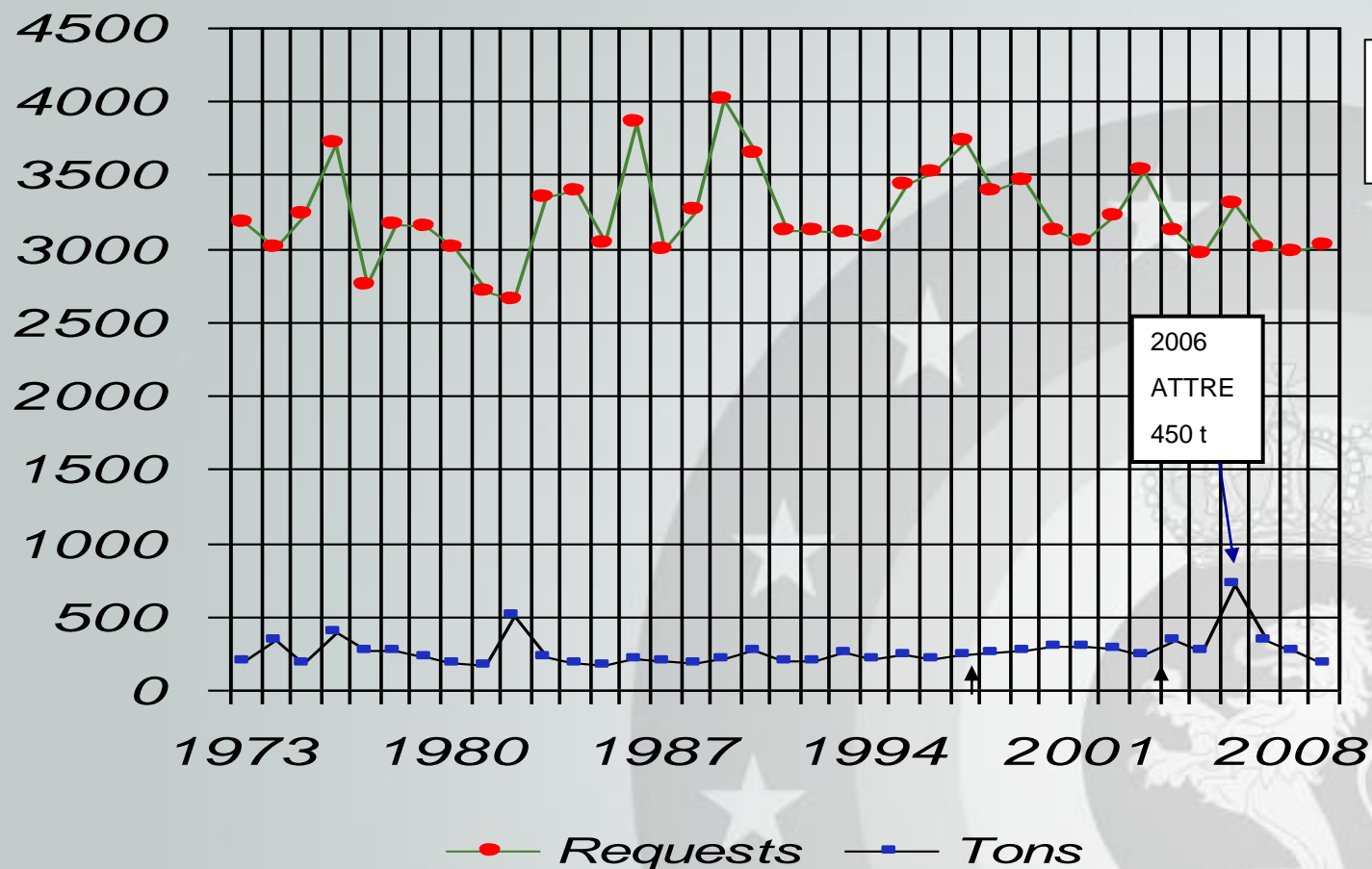
Currently used doctrine (NATO):

- Mines
- UXO other than mines or IED's (no explicit term)
- Improvised Explosive Devices (current threat)

Basis for further lines of development (DOTMLPFI)



Existing ERW



3027
requests

2009

191 Ton



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Prevention is better than cure (⇒ occurrence ERW)

- Two pronged approach
- Art 9: Generic preventive measures
- Refers to Technical annex
 - Munitions Manufacturing Management
 - Munitions Management (labo testing, life firing, ...)
 - Training
 - Transfer
 - Future production (improving reliability)



Prevention is better than cure (↘ casualties)

- Recording, storage and release of information for UXO and AXO
 - location of targets, nature, estimated numbers
 - Para 1.(c).(i) content
 - (3) methods of identification
 - (4) safe method of disposal
 - Mechanism : UNMAS, IMSMA
 - Timing: ASAP



Prevention is better than cure (↗ casualties)

- Recording, storage and release of information for UXO and AXO
- Warnings, risk education, marking, fencing and monitoring
 - feasibility : use during mobile phase of battle
 - ↔ mined areas (static, well recorded)
 - intentional entry due to attractive material



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Clearance as part of the "cure"

- Protocol V: no suggested methodology
- "to minimise" versus "to eliminate"
- IMAS: Battle Area Clearance (\Leftrightarrow Demining)
- Objective: to eliminate **all** explosive ordnance related risks
- confusion : 99,6% (0,35% Specified Quality Limit)



Clearance as part of the cure

- Battle Area Clearance
- Two main phases:
 - Surface Clearance : visual clearance
(residual risk, thorough risk analysis)
 - Sub Surface Clearance : instrumental clearance
- Terrain oriented activity
- Permits statements on status of area
- BEL: Engr based capability



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Case study Lebanon

ERW 2006

UXO

- Widely spread historical pollution due internal conflicts
(15 years, ended in 1990)
- Huge contamination of cluster munitions
(July War, est.500.000 clusters, 1.000 strike sites)

AXO

- small storage sites
(Hezbollah)

Mines 2006

- Mining of the Blue Line (border Lebanon-Israel)
- Use of APers to protect Hezbollah positions



Case study Lebanon

(📍 occurrence ERW)

- Origin of explosive ordnance : US
- Produced under licence
- ISR personnel
- Munition Manufacturing Management
- Munition Management

Facts:

- Munition generally in good external condition
- BUT: fuzing systems => high rate duds
- Oldest lots were used







631682



7-73-B-25

4-73-67

4-73-18

EEEDD

4-B1



Case study Lebanon

(✂ casualties)

Recording, storage and release of information for UXO / AXO

- location of targets, nature, estimated numbers
 - Over 1.000 strike areas, mixed pollution (dropped, projected)
 - Based on reports by civilians, Hezbollah
 - (release 2009 of some minefields location, marking Blue Line)
- methods of identification
 - Munition was known (US TM60)
- safe method of disposal
 - US TM 60 series
 - ISR munition: via allies



Case study Lebanon

(📍 casualties)

Recording, storage and release of information for UXO / AXO

- Mechanism : UNMAS, IMSMA
 - new to BEL armed forces
 - currently in instruction
 - most armed forces use and integrate commercially available software



Case study Lebanon

(🚧 casualties)

Warnings, risk education, marking, fencing and monitoring

- Feasibility
 - 1.000 strike areas (several 100/1000 metres of fencing required)
 - Terrain
- Risk education
 - Provided by Engr
 - Accreditation issues
- No known cases on intentional entry due to attractive material



Case study Lebanon Clearance

Surface Clearance

- Fast solution with great effect (+10.000 UXO)
- Initially no problem because of season (dry, no vegetation)
- Combined deployment of EOD team + Engr section
- !! Mindset : no mines BUT what if ERW reacts to contact
2 incidents: 4 injured
- Importance of detailed risk assessment





Case study Lebanon Clearance

Sub-Surface Clearance

- No recorded best practices / effectiveness of equipment
- Deployment based on existing material
 - Cold war oriented Engr capability
 - Detectors: ATk + APers mines
- Introduction of new equipment due to safety and technical issues
 - Personnel Protective Equipment
 - UXO detector
 - Blast boots
 -







Case study Lebanon Clearance

- Risk tolerance: humanitarian Ops ⇔ Combat Ops
- Output must be "up to standards" ⇔ breaching
- Accreditation
- Quality Management (workload)



Case study Lebanon Clearance

- DOVO approach: Roving
!! Munition oriented ↔ Terrain oriented
- Humanitarian impact ?
Fast relief but possible residual hazard





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Conclusions

- Protocol contains little "technical" guidance
- Generic measures
- Added value in suggested information flows
BUT Technical annex is non-legally-binding
- Important platform for promotion of UN standards (IMAS, IMSMA)
BUT compliance requires investments throughout the different lines of development

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