<table>
<thead>
<tr>
<th>Belgian EOD Group</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SitRep</strong></td>
</tr>
<tr>
<td>Briefing GECE</td>
</tr>
<tr>
<td><em>LtCol GS MOERMAN Luc</em></td>
</tr>
<tr>
<td>04 May 2011</td>
</tr>
</tbody>
</table>
AGENDA

• Organisation

• Main tasks
  - Disposal of conventional munition
  - OCW program
  - Disposal of IEDs
  - Instruction and training
  - EOD support abroad

• Defeat the network

• Industry/Material related issues
**Personnel**

- **Total OT**: 26 - 182 - 133 (341)
- **Sit Jan 11**: 23 - 139 - 122 (284)
- **OT**: 18 - 128 - 62 (208)
- **Sit Jan 11**: 17 - 95 - 63 (167)

**CHOD**

**ACOS Ops & Trg**

**COMOPSAIR**

**COMOPSLAND**

**COMOPSMED**

**COMOPSNAV**

**COL 2D**

- **4 Engr Bn**
- **11 Engr Bn**

**EOD Gp**

**MEERDAAL**

- **171**
  - **(130)**
  - **Army**
  - **Air**
  - **Navy**

**POELKAPELLE**

- **128**
  - **(115)**
  - **Army**
  - **Air**
  - **Navy**

**ZEEBRUGGE**

- **42**
  - **(39)**
  - **Navy**
  - **Army**
MAIN TASKS

• Disposal of ammunition WW I & WW II and obsolete Ammunition (*CMD*)
• Dismantling Toxic ammunition WW I (*OCW*)
• Disposal of IEDs (*IEDD*)
  (technical assistance to Juridical Authorities)
• Instruction and training
• EOD support abroad
On land (responsive, initiated by Police)
**DIVING TASKS** in territorial sea *(RDS : Ready Duty Ships)* and inland waterways
AIRCRAFT CRASH

Crash F16
SOMAL -FAILON 2004
Sites (known)

Dadizele
Zwijnaarde
Mesen
Matagne
Zwijndrecht
# Sites (known)

<table>
<thead>
<tr>
<th>SITE</th>
<th>HISTORY</th>
<th>QTY</th>
<th>EXECUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>DADIZELE 2</td>
<td>Dump WW I</td>
<td>?</td>
<td>No permission by owner</td>
</tr>
<tr>
<td>ZWIJNAARDE 2</td>
<td>Explosion GE Mun Dep WW II</td>
<td>20 t</td>
<td>PLANNED</td>
</tr>
<tr>
<td>MATAGNE</td>
<td>Dump GE WW I/ II + PRB</td>
<td>?</td>
<td>NOT PLANNED</td>
</tr>
<tr>
<td>MESEN</td>
<td>2 mine chambers WW I</td>
<td>50 - 90 t</td>
<td>NOT PLANNED (15 to 25 m depth)</td>
</tr>
<tr>
<td>Fortress</td>
<td>Mun UK/BE/FR/GE WW I / II</td>
<td>2000 - 4000 t</td>
<td>Until 2008: 40t</td>
</tr>
<tr>
<td>ZWIJNNDRECHT</td>
<td></td>
<td></td>
<td>2009: 98t</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2010: 30 t</td>
</tr>
</tbody>
</table>
ZWIJNDRECHT

LONCIN 2007
• NTM : immediately - 1hr (>office hours)
• one team in MEERDAAL
• one team in POELKAPELLE
• one team EOD-Divers in ZEEBRUGGE
• at home with mobile phone and ASTRID
CMD

2748 requests

2010

174 Ton

Number of requests

Tonnage
MAIN TASKS

- Disposal of ammunition WW I & WW II and obsolete Ammunition (*CMD*)
- Dismantling Toxic ammunition WW I (*OCW*)
- Disposal of IEDs (*IEDD*)
  (technical assistance to the Juridical Authorities)
- Instruction and training
- EOD support abroad
### THE ‘POELKAPELLE’ PROBLEM

#### WW I
- 1.455 millions projectiles
- Toxic shells: 4,5%
- 30 % duds …

#### Today
- 250 t / year
- 700 EA toxic shells (OCW) / year

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>Tox Mun</th>
<th>Conv. Mun</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
<td>Number</td>
</tr>
<tr>
<td></td>
<td>(millions)</td>
<td></td>
<td>(millions)</td>
</tr>
<tr>
<td>GERMANY</td>
<td>33</td>
<td>6,4</td>
<td>485</td>
</tr>
<tr>
<td>FRANCE</td>
<td>16</td>
<td>4,6</td>
<td>334</td>
</tr>
<tr>
<td>GREAT-BRITAIN</td>
<td>4</td>
<td>2,2</td>
<td>178</td>
</tr>
<tr>
<td>US</td>
<td>1</td>
<td>12,5</td>
<td>7</td>
</tr>
<tr>
<td>RUSSIA</td>
<td>3</td>
<td>4,2</td>
<td>69</td>
</tr>
<tr>
<td>AUSTRIA</td>
<td>5</td>
<td>2,9</td>
<td>170</td>
</tr>
<tr>
<td>ITALY</td>
<td>4</td>
<td>2,7</td>
<td>146</td>
</tr>
<tr>
<td>TOTAL</td>
<td>66</td>
<td>4,5</td>
<td>1.389</td>
</tr>
</tbody>
</table>
OLD CHEMICAL WEAPONS

7.7cm (DEU)

20cm LIVENS (GBR)
THE BELGIAN OCW PROGRAM

- **1989**: Government decision OCW program

- **1997 – 1999**: Intensive testing of the installation
  - Modification of process
  - Definition of new necessary investments

- **1999**: Routine identification and dismantling

- Main process: *mechanical separation*

- **2002**: Introduction of *contained detonation*
Inflow
Daily found WWI ammunitions

High Priority

Low Priority

IDG
Non destructive IDF

Identified OCW Platform

Non OCW Platform

OMG
Dismantling

CDC

CED
Scrap

‘Heritage’
Stockpiled supposed OCW since 1980
Chamber + OffGas Treatment
- $\text{NEQ}_{\text{max}} = 50 \text{ Kg}$
- $\text{NEQ}_{\text{regime}} = 25 \text{ Kg}$
- Detonation in vacuum condition
- ➔ Reduction Impulsive Load + Noise

Target Mun
- (2008 – 2010) : OCWs ➔ 21cm
- (2011 - …)
  - Most polluting UXOs
  - Daily inflow OCWs

DONOR : Slurry (LEDC) – 0.9 NEQ
To investigate some fundamental aspects of the basic functioning of a CDC and some of its operating parameters.

Agent of choice: sulphur mustard (Yperite)

Basic functioning & operating parameters

- Overall: residual yperite (similar to Destruction Efficiency, DE)
- Previous work: donor charge and “mechanical” destruction of the munitions
- This work: performance of the donor charge to destroy the CWA
  - Thermal effect versus shock wave
  - Brisance of the donor, explosion temperature, importance of aluminized explosives
  - Use of additional water
  - Influence of vacuum, inert or reactive (O₂) gas
  - Ratio donor/CWA (later)
TAKE AWAY’s

- Detonating donor charge has a limited additional contribution
  - In this case, about 1-% increase of DE
  - Not yet fully clear if this “1-% effect” is only due to the shock wave
  - Contribution of the shock wave could increase when the ratio “agent/donor” increases

- Residual yperite as function of temperature indicates that the high temperature in the fireball is the main factor responsible for destruction of the agent

- Appropriate detonation (i.e. brisance of the donor charge) is required for *dismantling* the item but…

- …high destruction efficiency of the agent will be achieved with high energy energetic material.
MAIN TASKS

- Disposal of ammunition WW I & WW II and obsolete Ammunition (*CMD*)
- Dismantling Toxic ammunition WW I (*OCW*)
- Disposal of IEDs (*IEDD*)
  *(technical assistance to the Juridical Authorities)*
- Instruction and training
- EOD support abroad
NATIONAL STAND-BY 24/24 Hr
- one team in MEERDAAL barracks (NTM 15 min)
- one team at home with mobile phone and ASTRID
- up to 4 teams
NEUTRALIZATION IMPROVISED DEVICES
POST-EXPLOSION investigation
TECHNICAL REPORTS
NATIONAL REPOSITORY FOR EVIDENCE
Improvised Explosive Device Disposal

- 103 requests
- 57 reports
- 2001 NEW YORK
- 2004 MADRID
- 2005 LONDON
- 2010

Graph shows the number of requests from 1972 to 2008, with peaks in 1988 and 2004.
MAIN TASKS

- Disposal of ammunition WW I & WW II and obsolete Ammunition (CMD)
- Dismantling Toxic ammunition WW I (OCW)
- Disposal of IEDs (IEDD) *(technical assistance to the Juridical Authorities)*
- Instruction and training
- EOD support abroad
INSTRUCTION AND TRAINING

EOD SCHOOL

DIVING SCHOOL
INSTRUCTION AND TRAINING

Courses in F, N and/or E

- intra COL-2D
- intra Defense
- other Federal Departments (police, …)
- civil authorities (Fire Service, critical infrastructure, ..)
- international (Homeland and “in country”)

! Accreditation (CHE) Police (IEDD operator)
! Info IED = module basic training Police
MAIN TASKS

- Disposal of ammunition WW I & WW II and obsolete Ammunition (*CMD*)
- Dismantling Toxic ammunition WW I (*OCW*)
- Disposal of IEDs (*IEDD*)
  
  (technical assistance to the Juridical Authorities)
- Instruction and training
- EOD support abroad
AFGHANISTAN

PRT KUNDUZ: 02 teams
PRT KUNDUZ
LEBANON (UNIFIL)

BELUFIL – ATIRI:
01 team
Attack the network

- Identify
- Analyse
- Reconstruct
- Compare

L2 Technical Exploitation Report
Industry / Material related issues

- internal organization armored EOD-vehicle
- medium-sized RVC
- ECM-resistant detector
- containment vessel (single / multiple use)
- incident information database (GIS module)
Questions?

Moerman Luc
Commanding Officer
LtCol G5
OF4 (BEL) Army

Belgian EOD Group
Naamsesteenweg 100
B-3053 Oud-Heverlee
Belgium

UNCLASS PHONE (+32) (0)16 39 5400
UNCLASS FAX (+32) (0) 16 39 5414
UNCLASS luc.moerman2@mil.be

All that is necessary for evil to succeed is that good men do nothing.