German experience on clearance and destruction of cluster munitions remnants

Intersessional Meeting to the Convention on Cluster Munitions, 16 – 17 May 2022
Content

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The Site and Contaminated Area
Wittstock Former Military Training Area

~ 80 km NW of Berlin, Germany

Area approximately 120 km², of which 11 km² are contaminated with Cluster Munition remnants

1945 – 1993: Ground-to-ground and air-to-ground training area of the former Soviet Forces

High Density of UXO (Tank and Artillery Munitions, Rockets, Bombs ...)
The Contaminated Area
Clearance Concept for Wittstock
Legal and technical framework

No federal agency for explosive ordnance disposal; planning / supervision of clearance at Wittstock exercised by Federal Institute for Real Estate

Clearance conducted by private sector

High contamination with UXO, fragments, live and inert ordnance, i.e. large calibre dropped munitions and shaped charge munitions

Limits for Mechanical clearance

Forest Fire Hazard
Concept for Cluster Munitions Clearance at Wittstock

(1) Preparation of the site: desk study and creation of an access and evacuation road network as well as of a fire protection system

(2) Controlled burning of vegetation (heath) within the prepared fire strips

(3) Clearance

(3) Detailed documentation of finds and clearance results

(4) External quality control of clearance results
(1) Fire Protection System

Total Length: 66,579 m

Southern part: natural fire protection, no fire breaks required

Fire protection system could not be established in the eastern part because of high forest
Concept for Cluster Munitions Clearance

(1) Clearance of access road network and fire strips

(2) Controlled burning of vegetation (heath) within the prepared fire strips

(3) Clearance

(3) Detailed documentation of finds and clearance results

(4) External quality control of clearance results
(2) Controlled Burning

Favourable conditions only during limited periods of time per year
Concept for Cluster Munitions Clearance

(1) Clearance of access road network and fire strips

(2) Controlled burning of vegetation (heath) within the prepared fire strips

(3) Clearance

(3) Detailed documentation of finds and clearance results

(4) External quality control of clearance results
(3) Clearance - Status as of 25 March 2022

5 m Fire Protection Ridge
Contaminated Area
Cleared Area
Cleared Tracks
Burned and prepared for clearing
Clearing ongoing
Clearing ongoing at tracks
Preparatory work ongoing
Need to be burned
Personnel (annual average) and financial resources

- 2017: 40 Personnel
- 2022: ~200 Personnel
  (~13% of the German UXO Clearance Industry)

- 2017: 1,628,000 €
- 2018: 9,503,739 €
- 2019: 11,523,802 €
- 2020: 12,939,800 €
- 2021: 21,386,571 €
- 2022: 27,000,000 € (estimated)
- 2023: 27,000,000 € (estimated)
- 2024: 27,000,000 € (estimated)
- 2025: 18,500,000 € (estimated)
- 2026: 250,000 € (estimated)

- Total: approx. 157,000,000 €
Field Works
Status as of 25 March 2022

Total Area to be cleared: 11 km²

Total Area cleared as of 25 Mar 22:

Inside cluster munitions area: 4.73 km² (= 43 %)

Outside cluster munitions area: 0.77 km² (fire protection strips, trails etc.)
Cluster Munitions Finds

- Total: 5513
- AO-1 Sch: 200
- AO-1 M: 2
- AO-2,5: 2
- AO-2,5RTM: 79
- AO-10 Sch: 12
- ShOAB-0,5: 3890
- PTAB 1: 273
- PTAB-1 M: 7
- PTAB-2,5 M: 601
- PTAB 2,5 TG: 17
- PTAB-10-5: 113
- ZAB 1-E: 1
- ZAB 2,5M: 231
- ZAB 2,5S: 83
- ZAB 2,5: 2

Numbers as of 25.03.2022
### Finds

<table>
<thead>
<tr>
<th>Date</th>
<th>Cluster Munition</th>
<th>Other Munition</th>
<th>Munition fragments with explosives (*)</th>
<th>Scrap without explosives (*)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>(pieces)</td>
<td>(pieces)</td>
<td>(tons)</td>
<td>(tons)</td>
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<tr>
<td>14.03.-25.03.2022</td>
<td>75</td>
<td>810</td>
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<td>210</td>
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<td>28.02.-11.03.2022</td>
<td>18</td>
<td>1114</td>
<td>1</td>
<td>0</td>
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<td>14.02.-25.02.2022</td>
<td>28</td>
<td>2336</td>
<td>9</td>
<td>0</td>
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</table>

(*) Number for munition fragments and scrap indicate the amount of material shipped off Wittstock during a specific time period.

*Numbers as of 25.03.2022*
Large UXO and Debris / Scrap
Scrap recovered from a single parcel (50 x 50 m)
Thousands of Shell Casings
Piles of bombs
Outlook
# Planning the years 2022 - 2025

To be cleared Jan 2022 – Aug 2025: 6,620,000 m²

<table>
<thead>
<tr>
<th>Year</th>
<th>Planned Personnel (yearly)</th>
<th>Planned cleared area [m²]</th>
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</thead>
<tbody>
<tr>
<td>2022</td>
<td>200</td>
<td>1,500,000</td>
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<tr>
<td>2023</td>
<td>200</td>
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<td>2,200,000</td>
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<tr>
<td>2025</td>
<td>150</td>
<td>720,000</td>
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</tbody>
</table>
Factors influencing clearance speed - Risks

Reduced productivity of clearance due to

• Higher density of metal objects and UXO than expected
• Necessary works to maintain fire protection system
• Limited personnel resources for UXO clearance
• Weather conditions
Destruction of cluster munition

Thank you very much ...