Sustaining deployed camp facilities in developing countries

COMBAT ENGINEER 2016, PRAGUE

Colonel (GS) Holger Gratz
Accommodation Capability Concept

**Legend:**
- Fixed Accommodation
- Mobile Field Accommodation
- Exercises and Training
- Infrastructure, Environmental Protection and Services
- All services and military organisational elements
- Bundeswehr Logistics Command

**Fixed Accommodation**
- Σ 14,000

**Mobile Field Accommodation**
- Σ 6,200

**Exercises and Training**
- Σ 5,600

- 5,200 Exercises Pool
- 200 Type I Special Engineer Training
- 200 Type II Special Engineer Training

**Infrastructure/CSO Camp**
- Σ 7,500 (up to 10,000)
- • Mission infrastructure
- • Third party provider (NHS, MN, CSO)
- • Framework contract services

**2,500 Common Pool**
- Mobile Field Accommodation
- max 60 days

**3,700 Service stocks**

**6,500 Deployable Camp**
- max 1 year

**LoA 10,000 + EV**

**All services and military organisational elements**
Bundeswehr Special Engineer Affairs

FMOD
Forces Policy II 4

BwLOGCOM

XX

BwLogC
Depots/Warehouses

BwLogS
Mil Driving Schools

Spec Engr Regt
Log Bn

Map of Germany with cities and symbols indicating BwLOGCOM, Log Bn, Spec Engr Regt, and Bw Log School.

Symbols:
- BwLOGCOM
- Log Bn
- Spec Engr Regt
- Bw Log School
Mobile Field Accommodation

2,500
Common Pool
Mobile Field Accommodation
max 60 days

3,700
Service stocks

Mobile field accommodation - Examples
Fixed Accommodation - KFOR - Military Camp

Fixed Accommodation

6,500 Deployable Camp
max 1 year

Containers

Tents
Fixed Accommodation

Infrastructure/CSO Camp

Σ 7,500
(up to 10,000)

- Mission infrastructure
- Third party provider (NHS, MN, CSO)
- Framework contract services

1 year +
Fixed Accommodation

6,500 Deployable Camp
max 1 year

Challenges
Project
“Bundeswehr Field Camp Module System”

Type I – 150 (tent)
Type I – 200 (tent+)
Type II – 500
(protected container)
Type I – 150 (Tent)

- Universal transport platform (UTP)
- Working area
- Messing/social area
- Water supply, laundry
- Accommodation
- Sanitary facilities
- Power supply
- Accommodation
- Sanitary facilities
- Power supply
- Messing/social area
- Water supply, laundry
- Working area
- Universal transport platform (UTP)
Type I – 150 (Tent)

Type I – 150 (tent)

300
Type I – 200 (Tent+)
Type II – 500 (Protected Container)

- Quarters for 4,000 personnel
- Two remote working areas for 500 personnel each
- Minimum in variety of materiel
- Reduction of training and logistics expenditure
- Higher degree of protection
- Integration of renewable energies
## Project Overview

<table>
<thead>
<tr>
<th>Type I – 150 (tent)</th>
<th>Tents</th>
<th>300</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type I – 200 (tent+)</td>
<td>Tents</td>
<td>1,200</td>
</tr>
<tr>
<td>Type II – 500 (protected container)</td>
<td>Containers</td>
<td>5,000</td>
</tr>
</tbody>
</table>
Energy Technology

- Battery Storage Systems
- Adsorption Chillers
- Heat Recovery
- Solar Thermal System
- Recycling
- Wind Turbine
- Waste Incineration Plant
- Cogeneration Plant
- Water Recycling
- Photovoltaic System
- Frequency Converter
- Biogas Plant
- Small Wind Turbine
Energy Strategies

- External Certification
- Energy Supply Contracting
- Energy Demand Reduction Contracting
- Training
- Energy Demand Reduction
Benefit Analysis
Example MALI \([ < 3 \text{ years} / < 300 \text{ PAX} ] \)

<p>| | | | | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Flag" /></td>
<td><img src="image2.png" alt="Man" /></td>
<td><img src="image3.png" alt="Map" /></td>
<td><img src="image4.png" alt="Diagram" /></td>
<td><img src="image5.png" alt="Diagram" /></td>
<td><img src="image6.png" alt="Diagram" /></td>
<td><img src="image7.png" alt="Diagram" /></td>
<td><img src="image8.png" alt="Diagram" /></td>
<td><img src="image9.png" alt="Diagram" /></td>
<td><img src="image10.png" alt="Diagram" /></td>
<td><img src="image11.png" alt="Diagram" /></td>
<td><img src="image12.png" alt="Diagram" /></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>0</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

\[ \sum_{0}^{n} X = \begin{array}{cccccccccccc} 7 & 3 & 4 & 1 & 1 & 4 & 0 & 0 & 0 & 0 & 0 & 1 & 2 & 0 & 0 \\
49 & 9 & 16 & 1 & 1 & 16 & 0 & 0 & 0 & 0 & 0 & 1 & 4 & 0 & 0 \end{array} \]

Result:
<p>| | | | | | | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ΣX</td>
<td>8</td>
<td>3</td>
<td>8</td>
<td>1</td>
<td>3</td>
<td>6</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>X²</td>
<td>64</td>
<td>9</td>
<td>64</td>
<td>1</td>
<td>9</td>
<td>36</td>
<td>0</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>16</td>
<td>36</td>
</tr>
</tbody>
</table>

**Result:**
Sustaining deployed camp facilities in developing countries

COMBAT ENGINEER 2016, PRAGUE

Colonel (GS) Holger Gratz