Lesson 3.5b
Analysis of the Operating Environment (AOE)
Operating Environment Evaluation;
Analysis of the Physical Terrain (PT)
Content

• APIR and APII
• Mapping
• Terrain features and key facilities
• LLOCs, WLOCs, relief and vegetation
Learning Outcomes

• Explain Area of Peacekeeping Intelligence Responsibility (APIR)
• Explain Area of Peacekeeping Intelligence Interest (APII)
• Using a map conduct an analysis of PT, including identifying terrain features and key facilities
• Identify key LLOCs, WLOCs, relief and vegetation
Relevance

- Movement is constrained and restrained by physical terrain (PT)
- Physical terrain is affected by climate and weather
- Human, information domains exist in physical terrain
- COAs can exploit the opportunities that Physical Terrain provides
- Terrain affects the COAs available to actors that pose as a threat to the UN mandate
Activity

Importance of Physical Terrain in military operations

Instructions:
• Discuss what is meant by the ”Physical Terrain” (PT)
• Discuss how the Physical Terrain is affected by climate and weather and its impact on the conduct of military operations.
• Illustrate by using examples from military history or your own experiences where a good analysis of the Physical Terrain resulted in the success of a mission and/or where a poor analysis of the Physical Terrain seriously hampered or even prevented the accomplishment of a mission

Approximate Time: 15-20 minutes
Where is Analysis of Physical Terrain in the AOE process?

- Analysis and conclusions of PT, plus conclusions on Climate & Weather
- Analysis and conclusions on Human Terrain (HT)
- Analysis and conclusions on Information Terrain (IT)
Physical Terrain is one of 3 interconnected layers in OEE

Three ‘terrains’ are interrelated
Physical Terrain

• **Living space** for actors:
  – Live on land and off
  – Influenced by where, when they can live move and work
  – How they use it

• **Focus** on Area of Peacekeeping-Intelligence Responsibility (APIR)

• And wider Area of Peacekeeping-Intelligence Interest (APII)

• Helps visualization of OE
APIR. area given to UN Forces; has responsibility for the production and provision of peacekeeping-intelligence/understanding.

APII. area beyond control of UN Forces and is outside the APIR, but this area has relevance to conduct of UN mission and therefore, be considered and evaluated.

Our own Area of Operations
Learning Activity

How to analyze and evaluate the Physical Terrain (PT):

• **Situation:**
  • Use the scenario to identify APIR and APII

• **Task:**
  • Define the Area of Peacekeeping Intelligence Responsibility (APIR) and the Area of Peacekeeping Intelligence Interest (APII)

• **Time:** Approx. 10 min - group work and discussion
Terrain Features

• Physical Terrain consists of two distinct terrain features:
  – Natural
  – Manmade
Learning Activity

• **Situation:**
  • Use the scenario to identify terrain features

• **Task:**
  Use mapping and other assets to:
  – Identify physical terrain features (Natural and man-made)
  – Mark on map

**Key Question:** How will this affect the actions of the human terrain?

• **Approx. Time:** 10 Min
Example of a map showing key facilities
### Example of 3CF analysis of key facilities in Sector EAST

<table>
<thead>
<tr>
<th>FACTOR</th>
<th>DEDUCTION</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical terrain:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. LLOC in SCT EAST</td>
<td>1.1 LL EAST – WEST</td>
<td>1.1 IR</td>
</tr>
<tr>
<td>2. Entrances to SCT EAST</td>
<td>1.1.1 Main LL is critical for both UN / UNHCR / LP / AG</td>
<td>- What is the condition of the road?</td>
</tr>
<tr>
<td>3. Airfields in SCT EAST</td>
<td>2.1 Main entrance from ERIYA to GARIYA</td>
<td>- What is the type of surface</td>
</tr>
<tr>
<td>4. Relief in SCT EAST</td>
<td>2.1.1 LLOC through mountains</td>
<td>2.1 IR</td>
</tr>
<tr>
<td>5. Bridges in SCT EAST</td>
<td>2.1.2 LLOC go’s through tunnel</td>
<td>- What are the characteristics of the tunnel surroundings</td>
</tr>
<tr>
<td></td>
<td>2.1.3 Tunnel is key entrance</td>
<td>5.1 IR</td>
</tr>
<tr>
<td></td>
<td>3.1 1x Airfield in SCT EAST</td>
<td>- Condition of the bridges</td>
</tr>
<tr>
<td></td>
<td>4.1 Strong relief EAST of SCT EAST</td>
<td>- Classification of the bridges</td>
</tr>
<tr>
<td></td>
<td>5.1 Bridges in SCT EAST</td>
<td>RFI</td>
</tr>
<tr>
<td></td>
<td>5.1.1 3x bridges are critical for entrance from ERIYA</td>
<td></td>
</tr>
</tbody>
</table>
Learning Activity

Key Facilities

• **Situation:**
  • Use the scenario to identify all key facilities in your AIR

• **Task:**
  • Study your sector map and identify key facilities
  • Mark on Map with a clear legend
  • Insert factors into the 3-column format (3CF) and make deductions
  • Draw up a list of IRs

• **Time:** Approx. 20 minutes (group work and discussion)

<table>
<thead>
<tr>
<th>FACTOR</th>
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<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bridges</td>
<td>Are bridge classifications sufficient for UN convoys?</td>
<td>RFI</td>
</tr>
<tr>
<td>Dam at X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electric power plant at Y</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Types of Terrain Analysis and Overlays to Complete
Use of mapping

- Accurate up-to-date mapping is essential
- Digital and analogue
- Map scale: 1:50,000 or 1:100,000 for OE
- Details and clarity important
- Close-up imagery for conducting small-unit operations
- Use separate overlays or digital overlay layers → Don’t reproduce map, highlight objects, elements for making conclusions
- One overlay per specific topic/factor to focus information and to combine single overlays as needed
Overlay Symbols

- **Key Terrain**
- **Restricted Terrain**
- **Severely Restricted Terrain**
- **Built/up Areas**
- **Rivers & Lakes**
- **Land Lines of Communications (LLC)**
- **Rail road**
- **No go waterway**
- **Slow go waterway**
- **Bridge**
- **No go waterway**

* **Outside** Rainy season
** Already in Slow- or No go area
Terrain Overlays

The different Terrain Overlays that allow us to conduct the analysis of military aspects of the terrain are:

- Land Lines of Communication (LLOC)
- Water Lines of Communication (WLOC)
- Relief
- Vegetation
Land Lines of Communication (LLOCs)

MSRs and SSRs designated and named after routes have been evaluated.
Water Lines of Communications (WLOCs)

- Key Terrain
- Restricted Terrain
- Severely Restricted Terrain
- Built/up Areas

Rivers & Lakes

Land Lines of Communications (LLC)

Rail road
- No go waterway
- Slow go waterway*
- Bridge
- No go waterway**

* Outside Rainy season
** Already in Slow- or No go area
Relief

- Up to 3200 meter
- Up to 1750 meter
- Up to 1000 meter
- Up to 750 meter
- Up to 3750 meter
Vegetation

**LEGEND**

- Lake
- Jungle / Rainforest / woodlands
- Grassland type Savannah
- Savannah
- Desert
- Stone Desert
- Mountainous area

UNIGAR – GARYA main map (PKMI pilot course 2019-1)
Learning Activity

- **Situation:**
  - Use the scenario identify LLOCs, WLOCs, Relief, Vegetation in the AIR

- **Task:**
  - Study sector map; identify key LLOCs, WLOCs, Relief and Vegetation
  - Mark on Map with a clear legend
  - Insert factors into the 3-column format (3CF) and make deductions
  - Draw up a list of Information Requirements

- **Time:** 30 minutes (group and discussion)

<table>
<thead>
<tr>
<th>FACTOR</th>
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</tr>
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<tbody>
<tr>
<td>MSR from Town A to B</td>
<td>Threat Actor A needs to control for supplies. May challenge UN FOM UN need to control MSR. Local population requires security in this area.</td>
<td>RFI. Where are vulnerable areas for UN convoys</td>
</tr>
</tbody>
</table>
Take Away

• Understand Area of Peacekeeping Intelligence Responsibility (APIR) and term Area of Peacekeeping Intelligence Interest (APIII)

• Be able to conduct a simple analysis of the PT of an area of operations

• Identify terrain features and key facilities

• Identify key LLOCs, WLOCs, relief and vegetation

• Integrate your analysis into the broader AOE/MPKI products
Questions