Minelaying in cold weather operations

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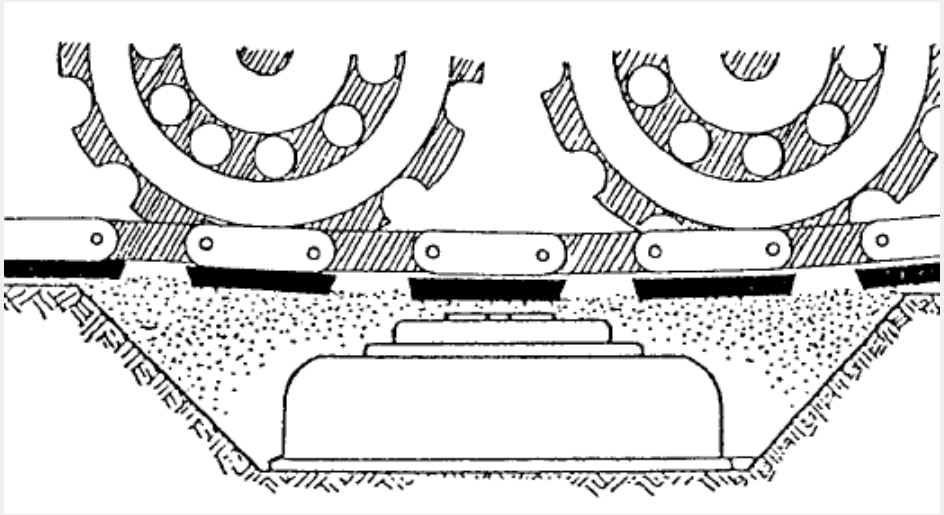
Agenda

- CW effects on mines
- Siting
- Resourcing
- Laying
- Maintenance
- Camouflage
- Scatterable and remote minefields

- Time: 30 min

Cold weather effects on mines

- Measures required to counter effects of snow and ice
- Pressure-actuated mines are most affected
- Diffusion of pressure / bridging
- Snow and ice may dampen effects from explosions
  - Up to 50% reduction in effect when covered with 40cm snow
- Fuzes or other mechanisms may freeze
  - Increased pressure required for track-width mines
  - Failure to detonate



Cold weather effects on mines

- Pressure actuated mines should be placed in shallow holes
  - Pressure plate or fuze above ground
- Mines laid in deep snow should be as close as possible to the surface of the snow
  - Support
    - Compacted snow
    - Boards
    - Etc
- Waterproofing of mines
- Magnetic mines are not significantly affected by snow
  - Decreased battery life

Siting

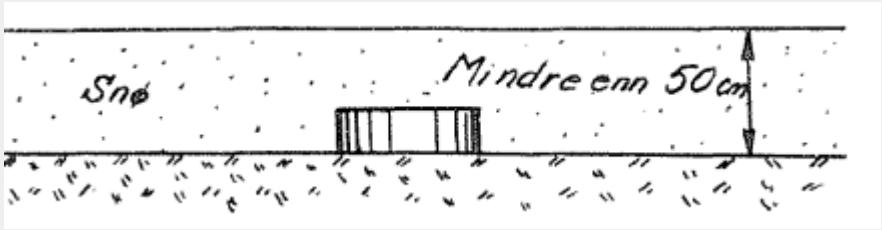
- Keep winter mobility in mind when reccing and siting
  - NOGO or SLOWGO may be GO when frozen
  - Deep snow may difficult to traverse
- Siting should begin *after* camouflaging if vehicles are used
- Pickets for start and end points
- Battle positions for covering units
  - Cover and concealment

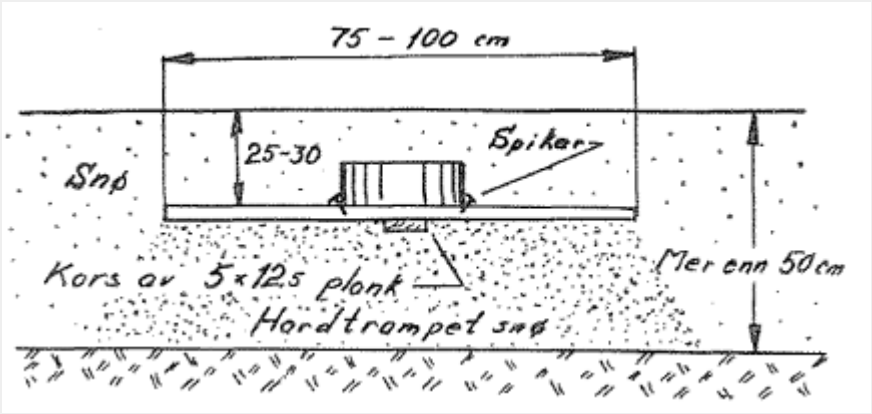
Resourcing

- Establishing a mine dump
  - Snow clearing
- Logistics may not reach mine dumps outside of road network
  - Snow clearing
  - Mobility measures
  - Placing mine dump by road

Laying

- Burial of mines extremely difficult in frozen ground
  - Time required to bury greatly increases
  - Usage of specialized equipment
    - Augers
    - Explosives
- Prechambering minefields
- Snow depth 10-15cm
  - Mine buried in ground
- Snow depth <50 cm
  - Mine placed in ground
- Snow depth > 50cm
  - Mine placed in snow
- Trip wires above or at surface of the snø



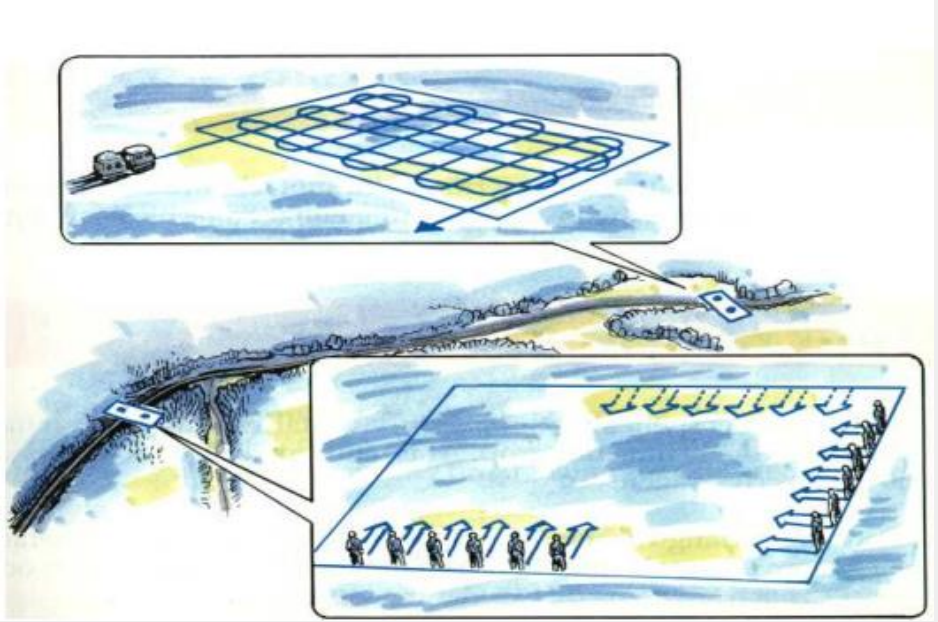


Maintenance

- Minefields must be maintained regularily
- Lifting and relaying minefield after snowfall
  - Heavy snow may trigger mines
  - Reduced efficiency
- Temperature changes
  - Thawing and freezing
  - Impacts mine mechanisms
- Mines shifting and moving after snow melting
  - Mines could end up outside established minefield

Camouflage

- Camouflaging a minefield in winter is challenging
- Camouflaging mine pattern rather than the field itself
- Hiding tracks in snow
  - Vehicles
  - Fake tracks
- Painting mines white
- Snowfall, snowdrift etc. will camouflage field over time
- Melting snow may unmask a field laid in snow



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Scatterable and remote minefields

- Efficiency dependent on fuzing
- Can be surprisingly well camouflaged in deep snow
- Battery life reduced
- Self-righting mines may not right themselves properly in deep snow

Orientation ends
Questions?

(10 minutes maximum)

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