



**NATO
Centre of Excellence
for
Cold Weather Operations**

NOR COASTAL RANGER COMMANDO



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The Norwegian Coastal Ranger Commando

The Norwegian Coastal Ranger Commando (CRCDO) is the Royal Norwegian Navy's dedicated ISTAR and VBSS capability.

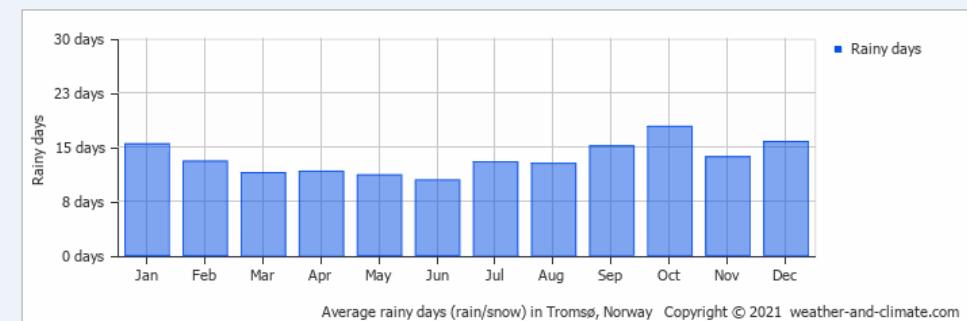
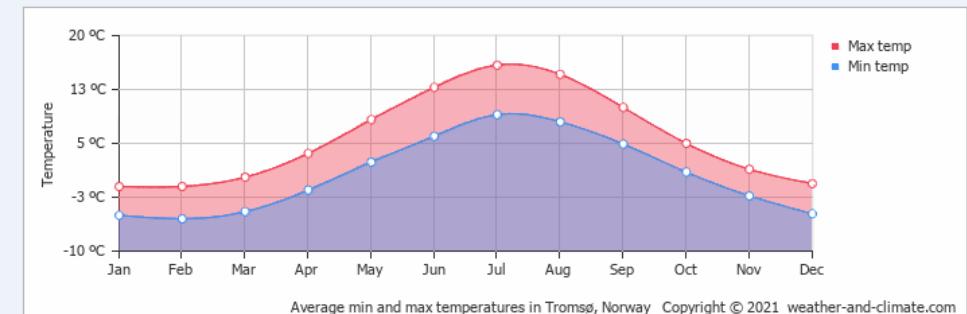
- Primary tasks include:
 - Build SA/SU
 - Deliver target data to long distance weapons
 - VBSS (lvl 3 – not HR)
- Implementation of UAV
- Vide range of operations in the littoral domain and in the arctic
- Challenging coastal environment and arctic climate dominated by long winters.





Weather conditions

- Winter season from November to March.
 - Expect Temperatures between +4°C to -30°C.
- Daylight:
 - Dec-Jan >1Hrs
 - May-July <24HR
- Snow/Ice:
 - September-April
- Stormy season:
 - Feb-March; wind up to 30M/S (67MPH) WCT;
 - Keep in mind winter chill temperatures.
- Icing:
 - Heavy icing on patrol boats during blizzards and freezing temperatures.





Area of Operations

- Islands and narrow fjords, surrounded by mountainous terrain
 - Mountains average from 1500-6000 feet
- High humidity close to the sea
- Dry and cold on the mountain plateau





Planning

- Time:
 - Enough time: allocate at least 2-4 x more time for all phases of the operation.
 - More gear/equipment combined with snow will reduce your infill speed on ground (0,5-1 KM per Hour).
 - During zodiac insertions, your plan should include areas where the patrol can stop to move IOT increase their core body temperature (Every 2nd hour).
 - Concealment of tracks takes a long time and need to be accounted for in your plan.
- Weather factors:
 - Polar low pressure leads to rapid change in weather, get a daily updated forecast!
- Lack of daylight:
 - Favourable for concealed insertion, but your IR/thermal sensors dictates your distance to the target. Distance will be significantly shorter than during daytime.





- Avalanche hazards:
 - Limits what terrain you can use to your advantage.
 - The patrol needs to be sufficient equipped and trained
 - Updated avalanche warnings/rapports prior to execution and during the operation
- *Train as you fight*
 - Conduct your training and education in the environment you are to operate in. (i.e coastal environmental)
 - Adapt your TTP's and equipment according to the experiences you gather during training.





Execution

Environmental factors effect on mission and equipment

- Batteries:
 - 30-60% less power due to freezing temperatures.
 - Bring enough batteries and/or plan with resupply.
 - Test the endurance of your system during freezing temperatures
- UAV
 - Plan on limited ISR support
 - There is a high risk of icing and whiteout due to snow/blizzards
- COMS:
 - Degraded performance on radios, especially HF due to AURORA BOREALIS and limited satellite coverage
- Pre recce's by foot not always feasible
- Risk of winter injuries and equipment failure increase when moving from wet conditions to a colder area.
- Cold weather injuries may appear within seconds





Combat Readiness

- Bring the right equipment.
 - Make sure it has been tested in the environment it being deployed.
- Proper training and experience is key to survival.
- Always make improvements on your situation, dry your kit when ever you can.

- Cold weather and fuel:
 - Issues may occur due to extreme temperatures and depending on your fuel quality.
 - Waxing of filters may happen. Ideally use a high paraffin blend. Get the correct type of fuel!
- Your body uses more energy and water to function in cold temperatures. Make sure you eat and drink more than you usually do.





Questions?

