

Cold Weather Operations Conference

2023



THIS YEARS THEME:
**WARFARE
DEVELOPMENT FOR
THE HIGH NORTH**

The aim of the conference is to highlight current and future geopolitical, military strategic and environmental trends that have implications for the development of the Cold Weather Operations as part of Multi-Domain Operations.



TIME AND PLACE

14. - 16. November
2023
Scandic Hotel Hamar



**WHAT CAN YOU
EXPECT?**

Three tracks
20 exhibitors
40 + hours of lecture
and knowledge
3 days of insight and
inspiration



Scan the QR Code for information

Post Conference Report

Event Summary

Host: Centre of Excellence Cold Weather Operations.

Organizer: Berg-Hansen travel and event management

EXPO: Berg-Hansen travel and event management

Venue: Scandic Hotel, Hamar, Norway

Time: 14-16 November 2023

Content: 39 speakers, 6 panel debates, 23 exhibitors

Attendees: More than 400 attendees from 18 different nations





COE-CWO put warfare development for the High North at the agenda.

“There is a heightened interest in the northern hemisphere among several nations in the world. The need for NATO to be able to operate under cold weather conditions has, as a consequence, increased considerably. This year's conference aimed to build understanding of why the Alliance need for Cold Weather Operations Competence is increasing, how we can utilise this competence, in all domains, and what the industry could do in order to give the Alliance the advantages needed.”

Colonel (a) Simen Sandum, Director (a) COE-CWO

The conference in short:

The aim of the conference was to highlight current and future geopolitical, military strategic and environmental trends that have implications for the development of the Cold Weather Operations as part of Multi-Domain Operations. The challenges in the High North and the Arctic post Russian invasion of Ukraine with Finland and Sweden into NATO, the accelerating climate changes in the arctic, and the rapid development of new technology and Artificial Intelligence lays the ground for discussions on challenges ahead, and solutions the Alliance need for warfare development in the High North.

Hosting the conference, COE-CWO facilitated sharing of recognized expertise and experience among NATO and partner nations. The large Nordic footprint at the conference highlighted Nordic countries position as cold weather experts within the alliance. However, the conference built on cold weather experience from several other nations as well.

The thematic contents of the conference were divided into three complementary tracks with 40 different speakers that shared relevant knowledge and experience:

1. Military Instrument of Power in the High North
2. Cold Weather Environments
3. Cold Weather Equipment development and EXPO

In addition to the academic program, the conference also contained an equipment and material exposition (EXPO). 23 different manufacturers and suppliers showcased different technical solutions for cold weather challenges. This year the industry also held presentations in the EXPO hall during the academic breaks.



Opening ceremony and networking

The conference took place at Scandic Hotel in Hamar and facilitated for “compact games” with everything at one place. The Expo area in “Scandic Scene” served as the heart of the conference together with the “Winter Garden”, where all attendees, speakers, and industry could meet, discuss, and network during the conference. The scene was set with a spectacular opening ceremony with His Majesty Kings Guard followed by a welcome speech from the Director COE-CWO, and an historical introduction from Christian Borch.



Christian Borch, with over 40 years’ experience with newspaper and broadcasting journalism, also led a panel discussion with five speakers representing the three tracks with expertise from the political level, military, industry, academia, and climate research. The formal dinner and entertainment in the EXPO hall in the evening served as a unique venue facilitating networking among allies and establishing new relationships.



39 speakers.

Track 1 Military Instrument of Power in the High North

- *The New High North – Nordic countries as a Military Power in the High North*
- *Military Challenges in the High North, post Russian Invasion of Ukraine.*
- *Arctic security strategy development to counter new challenges.*
- *War studies and R&D - Developing the Military Instrument of Power and Multi-Domain Operations in the High North.*

14 speakers, 2 panel discussions.

Track 2 Cold Weather Environments

- *Changing Climate - How to prepare.*
- *Understanding and Preparing for a changing Cold Weather Environment.*
- *Arctic security strategy development to counter new challenges.*
- *Prepare for the future - Ways and means to prepare for Cold Weather Operations.*

13 speakers, 1 panel discussions.

Track 3 Cold Weather Equipment development

- Trends, development, and new use of equipment for cold weather capable forces related to mobility, survivability, and sustainability.

12 speakers.

NOTE!

Speaker presentations from all tracks can be found at the [Conference Website.](#)

Track 1 The Military Instrument of Power (MioP)

Current and future approach of different Arctic nations' MioP in a context of Multi-Domain Operations. Track 1 highlighted the political and strategic challenges in the Arctic and the High North after the invasion of Ukraine, and the opportunities that follows with Finland and Sweden into NATO. Director General Jon Elvedal Fredriksen opened track 1 with a Nordic political perspective on the situation in the High North. The security landscape in the High North has changed dramatically after the invasion of Ukraine. Finland and Sweden into NATO has accelerated the cooperation between the Nordic countries and LG Ingrid Gjerde emphasized that the goal is to develop a holistic and comprehensive approach that integrates the Nordic defense concept into the NATO



framework. The development of a Nordic air operations center is an example of an initiative to operationalize political strategies and build a stronger NATO in the High North. Sweden is not yet in the Alliance but prepares the ground for what the nation can provide.

The speakers at Track 1 presented various perspectives on Arctic nations' views of the security dynamics in the region. Both climate change and resources will shape the importance of the Arctic region in the future, where several nations and actors will be competing in a divided Arctic region. The different nations have prioritized developing national Arctic and High North strategies, including defense aspects. However, there is so far no shared understanding regarding regional threats, security challenges, and opportunities. Director Esther McClure from the US DOD presented the Pentagon perspective and the development of the Arctic strategies for 2024, now aligned with the other Arctic nations. GM Eifler presented how the US Army Alaska has succeeded in operationalizing the US strategies by building an airborne division ready to fight in the Arctic and in extreme and cold environments anywhere in the world. The General emphasized that training and exercise over time in extreme conditions during the winter period was one success criterion. Speakers from the Danish Arctic command, Norway, and the Joint Warfare Center also highlighted that it is important to prioritize training and

exercise in Arctic conditions and cold weather at all command levels over time. This is essential to be able to develop a broad understanding of how cold environments effects soldiers and forces in multi domain operations. The Nordic exercise plan create possibilities to develop interoperable capacities for cold weather operations within the Alliance.

GM Dag Aamo presented how R&D and education at Defense University Colleges is key in understanding the future strategic and operational environment in the Arctic, and an enabler to support the Alliance to gain High North Capabilities. The strong and close cooperation established with Ukraine is essential to go from lessons identified to lessons learned. The speakers from Ukraine stressed the importance of building resilience in the population and that civil-military readiness and corporation is crucial to keep the society going and to keep the military forces sustained.



Track 2 Cold Weather Environments

Track 2 covered concerns at operational and tactical level regarding planning, preparing and execution of Operations in a Cold Weather Environment. Track 2 also aimed to highlight topics relevant for future development and understanding of Cold Weather Environments.

Dr Ryan Burke opened track 2 and set the tone for the rest of the conference, as he questioned different nations joint cold weather capabilities and their ability to operationalize current strategies. He also put emphasis on how the Arctic region experience priority challenges for decision makers and governments, as problem sets such as climate change, NATO expansion, and the ongoing wars in Ukraine and Gaza are growing. This theme was followed by BG Terje Bruøygard, as he debated climate change's possible impact on land forces, how different characteristics of land operations are challenged by climate change, but also how the military land domain is a large contributor to the climate change. We were unfortunate to experience two "last minute" cancellations by speakers who were selected to talk about climate impact on the air- and naval domain. Nevertheless, the first day of track 2 provided us with interesting perspectives on operational concerns related to the Arctic and cold weather environments.



Day two of track 2 was opened by Ms Erin Sikorsky. She gave an insightful presentation on current climate- and political-security issues, but also her views on future developments in climate and the political and military landscape in the northern regions of the

world. Erin's inspiring presentation was followed by different speakers from Met organizations, both national and NATO; NATO ACO Met office, UK Met Office and Nor Met Office. Their presentations provided us with a better understanding of why and how NATO should utilize its METOC resources, as operational planning requires a thorough and qualified understanding of the environment. How we utilize this knowledge

is key to success when it comes to writing doctrines, organizing, preparing, training and execute cold weather operations.

In continuance to the previous speakers, the rest of the day was reserved for various national perspectives (NOR, SWE, FIN and UKR) on how to develop and prepare cold weather capable forces. We were presented with somewhat coinciding perspectives from the Nordic countries. They all agreed on some common denominators to become cold weather capable. One of the main takeaways was the agreed need for prolonged exposure to the climate you are subject to operate in, but also the fact that environmental understanding is key to develop cold weather capable forces. The Ukrainian speaker presented a bit different perspective, as the war in Ukraine has provided them with first-hand experience and lessons learned when attacking cold weather as well as the adversary. The Ukrainian speaker pointed out the necessity of finding solutions to problems as you go, to always be agile, and many times they found that old fashion solutions work better than state of the art technology in a cold climate. Resilience in the public as well as the military forces was pointed out as key to success.

The last day was oriented towards future development. Are there others means to prepare and train leaders and staff for cold weather environments than exposure? We had three speakers debating this topic, from three different perspectives: Wargaming, artificial Intelligence and the use of VR/AR. Indeed, interesting to hear what the future has in hand for us. All speakers provided us with solutions to various problem sets, some more mature than others, but all in all relevant and available. There is definitely potential in new technology, also in regard to cold weather capability development, and especially in battle staff training and decision support.

Track 3 Cold Weather Equipment development

Track three addressed the current and future demands for research and development within mobility, survivability, and sustainment for cold weather capable forces.

CWOC 23 aimed to point out research and development as the systematic activity that companies and research institutes undertake to innovate and introduce new products and services, or to improve their existing offerings to NATO.



Track three was held in the EXPO hall where the exhibition from relevant industry and enterprise was ongoing.

The speakers at Track 3 were speaking under three different themes: Mobility, Survivability and Sustainment.

In a military context, mobility refers to the capability of armed forces and their equipment to move swiftly and effectively on the battlefield. Effective mobility is crucial for the success of military operations, as it allows forces to gain a tactical advantage, seize opportunities, respond to threats, and sustain operations in challenging environments. The speakers presented existing and upcoming solutions for unmanned autonomous systems. How can Robotic and Autonomous Systems (RAS) support cold weather operations and integrate into the current CONOPs, and highlighted that technology will not replace human beings, but will assist. They also emphasized that money must be set aside for education and not only investment in equipment.

The speakers on the survivability session highlighted some development and scientific testing, results, and vision of equipment for survivability of cold weather capable forces. Cold weather and climate change within the operational environment challenges our Soldiers and equipment. The war in Ukraine shows us that forces need to be able to conduct operations over a long period of time.

The sustainment session had a deeper look into development and tests of equipment for sustainment of cold weather capable forces. In a military context, sustainment refers to the comprehensive planning and execution of activities aimed at maintaining the readiness, well-being, and logistical support of military forces in an operational environment. Sustainment is a vital aspect of military operations, as it ensures that troops remain combat ready, well-supported, and capable of accomplishing their missions.

NCO Break-out

On Wednesday after lunch, the Command Sergeant Major of the COE-CWO invited the NCOs for an NCO break-out. The NCO breakout was conducted with selected non-commissioned officers by invitation. Invitations were sent out to Warrant officers and OR 8/9 level. The theme of the session was cold weather training on individual, collective



departmental competence, and NCO/Specialist development. Speakers were WO Stephen Thomas of the UK Royal Marines, Sergeant Major Daley US Army 11th Airbourne Division Alaska, and Sergeant Major Fredrik Flink from the SWE subarctic warfare centre. The session was positively received by the

participants. The messages afterwards give the impression that more time is desired for social interaction among the senior NCO's and to deepdive into more practical examples of material, technique, and combat technique.

EXPO

The EXPO were held in the largest hall at Scandic Hotel, "Hamarhallen", where 23 exhibitors from 6 countries presented equipment and technical solutions relevant for cold weather operations. The EXPO served as a great place for professional discussions and networking. This year the industry also had an opportunity to use the main stage in EXPO hall during the long academic breaks to have short presentations and introductions on their research and equipment.



The exhibitors were present all three days, and there was a large variety of different material and solutions presented. The EXPO was open one hour prior to the presentations every day.

Key take aways from CWOC 23.

Track 1 underlined that the strategic importance of the Arctic and High North region is



increasing. Strong cooperation at the political and strategic levels within NATO is vital to create a shared understanding of the threats, competition, and possibilities in the Arctic. The efforts taken to further develop strategies that support building NATO's arctic capabilities with trustworthy capacities to deter any conflicts to escalate, are vital to ensure a safe and secure Arctic for the generations to come.

Track 2 emphasized the importance of NATO's ability to operationalize these strategies, as there seems to be a gap between the institutions writing them and reality. All information about the future in the High North and the Arctic points in the same direction. This area will be busier and there will be more uncertainty. NATO will experience increased geopolitical challenges as well as increased operational challenges. This again will lead to a larger variety of military implications as the demand for military support will be increased.

Cold weather present challenges for military units in multiple ways, where special solutions are required. As NATO continues to develop capabilities to operate in the Arctic and the High North, track 3 pointed out that smart technology can help increase survivability and sustainment in the future



. The conclusion is that autonomous systems and AI is here to stay, but it is still a long way to go to achieve complete autonomy. Autonomous systems will not replace humans but will be a force multiplier that assists and provide capabilities that can change how we operate in the future.



**"Victory awaits the one who has everything in order.
Luck, people call it.
Defeat is certain for the one who neglected to take
the necessary precautions.
Bad luck, they call it..."**

- Roald Amundsen -



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