

THE NORWEGIAN AVALANCHE SCIENCE CENTRE – FOCUS ON HUMAN FACTORS

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ABSTRACT: UiT The Arctic University of Norway is establishing The Avalanche Science Center (ASC) during the period 2015-2017 with the vision *No Avalanche Fatalities within Norway*. To reach our goal we will develop new knowledge about the human factors and decision-making in avalanche terrain. We will adopt a multi-disciplinary approach including both national and international scholars and collaborate with relevant groups. In addition to research, the center emphasizes dissemination of knowledge and interaction with practitioners. We plan to: 1. Disseminate knowledge through workshops, meetings, websites and social media, 2. Contribute to the coordination of preventive work and domestic education, and 3. Assist domestic and international organizations and businesses seeking information and knowledge about avalanche danger and means to prevent accidents. It is very important for the center to be relevant and accessible for all user groups, thus emphasizing on being a transparent center, open for anyone.

KEYWORDS: No avalanche fatalities, Human factor research, Dissemination of knowledge, Preventive work and education.

1. INTRODUCTION



Fig. 1. Remains after an avalanche accident. Photo by Trond Idrupsen.

The skis in Fig. 1 belong to Andreas Grundvåg Nilssen, who in 2007 survived a big avalanche at Store Kjøstinden in the Lyngen Alps. He was totally buried for 15 minutes, but is alive today thanks to his two friends who located and got him out alive. His skis were found in summer of 2016.

Andreas was one of the lucky guys.

Bud sadly, the good luck did not accompany the 58 other victims killed in avalanche accidents in Norway from 2009 – 2016. Of these 91 % were recreationists, 7 % in houses and 2 % on roads. Around 60 % of all fatalities in Norway occurred in North: 21 in Troms, 8 in Nordland, 4 in Finnmark and 4 at Svalbard. This means that the Avalanche Science Center (ASC) is located in the part of Norway where most people perish in avalanche accidents (Fig.2).

Troms is the most popular area in Norway for ski touring and ski mountaineering. We have some of the most dramatic and scenic mountain areas in the world where the mountains rise directly up from the sea. A visit here rates high on the list for all ski tourer and ski mountaineer.

We see each year thousands of people coming for enjoying the adventure of a lifetime. The local activity is widespread; from the first snowfall in October it melts in June. The mountainous playgrounds are signed all over. Visitors come from all over the world. The growth has been increasing the past 5-10 years and is still rising.

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Fig.2: Location of Tromsø and ASC.

With the focus on avalanches in our area during the last years, also local people have been more keen to learn more. They want more knowledge in order to be prepared and avoid being caught in an avalanche. An indication of this enormous interest; was an avalanche seminar last year at the University that assembled 600 listeners!

One of the gems of the area is the Lyngen Alps. They are renowned for its jagged alpine peaks and endless possibilities for fantastic ascents and descents showed to the world through numerous films and articles in magazines during the last decade.

This means that the ASC also is located in the middle of important aspects when it comes to having a perfect platform to deal with how to reduce deaths in avalanche. We have the inviting mountains, lots of snow and thousands of skiers.

So we live directly in a mountainous snowy laboratory when it comes to the foundations of research focusing on all aspect of the humans factor.

Troms has also a number of avalanche-prone roads and houses. The management of this infrastructure requires sound knowledge, information and decision-making in order to have safe development plans, constructions, evacuation procedures and road management.

2. DEVELOP NEW KNOWLEDGE

By establishing a community of dedicated competent employees who will focus on applied research on the human factor, our aim is to develop new knowledge. Further, the goal is that the findings can contribute to raise the public awareness about

how we approach the challenges living and traveling in the avalanche prone mountains. In addition to research, the center emphasizes dissemination of knowledge and interaction with practitioners.

The science program for the centre is presented in Engeset et al. (2016).

3. DISSEMINATION OF KNOWLEDGE

It is very important to us that all research results and knowledge we produce will reach out to relevant user groups in a language that everyone can understand and identify. This means we have a pronounced focus on how and where we distribute and communicate our messages. Our most important channels will be workshops, seminars, meetings, websites and social media.

We will have avalanche evenings in Tromsø during winter season where researchers working with the human factor will present their result for the public. To inspire to research on the topic we hope to engage young researches to contribute. In addition, more celebrated researches from all over the world will be invited to make a presentation. The evenings will take place in a relaxed atmosphere at Driv; the student cultural house.

Our [website](#) is our official net communication surface while our [Facebook site](#) is our most important day-to-day communication channel. It is very important for the center to be relevant and accessible for all user groups. We therefore emphasize the importance of being a transparent center, open for anyone. Both through external contact and internal open facilities where everyone is welcome.

4. CONTRIBUTE TO THE COORDINATION OF PREVENTIVE WORK AND DOMESTIC EDUCATION

As an academic institution with human and economic resources, we have responsibility to take action when it comes to coordinate preventive work and domestic education in Norway.

We will develop topic related student courses as well as contribute to develop courses for other user groups who are involved in avalanche related activities.

We will also use the technical resources available at UiT to create online avalanche educational pro-

grams and courses. These will focus both on general avalanche awareness but also more specific related to human factor and decision-making.

We will take action to incorporate close cooperation between education institutions in Norway to build a joint network of avalanche resources.

5. ASSIST IN PROVIDING INFORMATION AND KNOWLEDGE

All of the employees at ASC are active snow addicted skiers or boarders and therefore have a devoted personal background within the field.

We cooperate closely with the Norwegian Avalanche Warning Service (Engeset, 2013) and www.varsom.no, who are responsible for the daily avalanche forecast in Norway. This means that we constantly have updated information about the avalanche situation all over our country. We will be pleased to forward our knowledge about avalanche danger and means to anyone.

We will also do our best to assist domestic and international organizations and business in fulfilling their needs for information.

We have an ongoing cooperation with the tourist authorities in the Lyngen municipality to provide signs at the most popular parking lots for ski touring with information about where to obtain avalanche conditions.

Ski touring guidebooks are becoming more and more popular in Norway. We cooperate closely with the book publisher Fri Flyt to assure the quality of the avalanche content. We also cooperate closely with them on a new book coming out this autumn about safe ski tours in Norway using ATES (Avalanche Terrain Exposure Scale)

6. WE WANT TO BE AN IMPORTANT VOICE TO REACH OUR VISION

As an academic institution with aim to reach out with new knowledge to a wide variety of public with different background, it is very important for us in all circumstances to be a close related partner both physically and the way we communicate.

We want to tell our stories in a language that everyone can understand and identify with.

We want to attract avalanche researches from all over the world to the ASC.

The aim of ASC is to be an important voice in today's world of avalanche research. We want to tell

the good stories with happy beginnings, happy endings and conclusions framed by big smiles and satisfied women and men.

These stories are hopefully the awards fulfilling our vision: *No Avalanche Fatalities within Norway*.

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