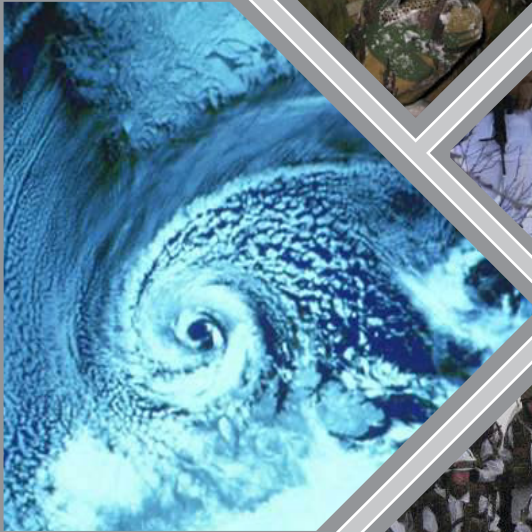




**Hæren**

**UD 6-81-1 E**

**INSTRUCTION IN WINTER SERVICE  
WINTER CONDITIONS, LEADERSHIP  
AND TRAINING**



**English edition**



## ABOUT UD 6-81-1E

### Metadata

SHORT TITLE:	UD 6-81-1E
SECURITY GRADING:	UNCLASSIFIED
ENTRY INTO FORCE:	2013-11-01
LEGAL AUTHORITY:	Norwegian Army Regulations on Army Education and Training, 1/2-12, item 1.3
AUTHORITY:	Inspector General of the Norwegian Army
RESPONSIBILITY:	Army Land Warfare Center
PREVIOUS VERSION:	No previous english version published.

### BACKGROUND

UD 6-81-1E is produced in accordance with the armed forces standard for electronic publications - FS 7610-1900. Both the electronic version and the paper edition is produced from a single information source, based on the eXstensible Markup Language standard, XML.

#### The web edition

The web edition of UD 6-81-1E is stored on the Armed forces database for "Rules, Regulations and directives" (FOBID).

FOBID will hold at all times the current edition of UD 6-81-1E as well as previous editions

#### The paper edition

The paper edition can be ordered from FLO Base Østerdalen, Grafisk (LMS), Rena Military camp. The CD edition contains both the web edition and the pdf edition to be used if a web browser is not available.

The CD edition can be ordered, at the cost of the ordering unit, from:

FLO Base Østerdalen, Grafisk (LMS), Rena leir

PB 24

2451 RENA

#### Contributer in production

Photo cover: Forsvarets mediesenter (FMS) edited by M&K DOK AS

Production: Norwegian Army LWC and [M&K Dokumentasjon AS](#).

Illustration and photos: FMS/M&K Dokumentasjon AS

Printing and binding of the paper edition: AIT Otta AS

UD 6-81-1E Instruction in Winter Service - Winter Conditions, Leadership And Training



**UD 6-81-1E**

**Instruction in winter service  
– Winter conditions, leadership and training**

Norwegian School of Winter Warfare  
UD 6-81-1E Instruction in winter service  
– Winter conditions, leadership and training is approved for use for  
The Norwegian Armed Forces

Rena, 10.10.2013

By authority

Svein Ruderaas  
Colonel

Deputy CO Army Land Warfare Center

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# 1 Introduction

## 1.1 Objective

These instructions have been prepared by the Norwegian School of Winter Warfare and aim to provide officers and units with knowledge of winter conditions and the effect these have on leadership and training. It will also provide units with guidance on the importance of control routines in a military unit in winter. The publication focuses on officers but is also useful for soldiers. The section that discusses training and exercise planning in winter is aimed at platoon and company level.

Chap-1

## 1.2 Application

These instructions apply to the entire Norwegian Armed Forces.

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Training

## 2 The geography, topography and climate of Norway

### 2.1 Geography

Norway has a total area of 385 186 km<sup>2</sup>, of which the mainland and neighbouring islands comprise 323 787 km<sup>2</sup>. The coastline has been calculated at 100 915 km, making it the second longest in the world for a single country, after Canada.

Norway is one of the world's northernmost countries and one of the most mountainous countries in Europe. The average altitude is 460 metres above sea level, and 32 per cent of the mainland lies above the timber line.

The terrain in Norway largely comprises high plateau and rugged mountains with fertile valleys, and small and scattered plains. Norway has many long, deep fjords. Several of Norway's mountain areas have glaciers.

Chap-2

### 2.2 Topography

Norway's topography is extremely diverse and includes V-shaped valleys, U-shaped valleys, rivers, glaciers, mountain plateaus with extensive areas of moorland, rocky terrain and scree.

Mountain plateaus with extensive areas of moorland and many lakes and rivers are found in Hardangervidda and Finnmarksvidda, among other places.

Glaciers helped to shape the alpine landscape with its many high peaks. Examples of this can be seen in Lyngen, Rondane and Sunnmøre.

Most of the valleys in Norway have been formed by glaciers and rivers. Examples of V-shaped valleys are the Gudbrandsdal valley with its tributary valleys, while U-shaped valleys can be found in Østerdal, among other places. There are extensive glaciers in Jotunheimen and Møre, and in Northern Norway.



*Figure: 2.1*



*Figure: 2.2*



*Figure: 2.3*

Military operations, exercises and training in Norway present challenges in terms of the country's location to the far north on the globe and in terms of its topography, which comprises many different types of terrain. Within a relatively short space of time it is possible to encounter many different climatic conditions and different topography. Cold, wind, precipitation and exposure to different types of moisture (saltwater/freshwater/air humidity) affect each of us individually. Many local variations can be experienced within even a small geographical area.

As a digression, it is worth mentioning the basic philosophy of the Norwegian Infantry:

*"Combat must be conducted offensively and aggressively in order to inflict losses on the opponent and create situations that can turn things to our advantage. Combat must be characterised by speed and force and be conducted in terrain that favours our units."*

Units must take extra care to adapt activity in wintertime. It is important to give the

individual time to modify/adjust equipment relative to the changing conditions. Moisture, wind and cold in combination with static activity present challenges.

## 2.3 The climate in Norway today

### 2.3.1 General

Although Norway lies on the same latitude as Alaska, Greenland and Siberia, the climate is nevertheless favourable. This is because of the Gulf Stream, which produces a large, warm and stable sea current off the Norwegian coast.

The climate in Norway displays large variations. There are two main features in terms of the temperature distribution in winter. Firstly, high temperatures are found along the coast, although you do not need to go far inland before encountering sub-zero temperatures. Secondly, low temperatures can be found in lower-lying inland areas of Finnmarksvidda and in the interior of Eastern Norway. Temperatures as low as -40°C are not uncommon in these areas, even if they do not occur every winter. Modern climate research and calculations suggest that, globally, the average winter temperature will become approx. 4°C warmer in the course of the next 100 years. Despite this, Norway will continue to experience cold, severe winters in the years ahead. The winter temperature is expected to increase by 1-2.5°C over the next 10 years.

Where precipitation is concerned, the areas with the highest average precipitation are found between the Hardangerfjord and Møre. The areas with the highest precipitation in Western Norway are among those with the most precipitation anywhere in Europe. Inland areas of Eastern Norway, Finnmarksvidda and individual areas along the Swedish border are in the lee of the major weather systems that produce a significant amount of precipitation. The majority of the annual precipitation in these areas falls during the summer.

### 2.3.2 Air temperature

The highest average annual temperatures in Norway can be found in the coastal zone from Lindesnes in Vest Agder to Stad in Sogn og Fjordane. In 1990 Lindesnes lighthouse recorded Norway's highest annual average temperature of 9.4°C.

The coldest area through the year in the lower-lying areas is Finnmarksvidda, with Sihccajavri having the lowest average annual temperature at -3.1°C. In the high mountain regions there are extensive areas where the annual average temperature is normally lower than -4.0°C.

There are two main features to temperature distribution in winter. The first is the high temperatures along the coast: the entire coast from Vest-Agder to Lofoten normally has monthly average temperatures above 0°C. The highest monthly average temperature in winter is in Sunnmøre. The highest maximum temperature in winter is found in Møre, with 18.9°C recorded in Sunndalsøra in February. However, you do not need to go far inland before encountering sub-zero temperatures.

The second main feature in winter is the low temperatures in the lowland areas of the interior. Finnmarksvidda is usually a particularly cold area. In inland areas of the plateau, the average monthly temperatures in winter drop below -15°C. The lowest minimum temperature recorded at a weather station in Norway is -51.4°C, measured at Karasjok in 1886.

### 2.3.3 Precipitation

The precipitation that falls in Norway can basically be divided into three main types: stratiform, orographic and convective. Stratiform and orographic precipitation both result from damp air rising and cooling such that it has to release moisture, which falls as rain or snow.

Stratiform precipitation is the most common form of precipitation in Norway. It is formed in the low pressure systems that develop along the polar front, i.e. at the boundary between cold polar air from the north and warmer damp air from the south. The warmer air in the front is forced upwards and cooled. This means it can no longer retain as much moisture, and much of the moisture in it turns into ice or water and falls as precipitation. The polar front brings moist air masses in over Norway from the south-west and west for most of the year, and activity is greatest in the autumn and winter. However, because warm air can retain more water vapour than cold air, most precipitation occurs in the autumn.

Orographic precipitation occurs when air masses containing precipitation reach the coast of Norway and are forced upwards even more quickly by the terrain. This form of precipitation is highest just inland from the coast. From this maximum zone, the precipitation decreases again, then as the air masses reach the lee of the mountains, they sink and are warmed up. This, too, reduces the precipitation.

Convective precipitation forms locally when air becomes unstable and vertical air currents arise. The air in these currents is cooled, and precipitation occurs.

Convective precipitation occurs mostly in inland areas in summer, when the strong warming-up effect associated with gradients makes the air unstable. Convective precipitation may arise in conjunction with stratiform and orographic precipitation, and intensify these locally.

There are significant differences in normal amounts of precipitation in Norway. The highest amounts are found in an area of Western Norway just inland from the coast. Here, and across most of Norway, stratiform and orographic precipitation dominate, and the highest amount of precipitation falls in autumn and winter and the least in spring. Convective precipitation dominates in inland areas of Eastern Norway and in Finnmark, as well as other areas that are protected by the terrain from moist air masses. In these areas the highest amount of precipitation falls in the summer and the least in the winter and spring.

The area with the most precipitation in Western Norway – the Hardangerfjord and Møre – is among the areas with the most precipitation in Europe. In these areas, the precipitation is distributed throughout the year. There are no marked dry and wet seasons as there are in many other places. Some places have recorded more than 5,000 millimetres of precipitation in a year (e.g. the measuring station at Brekke on the Sognefjord in 1990).

The areas with the least precipitation are Skjåk in the Gudbrandsdal valley and the Dividal valley in Indre Troms, with measurements as low as 275 millimetres per year.

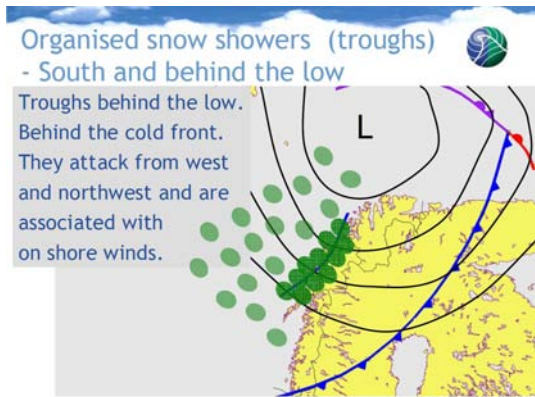
The interior of Eastern Norway, Finnmarksvidda and a few small areas close to the border with Sweden are in the lee of the most common major weather systems that produce a lot of precipitation in Western Norway and northwards along the coast. In

these areas, which have more of an inland climate, there are usually very low amounts of precipitation, and the majority of the annual precipitation occurs during the summer.



*Figure: 2.4*

A trough is a phenomenon that is particularly relevant in the winter and is formed from an area of low pressure. The troughs, which bring heavy precipitation, develop behind a cold front when an arctic air stream moves over warm sea. Troughs tend to be unstable in the vertical direction, and the phenomenon is an almost daily occurrence.

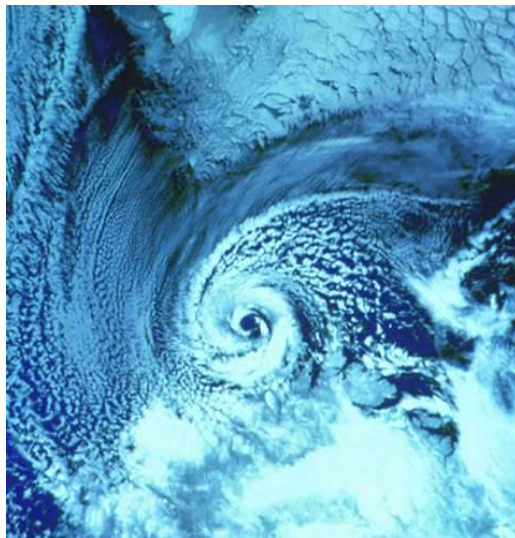


*Figure: 2.5*

*Troughs behind the low pressure and the cold front.*

A polar low is another phenomenon relevant in the winter. This is a type of low pressure system that occurs on the pole side of a polar front. During the winter, the polar front extends from Florida to Southern Norway. A polar low occurs when the atmospheric layer just above the surface of the sea is much warmer than the ice-cold air streaming out from the edge of the ice mass. This creates unstable atmospheric layers and the warm air rises. When the area of low pressure meets land, it will produce strong winds and heavy snowfall.

Since polar lows are difficult to predict and issue warnings for, a lot of wind and snow often arrives unexpectedly. The wind may vary by speeds of 15–30 m/s. Empirical evidence points to 5–15 polar lows per year. These mainly arise from sea areas off North Norway but may occur as far south as the North Sea.



*Figure: 2.6*

*The image shows a polar low pressure system in the Barents Sea*

### *The climate in Norway today*

- *The temperature will increase, but there will still be severe and cold winters*
- *The amount of precipitation will increase in the mountains and the cold inland areas*
- *Unpredictable weather changes will occur, with a lot of cold wind and high levels of snowfall*

## 2.4 Regional climate projections for Norway 2100

The following summary of climate projections for Norway for the next 100 years is based on the report "Climate in Norway 2100" drawn up by the Norwegian Meteorological Institute, the Bjerknes Centre for Climate Research, the Norwegian Water Resources and Energy Directorate (NVE), the Institute of Marine Research, and the Nansen Environmental and Remote Sensing Centre. The report was produced in connection with Official Norwegian Report NOU 2010:10 Adapting to a changing climate. The summary provided here is restricted to the conditions related to winter conditions.

### 2.4.1 Air temperature

It will become warmer in all parts of the country and in all seasons. The annual average temperature in Norway is estimated to increase by 2.3–4.6°C by 2100. The temperature increase is expected to be highest in the winter and lowest in the summer.

The annual average temperature is estimated to increase most in Finnmark, where the calculations suggest an increase of 3.0–5.4°C. The equivalent figures for Western Norway are an increase of 1.9–4.2°C.

### 2.4.2 Wind

The climate models predict little or no change in average winter conditions in the present century. There may be a greater frequency of high wind speeds, but system weaknesses in the climate models mean it is too early to draw any conclusion in that respect.

### 2.4.3 Precipitation

There will be more precipitation throughout Norway. On average, annual precipitation is estimated to increase by 5–30 per cent by the end of the century. Winter precipitation may increase by **more than 40 per cent** in parts of Eastern, Southern and Western Norway by the end of the century. Moreover, precipitation is expected to increase for all seasons and in all regions.

The high level of natural variability may nevertheless result in periods of reduced precipitation locally, lasting from a few years to a few decades.

There will be more days with significant amounts of precipitation, and the average precipitation for these days will be higher throughout Norway and at all times of year.

### 2.4.4 Snow

The snow season will become shorter throughout the country. The reduction will be highest in the lowland areas, where a reduction of 2–3 months is expected by the end of the century. The average maximum depth of snow may increase in the high mountains and in areas in the interior of Finnmark by the middle of the century, whereas in other areas it will decrease. Towards the end of the century, it is expected to decrease everywhere.

### 2.4.5 Avalanches

There is a clear connection between precipitation and various forms of avalanche. Higher temperatures may reduce the risk of dry avalanches but will increase the risk

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of wet and slush avalanches in vulnerable areas. These may affect different places than previously.

Higher precipitation intensity in winter, either in the form of rain on snow or snow, will increase the frequency of all types of avalanches. More “extreme” weather and high-intensity weather will produce more loose snow avalanches, slab avalanches – both dry and wet – and, in particular, an increase in slush avalanches.



*Figure: 2.7*

### *The climate in Norway in 2100*

- *Possible greater frequency of high wind speeds*
- *Precipitation in winter may increase by more than 40 per cent in Eastern, Southern and Western Norway*
- *More “extreme weather” and high-intensity weather will produce more avalanches*

## 3 Leadership in winter conditions

### 3.1 Introduction

Norway's winter climate is one of the most demanding in the world in which to conduct land operations. The winter places great demands on personnel, materiel and leadership. This booklet is not in any way intended to provide all the answers or to serve as a service manual in leadership. The aim is to provide a number of reflections on leadership and the importance of leadership in winter.

Norway has long traditions of training units to provide them with winter and cold-weather competence. Mastering operations in the most demanding conditions Norwegian topography and weather can present, namely winter in the mountains or on the coast, has always been important for the Norwegian Armed Forces. Norwegian units have been, and continue to be, proficient at operating and maintaining combat capability in demanding winter conditions. In other words, the Norwegian Armed Forces have been effective in exploiting the topography and climatic conditions to their advantage. This has also been one of the basic philosophies of the Norwegian Armed Forces and is required to be reflected in both the training and teaching of soldiers and officers in formal settings and in training units.

Chap-3

### 3.2 The importance of leadership

Military leadership in its most extreme form is about being able to lead effectively in situations where subordinates are expressing fear, apprehension and anxiety; situations where subordinates are under physical and psychological pressure and where normal motivating factors are absent. Military leadership is also about being able to lead in extremely varied topographical and climatic conditions.

In winter conditions it is important for the officer in charge to be visible and clear. This becomes even more important in challenging situations that at times produce extreme conditions such as precipitation, wind and cold. It is said that at section and platoon leader level, a lot of professional capability is beneficial for the leadership. The professional capability of the officer in charge will give soldiers and fellow officers assurance and help to prevent an individual experiencing fear, apprehension and anxiety about a harsh winter environment.

In both contexts, situational leadership practised by means of task-based leadership is paramount in developing colleagues and guiding them to a common goal.

### 3.3 Leadership qualities in winter conditions

Holding a leadership position means establishing a leadership role. As an officer, you must fulfil many expectations, from fellow officers, rank and file soldiers and other people around you. In many ways, the impact of winter makes this task even more demanding and challenging.

The leadership qualities the officer in charge must possess become more visible and evident in winter. In the following chapters we provide some reflections on these various qualities, and what leadership requirements are intensified in wintertime.

### **3.3.1 Ability to take the initiative**

The ability to take the initiative and develop this in the appropriate direction is important. The balance between taking an offensive approach to accomplishing tasks, keeping the soldiers active and, in addition, making sound and reasonable judgements is important. Winter affects both soldiers and officers in such a way that taking the initiative also entails intervening in situations where this is required.

Once you have gained experience as an officer in charge during winter service, you will gradually recognise when it is necessary to intervene in given situations. As an officer in charge, the winter requires closer monitoring of the individual than is the case in summer. Even small things that may initially be perceived as trivialities will be intensified in a winter environment. This makes inspecting and paying attention to your soldiers crucial. Inspection is better than trusting or assuming.

A winter environment requires officers in charge who possess the drive to keep soldiers and officers active. The officers in charge must be seen, in a positive sense, as having the drive to make things happen, and show creativity in achieving effective solutions and attitudes in the unit.

### **3.3.2 Ability to deal with uncertainty**

Although the ability to deal with uncertainty also means taking action, even without knowing all the consequences, this must be carefully evaluated in a “winter situation”. Taking charge of activities during the winter must be based on sound, safe choices. The ability to see the consequences of judgements and actions is more important in winter than in summer. The challenge lies in the fact that the consequences of incorrect actions can relatively quickly give rise to unfortunate outcomes in wintertime. During the summer, a unit can make significant misjudgements without this necessarily having consequences in terms of safety. During winter training the same misjudgements could lead to frostbite and hypothermia, and consequently create an increased level of uncertainty in the unit. This is why, in situations where you feel uncertain, it is important to display an ability to take action and, at the same time, not to be afraid to either speak up or seek advice from a superior. It is also important to have the courage to act on your own instincts, i.e. to take the initiative in a situation or be strong enough to assess when “enough is enough”, while also communicating this to superiors at the same time.

### **3.3.3 Ability to create trust**

As an officer in charge, trust is gained in many ways through effective, clear leadership. At lower levels (section, platoon and company), this is mainly achieved through professional capability and loyalty to subordinates, superiors and colleagues. The impact of winter on soldiers and officers means that the officer in charge must be capable of communicating his/her message and be honest, predictable and thorough in preparing his/her unit for winter. Allow time and space for lower levels to make their preparations. Allow space for good communication between soldiers and officers, and facilitate involvement and self-development.

If human beings do not have their basic needs satisfied, including the need for food, rest, safety and security, their attention will be directed towards restoring balance in these areas. Such situations demand something extra from the officer in charge in order to steer attention away from self-preservation and towards the common good.

### 3.3.4 Ability to show care

Winter demands a lot in terms of taking good care of subordinates. You must be able to follow up on all levels, and make time for individuals when necessary. The patrol, section or platoon is only as strong as its weakest link. Taking care of subordinates also means setting clear requirements for both execution and follow-up.

### 3.3.5 Ability to make effective, independent decisions

Training in a winter environment will place greater demands on the leadership of a platoon leader/section leader/company commander because he/she is dependent on the unit loyally following the decisions that are made. Experience shows that an officer in charge at this level must employ a greater spectrum of his/her leadership in a winter environment than under “normal” conditions. Purely in terms of leadership, winter training will thus be able to provide officers in charge at this level with what they need to emerge as even better officers in charge in future operations. The ability to make effective, independent decisions in winter is about having the professional assurance and ability to be present in the situation, both mentally and physically. It is about keeping a watchful eye on the situation as well as being able to predict and prevent potential problems linked to the activity in winter.

Chap-3



Figure: 3.1

#### *Leadership in winter*

- *Winter makes the job of the officer in charge more demanding and challenging*
- *Taking charge of activities during the winter must be based on effective, safe choices*
- *Create trust through professional capability, good leadership and communication*

### 3.4 Experience-based learning

The Norwegian Armed Forces' basic educational philosophy underlies all training in the Armed Forces. It is intended to form a basis for and help to create a "common thread" running through all education, training and exercises. The foundation for learning must be reoriented from imparting knowledge to focusing more on knowledge development.

Learning, the process of which comprises interpreting, integrating and adapting new cognition to the knowledge you already have, is an important concept. The focus in the training of soldiers and officers must be weighted towards learning.

In a winter setting too, experience-based learning means that soldiers and officers must build "layer by layer" on the experiences they gain. They must be made to feel secure in what they do themselves, and be able to put what they learn and experience to practical effect. They must be encouraged to be able to act independently and to take the necessary action when the situation requires, for example wearing clothing suitable to the activity, and receiving adequate nutrition and sufficient fluids. This requires them to have gained experience of this. You must motivate soldiers and officers also to become individuals capable of independent thought, to be rational and, on this basis, to make effective decisions both for themselves and others.

For the officer in charge and instructor, it is a question of balancing a mixture of defined modes of action with the ability to allow space for people to think for themselves in order to gain experience. Experience gained can, in a way, be compared with drill. Actions become "automated" through experience and experience-based learning. "Automation" in this sense means that actions become a natural means of maintaining your own combat capability and that of others. This helps to free up mental resources to concentrate on the primary function, which is combat. Experience and experience-based learning also help to reduce risk by making the individual soldier better able to take care of him/herself.

Examples of winter service and extended exercises in winter show that being outside a lot, learning winter skills and gaining experience lead to many of the basic elements becoming "gut reflexes". Winter also provides us with a realistic environment where the units learn, train and exercise on a scale of 1:1. The soldiers must learn that changing from wet into dry clothing and wearing more clothing in extreme cold means they will be warmer and more comfortable. At the same time, they must also experience the consequences of not doing so. This is what is known as contextual learning.

If a soldier is shown which actions in this example enable him/her to stay warm, this then becomes experience. If a soldier is merely aware of the connection between measure and outcome, this remains nothing more than an action.

The impact of winter on soldiers and officers requires officers in charge to behave in such a way as to activate and engage those they are teaching. This is a precondition for optimal learning. Inadequate or incorrect learning in a winter environment can have serious consequences both for personnel safety and the activity being carried out.

The officer in charge and the soldiers he/she is leading must possess the mental capacity to process new, unknown and complex situations. In order to free up the

mental capacity to be capable of carrying out the task at hand, it is important that the fundamental basic skills are “automated” through effective experience-based learning.

Where winter service is concerned, it is important to balance theory and practice, among other things, by using good examples from challenging situations and translating these into practical exercises in realistic situations. Theory lays the foundation for learning. The actual learning takes place through practical execution and reflection.

### 3.4.1 Reflection

Many people perhaps associate reflection with a fairly heavy onerous process and do not entirely see the necessity of it. Consciously or unconsciously, experienced instructors make use of reflection in experience-based learning. When summarising, the task of the officer in charge or instructor should therefore be to ask leading questions and guide the student/soldier in terms of how the person in question perceived the situation and his/her own learning.

Reflection is a summing up of a learning situation and thoughts about what has been done. It is therefore an important part of the learning process that during reflection a link is created between the action taken and what led to the outcome of the situation. Reflection creates an awareness of which actions led to which outcomes – positive and negative. This is what is meant by experience-based learning.

Reflection makes the soldier aware of the actions that have been carried out. It gives the soldier in question experience and makes him/her more able to cope with the winter climate. The soldier frees up mental capacity so that both he/she and the leadership can focus on the task at hand.

Reflection makes the individual aware of the situation: what has happened, why things happened and how this affects both individuals and the group, section or unit. We also become aware of what was learned in the situation. If the outcome of the activity or situation was not as wanted, those involved learn to identify which mistakes led to that outcome.

In conclusion, we can say that reflection is a condition for experience-based learning. If you do not reflect, you do not learn, but merely experience something without understanding why. Experience-based learning offers reflective individuals positive potential to take care of themselves and others in a winter environment.

#### *Experience-based learning and reflection*

- *Experience-based learning means building “layer by layer” on experiences gained.*
- *Theory lays the foundation for learning. The main focus of winter training must be practical education, training and exercises.*
- *Reflection is a summing up of a learning situation and thoughts surrounding what has been done. This is intended to make individuals aware of the actions carried out.*

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## 4 Control functions

### 4.1 General

Control functions are the unit's experiences and routines formalised in a system. This is not seasonal or something specific to the winter but, as mentioned previously, the absence of these functions will have even more critical consequences for a unit in wintertime. The prerequisite for succeeding with control functions in a unit is that the routines are continuously followed up and are understood by everyone.

The system of control is the responsibility of the commanding officer and must permeate the activity. The focus on safety always starts at the top, highest ranking officer down to the section leader.

The purpose of control functions is as follows:

- To assure ourselves that all personnel in the unit are fit to face the challenges imposed by the climate.
- To assure ourselves that officers have an ample toolbox to choose from when necessary.
- To avert and/or limit injuries to personnel and damage to materiel.
- To avert accidents and fatalities.
- The unit establishes routines for internal approval and possible certification.

Routines provide a system for exercising control – over who, what, how and when – taking the unit's level of ambition and expertise as the starting point.

### 4.2 Level of ambition and training standard

In principle, the risk of a unit experiencing winter-related injuries is higher when units with a low training standard decide to embark on a demanding winter exercise. It is crucial that the activity's level of ambition is compatible with the unit's training standard. Correct progression through education, training and exercises is important.

The unit and the officer in charge must create good opportunities for the unit to succeed. This starts with knowledge, skills and attitudes, among both officers and soldiers. Basic skills and a focus on fundamental winter skills must be the foundation. As a result, individuals, sections, platoons and the unit as a whole will become used to being outside in winter conditions. The level of ambition can subsequently be developed to encompass more demanding tasks in winter conditions.

By setting the level of ambition relative to the training standard and by creating good arenas for trust between officers and soldiers, you will also develop both the soldiers' ability to speak up about winter-related injuries and the officers' ability to assess abort criteria.

### 4.3 The leader's responsibility

Being an effective officer in charge in wintertime is very demanding.

Being present in the situation is a prerequisite for success. This means that the officer in charge – whether this is the officer conducting the exercise, or battalion commander or company commander – is present in order to inspect, motivate and familiarise him/herself with the situation in which those involved find themselves. Being present should also “reinforce control and follow-up at all stages”. This means that the officers in charge at the various levels also ensure that control takes place at the level below and follow up on this.

The person leading the unit must ensure that the unit is mentally and physically fit before starting exercises and training to carry out the tasks and assignments imposed. This also means your own personnel being provided with the necessary education and having undergone sufficient training/trained together. In the case of winter service, a set of master classes have been issued in the fundamental areas, intended to provide the individual and the unit with an effective professional basic platform from which to work. In addition, the officer in charge needs to be up to date on personnel and critical materiel.

One final but important element is risk-assessing the activity to be carried out as well as following the applicable safety provisions. The officer in charge must also be competent in assessing the weather and its effect on the planned activity. The last-mentioned point is crucial for the ability to make effective judgements and decisions.



*Figure: 4.1*

***! Control functions***

- *A system for control is a leadership responsibility at all levels, from brigadier to section leader*
- *Set the level of ambition relative to the unit's training standard*
- *As an officer in charge you must be present during activities. Follow up, inspect, control: "Don't expect – inspect!"*
- *Assess the weather and the impact of the weather on the planned activity*

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## 5 Training in winter conditions

### 5.1 General

Since the Army is the largest branch of the Norwegian Armed Forces engaged in land-based operations in winter, most of the examples of training and documentation are from the Army. Documentation also exists, including training programmes used by other branches of the Armed Forces, that is not discussed here. Directives laid down for all land-based military activity must be applied by all units in the Armed Forces that carry out such activities.

### 5.2 Guidelines, orders and requirements

#### 5.2.1 **The Directive of the Chief of Defence for competence requirements in winter service for units on land-based operations in the Norwegian Armed Forces**

The purpose of endorsing officers for land-based military activities in winter is to ensure that units of the Norwegian Armed Forces that carry out such activities have officers with a uniform minimum level of competence that is in line with the rules, safety provisions and requirements for winter service training. “Land-based military activity” refers to education, training, exercises or operations on land or in proximity to land, in coastal environments, on lakes and watercourses.

The endorsement is intended to ensure a uniform starting point for officers required to lead units in winter service training.

The directive sets requirements as to the level of winter competence the individual unit must possess or which course it must have completed in order to be able to engage in land-based winter service.

#### 5.2.2 **The Norwegian Armed Forces Safety Rules and Regulations for Landbased Military activity.**

Training in winter conditions is subject to a number of guidelines, orders and requirements. UD 2-1 The Norwegian Armed Forces Safety Rules and Regulation for Land based military activities regulates a minimum standard of safety provisions, including for winter service. As well as specifying competence requirements for units engaged in land-based winter service, the regulations also set requirements for preparations, implementation and continuous evaluations in wintertime, particularly in terms of evaluating avalanche risk and transit across ice, but also several other safety-related aspects associated with education, exercises and training in winter.

#### 5.2.3 **Norwegian Army Regulations on Army Education and Training (HUT)**

This is the primary guideline document issued by the Inspector General of the Army (GIH) covering all education and training in the Norwegian Army. The regulations apply to all education, training and exercises for all categories of personnel and units in the Army, and form the basis for drawing up all the Army’s training programmes and regulations. The regulations contain a separate appendix on winter service (appendix N).

In order to achieve an acceptable training standard for winter warfare, the GIH has

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designated winter service as a special subject, common to the entire Army. In addition, winter service is to be integrated in the relevant subjects, both for training of individuals and units

As well as setting training goals, the appendix also sets competence requirements with respect to winter service for Army units.

### ***! Guidelines, orders and requirements***

- *Familiarise yourself with the current winter-related provisions in UD 2-1*
- *Risk-assess all activities*
- *Make active use of regulations and guidelines in planning and implementation*

## 5.3 Training programme

### 5.3.1 General

The unit must recognise that fear of and anxiety about winter and cold is something experienced by many of the individuals called up for military service and perhaps also by younger officers. They must be taught to handle this fear by focusing on the fundamental basic skills and wellbeing in the early stages of the training. This will give individuals greater familiarity with and greater faith in their ability to master the elements and the climate in which they will be operating.

Establishing effective routines from day 1 is important in assisting the process of acclimatisation to a winter environment. At the same time, you must instil confidence that the materiel and clothing being used are satisfactory for the conditions of use.

### 5.3.2 Basic Training Level 1

The basic training programme for new recruits describes the subjects and topics that are compulsory in all soldier training in the Norwegian Army. The aim is to ensure purposeful and coordinated training that provides the individual soldier with general military competence as a basis for further service and training.

The programme includes training objectives, teaching objectives and lessons for basic soldier training.

Winter service is a common core subject and comprises a 30-hour programme. The aim and objective of this programme is to provide officers and soldiers with sufficient training in winter service to enable them to master carrying out tasks in wintertime and to take care of themselves and others.

By means of the training in winter service, soldiers and officers shall be generally encouraged to develop a positive attitude to movement outside in winter conditions. The training shall be motivational in the sense of creating security for both the individual soldier and the unit as a whole.

This programme should be viewed as a minimum requirement for all categories of soldier in the Norwegian Army. Viewed in isolation, for many units 30 hours is far too little time for training. For these units, it is important that they manage to

integrate other basic training or specialist trades and skills with this winter element. The Norwegian School of Winter Warfare has drawn up an extended training programme for units that require more training in winter service beyond the stipulated 30 hours.

The focus on winter service must start early in the autumn so that basic skills are acquired before the winter season actually starts. This applies in the first instance to the Norwegian School of Winter Warfare's MASTER LECTURES referred to in the training, including clothing, frost- and cold-related injuries, control functions, nutrition and safe marching routes.

### 5.3.3 Progression in the training

Progression in the winter training is crucial for a good outcome. We recommend starting with the basic lessons so as to create a good basis for the practical part. Most of the training units, at least in the Army, have two intakes per year: one in August and one in January. The January intake faces a challenge in that it is cold and there has already been snow on the ground for a long time. For these people it is important to integrate elements of winter service into the core introductory training. It is also important that the unit's officers are themselves familiar with "winter materiel" and that younger officers attend and follow the training.

When it comes to putting the introductory theory of winter service into practice, it is important that officers follow up operations thoroughly. The slightly older and more experienced officers in particular have an important role to play here. Control is reinforced down at section level. Follow-up of the individual soldier at an early stage in the training will help to create awareness of potential "risks" as well as having a pre-emptive effect in terms of the impact of winter on the individual.

The introductory wintertime exercise with a new contingent/unit does not need to be combative. The focus should be on the individual becoming familiar with his/her personal clothing and equipment. The focus should also be on bivouacs, heat sources, buddy checks, nutrition, internal routines such as weapon and foot inspection (TEXAS-SIBIR), hygiene and emergency bivouac procedures.

#### ***Training and training programme:***

- *Start the training by focusing on basic wintertime skills. Use the MASTER CLASSES issued by the Norwegian School of Winter Warfare*
- *Progression in the training is crucial for an effective outcome*
- *Integrate winter training with specialist trades and skills*

## 5.4 Exercises and training in winter

### 5.4.1 General

Training is our most important means of getting ready to carry out tasks. Winter service, like many other subjects, requires a certain minimum level of individual skills to be mastered before going further with the training. It is an established fact that training in a number of individual activities over time leads to increased knowledge and a higher skill level. Succeeding feels good, and provides motivation

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to work harder and acquire new knowledge. Education, training and exercises go hand in hand. A good underlying education is required in order to benefit from training. Further, a lot of training is required in order to derive benefit from exercises. All of this is interconnected. The level of ambition and the form of training must be seen in the context of the unit's standpoint. Challenging tasks require continual training.

### 5.4.2 Ready for combat (CR)

Ready for combat (Norwegian: KTS) procedures are important and should also be used as a leadership tool. You must ensure you have a clear view of what this means for both the individual and the unit. Sufficient time must be allocated to CR preparations ahead of activities and exercises. Among other things this means reviewing and physically checking the critical materiel you have as well as checking the individual's personal clothing and equipment. Good-quality clothing is particularly important in wintertime, and special attention should be given to checking that base layers and footwear, mittens and headgear fit correctly. We have all seen too many examples of insufficiently thorough and detailed preparations resulting in significantly less benefit being derived from the exercise.

When it comes to following up the individual soldier, it is sensible and critically important to create situational awareness among officers in charge at lower levels so that they obtain some form of medical history for their subordinates. The aim is to reveal any previous frost-/cold-related injuries, foot problems, use of prescription medicines and any requirements for equipment modifications. This should be done ahead of exercises and training with a view to gaining "normal condition" status.

A good "combat ready" procedure must also follow up and communicate what is and what is not to be brought along. This can easily be managed using packing plans and line division of equipment for both individual and section materiel.

The "combat ready" procedure is important as it provides an arena for all levels within a unit's control function, and because it produces many "side effects" for a unit's ability to perform tasks well and effectively. This in turn will give a unit/platoon leader a better basis for assessing and evaluating his/her officers in the execution of the procedure, and thus confirming a basic assessment of the individual.

### 5.4.3 Basic skills

By way of introduction and before the winter exercises start, the soldiers and officers must have a good grounding in basic skills. As a starting point, a theoretical review of training in accordance with GSU 1 Winter Service should be conducted. Emphasis must be placed on the basics regarding appropriate clothing, planning of safe routing and navigation, prevention and treatment of cold weather injuries, nutrition/fluid balance and control routines. As previously mentioned, it is important to take the unit's standpoint into account and choose a reasonable level of ambition for the exercise in this respect.

### 5.4.4 Exercise elements

It is difficult to define exercise elements for adapting to winter conditions in a military setting, as there are many different units that have various roles in wintertime. Nevertheless, it is desirable to provide advice to the units that either operate in such a way that the winter will have a significant impact on their ability to

operate, or units that actively use exercises in a winter environment to improve in terms of their primary function.

Where exercise elements for a basic winter exercise are concerned, it will be appropriate to include teaching and practical training in companion rescue. In the last two to three years, nearly all the units of the Armed Forces have been issued with shovel, avalanche probes and transceivers. The basic training in the actual use of this materiel is relatively simple and not particularly time-consuming. Training and practice, including companion rescue, require more time. Approximately one day of practical training is needed to produce a good soldier and a well organised section.

Establishing bivouacs and bivouac routines is something that is always relevant. In this case it is important to transfer good practice and the unit's routines from bare ground to a winter environment.

For units that often operate outside vehicles and off road, it is also important to have a knowledge of safe routing, navigation and snow awareness. This must be put into practice by aligning maps and physical terrain. Look for terrain that presents challenges without exposing personnel or the unit to danger. Snow awareness acquired by digging in the snow, looking at the different layers in the snow pack and what affects this, contributes to a greater understanding. Creating awareness of these subjects is important in laying the foundations for making effective judgements.

Navigation training with map and compass should be considered a basic winter skill. Practical training in this should be carried out in different weather conditions and with different applicable methods, for example compass patrol. Continual training for this practice element confers a sense of mastery and will also be crucial in demanding winter conditions.

Beyond this, imagination is the only limit. The individual unit should also organise practice elements that capture the unit's specialist trade/skills and the challenges it faces in terms of operating in winter conditions.



*Figure: 5.1*

#### **5.4.5 Exercise planning**

Exercise planning in this publication mainly refers to the company/battery/squadron level.

The unit commander must have a clear objective of what he/she wishes to achieve in connection with training and exercises. The level of ambition and objectives must be aligned. What is the purpose, what do you wish to achieve? This helps to provide both the officer and those he/she is leading with a shared approach to and feeling of ownership about what is to be done.

The nature, content and level of ambition of the exercise must be proportional to the unit's standpoint.

The person made responsible for drawing up proposals for an exercise plan should ideally use a previous successful plan as a checklist. In this way you can incorporate many of the successful practice elements.

Draw up a simple and clear plan. Ensure there is progression in the exercise, and be sure to include the elements requiring training and practice that were reviewed earlier. Draw up a plan showing where and how you want to carry out the various practice elements.

Continue the unit's routines. Create consensus on how inspection routines are to be carried out and who will ensure that this is performed properly, and follow up.

Based on the established plan, envisage a "worst case scenario". Parameters may change. Establish an alternative plan to ensure the unit will still benefit from the exercise.

Present a plan to your own commanding officer in good time. Make adjustments in line with any comments you receive.

Present the plan at an officers' meeting. Get feedback, and make adjustments if necessary.

Present the plan to the soldiers in the unit.

Give those in the operational stage, platoon leaders under you and those who will lead the elements during the exercise time for preparation. Support and check!

After the exercise is complete, it is sensible to carry out an evaluation with both soldiers and colleagues in the unit. Identify the most important experiences and adjust the plan in relation to the next exercise.

Create realism in the elements you organise without going beyond what is safe – “Train as you fight”.

Conduct a thorough risk assessment of the planned activities.

### *Exercises and training in winter*

- *The unit's Ready for combat procedures are important ahead of training and exercises. Allow time for this. CR is also a leadership tool.*
- *Continual training gives a feeling of mastery.*
- *Design practice elements on the basis of the unit's standpoint and needs.*
- *Draw up clear and simple plans for training and exercises.*
- *Allow time for preparations. As an officer in charge, you must support and check.*

Chap-5

#### **5.4.6 Conclusion**

We would like to conclude this publication with a few remarks that address the importance of education, training and exercises in a winter environment.

The intention of winter drill exercises (ref. Second Battalion, Brigade North, 2008): (Commander 2nd Battalion, Lt.-Col. Svend Arne Hokstad)

*“Carrying out a winter exercise of long duration can in many ways be compared with a combat operation. The consequences of any deficiencies in preparation, thoroughness of planning, overall implementation and leadership will give clear and effective feedback on your own competence and capability. My assessment is therefore that this winter exercise should form the basis for training and conducting exercises in controlled winter-defined situations in peacetime in order to create challenges that produce a coping effect in combat situations.”*

Internal officer training in Second Battalion, Brigade North, in connection with start-up of new contingent in 2008: (2IC, Support Company, Second Battalion)

*“Seen on the basis of the implementation of this year's course, I personally consider that it must be continued. Failure to ‘quality assure’ our own officers in this way could in the worst case scenario lead to personal injury. When the level of skills in orientation in wintertime/choice of marching routes proves to be as low as it is, there is scope for reflection. Use and maintenance of expensive materiel is also something that not everyone is sufficiently familiar with, and this course also puts this on the curriculum.*

*By continuing the course in one form or another, we will effectively impact the winter's exercises, whether we use skis the whole winter or whether we are seated in vehicles.*

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*The principles we apply are the same but the consequences of opting for easy solutions will have far greater impact when lightly equipped than when sitting in a heated vehicle.”*

Allied forces training in Norway (Head of Allied Mobile Forces Land)

*“If you can fight and survive in the extremes of the Arctic, you can fight anywhere in the world”*

## 6 Entry into force

UD 6-81-1 Instruction in Winter Service – Winter Conditions, Leadership and Training came into force on 1 November 2013. At the same time UD 6-81-1 A Guide to Cold Weather Operations, Booklet 1 Winter Conditions, dated 13 December 1987, was withdrawn.

### REFERENCES

#### Abbreviations

GIH	Inspector General of the Army
KTS	Ready for combat
HUT	Norwegian Army Regulations on Army Education and Training
GSM	Soldier Initial (Phase 1) Training
Brig N	Brigade North
Bn 2	Second Battalion/Brigade North

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