

# Safety Manual for Fieldwork

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*Greenland Institute of Natural Resources*

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## Contents

Preface .....	1
General information on fieldwork .....	2
Camping guidelines .....	6
Safety on water .....	6
Safety in remote areas .....	7
Crossing rivers .....	8
Safety on bird cliffs.....	8
Safety on glaciers .....	8
Safety in areas with dogs .....	9
Safety in areas with muskoxen .....	9
Safety in areas with polar bears.....	10
Sun, UV radiation and snow blindness.....	13
Working with radioactive and toxic substances .....	13
Using snowmobiles .....	13
Safety around helicopters .....	14
Appendix A: Important phone numbers .....	15
Appendix B: First aid .....	16
Appendix C: Fieldwork in the winter.....	19
Appendix D: Outboard motors.....	22
Appendix E: Use of weapons.....	25
Appendix F: Use of miscellaneous equipment.....	28
Appendix G: Diving and underwater work.....	30
Appendix H: Confirmation of receipt .....	32

## Preface

This manual gathers all material relevant for field safety within the scope of the Greenland Institute of Natural Resources' activities. Great emphasis must be placed on the safety of each individual staff member conducting fieldwork with the Greenland Institute of Natural Resources (GINR). **Safety has top priority**, and no unnecessary risks should be taken.

It is important to take preventative measures, and GINR emphasizes that all equipment used in the field should be properly maintained, and staff members must be trained in the use of gear and machinery prior to fieldwork.

As a main rule the **field workers must follow the guidelines provided in this manual**, use common sense and think in terms of safety.

We urge everyone to contribute their comments, feedback and ideas for ongoing improvements to this safety manual. All revisions will subsequently be made by GINR's safety committee (SIKU).

The current safety manual supersedes all previously existing regulations.

## General information on fieldwork

Safety is extremely important in all kinds of fieldwork – especially work that involves traveling in dinghies, inflatable boats, on snowmobiles in remote areas, and climbing bird cliffs.

### In order to participate in any kind of field work

- **you must compile or be part of a fieldwork plan.**
- **you must provide the names of contacts / next of kin.**
- **you must bring and use suitable safety equipment.**
- **you must bring adequate communications equipment that enables you to call for help.**
- **you must have read and signed this document.**

Larger projects with prolonged stays at a particular site and/or highly hazardous work require at least two persons and a designated person who is in charge of safety.

### Essential outdoor guidelines

1. Never head into the wilderness alone.
2. Always wear/bring warm and waterproof clothing.
3. Always bring a map and compass/GPS.
4. Always inform people *where* you intend to travel and *when* you intend to return.
5. Always check the weather forecast before you leave – and remember to consult the wind chill factor chart on page 20.
6. Always listen to the advice from people with local knowledge.
7. Show respect for the weather. Save your strength and seek shelter in due time.  
There is no shame in returning home early.
8. Respect the terrain and
  - a. avoid steep slopes, where rock falls or rockslides can occur.
  - b. avoid steep snowy slopes, where avalanches may occur.
  - c. avoid thin or treacherous ice, e.g. during the spring and early summer, or on frozen rivers.
  - d. avoid areas with a danger of mud flows, e.g. near glaciers and deposits left by meltwater.
9. Never allow yourself to become panic-stricken. Keep a cool head and think things through.

### The project manager's responsibilities

The project manager (i.e. the person in charge of the project) must ensure that field workers have read and signed the safety rules and regulations. Prior to fieldwork participants should discuss how to comply with the rules and regulations during the upcoming fieldwork.

The project manager is responsible for

- ensuring that all safety equipment is in order before work begins.

- Field workers should always bring along a minimum amount of necessary spare parts and tools for minor repairs and daily maintenance.
- bringing a relevant number of emergency aid kits with the correct specified contents (see box on page 5) to be used for the corresponding field project.
  - A more comprehensive range of first aid equipment must be easily accessible at more permanent fieldwork sites.
- designating a person who is in charge of safety.

### ***Reporting to GINR***

**If a work-related accident occurs, GINR/SIKU and the head of administration must be informed immediately.**

The designated person in charge of safety and management must assess whether it is necessary to report regularly to the institute.

If the fieldwork can be characterized as particularly dangerous, the designated contact person should be contacted on a daily basis, if possible.

If it is necessary to report regularly

- a designated contact person must be appointed prior to fieldwork.
- field workers must report back to a contact person if scheduled plans are changed.
- the designated contact person is responsible for alerting authorities if communication is not maintained as agreed.
- immediately after arriving at the camping spot, and before the helicopter, plane, or ship has left the site, GINR must be contacted to ensure that contact can be made. If you cannot contact GINR, you must arrange for the captain of the vessel/aircraft to inform GINR of this situation.
  - Exceptions to this rule would be, if it is clear to everyone, that natural causes are to blame for the lack of radio contact, such as low batteries that need to be recharged, or if the group is working in a radio dead spot, or return transportation has been pre-arranged within a relatively brief amount of time e.g. a few days.

### **Researchers and students from other institutions**

Although GINR does not require researchers and students from other institutions to comply with GINR's standards, it is recommended that participants in fieldwork have completed formal instructions corresponding to a 24-hour basic course in first aid.

**In connection with fieldwork conducted under the auspices of GINR, researchers and students from other institutions must follow the rules stipulated by GINR.** It is GINR's responsibility to make sure that they are informed of the currently valid rules and regulations.

GINR is NOT responsible for researchers and students from other institutions who participate in programs that are administrated by their home organizations.

## **Vaccinations**

Each individual staff member must safeguard against this risk of contracting dangerous diseases such as rabies, tuberculosis and tetanus. GINR covers all expenses for vaccinations that are required in connection with performing one's work with the institute.

GINR recommends that you are **vaccinated against rabies** if you are to carry out fieldwork on land in areas with no immediate access to medical attention, such as in the Northeast Greenland National Park. The veterinary office in Nuuk estimates that a considerable number of polar foxes in Greenland are infected with rabies, making it probable that you will come across foxes that carry the disease.

## **Insurance**

All employees of GINR, including volunteers and external people who work on GINR's projects, are insured by Europæiske Rejseforsikring A/S in accordance with the law on work-related injuries and business travel. In addition, GINR has taken out an extra insurance policy valid for expeditions and fieldwork.

If you have to embark on a business trip abroad, you can receive an insurance card from the administration. This expedites service if you happen to experience an accident. You may also receive a copy of the policy.

## ***Luggage***

It is particularly important to take notice of the special coverage of luggage. In addition to covering lost luggage, the insurance also applies to baggage delays. The purpose is to allow travelers to purchase toiletries and essential clothing when their luggage is delayed by more than three hours with regard to expected time of arrival at the destination. The insurance covers replacement purchases worth up to Dkr. 3,000. The same insurance policy also provides extra coverage in connection with theft and damage. If such a situation occurs, please contact the GINR administration.

## ***Vacation in connection with field work***

Should you decide to go on vacation right after completing your fieldwork, please be aware that the GINR insurance policy only provides coverage within the state where you have done the fieldwork – i.e. if you are on field work in Alaska, and you leave the state of Alaska, you will no longer be covered by the insurance.

## ***Rented or private equipment***

If you are renting any kind of equipment, it is important to verify that the owner is insured. This can be particularly important if you are renting e.g. a snowmobile. You should be aware that the insurance only covers GINR's staff members; all damages caused by/on the snowmobile must be covered by the owner's liability insurance. Please contact the administration if you are in doubt.

Private equipment that is brought into the field without a preliminary agreement with the management is not insured.

### **First aid kit and emergency equipment**

Always bring along emergency/safety equipment that matches the character of the task at hand, local conditions and the season.

*Inform the custodian at GINR if cases and kits need to be filled up.* It's always a good idea to double check that everything is actually there.

#### ***First aid kit contents***

On a field trip, the first aid kit should be stored in one of the field cases or kept by the field leader. A complete first aid kit should contain the following:

<b>For minor injuries</b>	<b>For more serious injuries</b>
<ul style="list-style-type: none"><li>○ Antiseptic swabs</li><li>○ Adhesive bandages</li><li>○ Elastic bandages</li><li>○ Adhesive tape</li><li>○ Fingertip adhesive bandages</li><li>○ Small compression bandages</li><li>○ Elastic gauze bandages (to hold compresses on wounds or as a temporary support bandage)</li></ul>	<ul style="list-style-type: none"><li>○ Sling</li><li>○ Gauze compression bandages</li><li>○ Large compression bandages</li><li>○ Scissors</li><li>○ Tweezers</li><li>○ Disposable latex gloves</li><li>○ Heat-reflective survival blanket (to protect the injured person from cold, rain and wind)</li></ul>

#### ***Emergency equipment contents***

Certain situations will require that you bring along the following emergency equipment:

<b>Emergency equipment</b>	<b>Camping equipment</b>
<ul style="list-style-type: none"><li>○ Medicine and bandage kit</li><li>○ ANNA life-pack or equivalent with instruction manual</li><li>○ Signal pen with cartridges</li><li>○ Signal cloth</li><li>○ Signal mirror, whistle</li><li>○ Compass, map</li><li>○ Heat-reflective survival blanket</li><li>○ VHF radio and/or satellite phone</li><li>○ Emergency radio distress beacon if possible</li></ul>	<ul style="list-style-type: none"><li>○ Tent (at least 1)</li><li>○ Trangia cooking kit with denatured alcohol</li><li>○ Sleeping mats (at least 2)</li><li>○ Sleeping bags (at least 2)</li><li>○ Matches in waterproof case</li><li>○ Bivouac bag (in the winter)</li><li>○ Emergency rations for 1 week</li><li>○ Distress and signal flares</li><li>○ Weapons and ammunition, if required</li><li>○ Spade (for winter camping)</li></ul>

Make sure that you have your equipment organized well ahead of time. Check that everything is in working order.

#### ***Batteries***

Pay special attention to batteries, which have a tendency to discharge at extremely low temperatures. Keep batteries in a warm place, e.g. in a pocket close to your body, or bring



## Camping guidelines

along an insulated box to store large quantities of batteries. Put the batteries in a refrigerator when storing them for longer periods of time. Take them out in due time before use to ensure they are not too cold.

If you are in doubt over how to check whether batteries are charged, please contact the logistics department.

## Camping guidelines

For your own comfort, you should always make camp in a dry and flat area, in the vicinity of a water source, at a sheltered location – and preferably with a good view.

Provisions and emergency equipment must be securely packed in waterproof boxes so they are protected from the elements.

**The campsite should always be left in pristine condition.** This means e.g. that all leftovers must be taken with you, although combustible waste can be burned on the spot.

### Fire

To minimize the risk of fire, you must allow at least 15 meters between each tent. Smoking is not allowed in the tents. If at all possible, all cooking should be done outdoors, at a safe distance from the tents.

Be careful with the use of open flames as dry air and strong winds can whip up large brushfires. Read more under "Safety in areas with polar bears", page 10.

## Safety on water

Safety manuals for GINR's large ships (Sanna and Pâmiut) and small boats can be found on board and must be read when you ship out.

### Rules for the use of small boats

The following safety guidelines must always be respected:

- When traveling in *small boats*,
  - you must wear a life jacket, a flotation suit or equivalent.
  - emergency flares must be readily accessible in the boat.
- When working in an *inflatable boat or on sea ice*,
  - you must wear a survival suit.
  - a signal pen with a cartridge must be in one of the pockets of each survival suit.
  - exercise extreme caution when using portable inflatable boats (rubber dinghies). Such a boat must have a minimum of two flotation chambers.
- When using *inflatable boats in remote areas without an accompanying boat*,
  - you must bring along emergency distress beacons. The transmitter must be placed so it can be easily activated in the event of an accident.

## Safety in remote areas

- If conditions require it, an auxiliary motor must be brought along.
- Nets, ropes and similar equipment must be kept in a plastic bag, box or other container to minimize the danger that field workers become entangled in them if the boat capsizes.
- If you go ashore on small islands you must bring communications equipment (walkie-talkies or VHF) and emergency gear such as a radio distress beacon and signal flares. Mobile phones do not normally qualify as safety equipment for maritime activities in Greenland.
- Always bring a VHF radio along.

### ***Before a boat trip***

- The outboard motor and the number of passengers must match the boat's size.
- The field workers must ensure that the motor and other equipment is working properly before they begin their trip.
- It is essential that you take along plenty of fuel.
- The fuel tank may only be filled when the motor is turned off.
- It is strictly forbidden to smoke in the boat while filling the fuel tank or switching fuel tanks.
- Extra spark plugs, oars and an extra propeller must be in the boat. Inflatable boats must also have a puncture kit and pump.
- The outboard motor must be secured with a chain or ropes.

### ***During a boat trip***

- If there is a dead man's switch on the outboard motor, it must be connected to the boat driver e.g. at the wrist.
- A minimum of 2 people must be on board if work is to be done from the boat.
- You are only allowed to take the boat out alone if you are providing local transport within the work area.
- You must always use a lifeline when traveling in remote areas, in waters with numerous reefs or when working in proximity to whales.
- Keep a safe distance to icebergs or calving glaciers.

## **Safety in remote areas**

Always be aware that the **weather can change incredibly fast**, that most of Greenland is extremely remote, and that help is far away. Plan your fieldwork meticulously and with the greatest possible margin of safety, as even small accidents can have disastrous consequences.

Your planning should take into account that bad weather conditions may necessitate extra buffer days. You should organize your work so that you have sufficient time to return to your tent(s) if the weather suddenly becomes threatening.

All fieldwork in remote areas, regardless of the scope of the task involved, must be conducted by *a minimum of two persons*.

**At least one field worker must have documented knowledge of first aid and be able to operate a radio/satellite phone and competently use emergency camping equipment, including weapons, if necessary.**

If you are dropped off in the wilderness (but always with a minimum of 2 persons), you should always bring along camping equipment and emergency rations for at least 1 week.

## Crossing rivers

Crossing rivers by foot can entail big risks for a number of reasons. The water is cold and there may be strong currents and deep holes, which are not visible from the riverbank. At least two people must be present when crossing a river.

- Never cross a river if you are uncertain whether it can be done!
- Never go barefoot.
  - You can lose all feeling in your feet and it can become difficult to maneuver where there are stones on the riverbed.
- Never use waders.
- Never attempt to cross a river during snow melt, because the river banks may be covered with water filled snow and you risk sinking through the snow.

Bring along a pole that can be used to work your way forward and give you support. Use either neoprene socks or gaiters over your boots.

Cross a river as early in the morning as possible. During spring and summer the water level tends to be lower earlier in the day due to lower snow melt. Cross the river diagonally and up stream.

For large rivers, you can use a rope (length: minimum 3 times the width of the river) tied around your waist during the crossing.

## Safety on bird cliffs

Working on bird cliffs and climbing in general is a particularly dangerous activity. Before climbing, the field worker must receive proper training. Climbers must wear helmets and other necessary safety equipment (e.g. ropes and anchors).

## Safety on glaciers

If it is known beforehand that the fieldwork will involve working on glaciers, or crossing glaciers, the field workers must complete a course in glacier skills before work commences. Necessary equipment must be obtained, such as rope, crampons and ice axes.

## Safety in areas with dogs

You are only allowed to set foot on a glacier if you are secured with climbing ropes and bring along emergency equipment.

### **Safety in areas with dogs**

Be aware that dogs that are untethered are normally more "inoffensive" than dogs that are tied up. Pay special attention to dogs that behave in an uncharacteristic manner.

If there are many foxes in the area, you should be on the watch for foxes with abnormal behavior.

Follow these rules:

- Bring along a good solid walking stick of the right length that can be used to persuade attacking dogs that they would be better off finding other quarry.
- Try to ignore the dog. Do not look it in the eyes as this is a sign of dominance and the dog will try to defend itself.
- Avoid smiling at the dog, because baring your teeth will be perceived as a threat by the dog.
- Avoid showing fear, as this will be perceived as a sign of weakness and a reason to attack.

### **If you are bitten**

If you are bitten by a dog, seek professional help as quickly as possible. Rabies bites must be treated within 48 hours. If you are infected, and do not receive treatment, rabies is deadly.

### **Safety in areas with muskoxen**

Muskoxen are particularly common in the area around Kangerlussuaq (Søndre Strømfjord), close to Ivittuut in West Greenland, and in North and East Greenland.

There is generally no reason to be afraid of muskoxen. Muskoxen are normally peaceful animals that remain unaffected by the presence of humans, but you should not ignore or underestimate the risks. Muskoxen can be provoked to exhibit threatening behavior or to attack in self-defense, especially if people venture too close to them.

**Always bring along a flare gun** as a means of frightening off the animal, and perhaps also a rifle for emergencies.

Follow these rules:

- Do not camp near trails used by muskoxen.
- Always maintain a respectable distance between you and the muskoxen and be aware of their behavior.
- Never walk through a herd of muskoxen, and never place yourself between calves and their mothers.

- Exhibit calm and relaxed behavior to avoid stressing the muskoxen.
- When a muskox begins to snort, scrape its horns against its forelegs, scrape against the soil with a foreleg or a horn, or produce a grunting noise, you have come too close. Slowly retreat in a calm manner and leave the animal alone.
- *You cannot outrun a muskox*, neither uphill nor downhill. It is natural for muskoxen to seek higher ground if they feel threatened, so do not cut them off from this possibility.
- Use a flare gun if a muskox comes too close. If a muskox attacks you, you may have to kill it in self-defense, in which case, you should shoot at the animal's upper torso area – never at its head.

## Safety in areas with polar bears

Polar bears can be found all over Greenland. In the central West Greenland you are less likely to encounter a polar bear than in other parts of the country. Nevertheless, the likelihood of such an encounter has increased in recent years. Polar bears are primarily endemic to the permanent pack ice along the coasts around the Arctic Ocean, as well as North and East Greenland. They live predominantly on the sea ice or in areas within a few kilometers of the coast.

In the autumn, winter and spring, polar bears hunt seals along the edge of the ice, in proximity to open water and in areas where sea ice has been piled up. They also hunt seals in areas where the sea ice is thin or cracked, for instance, where there are high tidal cracks, or at the foot of glaciers. During the summer, polar bears can be forced to go on land when the sea ice melts. During such periods, they feed on birds, eggs and small mammals found along the coasts, beaches and nearby islands. They also feed on leftovers from other animals, including waste left by humans.

During the summer, polar bears can be seen wandering along the coast. With the reduced amount of permanent sea ice in the Arctic, an increasing number of polar bears have been observed on land during the summer (until ice once again covers the sea near the coast). Polar bears can also drift with the pack ice along the east coast of Greenland, around Kap Farvel, and up along the west coast.

### Precautionary behavior

**Never approach a polar bear.** These animals defend their territory and may feel threatened by you.

- **Do not hike alone** if you are traveling in areas where there is a good chance of encountering a polar bear.
- As a rule, **always move during daylight hours** and be aware of your surroundings. Polar bears can be difficult to see.
- **Make noise** to convey your presence.
- **Scan the horizon** with binoculars at regular intervals.

- **Avoid areas with limited visibility** caused by jumbled sea ice, large boulders, driftwood or high vegetation.
- Keep your eyes open for **tracks and bear scat**.

### ***Camping rules***

- **Do not leave edible or strong-smelling things out in the open.** Polar bears associate people with food as something interesting and potentially dangerous.
- Burn your rubbish in the morning. That way, if a bear smells smoke (often from many kilometers away), it will at least come to investigate during daytime hours.
- Avoid camping on beaches or coastlines. Polar bears often travel along the coast.
- **Never sleep outside** a tent or hut.
- **Use a tripwire** around the camp. Remember that the alarm is not intended to frighten the bear, but to wake the people in the camp.

### **If you encounter a polar bear**

If you observe a polar bear that has not picked up on your scent, move away in a calm manner. Use the VHF radio to warn your colleagues of the polar bear's presence and provide precise information on its location and direction of movement.

Polar bears are curious and often investigate foreign objects, smells or sounds. Always proceed with caution and evaluate the situation. It is important to use good judgment and common sense, and be familiar with the animals' behavior.

***You may only shoot a polar bear in self-defense.*** You may not provoke a polar bear and "preventively" kill it. If you do end up shooting the animal, you are obliged to subsequently provide assurances of the self-defense shooting.

You can encounter three different types of behavior: curious, hunting or defensive.

### ***Curious polar bears***

A curious polar bear is characterized by investigative behavior. The bear moves slowly and with frequent pauses, stands on its hind legs and sniffs in the air (bears that attack never stand on their hind legs). The bear holds its head up high, with its ears forward or to the side, moves its head from side to side, or attempts to catch your scent by moving crosswind and approaching you from a downwind position.

Give the bear a chance to detect you. Help the bear identify you as a human by speaking in a deep voice. You may want to slowly move upwind of the bear, so it can catch your scent. This is often sufficient to cause the bear to move away.

*The bear must always have an escape route.* If you can only come clear of the bear by moving in the same direction that it is headed, allow the bear to put distance between you. The best behavior to display when encountering a bear is to slowly move away from the animal while, at the same time, never losing sight of it. Remain visible for bear and *never run from a bear*.

If the bear gets closer, demonstrate calm determination. This means that you remain standing and wave slowly up and down with your arms while you speak with a commanding voice. If there are a number of other people with you, move close together and create the largest possible visual object. If possible, seek safety indoors. Bears do not attack buildings. Instead, they investigate them, scratch at them and, in some cases, break into them if they can smell something edible – or out of pure curiosity. You have a good chance of chasing the bear away if you make a lot of noise.

If a bear gets too close, try to frighten it away with flares or a warning shot. But be careful not to shoot behind the bear or you may risk frightening it towards you. A rifle shot rarely has a deterrent effect. Furthermore, you should retain as many shots as possible, just in case you are forced to kill the bear. There will not necessarily be time to reload the rifle if the bear attacks.

If it becomes necessary to kill the bear, wait until you have a clear shot. *Aim for the upper torso* and try to avoid hitting the head. Remember that you are shooting in self-defense, so wait until the bear is close to you. *Keep on shooting* – even if you have hit the bear and it falls over.

### ***Hunting polar bears***

A hunting polar bear proceeds directly towards its "prey." It can follow you, or circle you, or return after being scared away. It may do a mock attack, but that does not mean that it is bluffing. It may show signs of being wounded, old or thin. The above-mentioned rules generally apply here as well. Show calm determination. Do not try to run away from the bear. Move together in a tight group and try to frighten the bear away with noise. Use whatever you can find e.g. bang pots and pans together. Be prepared to use flares or warning shots to frighten away the bear and, if necessary, to shoot it.

### ***Defensive polar bears***

A defensive bear feels threatened because it has been surprised, its escape route is limited or it is a mother with cubs. It approaches directly, intense and undaunted, often with an open mouth and snarling noises. If you surprise a bear at close range that shows signs of being upset or threatened (makes panting, hissing, or growling noises, snaps with its jaws, stamps with its feet, stares directly at a you or lowers its head with its ears pointed backward), do not run away. Slowly move away. Do not shout or make any sudden movements. Avoid direct eye contact. React in a non-threatening manner. Be prepared to use flares or warning shots to frighten away the bear and ultimately to shoot it.

### ***Bears with cubs***

Avoid getting between a mother and her cubs. If you find yourself in the vicinity of a bear with cubs, do not run. Gather everyone in the group and leave the area immediately. Be prepared to defend yourself if the bear attacks.

### **Fleeing and fighting a bear**

If you are fleeing from a bear, you can try to drop gear and pieces of clothing. This will rarely stop a bear, but it can perhaps allow you to win a little time. It is not recommended to play dead. If you cannot escape from the bear, and it ends in a direct confrontation, kick it, hit it with your arms or use any available objects as a weapon – such as a firearm, stone, chunk of ice, knife, ski or ski pole – and try to hit on the head.

### **Sun, UV radiation and snow blindness**

The sun's rays can be very strong. When needed use sun protection factor 15 or higher.

Be particularly aware of the dangers of snow blindness, which is a type of temporary eye damage caused by snow reflecting UV light. There are many degrees of snow blindness, from a vague feeling of sand in the eyes to extreme pain.

Sunglasses should be designed to stop light from shining in from the sides. Eye protection is just as necessary on overcast days as when the sun is shining.

### **Working with radioactive and toxic substances**

If you bring along and use radioactive or toxic substances in the field, do so with caution – and always bring along necessary safety equipment.

Prior to departure, carefully read the manufacturer's safety instructions and familiarize yourself with the correct handling and storage procedures.

- Containers with toxic and radioactive substances should be able to withstand transport.
- Containers should be packed in plastic bags ensuring that nothing will leak out.
  - It is also a good idea to protect containers against freezing, as it can be difficult to remove a frozen liquid with a pipette.
- Avoid spilling radioactive and toxic substances in the wilderness.
  - If necessary, use a plastic bag or tarp as a protective layer where the substance is used.
- Everything that has been in contact with radioactive and toxic substances should be collected and brought back for disposal.
- Hazardous waste must be kept strictly separated from other waste.

### **Using snowmobiles**

Snowmobiles should be used with caution. They can travel very fast, but the speed has to match the conditions, one's own experience, and the traffic regulations in rule.

Follow these rules:

- Wear a crash helmet



## Safety around helicopters

- You are legally required when driving a snowmobile in Greenland – even if you are a passenger.
- The dead man's switch must be connected to the driver.
- You may not open the engine compartment while the motor is running.
- Bring along skiing equipment or snowshoes for at least one person in case of mechanical difficulties.
- For safety reasons, at least 2 persons should drive together on separate snowmobiles (please see comment below).
- Bring spare parts and tools for common repairs and general errors.

It is sufficient with the use of only one snowmobile when doing field work in Kobbefjord, Nuuk. This can be done by either two persons driving on one scooter or one person driving the scooter while the other is on foot, on skies or snowshoes. The snowmobile in Kobbefjord belongs to NuukBasic and the use of the scooter must be arranged with NuukBasic logistics.

## Safety around helicopters

**Always follow the pilot's instructions.** Never try to persuade a pilot to do something that he/she has judged to be irresponsible. All activities must be arranged with the pilot.

If you have to embark a helicopter while the rotors are rotating, always approach the helicopter in a *crouched position* and within the pilot's field of vision. *Never approach the aircraft from behind* because the tail rotor is positioned very low.

Remember that the greatest danger posed by the main rotor is when it revolves slowly, because the rotor blades drop closer to head level.

It is a good idea to maintain radio contact with the pilot while the helicopter approaches the field camp. Consequently, you should agree on a VHF frequency.

Since it is difficult for a pilot to spot a camp from the air, you should bring equipment (e.g. a mirror or a large, brightly colored piece of cloth) so you can signal your position.

## Appendix A: Important phone numbers

<b>Greenland Institute of Natural Resources (GINR)</b>	+299 361200
<b>Aasiaat Radio</b>	130
<b>Aasiaat Radio from Iridium or Tusass</b>	+299 893126

### Emergency calls

In the event of an accident requiring medical attention, the fire department or the police should be informed using one of the numbers on the list below.

If you dial 112 on a mobile phone or landline (NOT Iridium), you contact an emergency central in Aasiaat, who will connect you to the nearest authorities.

When making an emergency call, you must provide the following information (remember to speak slowly and clearly):

- Where has the accident occurred?
- What has happened?
- How many people have been injured?
- Where are you calling from?

Town	Hospital	Ambulance	Police	Fire department
<b>Aasiaat</b>	+299 892211		+299 894222	113
<b>Ilulissat</b>	+299 943211		+299 943222	113
<b>Ittoqqortoormiit</b>	+299 991011		+299 991022	+299 599191
<b>Maniitsoq</b>	+299 813211		+299 813222	+299 813613
<b>Nuuk</b>	+299 344400	+299 344112	+299 321448	+299 321448
<b>Qaanaaq</b>	+299 971011		+299 971022	+299 971199
<b>Qaqortoq</b>	+299 642211		+299 642222	113
<b>Sisimiut</b>	+299 844211		+299 864222	113
<b>Upernavik</b>	+299 961211		+299 961222	+299 591134
<b>Uummannaq</b>	+299 951211		+299 951222	+299 951200

## Appendix B: First aid

It is important that everyone taking part in fieldwork have the skills and knowledge required to apply first aid. GINR therefore pays for all employees to take a first aid course. It is a good idea to take a refresher course at least once every other year.

Bring your first aid handbook when conducting fieldwork. If you no longer have this book, you can acquire one by contacting the administration.

It is important that you know how to call for help before you begin your fieldwork. Please note in particular that the phone numbers vary from town to town (see “Appendix A: Important phone numbers”, page 15).

Be particularly aware of the fact that it is often best to start by calling for help before you begin with first aid, as it is important to get the injured person quickly to a hospital.

Remember the 5 essential first aid guidelines:

1. **Stop the accident** – prevent the situation from worsening.
2. **Assess the person:**
  - a. Create free airways – check for normal breathing.
  - b. Call for help.
3. **Give lifesaving first aid (CPR):**
  - a. If the person does not breathe:
    - i. Perform 30 chest compressions followed by 2 rescue breaths.
    - ii. Continue until the person breaths normally or the rescue team arrives.
4. **Give general first aid:**
  - a. It is of special importance to shelter the injured person from the elements, and cover cuts and gashes.
  - b. Be specifically aware of the need to give psychological first aid.
5. **Provide emergency assistance and organize transport.**
  - a. Pay special attention to preventing shock and evaluating whether it may be necessary to bring the injured person to the closest hospital yourself.

<i><b>Injury</b></i>	<i><b>Treatment</b></i>
<b>Abdominal cavity injuries</b>	<ul style="list-style-type: none"><li>• The patient should lie in a supine position – nothing to drink.</li></ul>
<b>Acid burns</b>	<ol style="list-style-type: none"><li>1. Remove the injured person from the corrosive area.</li><li>2. Flush with water.</li></ol>
<b>Avalanches and landslides</b>	<ol style="list-style-type: none"><li>1. Dig out the buried individual.</li><li>2. Begin with artificial respiration as soon as the head is free.</li></ol>
<b>Bleeding</b>	<ol style="list-style-type: none"><li>1. Elevate the bleeding area.</li><li>2. Have the injured person lie down.</li></ol>

<b><i>Injury</i></b>	<b><i>Treatment</i></b>
	<ol style="list-style-type: none"> <li>3. If blood is spurting from the wound, see “Bleeding, arterial”.</li> </ol>
<b>Bleeding, arterial</b>	<ol style="list-style-type: none"> <li>1. Immediately press your thumbs directly on the wound. Lay down the injured person.</li> </ol>
<b>Bleeding, venous</b>	<ol style="list-style-type: none"> <li>1. Elevate the bleeding area.</li> <li>2. Lay down the injured person.</li> </ol>
<b>Broken bones</b>	<ul style="list-style-type: none"> <li>• Use a sling for arms.</li> <li>• For legs, have the injured person lie down and support the fractured area with pillows or blankets.</li> </ul>
<b>Burns</b>	<ol style="list-style-type: none"> <li>1. Immediately flush with cold (not icy) water directly from a tap or a river.</li> </ol>
<b>Dog bites</b>	<ol style="list-style-type: none"> <li>1. Wash the wound and dress it with a sterile bandage.</li> <li>2. Contact a physician.               <ol style="list-style-type: none"> <li>a. Has the dog been vaccinated against rabies?</li> </ol> </li> </ol>
<b>Drowning</b>	<ol style="list-style-type: none"> <li>1. Save the drowning person!</li> <li>2. Apply first aid as soon as you have pulled the drowning person out of the water.</li> </ol>
<b>Electrical accidents</b>	<ol style="list-style-type: none"> <li>1. Turn off the electricity.</li> <li>2. Apply first aid to unconscious individuals.</li> </ol>
<b>Exposure</b>	<ol style="list-style-type: none"> <li>1. Protect from further chilling by wrapping up the patient in a blanket.</li> </ol>
<b>Frostbite</b>	<ul style="list-style-type: none"> <li>• If the skin is hard, take the patient to a hospital.</li> <li>• If the skin is flexible, warm it up slowly.</li> </ul>
<b>Gunshot wound to the lungs</b>	<ol style="list-style-type: none"> <li>1. Immediately cover the wound – but not airtight.</li> <li>2. Dress the wound, allowing for air inflow.</li> <li>3. Place in a lateral position on the side that has been hit.</li> </ol>
<b>Gunshot wound to the stomach</b>	<ol style="list-style-type: none"> <li>1. Lay the injured person down on their back to relieve any pressure:</li> <li>2. Cover the wound(s) with sterile bandages. Do not give anything to eat or drink.</li> </ol>
<b>Gunshot wounds to arms/legs</b>	<ul style="list-style-type: none"> <li>• Expect bone lesions, support as you would a broken bone.</li> <li>• Use sterile compresses.</li> </ul>
<b>Heimlich maneuver</b>	<p><i>Only to be used in extreme cases as it may cause damage to internal organs. If Heimlich is used, a physician must be consulted afterwards!</i></p>

<b><i>Injury</i></b>	<b><i>Treatment</i></b>
	<ol style="list-style-type: none"> <li>1. For a conscious person who is sitting or standing, position yourself behind the person and reach your arms around his or her waist.</li> <li>2. Place your fist, thumb side in, just above the person's navel (belly button) and grab the fist tightly with your other hand.</li> <li>3. Pull your fist abruptly upward and inward to increase airway pressure behind the obstructing object and force it from the windpipe.</li> <li>4. If the person is conscious and lying on his or her back, straddle the person facing the head. Push your grasped fist upward and inward in a maneuver similar to the one above.</li> </ol>
<b>Intracranial hemorrhage</b>	<ul style="list-style-type: none"> <li>• This happens when a person with a concussion later loses consciousness.</li> </ul> <ol style="list-style-type: none"> <li>1. Apply first aid.</li> </ol>
<b>Rib cage injuries</b>	<ol style="list-style-type: none"> <li>1. Immediately cover the wounded area – but not airtight – with your hands.</li> <li>2. Dress with a bandage.</li> <li>3. Place the patient in a lateral position on the wounded side.</li> </ol>
<b>Scalding</b>	<ol style="list-style-type: none"> <li>1. Immediately flush with cold (not icy) water directly from a tap or a river.</li> </ol>
<b>Sprained or dislocated joints</b>	<ol style="list-style-type: none"> <li>1. Support the twisted joint using a sling for arms.</li> <li>2. For leg injuries, lay the injured person down and support the joint.</li> </ol>
<b>Throat, foreign object</b>	<ol style="list-style-type: none"> <li>1. Remove the foreign object.</li> <li>2. Give the patient 5 slaps on the back.</li> <li>3. If that doesn't help, perform the Heimlich maneuver (see above).</li> </ol>

## Appendix C: Fieldwork in the winter

### Cold

- Always wear warm clothing.
- Footwear should be large enough that it ensures good circulation.
- Mittens are warmer than gloves.
- Drink plenty of liquid to avoid dehydration and the resulting reduced blood circulation.
- Do not ignore numbness.

### *Hypothermia*

Hypothermia is a medical condition in which the body loses heat faster than it can produce; it is characterized by an abnormally low body temperature. The *main symptoms* are trembling, apathy, withdrawing from the group, incessant complaining followed by mental confusion and irrational behavior. Individuals suffering from hypothermia must be treated with care – and possibly for physical shock.

If someone is suffering from hypothermia:

1. Remove all wet clothing.
2. Place the individual in dry – but not heated – clothing/blankets/sleeping bags.
  - a. Remember that the arms must be outside the first layer of wrapping.
3. Place a hot water bottle over the heart region and give the person hot drinks, preferably with high sugar content.
  - a. You may also serve the patient easily digestible hot food. The idea is to get the body to start producing its own heat.
4. Make sure that the individual does not move around too much.

### *Frostbite*

- Use skin against skin to warm up parts of the body that are frostbitten.
- Never rub white (frostbitten) areas of skin – this only worsens the injury.

There are two degrees of frostbite, first and second degree. The degree depends on the depth and size of the injury:

- *First-degree* frostbite is only superficial.
  - After the skin thaws, it becomes red and the area may have changed slightly. The symptoms will disappear completely when it is treated.
- *Second-degree* frostbite is deep.
  - The skin becomes white and hard, and it is extremely painful when it thaws. In cases of second-degree frostbite, the best solution is to submerge the limb in water that is 42-44 °C. However, this treatment can be so painful that it is necessary to seek professional medical attention before starting.

**Chill factor chart**

<p style="text-align: center;"><b>Wind chill factor chart</b></p> <p style="text-align: center;"><i>With a wind chill factor of -30 degrees Celsius, you should keep outdoor activities to an absolute minimum.</i></p> <p style="text-align: center;"><i>With a wind chill factor of -60 degrees Celsius, you shouldn't go outside at all.</i></p>												
Wind speed knots / m per sec.	Temperature measured in Celsius Wind chill factor (perceived decrease in temperature)											
calm 0 / 0	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	
5 / 2.5	8	4	-3	-9	-14	-19	-24	-30	-36	-41	-46	
10 / 5	6	2	-6	-13	-18	-23	-27	-35	-42	-47	-52	
15 / 7.5	4	0	-9	-17	-22	-27	-31	-40	-48	-53	-58	
20 / 10	2	-3	-12	-21	-26	-31	-35	-45	-54	-59	-64	
25 / 12.5	0	-6	-15	-25	-30	-35	-39	-50	-62	-66	-70	
30 / 15	-2	-9	-18	-29	-34	-39	-43	-55	-68	-71	-76	
35 / 17.5	-4	-12	-21	-33	-38	-43	-47	-60	-74	-77	-82	
40 / 20	-6	-15	-24	-37	-42	-47	-51	-65	-80	-83	-88	
<i>Wind speeds above 40 knots / 20 m per sec. have little extra impact</i>	MINIMAL DANGER: for people wearing appropriate winter clothing			INCREASING DANGER: of frostbite on exposed skin				GREAT DANGER				

**Avalanches**

During the winter, certain areas are prone to avalanches. It takes a certain amount of experience to identify such areas, but you should avoid traveling through or camping close to steep slopes covered with large quantities of snow. When possible avoid making noise or using firearms because this may trigger avalanches.

Fieldworkers should be equipped with avalanche ropes and RECCO® reflectors.

**Crossing ice**

It takes considerable experience to assess the ice's capacity to bear weight when crossing a layer of ice over deep water.

Always listen to the weather forecast and avoid attempting to cross long stretches of ice-covered water if there are predictions for strong winds or heavy snowfall, which can reduce visibility.

You may experience large temperature fluctuations in Greenland, thus it is important to be aware that it is not just the thermometer that tells you how cold it is. You should always check the weather forecast and calculate the wind chill factor using the chart on page 20.

### ***Equipment***

- All fieldworkers who conduct studies on ice-covered lakes, large rivers and sea ice should bring ice pitons and lifelines.
- If dictated by the conditions, survival suits should be used.
- Bring safety lines (climbing rope in the appropriate length with karabiners), which should be used to link people together. Also bring extra warm clothing and extra socks, in case you fall through the ice.

### ***Freshwater***

- A general rule of thumb is that *13 cm of lake ice* (frozen freshwater) can hold people or sleds.
- Ice cover is impaired in areas with subjacent running water e.g. in river bends and at river inlet or outlets to/from lakes or fjords.

### ***Sea ice***

You should take great care when crossing sea ice (frozen saltwater).

- Sea ice must be much thicker in order for it to carry the same amount of weight as lake ice.
- The thickness of sea ice may vary considerably, even within a very short period of time, due to ocean currents.
- Pay particular attention to cracks that may form in the ice.
- The action of the tides also influences the characteristics of sea ice.



## Appendix D: Outboard motors

- Only use fuel that is recommended for your motor.
  - Ensure that the tank(s) contain this type of fuel.
- Before you fill the fuel tank of your two-stroke engine:
  - Know the correct type of oil to mix with gasoline.
  - Know the correct proportional mixture of gasoline and oil.
  - Make sure there are labels on the spare tank with information on whether gasoline is mixed or unmixed.
- For longer boat trips, bring a full spare tank of gasoline.
- At least one person on board should be able to operate the motor in a competent manner and to perform simple troubleshooting and change the spark plugs.
  - Bring new spark plugs and a spark plug wrench for the outboard motor.

### Troubleshooting

Letters in list refer to table below.

- A. Motor will not start.
- B. Motor runs unevenly or stops.
- C. Motor runs unevenly in neutral.
- D. Motor will not go above a certain number of RPMs.
- E. Motor becomes overheated.
- F. RPMs are lower than normal.
- G. No speed when the motor is put in gear.
- H. The motor produces a great deal of smoke.

A	B	C	D	E	F	G	H	Possible cause
X	X							Fuel tank is empty.
X	X		X					Fuel line is incorrectly connected.
X	X	X	X		X			Fuel line is pinched or broken.
	X	X	X		X			Fuel filter is clogged.
X								There is a problem with the fuel pump.
X	X				X			The fuel is contaminated or unusable.
	X			X				Specified motor oil has not been used.
X	X	X	X		X			Spark plugs are fouled or malfunctioning.
						X		Propeller and/or propeller cotter pin need(s) changing.
							X	Too much oil in the gasoline mixture.

Some of these problems can be fixed on the spot – others require assistance.

### **Changing spark plugs**

1. Take the hoods off the spark plugs.
2. Unscrew the old spark plugs and install new ones.
3. Put the spark plug hoods back on.

### **Starting a flooded motor**

If a number of attempts are made to start an outboard motor (especially with an open choke), the motor can become flooded. Remove the surplus oil from the motor:

1. Remove the spark plugs as described above.
2. Dry the spark plugs.
3. "Start" the motor a few times without the spark plugs installed.
4. Install the spark plugs again.

### **Starting the motor with the emergency starting cord**

The motor includes an emergency starting cord (roughly 1 meter long), which has a knot on one end.

If the cord used to start the outboard motor breaks or becomes defective in some way, you can start the motor with the emergency starting cord by doing the following:

1. Remove all loose clothing and other objects a good distance from the motor.
2. Remove the motor cover.
3. Slip the knot on the emergency starting cord into the notch in the flywheel on top of the motor.
4. Wind – never tie – the cord clockwise around the flywheel one or two times.
  - a. Motors with a starter engine may have a plate over the flywheel.
5. Pull the cord to start the motor.
6. Repeat if necessary.

### **Changing the propeller**

Remember to bring a new propeller ( $\pm$  "inner" shear pin) and cotter pin on boat trips.

Change the propeller if it is damaged, and change the cotter pin for the propeller/axle if it is broken.

It is best to change a propeller and cotter pin on land. If you have to change the propeller on the water, you should first remove the motor, so the propeller can be changed inside the boat.

On some propellers, there is an "inner" shear pin that sits firmly on the axle. It is important not to lose this inner pin, as the axle's rotation will then no longer drive the propeller. If the pin is broken, it will have to be replaced with a new one.

1. Remove the locking cotter pin, which is held in place by a nut.

2. Remove the nut that holds the propeller to the axle.
3. Remove the propeller.
4. If the shear pin is lost or broken: Slide the new onto the axle, screw on the nut and lock in place with the cotter pin.

### **Cleaning the fuel filter**

The fuel filter is placed where the tube from the fuel tank enters the carburetor. Clean it by unscrewing it and removing any dirt that may have accumulated inside.

### **Cooling system**

When the motor's cooling system is working properly, a stream of water shoots out at the rear of the motor.

When starting a motor, and regularly during operation, you should check to ensure that this vital stream of water is there.

To remove water from the cooling system:

1. Put the running motor in neutral.
2. Pull the water intake above the waterline until all water has been pumped out of the cooling system. This is particularly important in freezing temperatures.

## Appendix E: Use of weapons

The use of any weapon demands great care and responsibility. A hunting rifle is a dangerous weapon and should always be regarded as if it were loaded.

The marksman is responsible for handling and maintaining the weapon so that it is fully functional at all times. A defective firearm can cause fatal injuries.

When a rifle or shotgun is stored at GINR it must be kept in the gun safe! The bolt of the rifle must be separated from the rifle – remember to mark the bolt with the correct rifle number (found on the barrel) to ensure the right bolt goes with the proper rifle.

### General rules

- Never point a weapon at other people.
- Always keep the muzzle pointed in a safe direction.
- You should treat all weapons as if they were loaded!
- Firearms must be unloaded when not actually in use.
- Do not rely on your gun's "safety".
- Only rely on the checks that you have done personally.
  - When you are handed a rifle, immediately check if the magazine and the chamber are free of cartridges.
- Never bring a loaded weapon into a car, boat, house or cabin.
- Always carry a rifle with a strap over the shoulder and the barrel pointing upwards.
- Only switch the safety lock off immediately before firing a shot, and just after a cartridge is loaded in the breech.
- Weapons and ammunition should always be stored in separate places.
- Avoid damaging the rifle.
  - It doesn't take much to dent the barrel of a shotgun or budge the rifle's scope, thus throwing off the adjustment. Avoid hitting or banging into the weapon as much as possible as this can also trigger an accidental shot if the weapon is loaded.

### *Know your weapon!*

- Learn the mechanical and handling characteristics of the firearm you are using.
- Practice!
- If a new scope has been added, or when starting to use a box of newly purchased ammunition: Test precision by firing adjustment shots at a target.
- Ensure that there have been no changes to the rifle or scope by firing test shots at a target.

### Before shooting

1. Be sure the barrel is clear of obstructions before shooting.
2. Use the cleaning rod to remove all oil from inside the barrel and chamber.
3. Apply a light coat of gun oil to the outside of the barrel, lock and other exterior parts.

- a. This oil film is intended to protect the weapon if it is exposed to moisture. If there is a chance that it will come into contact with saltwater, it is also wise to use gun grease.
4. If a rifle is going to be used in freezing temperatures, all oil should be wiped from the bolt to ensure that it doesn't seize up.

### Shooting

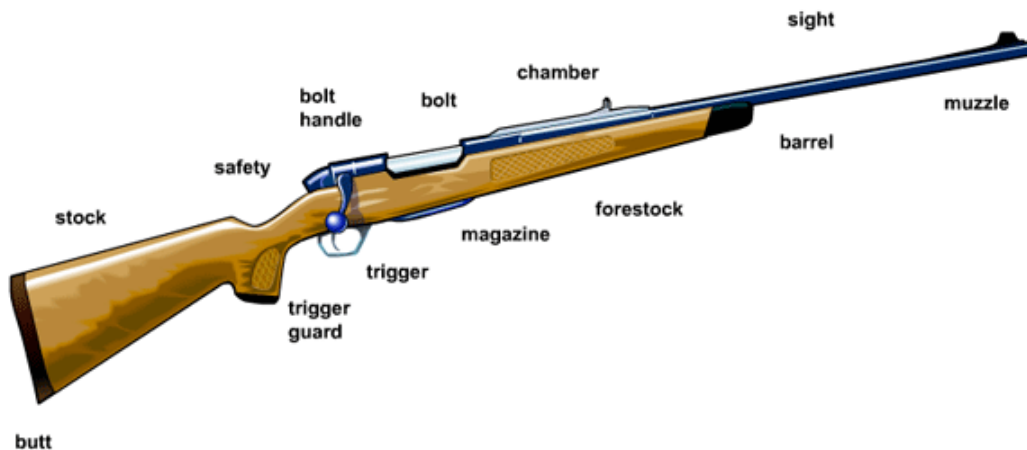
- Use correct ammunition.
- If possible wear eye and ear protection when shooting.
- Only load a rifle immediately before it is to be used.
  - Load the rifle with the barrel pointing upwards.
  - When loading the shotgun on a boat, the barrels should always be pointing away from the vessel.
- Be sure of your target and what is beyond it.
  - There should always be a safety margin of 20 degrees to each side of the line of fire.
- When shooting from a motor boat, you must never shoot across the boat.
- If your gun fails to fire when the trigger is pulled, handle with care!
- There is always a danger of ricocheting projectiles when shooting at water, ice, rock, roads and similar surfaces. You should exercise extreme caution under such circumstances, and in many cases avoid shooting at all.
- As soon as you are finished using the weapon, unload the rifle and check the chamber and the magazine.

### After shooting

It is important to have a good cleaning kit and cleaning rod.

1. Disassemble a shotgun down to its main parts:
  - a. Remove the forend and dismantle the barrel.
  - b. For rifles, remove, clean and oil the bolt.
  - c. If the firearm is moist: Carefully wipe it.
  - d. Clean the barrel and chamber thoroughly.
    - i. Apply a thin film of gun oil to both the interior and exterior.
2. Apply a thin film of oil to the lock and all other metal parts to ensure smooth operation.
3. Wipe the wooden parts of a firearm with a small amount of raw linseed oil on a cloth.

## Checking a hunting rifle



Before the beginning of each field season, a hunting rifle must undergo a technical inspection comprising, at minimum, the following:

1. Check that the stock bolts are tight.
  - a. These bolts hold the receiver, i.e., the part of the firearm that houses the operating parts.
2. Check the trigger.
  - a. The trigger should release a shot when 1,000 to 1,500 grams of pressure is applied. If the pressure is less than 1,000 grams, the trigger is unsafe, and if the pressure is over 1,500 grams, the trigger is too stiff, making it difficult to fire an accurate shot. In both cases, the trigger must be adjusted or replaced.
3. The barrel must be free floating, i.e., not touching anything, as this could have an adverse effect on the rifle's accuracy.
  - a. Check by placing a piece of paper around the barrel and moving it between the barrel and the forestock. On a half-stock rifle, there should be enough space between the barrel and the forestock to allow the paper to pass freely all the way down to the receiver.
4. Check safety by slapping the rifle butt with the heel of your hand while the rifle is on safety.
  - a. If the firing pin is released either by this or when the safety is subsequently switched off, the rifle has a serious defect and should be immediately sent to a gunsmith.
5. Check the strap and strap braces by giving them a good shake.
6. If the rifle has been fitted with a scope, check that it is securely mounted.
  - a. When you push against the scope, you should not see or feel any play whatsoever. You can normally tell if the scope has not been mounted properly by adding a little gun oil to the joints, which will visibly move if the components are not properly tightened.

## **Appendix F: Use of miscellaneous equipment**

### **Using gasoline-powered high-voltage generators**

The instructions below must be followed to avoid injuries, death and damage to property.

#### ***Placement and connections***

- A generator must be placed at least 1 meter away from buildings and similar structures.
- A generator must be properly grounded to avoid getting a shock if it is hooked up to a defective machine or appliance:
  - Connect a thick cable between the ground clamp and the ground connection on the generator.
- Storing a generator:
  - Empty as much fuel as possible from the tank, remove the spark plug, clean it and reinstall it.
  - Pack the generator in a plastic tarp or, if possible, in a box (make sure beforehand that the box is completely dry).
- If someone wants to connect the generator to the user's electrical network, this can only happen via a change-over switch. Such a connection may only be made by a qualified electrician.
- Never connect more devices to the generator than it can power.

#### ***Operation***

- The user must know how to quickly stop the generator, and not allow anyone to use it without proper instruction.
- A generator may not be operated in enclosed spaces, because exhaust fumes contain carbon monoxide!
- The gas tank may only be filled when the generator has stopped running. It is forbidden to smoke or use an open flame when filling the tank.
- When you start the generator, you should ensure that the alternating/direct current is turned off, and no devices are attached to it.
- To avoid electric shock never touch a generator with wet hands, and do not use a generator outdoors in rain or snow, causing it to get wet.
  - Protect the generator by placing it in a wooden box turned on its side.
- Read the manufacturer's user manual for further information.
- There should be at least 2 new spark plugs with the generator.

### **Instructions for the use of portable butane gas devices for use in tent camps, living containers etc.**

Bottled butane gas is heavier than air and thus settles into low-lying areas. In spaces where you can smell gas, you must not use an open flame. You should open doors and windows to

create air circulation, and close the valve on the gas bottle. In case of fire remove all gas bottles if possible.

- All gas containers, including empty bottles, should be securely tied down when they are transported on roads or over rough terrain, and the valves should be properly closed and protected against damage.
- If you use butane gas at a tent camp for cooking, heating etc.:
  - Bottles of gas must be placed *outside* the tent.
  - Fire extinguishers must within easy reach.
- You may only use bottled gas for producing heat and light in living containers and other spaces with a minimum size of 15 well-ventilated cubic meters.
- Appliances that use gas must be supplied with a thermoelectric ignition fuse.
- The appliances may only be connected to a gas bottle with a maximum size of 11 kg, and the arrangement may only include a gas cooker or a maximum of two gas appliances.
- Bottled gas should be treated with caution and due consideration should be given to the risk of fire and explosions caused by gas leaks.



## Appendix G: Diving and underwater work

When working under water, it is important to differentiate between snorkeling and actual diving: *Snorkeling* takes place on the surface. *Diving* normally refers to scuba diving, i.e. to diving with compressed air tanks.

- All GINR staff members who are going to engage in diving must have a valid Nordic professional diving certificate.
- Staff members may snorkel without approval from a certifying authority. When snorkeling, you should wear a diving suit, mask and snorkel. You should also wear a floatation vest. Snorkeling is dangerous, so a minimum of two people should snorkel together.

### General information on diving

Diving is highly hazardous work. When you go diving, at least 3 persons should be present: Two persons should complete the dive itself, while at least one person should be in the immediate vicinity.

- You should warn the lead diver if you feel indisposed or otherwise unable to go ahead with the dive. In such a situation, you should not complete the dive.
- When the divers are below the surface, a diving flag (signal flag A) should be placed at a highly visible spot.
- Others should see to it that the equipment used, such as ropes, ladders and airlift pumps, is in working order, even if this is the divers' responsibility.

### Hiring diving assistance

- When hiring any type of diving assistance, the applicant should ensure that the diver has a legally recognized certificate. According to official diving regulations, the diver has a say in selecting the line holder, since the person in question should be familiar with this type of work, which is of critical importance.
- The applicant should inform the diver well ahead of time about the nature of the work that is to be carried out. Furthermore, it is important to ensure that other vessels do not intend to sail over the diving area.

### The lead diver's responsibility

The lead diver is responsible for ensuring

- that the dive is planned in detail, and that the necessary permits have been acquired from local authorities and so on.
- that a diving journal is maintained.
- that information has been gathered on local conditions that can have an influence on safety, for example, currents, waves, breakers, visibility and boat traffic.
- that each individual diver's personal equipment is in good working order.
- that in case of accident, there is access to the appropriate communications equipment and, if applicable, be aware of the location of the nearest telephone

## Appendix G: Diving and underwater work

along with an overview of important phone numbers (such as doctor, ambulance, etc.).

## Appendix H: Confirmation of receipt

I, the undersigned, hereby confirm that I have received the "Safety Manual for Fieldwork". I acknowledge that I am required to familiarize myself with the rules and follow them. Furthermore, I shall follow the instructions provided by field leaders, project managers and other senior officials from GINR.

**Place / date:**

---

**Name (in block capitals):**

---

**Signature:**

---

Next of kin (please write legibly):

**Name:**

---

**Address:**

---

**Phone:**

---

This confirmation is to be submitted to the safety officer.