



EXPEDITION LEADER HANDBOOK



PLAN - LEAD - SAFEGUARD - INSPIRE

Purpose

This handbook provides Expedition Leaders with clear, professional guidance to safely plan, supervise, and manage expeditions within the Army Cadet Force (ACF), including Duke of Edinburgh's Award (DofE) activities.

It consolidates safety procedures, emergency actions, dynamic risk assessment, and essential first aid knowledge into a **portable reference format**.

Introduction

Expedition leadership within the Army Cadet Force is more than supervising a route card or checking kit lists — it is about responsibility, judgement, and care for young people operating in challenging environments.

Whether on a DofE expedition, cadet adventure training exercise, or remote field activity, the expedition leader sets the standard for safety, professionalism, and calm decision-making.

This manual supports and develops ACF expedition leaders by bringing together practical safety guidance, first aid knowledge, environmental awareness, and leadership responsibilities into a **single, usable field resource**.

Expeditions place cadets outside their comfort zones. Fatigue, weather, navigation challenges, and minor incidents are normal — emergencies are rare, but preparation is essential.

A well-trained leader:

- Anticipates problems early
- Manages risk proportionately
- Enables cadets to learn and succeed safely

Above all, good expedition leadership is rarely noticed — but always felt.

Contents

1. Leadership Responsibilities
 2. Emergency Procedures
 3. Expedition Safety Card
 4. Supervision & Records
 5. Dynamic Risk Assessment
 6. First Aid (Heat / Cold / Bites)
 7. Training Scenarios
 8. Expedition Information
-

1. Leadership Responsibilities

Expedition Leaders are responsible for cadet safety **before, during, and after** expeditions.

Key duties:

- Route planning and assessment
- Weather and terrain monitoring
- Effective communication
- First aid readiness
- Calm, decisive action during incidents

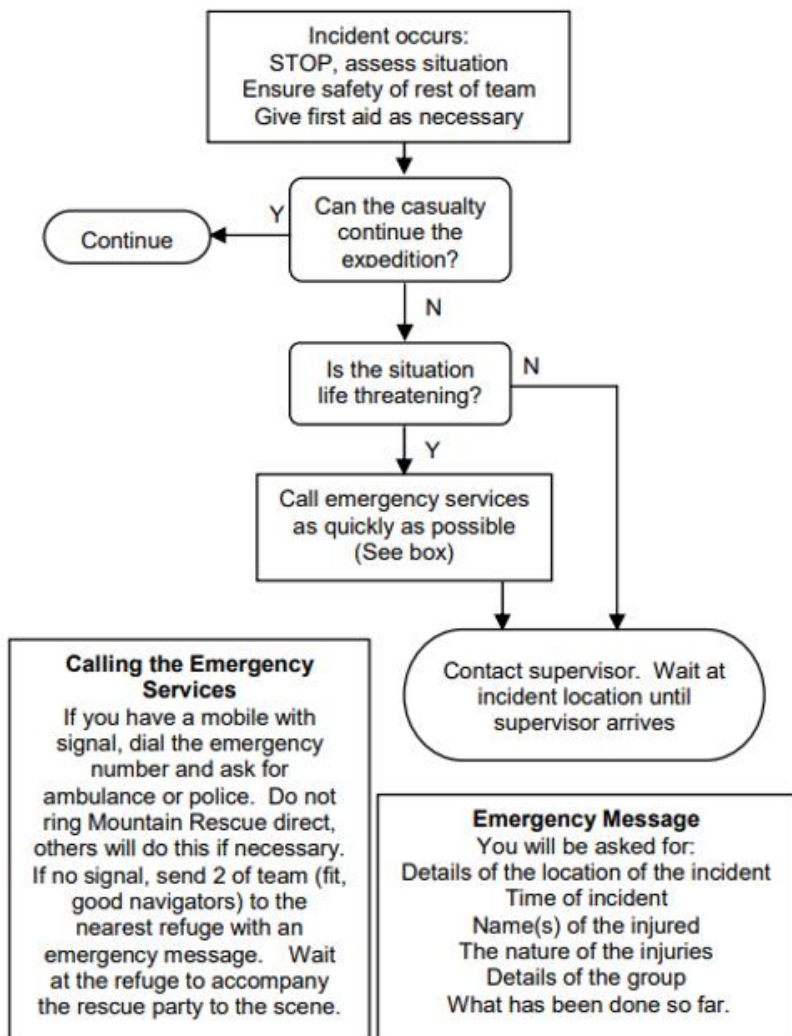
Leadership presence and judgement are critical expedition safety controls.

2. Emergency Procedures & Lost Drills

What is an Emergency?

- Injury or accident
- Sudden illness
- Lost team or individual
- Inability to continue
- Severe weather
- Critical equipment failure

EMERGENCY PROCEDURES



Contacting Emergency Services

Situation Action

Mobile signal Dial **999 / 112**

No signal Send **2 people** with written message

Remain at the location and guide rescue services.

Lost Drill

1. Stop
2. Last known position
3. Check map & compass
4. Do not wander
5. Escalate if unresolved

Contacting Emergency Services

Mobile Signal
Dial **999 / 112**

No Signal
Send **2 people** with written message

Remain at the location and guide rescue services.

Lost Drill

- 1. STOP** Stay calm and think.
- 2. Last Known Position** Where were you last?
- 3. Check Map & Compass** Review your location.
- 4. Do Not Wander** Stay put & wait.
- 5. Escalate if Unresolved** Signal for help.

3. Expedition Safety Card

Leaders must carry a safety card.

Include:

- Emergency contacts
- Group names & numbers
- Medical info
- OS Grid Ref / What3Words
- Lost drill summary

Expedition Safety Card

Safety and advice

If your team is undertaking an unaccompanied practice or qualifying expedition in wild country, has the Expedition Area Co-ordinator been notified of your plans, using the Expedition Notification Form (e.g. the Green Form)?

Notification no:

- For all DoE expeditions, the Supervisor must be in the area.
- Do you know how and where to contact your Supervisor in an emergency?
- Have you prepared escape routes and alternative routes in the case of bad weather?
- Do not be afraid to turn back or change to the bad weather route if conditions make it unsafe to proceed. If you have to do this, your duty is to contact your Supervisor as soon as possible.
- Never split your team unless in the case of an accident.
- Weigh your pack. Keep your load to a maximum of a quarter of your body weight.
- Get the latest weather forecast and set out early in the day.
- Agree the expedition emergency procedures with your Supervisor and their team.

The information on this card should be used in conjunction with the training from your Supervisor and DoE Leader.

Mobile phones

DoE teams must not rely on mobile phones in case of an emergency situation. Participants carrying a mobile phone as a potential support tool need to be trained in their functionality and best use.

All users of the countryside should follow the Countryside Code:

- Be safe: plan ahead and follow any signs.
- Leave gates and property as you find them.
- Protect plants and animals, and take your litter home.
- Keep dogs under close control.
- Consider other people.

Participants are expected to follow their agreed codes of conduct and behaviour and not to disturb rural communities.

Access to private land:

Remember: Permission must be obtained from the landowner before you camp on private land. For the various rules on access which apply in the UK, please see www.DoE.org/expedition.

This is a reference card only and does not constitute full emergency procedures/policy.

Accident procedure

In the event of an accident, keep calm – remember your training.

1. **Carry out immediate first aid** and make any casualties comfortable whilst waiting for help. Remember: make the casualty's position easily seen.
2. **Assess situation and agree plan.**
3. **Organise assistance and inform Supervisor.**
 - Follow your training and contact your Supervisor. If emergency assistance is required, dial 999 immediately and ask for the police and then mountain rescue (then contact your Supervisor).
 - If needed, two persons to go for help (if possible).
 - Raise alarm at nearest habitation.
4. **Give the International Distress Signal:** six signals at one-minute intervals.
5. **Record key information to tell emergency services.**

Date and time of the accident:

Location: OS Card no. Grid Reference:

Approximate place name or nearest recognisable feature:

Condition of injured person(s):

Name(s)	Responsiveness: alert/verbal/responsive to pain/unresponsive. Injuries: bleeding/fractures/burn/medical conditions etc.

4. Supervision & Daily Records

. Daily Action Record

Log:

- Route covered
- Weather
- Group wellbeing
- Incidents / near misses
- Decisions made

Records support safeguarding and learning

Daily Action Record	
Organisation / Group: _____	
Activity / Location: _____	
Date: _____	
Leader(s): _____	
Group Size: _____	

Daily Log	
Section	Record
Route Covered	(Planned route, actual route taken, key waypoints)
Weather Conditions	(Forecast vs actual, changes during the day, impact on activity)
Group Wellbeing	(Physical condition, morale, fatigue, injuries, concerns)
Incidents / Near Misses	(What happened, who was involved, outcome, actions taken)
Decisions Made	(Key decisions, reasons, risk considerations)

Additional Notes	
(Anything relevant to safeguarding, learning points, or future improvements)	

Review & Sign-off	
Learning Points / Follow-up Actions:	

Record completed by: _____	
Signature: _____	
Date: _____	

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5. Dynamic Risk Assessment



Plan and assess the risks in advance

We have example risk assessments according to walk difficulty to help you get started.



Adapt plans to local circumstances

Adopt or adapt our resources in a way that works for you to manage any specific considerations for your walk.



Share your plan with walkers

You can do this in your welcome briefing at the start of the walk before setting off.



Make changes if you need to

Stay alert to your surroundings and walkers and take a dynamic approach on the day.

Dynamic risk assessment is **continuous**.

We constantly monitor the route and conditions on route completing a dynamic risk assessment.

Common Hazards

Hazard	Controls
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Roads	Single file, leader crossings
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Medical	FA kit, ICE info
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Navigation	Headcounts, OS map
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Terrain	Footwear, rest
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Livestock	Calm movement
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What are the risks and hazards?	What could happen and who could be harmed?	How we reduce these risks
Roads (walking)	Walkers are at risk of road traffic accident. Other road users are at risk of accident	• Choose a route to minimise walking along busy roads without pavements/footpaths. • When walking along road sections without footpath/pavement maintain single file. • Advise other walkers (by shouting) when a vehicle is approaching. • The leader identifies the safest place to cross busy roads. Leader asks the walkers to take responsibility for their own safe crossing of the roads
Injury/medical episode	May need to contact emergency services	• Leader has a First Aid kit to deal with minor injuries.

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		• Leader provides In Case of Emergency (ICE) cards and/or keyrings for ICE info to walkers to keep in/on their rucksacks (some walkers will have this information stored in their mobile phones). • The group should have the means of contacting the emergency services: - o mobile phone (ensure adequately charged before the start of the walk). - o What3Words / OS Locator Apps can be used to give accurate location • In places of poor (or no) mobile signal: - o use emergency text (mobile needs to be pre-registered) - o send a pair of walkers to seek assistance; - o use whistle - 6 blasts / wait for 1 minutes/ 6 blasts.....repeat
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Getting lost / Going missing	Walkers get lost / go missing	• Where possible walks are recced a week or so in advance, or else carefully planned with good local knowledge, guidebooks and/or maps. • The leader counts the number of walkers at the start of the walk. At every junction, and after each break, the leader (or backmarker) checks that all of the group are present before continuing. • The leader has appropriate navigational aids for the walk. These may include: - o an Ordnance Survey map; - o mapping on a mobile phone + gps locator; - o compass; - o OS Locator App - to give grid reference for current location.
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Physical conditions	Walkers slip, trip and/or fall, resulting in injury.	Before the walk: • adapt the route if necessary to take account of physical conditions;- ensure the walk description describes more challenging physical conditions eg hills, stiles. At the start of the walk: • warn walkers of any known hazards eg busy roads, slippery wooden stiles and bridges, barbed wire, electric fences..... During the walk: • Carry out a dynamic risk assessment throughout the walk, pointing out hazards to walkers. - Zig-zag up/down any steep slopes, where possible. • Take adequate breaks throughout the day.
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Unsafe/unstable geographic features or obstacles (e.g. broken stiles, water, rock fall, overhangs, fallen trees)	Walkers slip, trip and/or fall, resulting in injury.	• Follow any local warnings or signs and advise walkers to keep away from sheer drops / edges. • Check paths are suitable for a group to use safely and make changes if necessary. • The leader will have sufficient skills to re-route and navigate around unexpected features, broken stiles & gates. • Avoid crossing any significant water features. • Walks should use bridges or other recognised water crossing points.
Livestock	Walkers are at risk of injury from livestock.	• Cross fields with livestock calmly and quietly re route if necessary

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		• Follow the Countryside Code. • Leave gates and property as you find them.
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CFSO 3801 - Army Cadets Dynamic Risk Management and Decision Making - Daily Action Recording Form

Date and Activity: _____

Score	1	2	3	4	5
A	Description	Serious	Light	Moderate	Very Serious
	Scale	0-3	4-5	6-8	9-10
	Army Cadet Example	Classroom Training, Conducting, Substances, Lessons	Halfway Drills, Training Outside in the Shade	Keeping Active, Rifles, Local walk or Navigation Exercise	Senior Roles, Mountaineering, Mountain Walks in Snow, Terrain, Circuit Training
B	UV Index Score	Low (1-2)	Moderate (3-6)	High (8-7)	Very High (8-10)
C	Select Most Appropriate to the conditions	High Forecast Air Temp 15°C - 20°C	20°C - 26°C	26°C - 32°C	32°C - 38°C
	Low Forecast Air Temp	14°C - 19°C	19°C - 24°C	24°C - 29°C	29°C - 34°C

Dynamic Risk Assessment Checks

	Date	Time	Risk Score	Mitigating Actions	Next Check	Check by
Example	01/01/23	11:00hrs	3, 4, 3 = 10	Training amended to light, MEL to inc. breaks, middle of day trip ceased and water consumption monitoring	Monitor 12:00	Capt Jones
1						
2						
3						
4						
5						
6						
7						
8						

June 23/2023 06:05:00 AM
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Page 1 of 3

Scoring Action Table for the Prevention and Management of Climatic Illness

Overall Score	Actions
13-15	Escalation of risk ownership of activities are to be continued, direction and guidance outlined in ACSO 1210 - Army Cadet Safety Management System (AC SMS). Apply any additional measures, direction and guidance issued by HQ RC Cadet Branch.
10-12	Traveling to locations must be done in using suitable transport for the climatic conditions. All individuals are to reduce load / equipment, where possible, that is being carried during activities. Reduced intensity of exercise significantly to Light Exercise Rate. Weather conditions to be monitored using forecasts / observations data, at least every hour. All individuals should not be standing for prolonged periods of time. Hot Temperatures: Stop and Avoid activities between 1130-1430 hrs. Change of activity timetable to cadet for early morning / late in day delivery or enhance the opportunity for rest periods during the middle of the day. Protective clothing (long t-shirt / bush hat) and sun protection lotion to be worn at all times. Cold Temperatures: Activities must be avoided during dark / night-time hours. All individuals to wear protective clothing from the elements including extremities at all times. Extremities to be regularly checked for any signs of Non-Freezing Cold Injuries (NFCI) and Freezing Cold Injuries (FCI).
7-9	Activity Owner to engage with their MSO / MSA and, where possible with their TSA for additional support and guidance. Load / equipment being carried during activities must be monitored with participants. Stopping or pausing activities if any individual becomes unwell / presents with symptoms of climatic injuries; activity must be reviewed before restarting. Activity Owners to review Risk Management Plans for cadets and / or CFA/As who are classed as higher risk individuals in-line with the activity. Weather conditions to be monitored using forecasts / observations data, at least every 2 hours.
5-6	Hot Temperatures: All individuals are to apply sun protection lotion, wearing clothing to protect from direct sunlight on the skin (bush hats / long-sleeved shirts). Reduced intensity of exercise significantly to Moderate Exercise Rate. Monitoring of all individuals on their hydration intake pre, during and post activities. Cold Temperatures: All individuals to wear additional layers, ensuring extremities (hands, face, feet) are covered and protected. Reduced intensity of exercise significantly to Moderate Exercise Rate. All individuals to maintain drinking water and hot fluids where possible and are monitored in their intake pre, during and post activities.
3-4	Areas to pause / stop or rest from activities are provided that are protected from the weather (sun / wind / rain). Weather conditions to be monitored using forecasts / observations data, at least every 3 hours. Hot Temperatures: All individuals are to remove outer layers, unless raining layers under coats to be removed. Cold Temperatures: All individuals to ensure additional layers are carried / worn. Considerations on the effect of wind-chill are taking into account on the individuals participating. Ensure hydration facilities are provided. All individuals wearing suitable clothing for the activity taking place.

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Page 2 of 3



- From outside ring to centre: Assess Consciousness, Movement, Sweat, Alertness.
- Assess (to the best of your ability) whether normal function, or impaired or no function.
- Treat (to the best of your ability) according to appropriate result quadrant.
- Treat all traumatised heat patients with active cooling to upper body chest/arms.

HEAT RASH

- Keep hydrated with water / non-fizzy
- Apply cold compress to the rash
- Change to / wear loose clothing

HEAT CRAMPS

- Place the casualty into a cool / shaded area
- Remove layers to cool them down, without removing protection from the sun
- Monitor until improvement (at least 30 min)
- Drink water slowly
- Seek medical advice if unsure by calling 111

HEAT STROKE

- Treat as heat exhaustion, and if no obvious vital signs, THEN 60-second breathing / pulse check
- If no breathing / pulse, THEN Start CPR
- Call 999 for urgent help

HEAT EXHAUSTION

- Follow steps 1-4 above
- Cool the skin by spray / sponge with cool water
- Cool packs (wrapped in cloth) under their armpits / on their neck
- Seek urgent medical advice if no change after 30min by calling 999



- From outside ring to centre: Assess Consciousness, Movement, Shivering, Alertness.
- Assess (to the best of your ability) whether normal function, or impaired or no function.
- Treat (to the best of your ability) according to appropriate result quadrant.
- Treat all traumatised cold patients with active warming to upper body chest/arms

COLD STRESSED, NOT HYPOTHERMIC

- Reduce heat loss (e.g. remove wet clothing, add dry clothing)
- To eat regularly with warm food and warm drinks

MILD HYPOTHERMIA

- Handle gently
- Keep horizontal
- No standing / walking for at least 30 mins
- If sheltered, remove wet clothing
- Insulate the casualty with layers
- Keep hydrated with hot drinks, where possible
- Monitor until improvement (at least 30 min)
- If no improvement call 999

SEVERE HYPOTHERMIA

- Treat as Moderate Hypothermia, and if no obvious vital signs, THEN 60-second breathing / pulse check
- If no breathing / pulse, THEN Start CPR
- Call 999 for urgent help

MODERATE HYPOTHERMIA

- Handle gently
- Keep horizontal
- No standing / walking slowly if seeing signs of frost bite
- No food or drink for 30 min whilst rewarming
- If sheltered, remove wet clothing
- Insulate the casualty with layers
- Newswarm extremities slowly if seeing signs of frost bite
- If no improvement call 999



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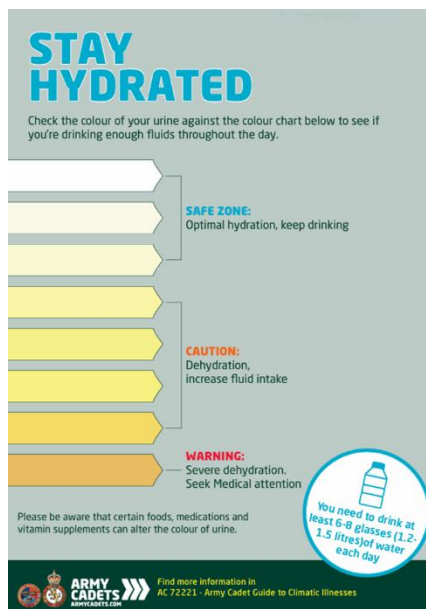
6. First Aid for Expeditions

Dehydration

occurs when the amount of fluid lost from the body is not replaced quickly. As well as fluid, essential salts are lost through sweating. Dehydration commonly occurs due to exercise on hot days, pro-longed exposure to sun or illness such as diarrhea or vomiting.

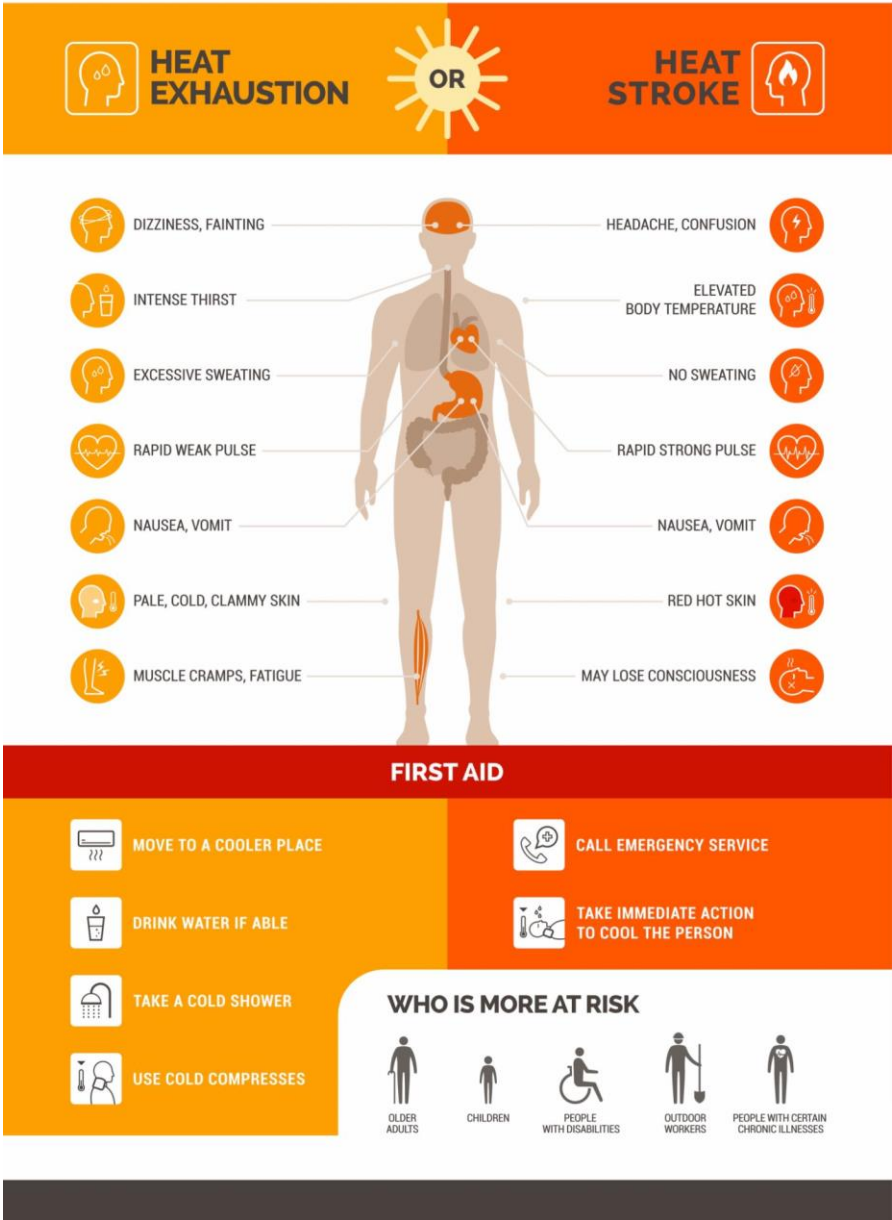
Severe dehydration can have the following Signs and Symptoms.

- feeling thirsty
- dark yellow, strong-smelling pee
- peeing less often than usual
- feeling dizzy or lightheaded
- feeling tired
- a dry mouth, lips and tongue
- sunken eyes
- Rehydrate with electrolyte solution to replace water and salt.



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Heat Injuries



TREATMENT OF HEAT INJURIES WHILE WALKING IN REMOTE AREAS



RECOGNIZE HEAT INJURIES

HEAT EXHAUSTION

- Feeling faint or dizzy
- Headaches
- Heavy sweating
- Pale, clammy skin.
- Rapid pulse
- Nausea
- Thirst
- Muscle cramps

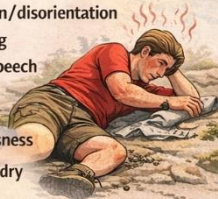


Both can escalate due to dehydration,

HEATSTROKE

HEATSTROKE

- Confusion/disorientation
- Stumbling
- Slurred speech
- Seizures
- Loss of consciousness
- Red, hot, dry



Both can escalate due to dehydration, heat, and exertion.

GIVE FIRST AID WHILE WAITING FOR RESCUE

1 Move to Shade

- Get casualty to shade, shelter or coolest area possible.



3 Cool the Body

- Cool with damp cloths, wet skin, fan air

5 Rehydrate

- Give frequent sips of water if alert (electrolytes are helpful)



2 Remove/Loosen Gear

- Remove excess clothing, loosen tight gear.



4 Cool the Body

- Give frequent sips of water if alert (electrolytes are helpful)

6 Monitor Condition

- Is casualty improving? Check for mental & physical changes.

6 Emergency Help

- Call for rescue ASAP. Recognize heatstroke as a medical emergency. If unresponsive, use recovery position.



A rapid core temperature rise becomes life-threatening. Monitor and treat until help arrives!

Heat Exhaustion

Signs: headache, nausea, warm skin

Treatment: cool, fluids

Heat Stroke – EMERGENCY

Signs: confusion, hot dry skin

Action: **999 / 112**, aggressive cooling

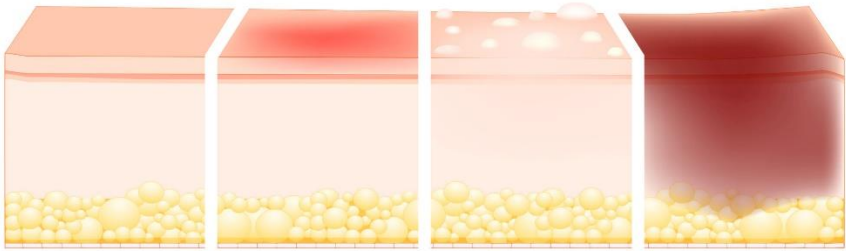
Cold Injuries



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What do you see	What do you do
Mild Hypothermia	
• Conscious and violently shivering. • Significantly reduced physical ability. • Cold, pale and dry skin	• Insulate and wrap in foil or plastic blanket • Shelter the casualty and insulate from the ground. • Remove and replace wet clothing. - Rewarm slowly, give warm drinks and high energy food if available. • Keep casualty horizontal and handle with care.
Moderate Hypothermia - No vital signs evident	
• Apathy, disorientation, irrational behaviour. • Rapidly decreasing response • Cold, pale and dry skin. • Slow shallow breathing. • Shivering rapidly decreasing.	• If conscious, as above but no food or drink. • Must be kept horizontal. • Call 999/112 and arrange professional evacuation as quickly as possible
Severe Hypothermia - No vital signs	
• No response. • No apparent breathing • Cold dry skin to touch	• Treat as for Moderate Hypothermia. • Handle with extreme care. • Call 999/112 and arrange professional Evacuation as quickly as possible.

Frostbite stages



Normal
(healthy skin)



Early stage
(frostnip)



Intermediate stage
(superficial frostbite)



Advanced stage
(deep frostbite)

What do you see	What do you do
Frostnip (early stage)	
• Skin becomes cold, numb and white. • Tingling sensation, pins and needles. • Throbbing or aching.	• Replace wet clothing with soft, dry clothing. • Warm the body, using warm hands or wrapping it in dry clothing. • Don't rub the affected area or apply direct heat because this can cause further injury
Superficial frostbite	
• Affects the top layers of skin and tissue, but treatment is needed to make sure there's no lasting damage. • Affected area will feel hard and frozen. • Swelling and itching. • Once out of the cold and the tissue has thawed out, the skin will turn red and blister.	• The frostbitten areas need to be re-warmed. • Re-warming shouldn't be attempted until you're out of the cold. • Re-warming can be painful. • The affected area should be re-warmed slowly by immersing it in warm water (40-41C). • Repeat twice daily
Deep frostbite	
• Continued exposure to the cold. • Skin becomes white, blue or blotchy and tissue underneath feels hard and cold to touch.	• Requires urgent medical attention. • As the skin thaws, blood-filled blisters form and turn into thick black scabs. • Tissue dies and affected tissue will be <u>removed to prevent infection.</u>

Frostbite / Trench Foot

- Do not rub
- Rewarm slowly
- Seek medical help

Severity Action

Mild Insulate, warm drinks

Moderate Horizontal, evacuate

Severe Handle carefully, 999

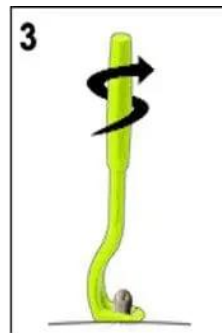
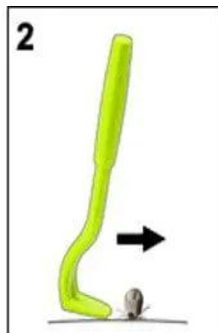
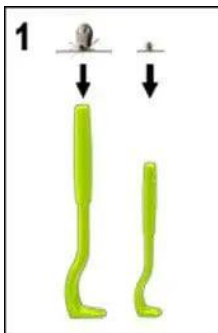
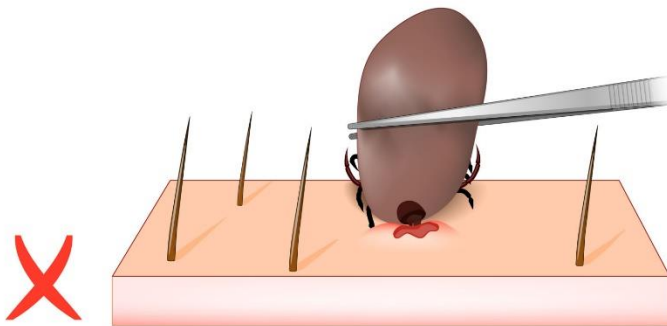
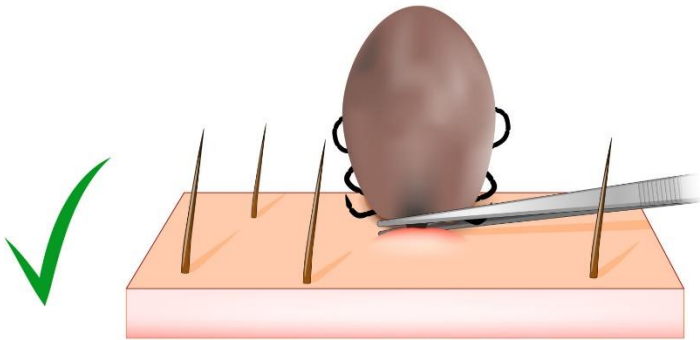
Bites, Stings & Plants

Ticks and Lyme Disease

Lyme Disease is a bacterial infection spread by ticks. Once thought to be rare it has now been shown to be common and widespread in the UK. Symptoms can be seen up to a month after infection. To avoid being bitten, ‘tuck in’ long trousers and tops, use insect repellents, and carry out regular tick checks when walking through Areas of long vegetation. Always have a tick removal tool in your first aid kit Tick Removal. Ticks should be removed with an appropriate tool such as a tick twister or card. Do not try and pull the tick out with your fingers or smear it in a liquid or gel to kill it. Don’t risk the tick’s internal contents being pushed into the bite site.

What do you see	What do you do
• Circular bull’s-eye rash. • Tiredness (fatigue). • Muscle pain. • Joint pain. • Headaches. • A high temperature (fever). • Neck stiffness.	• Ticks should be removed as soon as possible (see below). • If you have been bitten by a tick and suffer from symptoms listed, go and see your GP. • Give the GP a history

How to remove a tick





Adder Bites

Adders – the UK's only venomous snake, and something you may well see if out walking – if you are lucky! They usually like to bask in the sun on rocks and will be more surprised to see you than you are of it! They often sense you approaching and will move away before you even know they are there. If you do see one, stay calm, keep your distance and let it move away in it's own time.

What does an adder look like?



Adders have a distinctive diamond pattern



Adults are between 40-70cm (16-28inches) long



They may be grey, brown or, rarely, black, like this one

Created by: SMI McKay

What to Do if Someone is bitten by an Adder

1. Stay Calm

If someone gets bitten, the most important thing is to stay calm. Only a small amount of venom has likely been injected. However, minimising a casualty's movements limits the pumping of any venom around the blood system and towards the heart. That is where it can do serious damage by further pumping the venom throughout the bloodstream to other vital organs, including the brain.

2. Clean the bite

The area of the bite should be washed to remove any venom from the skin. Use clean water or a Medi-Wipe. You might apply a 'cold compress' to the bite site, but do not use ice packs. A cold compress could even be a bandage or other material soaked in cool water. This will help limit the spread of the venom and relieve any pain.

3. Keep the bite area low

Keep the bitten limb below the heart height to slow the spread of any venom. Assuming it is their leg that has been bitten, sit the casualty down on a rock, tree stump, or backpack, with their leg downhill. Loosen clothing on the affected limb and remove jewellery.

If the casualty has more serious reactions, call 999/112 and get an ambulance. Put the casualty in the Recovery Position and lower the affected limb below the level of the heart. In rare occasions, some people may have an anaphylactic reaction or suffer high anxiety leading to breathing problems.

Monitor their vital signs regularly.

Ticks: remove promptly, monitor symptoms

Adder bites: calm casualty, clean wound, limb low

Dangerous Plants

Hogweed/Giant Hogweed



Giant hogweed can grow up to five metres tall, often along footpaths and riverbanks. If the toxic sap of the plant comes into contact with your skin, this increases sensitivity to UV rays causing severe, painful burns. Can cause blindness if in contact with eyes.

What do you see	What do you do
Giant Hogweed/Hogweed	
• Sap can get onto your skin through touching any part of the plant, which causes your skin to react to ultraviolet light.	• Do not touch Giant Hogweed, avoid it. If you do come into contact, immediately wash the area with copious amounts of soap and water.
• On a sunny day burning, inflammation and blisters can be very severe and lead to scarring.	• Stay out of any sunlight for at least 48 hours, whilst monitoring for any delayed reaction.
• Contact with the eyes can be very damaging.	• Flush the eyes with copious fresh water.

First Aid treatment for Giant Hogweed burns:

Prevention is best so don't touch it! Educate your children to identify it stay away as well.

If you do encounter Giant Hogweed:

- Immediately wash the area with copious amounts of soap (Aloe Vera works best) and cool water.
- Stay out of any sunlight for at least 48 hours.
- Don't burst any blisters – seek medical help if they are extensive – a pharmacist or your GP initially.
- Monitor for any delayed reaction.
- Flushing the eyes with copious fresh water as a precautionary measure is also advisable.
- Thoroughly and quickly wash the clothes you were wearing when you came into contact with the plant.

It is worth noting that for some people, Cow Parsley can also be an irritant, although typically with much milder effects.

As always, if in doubt, contact a medical professional and tell them the situation. See your local pharmacist, GP or go to A&E if symptoms are blistering, painful or not improving.

7. First Aid Scenarios

Used for training and discussion:

- Heat illness
 - Tick discovery
 - Blister care
 - Hypothermia at rest
 - Casualty collapse
 -
-

8. Expedition Information

Stove Safety

- Ventilated areas only
- Secure fuel
- Never cook in tents

Stove safety instructions

Location

- Take some time to pick the cooking location. A firm level surface at ground level where the stove will not be knocked over is ideal and it must be at least two metres away from flammable items/tents.
- Consider the weather conditions and wind direction.
- Make it clear to other people that stoves are lit/hot and get everything needed together before starting to cook. Have somewhere safe nearby to put hot pans.

General safety

- Always be familiar with the stove & fuel before setting out.
- Be confident in how to use the stove and what dangers are associated with it and the fuel, for example gas canisters.
- Have water and a wet tea towel nearby, ready to use as a fire blanket. Always be careful to check if there is a flame or not, especially in bright sunlight.
- Never leave a lit stove unattended or unwatched.
- DofE participants and adults need to follow their Licensed Organisation's policies and the instruction and safety guidance given by the manufacturer of the stove they have chosen to use.

Gas stoves

- DofE teams must never use a gas stove that does not use self-sealing cylinders or cartridges.
- Remove cartridges from the stove for journeying and replace part used cartridges for full ones before the start of the expedition.
- It is best to use a gas stove that is low, stable and easy to shield from the wind.
- For exposed areas participants can use wind shields made of aluminium foil which can be bent into shape.

Gel fuels (Bio-ethanol)

- Do not fill gel burner over two thirds full.
- Never refill a lit or hot stove – the flame can be hard to see. Always check for heat – bubbling and a crackling noise indicates the gel is alight.
- Always refill from a small gel container, not a bulk container.
- Always keep unused fuel at least three metres away from the stove or any source of ignition and do not store in direct sunlight.

Spirit stove safety instructions

- The stove must be placed on a firm level surface, at least two metres away from flammable items/tents, in a place where it cannot be knocked over.
- Fill the stove from a small container, never from a bulk container such as a one gallon can or plastic container. (It is permissible to sell methylated spirits in a plastic container).
- The spirit must be carried in bottles specifically designed for the purpose which have a screw top and a safety valve. These should normally be around half a litre in capacity and the stoves should be filled from these bottles. Trangia fuel bottles with safety valves are good to use as these will prevent a full bottle fire. Note – it is not immediately obvious when the bottle is in the locked closed position, any pressure on the plunger in the open position can lead to leakage.
- Fuel should not be handled near tents or any naked flames; it is good practice to have a 're-fuelling' area where fuel is handled away from the designated cooking area.
- One person should carry the stove or the spirit cup downwind, away from the tents and it should be

- fuelled, or refuelled, in a place where there are no naked flames in the vicinity.
- Take great care when re-fuelling the stove, make sure that the flame is completely extinguished (the flame can be invisible, especially in sunlight) and the stove/burner has cooled before removing the burner to re-fill it (take the burner to the fuel, not the fuel to the burner). Remove the pan and carefully place a hand over the spirit cup or hold the corner of a sheet of paper just above the burner. This will indicate if the burner is still lit. The burner should be taken to the fuel, not the fuel to the burner (if the burner is cool enough to pick up it won't still be alight).
- If it is necessary to refill a burner, assume it is still burning. Go through the normal procedure of putting the burner lid over the flame to extinguish. Wait until the burner has gone cold before refilling.



The safe way to fuel and refuel spirit stoves



Packing a Rucksack

- Balanced weight
- Waterproof kit
- Essentials accessible

DofE expedition kit tips:

PACK YOUR RUCKSACK

Liner
Use a dry bag or rubble sack to line your rucksack to keep everything dry.
Lifventure Dry Bags

Sun protection
Store in a sealable bag to avoid leakage and keep near the top or in a pocket to regularly reapply.
Lifsystems Mountain Factor 50 Sun Protection

Fuel
Double-bag fuel canisters in a sealable bag and store vertically to avoid spillage.
Triangula Fuel

Waterproof jacket and trousers
Pack your bag in the order you will want your kit. Remember suit in first out.
Craghoppers Vanth Jacket and Ascent Overtrousers

Mid layers
Fleece are lightweight and dry quickly. Keep near the top as temperatures can change quickly.
Craghoppers Eak Fleece Jacket

Tent
Ensure the heaviest kit is close to your back and balanced on each side.
Vango Benashee 300 Tent

First Aid
Keep your first aid kit in the same place and easy to hand. Store small items you might need during the day in the top.
Lifsystems Trek First Aid Kit

Wash kit
Lifventure Travel Wash Bag

Eating/drinking
Plastic or titanium camping gear are lightweight, won't break and easy to clean.
Lifventure Ellipse Mug and Plate

Tents
Lifventure Travel Tent

Sleeping bag
Keep your sleeping bag dry by placing inside a waterproof bag inside your rucksack.
Vango Lethude Sleeping Bag

Socks
Always take at least two pairs of socks and ideally one set for each day. Pack to keep dry.
Brigade Mer's Ultralight Merino Performance Boot Sock/Boot Socks

Spare clothing
Push spare clothes to the bottom of the kit to fill the space available.
Craghoppers Chamon T-Shirt

Lunch/food
Bag each meal separately to help ration your food. Pack your lunch at the top and have snacks to hand for extra energy boosts.
Wayfarer Expedition Food

Sleeping mat
Try to get all your kit inside your bag. If you have a large roll mat, you can fit it securely to the outside.
Vango Trek Sleeping Mat

Head torch
Pack evening essentials such as batteries or chargers together so you can find them easier in the dark.
Lifsystems Intensity 155 Head Torch

Survival bag
Use up any gaps to help keep kit stable in the bag.
Lifsystems Survival Bag

Stove
Clean and dry thoroughly, then place close to your back to maintain your centre of gravity.
Triangula 25-1UL Stove

Rucksack
Make sure your rucksack transfers the weight of your kit to your hips and not on your shoulders.
Vango Sherpa 60-70 Rucksack

More advice on how to save weight and waterproof your kit, as well as the official DofE Expedition Kit List, can be found at DofE.org/shop

Save at least 10%, and often more, in over 200 stores and online

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Find everything for your next expedition at one of our five recommended retailers in store or online. Find your nearest store at DofE.org/expedition-retailer. All items shown are examples only. Always follow the advice and training of your DofE expedition experience. The Duke of Edinburgh's Award is a Registered Charity No. 1077490, and in Scotland No. SC034054, and a Royal Charter Corporation No. SC000005. DofE.org

STAR • SILVER • GOLD TRAINING



FOREWORD

Navigation is a core skill. This handbook provides with the knowledge and techniques required to navigate safely and accurately using maps, compasses, time, terrain, and natural aids.

CONTENTS

1. Maps & the National Grid
2. Grid References (4 & 6 Figure)
3. Bearings (Grid & Magnetic)
4. Magnetic Variation & Annual Change
5. Plotting Position & Resection
6. Time, Distance & Naismith's Rule
7. Map Symbols & Terrain Interpretation
8. Navigating by the Stars (UK)

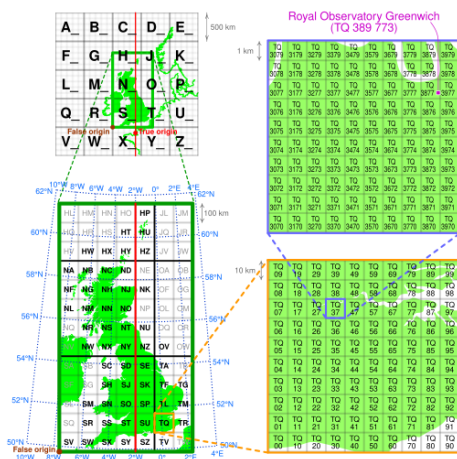
1. MAPS & THE NATIONAL GRID

Ordnance Survey (OS) maps are used throughout the UK for navigation. They are overlaid with a **National Grid** which allows any location to be identified using numbers.

The grid consists of:

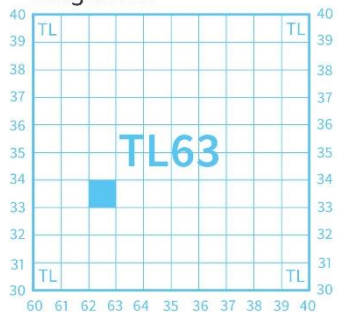
- **Eastings** – vertical lines, numbered along the bottom and top of the map
- **Northings** – horizontal lines, numbered along the sides of the map

Eastings are always read **before** northings.



Northings (up the stairs) >

Diagram D



Eastings (along the corridor) ›

Memory Aid

“Along the corridor, then up the stairs.”

Created by: SMI McKay

2. GRID REFERENCES

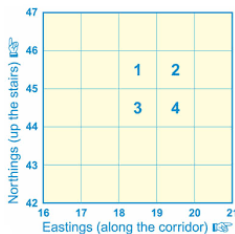
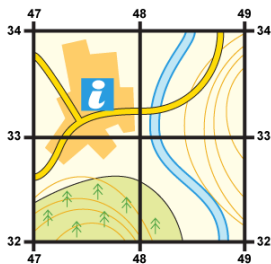
2.1 Four-Figure Grid References

A four-figure grid reference identifies a **1 km × 1 km square**.

Example: **1234**

- 12 = easting
- 34 = northing

This reference identifies the **bottom-left corner** of the grid square.



2.2 Six-Figure Grid References

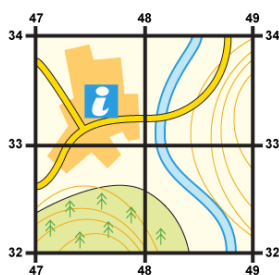
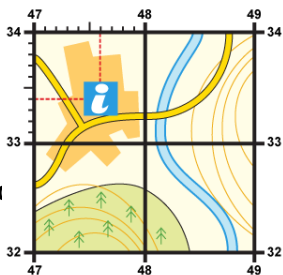
A six-figure grid reference identifies a position within a grid square to **100 m accuracy**.

Steps:

1. Identify the 4-figure grid square
2. Divide the square into tenths left to right (eastings)
3. Divide the square into tenths bottom to top (northings)

Example: **123456**

Create



3. BEARINGS

A bearing is a direction measured **clockwise from North** and written as **three figures**.

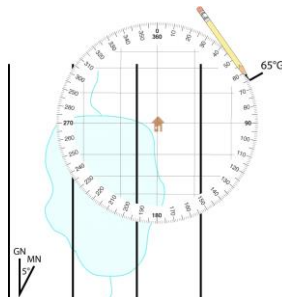
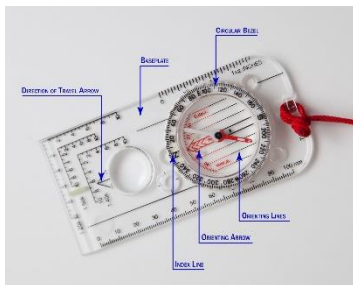
Examples: 045°, 180°, 275°

3.1 Grid Bearings

Grid bearings are taken from the map and measured from **Grid North**.

Steps:

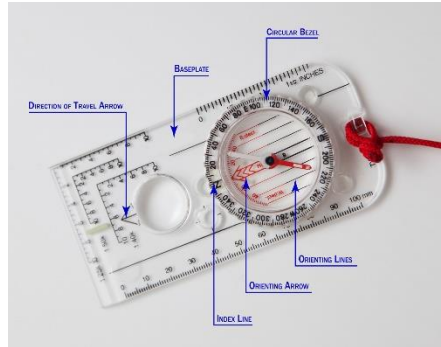
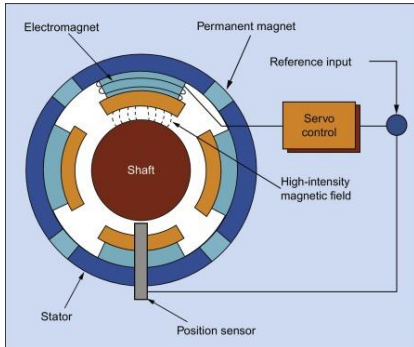
1. Place the compass edge between start and destination
2. Rotate the compass housing until the orienting lines match grid lines
3. Read the bearing at the index line



3.2 Magnetic Bearings

Magnetic bearings are followed on the ground using a compass and are measured from **Magnetic North**.

Created by: SMI McKay



Walking a Magnetic Bearing (Ground)

1. Convert the grid bearing to magnetic using the magnetic angle
 2. Set the magnetic bearing on the compass
 3. Turn until the needle sits inside the orienting arrow
 4. Select a feature on the line of travel
 5. Walk to the feature and repeat
-

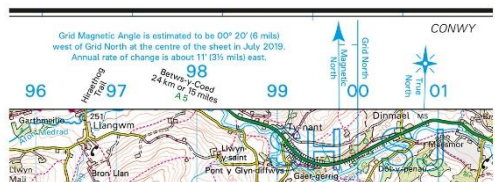
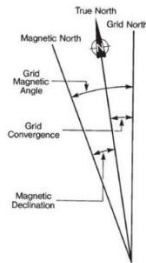
4. MAGNETIC VARIATION & ANNUAL CHANGE

Magnetic North does not align with Grid North and moves slightly each year.

OS maps show:

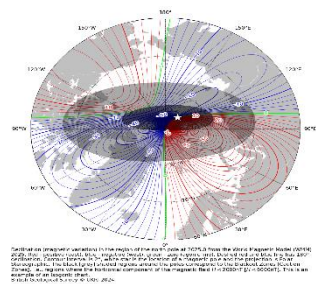
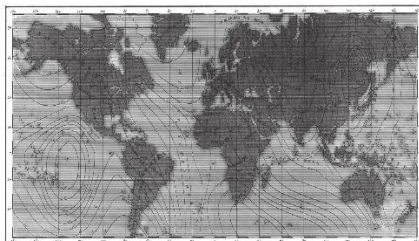
- Magnetic variation at time of printing
- Annual change (increase or decrease)

- True North
- Grid North
- Magnetic North
- Grid Magnetic Angle
- Magnetic Declination
- Grid Convergence



Converting Bearings

- Grid → Magnetic: **ADD** variation
- Magnetic → Grid: **SUBTRACT** variation



Memory Aid - “Grid to Mag Add Mag to Grid get RID.”

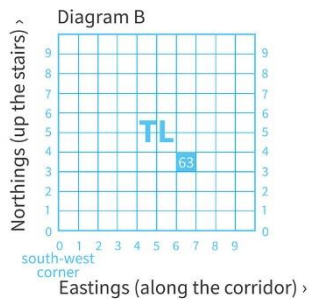
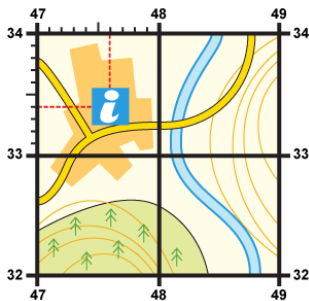
Created by: SMI McKay

5. PLOTTING POSITION & RESECTION

5.1 Plotting a Known Position

If given a grid reference:

1. Identify the grid square
2. Measure eastings
3. Measure northings
4. Mark the position lightly



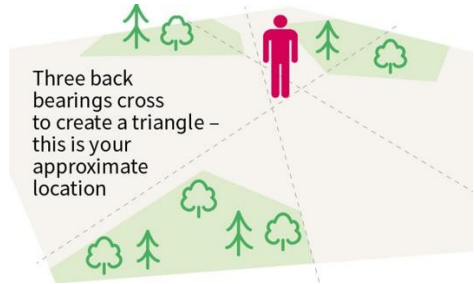
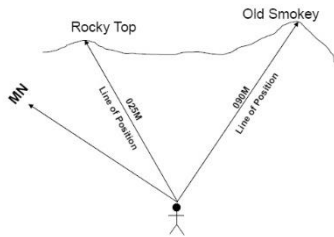
5.2 Resection

Resection is used when your position is unknown.

Steps:

1. Identify two or three visible features
2. Take magnetic bearings to each feature
3. Convert to grid bearings
4. Add or subtract 180° to obtain back bearings
5. Draw lines on the map Where the lines cross is your position.

6.



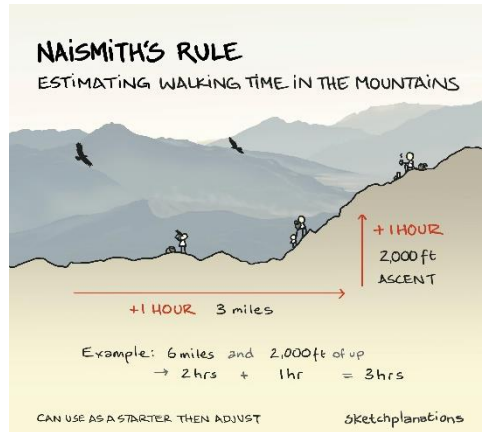
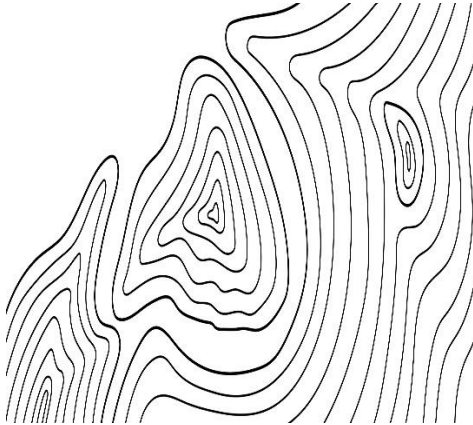
Gold Standard: Use three features to form a triangle of error.

6. TIME, DISTANCE & NAISMITH'S RULE (SILVER)

Naismith's Rule estimates journey time in hill walking.

Rule:

- **1 hour for every 5 km** of distance
- **+1 hour for every 600 m** of ascent



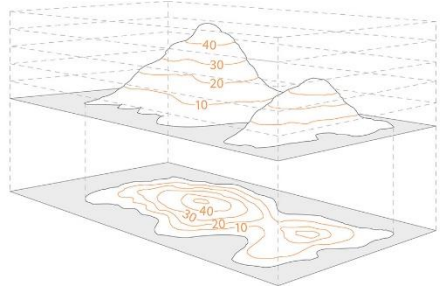
Memory Aid

“Five to one, six up adds one.”

7. MAP SYMBOLS & TERRAIN INTERPRETATION

Cadets must be able to interpret OS symbols accurately.

	Country park		Public house(s)
	Craft centre		Public toilets
	Cycle hire		Recreation, leisure or sports centre
	Cycle trail		Slipway
	English Heritage		Theme or pleasure park
	Fishing		Viewpoint
	Garden or arboretum		Visitor centre
	Golf course or links		Walks or trails
	Heritage centre		Water activities (board)
	Historic Scotland		Water activities (paddle)



Key Principles

- Close contours = steep ground
- Wide contours = gentle slope
- Blue = water
- Green = vegetation



8. NAVIGATING BY THE STARS (UK)

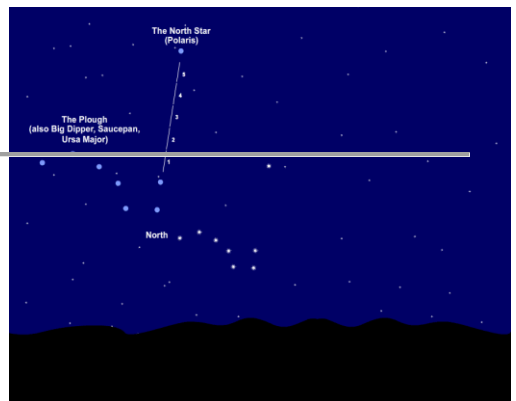
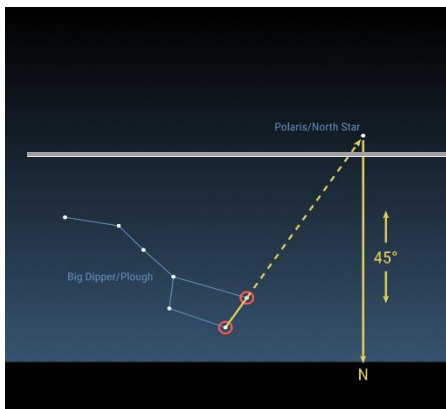
Star navigation is a **supporting and emergency skill**.

8.1 Polaris (Pole Star)

Polaris lies almost directly above **True North**.

To find it:

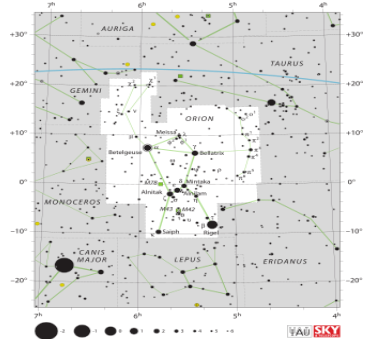
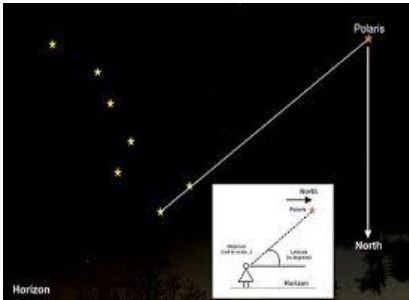
1. Locate the Plough
2. Use the two pointer stars
3. Extend the line five times the distance



8.2 Orion

Orion's Belt:

- Rises roughly in the East
- Sets roughly in the West



⚠ Safety Note: Star navigation never replaces map and compass.

FINAL NOTE

This handbook provides the knowledge to refresh your memory and skills to operate safely during training.
