



**Student Code of Practice for Fieldwork Safety**  
**Part II: Precautions required in especially hazardous environments.**  
**Including urban environments( section 12)**

**1 Fieldwork in areas of "rough and/or rugged terrain"**

The following points (1-6) are general for any fieldclass or trip to "rough and rugged terrain" and should be included with the more specific points relating to various environments which follow.

- (1) A Route Card must be completed for each group with expected time of return.
- (2) Leave a copy of the Route Card with a reliable person (supervisor, warden, landlady etc.)
- (3) Be suitably clad (App. I)
- (4) Carry a first aid kit and whistle. (Mobile phone – but do not rely upon mobile phones in remote locations).
- (5) Assess your safety equipment requirements (App II)
- (6) Use appropriate distress signals in an emergency (App IV)

**2. Fieldwork in areas of low relief and altitude**

- (1) Never climb drystone walls - they may collapse - use stiles and gates.
- (2) Use eye protection when hammering rock.
- (3) Always obtain permission before digging soil pits and trenches.
- (4) Always fill in soil pits and trenches - you are liable for any injury to animals or damage to equipment falling into your excavations.

**3 Fieldwork work in Mountainous areas and cliffs**

- (1) Be aware of predicted weather conditions and act accordingly.
- (2) Know how to navigate mist and fog (App V).
- (3) Never work alone
- (4) Always carry a survival bag, and a sleeping bag in winter.
- (5) Always wear hard hats below or on cliffs, crags and scree slopes.
- (6) If you do climb, make sure that you have ropes, use proper belaying procedures and recognised climbing techniques.
- (7) Know how to recognise the symptoms of shock and exposure (App VIII).
- (8) If you are immobilised for any reason:
  - (a) keep together
  - (b) put on all spare clothing
  - (c) use your survival bag without delay
  - (d) summon aid using the distress signals (App IV)

**4 Fieldwork in bogs, mires, swamps, etc**

- (1) Do not work alone.
- (2) Beware of any ground that sways or shakes or vibrates when walking. Often this will indicate rafts of vegetation overlying water.
- (3) Avoid any continuous carpets of Sphagnum or peat or reedswamp.
- (4) Always carry a pole or auger for probing the ground ahead.

- (5) If you find yourself sinking, immediately lie flat on your back, and call for assistance. Keep calm, don't panic. Free your legs and feet to the horizontal. Inflate any survival bag or any inflatable object you may have to give you extra buoyancy. Use this for support. Still lying flat, retrace your route to firm ground.

## 5 Fieldwork in estuaries, mudflats and salt marshes

- (1) Before undertaking any work in these areas
  - (a) complete a Route Card/map
  - (b) familiarise yourself with local Admiralty Charts
  - (c) know the local tides and currents
  - (d) use tide tables corrected for local conditions
  - (e) talk to local fishermen etc. who will probably know especially difficult or dangerous areas.
- (2) Remember that the timing and period of time available for work is limited by the tide. Be extra careful because of this.
- (3) Do not carry out fieldwork alone.
- (4) Remember that estuaries, mudflats and saltmarshes are very exposed and very cold, even in summer. Be properly equipped.
- (5) Always use a long probe when walking.
- (6) Do not cross creeks or channels without establishing their depth with a probe.
- (7) Beware of quicksand and soft mud.
- (8) Remember that mud becomes softer as the tide rises - allow plenty of time to retrace your route on a rising tide.
- (9) If you are caught in soft mud or quicksands, stay calm and do not make violent movements.
  - (a) If your boots or waders are stuck, remove your foot, rest the leg horizontally on the surface, and gradually free the other foot.
  - (b) Lie flat on the surface, and inflate any buoyancy you have to help distribute your load over as wide an area as possible.
  - (c) Crawl, whilst remaining spread-eagled downward, back along your route.
- (10) If any member of the party sustains injury of any type, (e.g. twisted ankle), cease work and make a speedy retreat. Do not delay, as any injury that slows progress can be fatal on a rising tide.
- (11) If possible, plan several short visits rather than one long visit.
- (12) Do not carry heavy loads - use a sledge or rubber boat.

## 6 Fieldwork on rivers and lakes

- (1) Complete a Route Card/map
- (2) Be aware of the risk of exposure (App VIII)
- (3) Always carry extra clothing
- (4) Do not work alone
- (5) Use a staff if you are wading a river, along with a depth probe
- (6) Be aware of local currents
- (7) Be aware of weeds and broken bottles
- (8) If you use a boat, always wear a life jacket
- (9) Be aware of floods. **NEVER SHELTER** under bridges, or in culverts during rain
- (10) Be aware of pollution and pathogenic bacteria risks (an anti-tetanus vaccination may be required)

## 7 Fieldwork in Woods and Forests

- (1) Complete a Route Card
- (2) Remember that it is very easy to get lost, and that if you do have an accident, finding you may be difficult.
- (3) Always backtrack if you think you are lost until you know where you are.

- (4) Beware of whiplash from branches when moving en masse
- (5) Do not smoke - beware of fires
- (6) Do not climb trees

## **8 Fieldwork on seashores**

- (1) Hazards include rocky shores with uneven surfaces, quicksands, seaweed, mud and slippery surfaces, tide hazard, waves. (It has been claimed that more accidents have occurred in geological work on rocky shorelines than working anywhere else).
- (2) Requirements - helmets, goggles (near cliff, use of geological hammers), tide-tables, rope (if water is entered and waves occur the person should be roped to someone onshore).
- (3) Don't touch strange canisters or other metal objects - report their existence to coastguard or police.

## **9 Fieldwork on agricultural land**

- (1) Hazards include working machinery, chemicals (e.g. pesticides, poisons) barbed wire, electric fences, unstable haystacks, unfenced livestock, ponds, ditches.
- (2) There are disease risks - including special risks to anyone liable to suffer from asthma. An anti-tetanus vaccination is essential if soil is to be handled.
- (3) Fire risks can be considerable
- (4) Rubber boots and thick gloves may be required.
- (5) Poisonous plants and animals are a widespread possible hazard.
- (6) Information is available from: National Poisons Information Service, New Cross Hospital, Avonby Road, London (01 407 6700), or from local poisons information services where available.

## **10 Fieldwork on or near railways, motorways or main roads**

- (1) Special permission is required for any work conducted on railways or motorways
- (2) Always wear high visibility clothing
- (3) Always carry and use an orange flashing hazard indicator at least 100m down traffic from you. Use reflective triangles and/or cones
- (4) Always have one person posted as a lookout.

## **11 Fieldwork in quarries, trenches, mines and caves**

- (1) Always seek permission from the site manager well before (2-7 days) you intend to visit.
- (2) You must comply with their safety instructions whilst within their area of responsibility
- (3) You must wear a hard hat and eye protection and boots with protected toecaps.
- (4) Always work in pairs, with one person as a lookout.
- (5) Avoid loose rock, recently cut faces and keep away from quarry buildings, vehicles, cables and other services, and from sludge ponds.
- (6) Never enter any pit without prior testing for CO<sub>2</sub> (Drager gas detection equipment should be used).
- (7) Be especially aware of work in trenches - never enter a trench which is not properly shored and only with the specific permission of the site manager.
- (8) Remember that you can suffer from exposure underground. Be properly equipped (App I & II).
- (9) Always leave a copy of the mine or cave plan with your route clearly marked, with a responsible person.
- (10) Never enter limestone caves during or after heavy rain or snowmelt.
- (11) A party for underground work should never be less than 4 persons - two to go for help, one to stay with the victim.
- (12) Always carry a spare torch and batteries
- (13) Use coloured string for retracing routes.

## **12 THE URBAN ENVIRONMENT**

### *Safety in an urban environment*

The main dangers of an urban environment are inclement weather, road traffic, theft and personal attack. The usual precautions should be taken against these hazards:

- Be prepared for bad weather (i.e. warm clothing; multiple layers; waterproofs)
- Take due care and attention when crossing roads
- Avoid working on a roadside
- Ensure all personal valuables are kept out of sight and safely secured (i.e. zip/close all bags and avoid use of back pockets)
- At all times be in sight of at least one other group member
- Avoid confrontation with members of the public displaying aggressive or erratic behaviour

### **Safety issues relating to interviews**

*When carrying out interviews you should observe the following:*

1. Do not enter a private household unaccompanied. Either arrange for interviews to take place in a public place, or conduct the interview accompanied by another team member. .
2. In all cases, ensure that the course leader or other members of your group know where, when and with whom an interview is to take place, and by what time the interview should be concluded.
3. Once an interview has ended, contact the course leader or other members of your group to confirm its safe conclusion.
4. If the behaviour of the interviewee(s) gives any cause for concern, terminate the interview as quickly but politely as possible, and leave.
5. Wherever possible, ensure that access to a working phone (mobile or public) is maintained at all times, in case of accident or emergencies.

### **Safety issues relating to questionnaires**

*When carrying or delivering a questionnaire you should observe the following:*

1. Work in groups or pairs so that you observe each other: always make sure that another group member can observe you while delivering questionnaires.
2. Though you will work in groups you should deliver questionnaires individually, as approaching a household in a group is too intimidating.
3. If a householder comes to the door, politely introduce yourself (I am a student from Liverpool University...) and state the purpose for the questionnaire. Reassure people that 'it will only take a few minutes of your time'.
4. Always remember that No means No. If a member of the public refuses to receive a copy of the questionnaire, accept this straightaway.
5. Make a record of all refusals so that these households can be avoided during questionnaire collection.
6. If a member of the public starts to become threatening or intimidating, stop delivering the questionnaire at once and walk away.
7. Ensure that access to a working phone (mobile or public) is maintained at all times, in case of accident or emergencies.

*When delivering a questionnaire you should observe the following:*

1. Inform course leader where you plan to conduct your questionnaires
2. Inform course leader at what time you expect to complete your fieldwork
3. Report to course leader prior to and on completion of fieldwork (by phone or in person)
4. Work in groups or pairs so that you observe each other: always make sure that another group member can observe you while conducting questionnaires.
5. Though you will work in groups you should approach households individually, as approaching a household in a group is too intimidating.
6. Be Polite. Introduce yourself (I am a student from Liverpool University...) and state the purpose for the questionnaire. Reassure people that 'it will only take a few minutes of your time'.
7. Always remember that No means No. If a member of the public refuses to answer the questionnaire, accept this straightaway.
8. Make an accurate record of all household contacts to ensure that return visits are made to households only where appropriate.
9. If a member of the public starts to become threatening or intimidating, stop the questionnaire at once and walk away.
10. Ensure that access to a working phone (mobile or public) is maintained at all times, in case of accident or emergencies.

### **Interview/questionnaire ethics**

1. Authorised consent must be obtained for use of all data collected (signed interview form; disclaimer sentence at bottom of survey form)
2. All reasonable effort must be made to obtain authorised consent for data collection conducted on private property (e.g. shopping centre; privately owned tourist attraction; farmed land); at all times the rights and wishes of private land owners must be respected.
3. Minimise respondent burden and avoid respondent distress through careful questions choice; stop interview/questionnaire immediately if it appears to be causing respondent distress.
4. All outputs should protect respondent confidentiality (e.g. through use of pseudonyms for interview respondents; avoidance of disclosive counts in statistical outputs)



## APPENDIX I

### Clothing for fieldwork

The essential requirements are:

- (1) Protection against wind, cold, rain and snow.
- (2) Adjustability to meet a wide variety of climatic conditions which may be encountered in a single day, especially in mountains.
- (3) Lightness combined with durability.
- (4) Ease of visibility

The following equipment is advised:

- (1) Windproof and waterproof anorak, with hood and long sleeves
- (2) Windproof and waterproof overtrousers
- (3) If in mountains, a cagoule or 6' & 3' thick polyurethane bag in which the whole body can be protected in an emergency.
- (4) Waterproof boots, with a no slip sole. Running shoes are not suitable. Note that rubber soles are dangerous on snowslopes, and wet grass.
- (5) Woollen or moleskin shirt, with longsleeves.
- (6) Two pullovers - one thin, one medium: this is more flexible than one heavy one.
- (7) Trousers, (not skirts):  
These should not be jeans when wet provide little protection against wind chill. Moleskin, tweed or Bedford cord trousers or knee britches are best.
- (8) Socks - always carry at least one spare pair - preferably oiled wool. Cotton or pure nylon socks are useless.
- (9) Gloves - woollen inner gloves with canvas windproof outer gloves are the best combination. Leather is useless. Woollen mitts or woollen fingerless gloves are best for fieldwork purposes. All gloves should cover the wrists, as heat loss here is very considerable.
- (10) Headgear A hat or head cover is desirable in addition to your anorak hood. A woollen balaclava is good, as it provides versatility, as well as being able to fit under a hard hat.
- (11) A small rucksack - This should be large enough to carry spare clothing, cagoule/poly bag and basic field equipment.
- (12) In mountains, especially in winter, carry a four season sleeping bag.

## APPENDIX II

### Essential Safety Equipment for fieldwork ()

The equipment should enable you to:

- (1) navigate safely.
- (2) provide first aid to others in distress.
- (3) summon help in case of accident.

The equipment list includes:

- (1) Accurate, waterproof watch.
- (2) Maps and/or charts on large scale (1:10,000; 1:25,000; 1:80,000; of area you are working in.
- (3) Compass
- (4) If in coastal areas, Tide Tables corrected for BST and local conditions.
- (5) Whistle
- (6) Mobile phone (do not entirely rely on mobile phones as networks often fail in remote places).
- (7) Torch and spare bulb/batteries
- (8) If in mountains, heliograph (mirror) and/or flares.
- (9) If in mountains, an aneroid for determining altitude: NB This must be correctly set at the start of the day.
- (10) Safety spectacles, goggles, sunglasses.
- (11) Personal first aid kit (see Appendix)
- (12) Hard hat
- (13) Sleeping bag if in mountains
- (14) Survival bag
- (15) Heavy duty penknife
- (16) Food and drink (warm)



## **APPENDIX III**

### **Calculate Times and Distances**

The essential requirements are:

- (1) To calculate correctly how much time is required to traverse a particular piece of terrain.
- (2) Establish a fail/safe point.

Time: Will depend upon the pace and rhythm of the party, and upon the topography and weather conditions.

Distance: is calculated directly from the map, with allowance for topography.

#### **Estimating Times:**

This is best done using the following formula (Naismith's):

1 hour for each three map miles (5 km)  
plus 1 hour for every 2000 feet (600m) ascent

- Procedure:
- (a) Before starting, determine the total distance to be walked (miles) and divide by 3.
  - (b) Before starting, sum the total height of each hill/mountain ascended during the day. Allow 10 minutes for every 100m: this gives the extra hours used climbing.
  - (c) Allow at least 1 extra hour for stops.

#### **Reference:**

Cliffe, P (1980) Mountain Navigation, D.E. Thompson, Printers, Edinburgh, p 29-35

## **APPENDIX IV**

## **International Distress Signals**

### **Distress signal:**

Six                blasts of a whistle  
                      shouts  
                      flashes of a torch  
                      flashes of a mirror

Pause for one minute

Repeat six whistle blasts, shouts or flashes until assistance is forthcoming

Rest - do not exhaust yourself

### **Answering signal:** (help on way)

Three            blasts of a whistle  
                      shouts  
                      flashes of a torch  
                      flashes of a mirror

Pause for one minute

Repeat again and again

If you have a mobile phone or CB radio, use it for short intervals, so as not to exhaust the batteries.

## **Route finding in mist/fog**

The requirements are:

- (1) To determine your exact location on the map
- (2) To avoid hazards (cliffs, swamps, mines etc).

The worst dangers are present in mountains and moorland.

- (1) Establish your last known position before the mist came down.
- (2) If you are on a well marked track by cairns, which is shown on the 1:25,000 or 1:50,000 map, keep to it.
- (3) If you are not on such a track, estimate the distance to the next known point (1 hr = 3 miles; 1000' climb = 1 hr) and set a compass course using your companion as a sighting mark. Keep him/her ahead, using your compass, and aneroid to determine your rise and fall. Always trust the compass, except when in areas of magnetic rocks, basaltic or gabbro formations. Ignore advice from parties not equipped with a compass.  
Do not contour a slope: if you do this, you will no longer be master of your direction. If possible, go straight down.
- (4) If you are on a mountain, but do not have a compass,  
never:
  - (a) enter a ravine or gully or endeavour to descent steep crags - these may end in cliffs or deep pools
  - (b) always follow the declining crest of a ridge
- (5) If you are on an uncairned track, without a compass, **STAY PUT UNTIL THE MIST CLEARS.** Remember, in mountains, mist may persist for days. Do not panic. Use your cagoule or poly bag for warmth. Make the distress signal (Appendix IV) - 6 blasts, or shouts, pause one minute, repeat again and again.

## **APPENDIX VI**

### **Route Card**

Objectives:

- (1) To inform the party leader/landlord/hotelier of your route.
- (2) To provide a baseline for emergency.
- (3) Aid rescue if overdue.

**NB These cards are only useful if you DO NOT DIGRESS FROM THE ROUTE GIVEN.**

Additionally, you should show on the 1:5,000 map extracts given to you by your course leader/lecturer with a 2B pencil your route. Indicate your field research areas with a circle not larger than 1km centred on the main research site. This should be left behind with your landlord/warden/local Police.

<b>ROUTE CARD</b> Names of Party from Geography Department, Liverpool Univ. L69 3BX	Route (give OS Grid Refs and Times).
1 2 3 4 5 6 7	e.g.ST073475 8.00 a.m ST291475 10.30 a.m ST400400 1-2 p.m. ST400108 4.00 p.m Return base 6.00 p.m.  Total distance : x miles Total height : x 1000' Time : x hours
Time and date of departure	Estimated time of return
Place of departure and registration of vehicle	Bad weather alternatives
Estimated time of return to vehicle	
Equipment carried (Please tick)  1. Emergency food 2. Waterproof clothing (colour) 3. Winter clothing 4. Torch 5. Whistle 6. Compass 7. Map (Scale) 8. Polybag 9. First aid 10. Rope 11. Tide tables 12. Other (specify)	Walking/climbing/public transport (delete as necessary).

## **APPENDIX VII**

### **The Country Code**

- Enjoy the Countryside and respect its life and work
- Guard against all risk of fire
- Fasten all gates
- Keep your dogs under close control
- Keep to public paths across farmland
- Use gates and stiles to cross fences, hedges and walls
- Leave livestock, crops and machinery alone
- Take your litter home
- Help to keep all water clean
- Protect wildlife, plants and trees
- Take special care on country roads
- Make no unnecessary noise

Please complete and return the following to acknowledge receipt of this document to the **General Office, Room 706/711, 7<sup>th</sup> Floor, Department of Geography, Roxby Building before Friday 28 September.**

I have read and understand the Student Code of Practice for Fieldwork Safety, Laboratory Rules and Departmental Safety Policy.

**Print Name:** .....

**Programme:** .....

**Sign:** .....

**Date:** .....