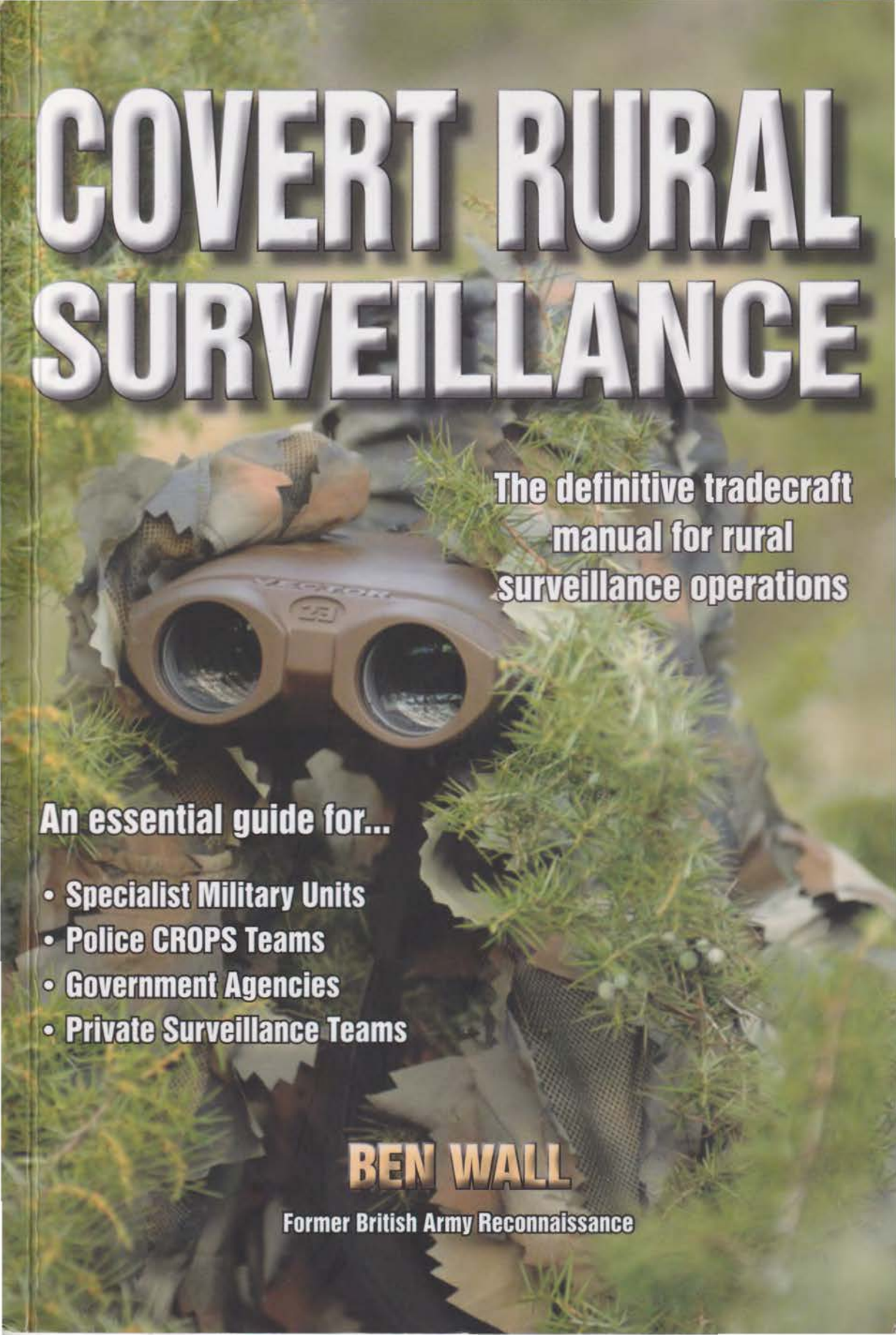
COVERT RURAL SURVEILLANCE



The definitive tradecraft manual for rural surveillance operations

An essential guide for...

- Specialist Military Units
- Police CROPS Teams
- Government Agencies
- Private Surveillance Teams

BEN WALL

Former British Army Reconnaissance

COVERT RURAL SURVEILLANCE

The definitive tradecraft manual for rural surveillance operations

By
Ben Wall

Former British Army Reconnaissance

CROPS

Providing discreet and professional services
www.crops.uk.com

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The biggest thanks to my close family for supporting me, all of your encouragement, and putting up with my behaviour at times; for being permanently attached to either a camera or laptop. For all the long trips away and time spent apart, it will be worth it.


CROPS
Providing discreet and professional services

WHO ARE CROPS?

Specialists in close reconnaissance, observation, protection and surveillance operations within the rural environment, we are dedicated to providing a completely unique service, utilising staff originating from specific military backgrounds.

With these specialised skills we bring military precision to the civilian and private sectors, offering a full 24hr "eyes on" service.

CROPS close target reconnaissance teams utilise image intensified night vision optics and infrared covert imagery to gather the most comprehensive results and complete surveys on a wide range of tasks. This core capability is achieved by their ability to move around the countryside undetected in the course of operations.

Close observation is conducted by our teams who are fully trained to install covert CCTV technical systems to your requirements. Using these remote cordoning methods enables us to totally contain a large area of ground covertly monitoring all movement within this location.

A specialised area of our operation and one that we are very proud of is state-of-the-art technical protection devices as well as low or high profile personal protective services. Our operators have conducted close protection roles in some of the most hostile environments of modern times, protecting members of the British Embassy, Foreign Office, US State Department, government figureheads, press and diplomats from all over the world.

In situations where a high threat is present, **CROPS** can provide a full-time residential security team. This service can be deployed if you are planning to go away on business or holiday for any period of time, giving you complete peace of mind.

CROPS operate small rural surveillance teams which deploy for days at a time, living and operating from concealed covert hides. These small teams are completely self-reliant and operate state-of-the-art remote devices.

CROPS operators use a combination of bespoke technical surveillance cameras and avoid using traditional surveillance tactics familiar to today's criminal element.

CROPS

School of rural surveillance

TRAINING

CROPS utilises 3000 acres of private training ground across 4 sites in the United Kingdom. Our self-contained indoor training rooms are located in a quiet rural setting within a converted barn complex and have full kitchen facilities where hot drinks and lunch is provided.

At **CROPS** we have a fully dedicated and professional training team whose skill sets originate from extensive and varied military backgrounds. We offer a training environment that's second to none, with a syllabus of modern operational tactics and techniques.

We have invested heavily in our audio and technical equipment to ensure it is of the highest quality, guaranteeing delegates have the best training environment.

COURSES

In addition to the courses listed below, **CROPS** conduct bespoke tailored training for government, military and private sector groups. Our mobile training team can be deployed throughout the United Kingdom or worldwide to meet client needs.

- Basic, intermediate and advanced rural surveillance
- Covert camera deployment training
- Static observation platforms
- Remote operator's medical training
- Covert method of entry

More information about our comprehensive training courses can be found on the **CROPS** website, ***www.crops.uk.com*** The course syllabus has been taken from this definitive covert rural surveillance tradecraft manual.

If you are interested in any of our services and wish to find out more about our training courses, please contact us at ***info@crops.uk.com***

Demonstrating a concealed hide on a rural surveillance training course

CONTENTS

CONTENTS

THE AUTHOR'S ADDRESS

Gone are the days of operating with state of the art, government designed and funded technical surveillance equipment where 70% of the work was done for me. Like some of you now reading this manual will find, we are only able to use equipment that's obtainable over the shop counter, at best maybe a sneaky bit of kit via the internet or through friends still operating on that higher tier.

To that end, you will not find any images of unobtainable high-tech equipment used by those covert operators, nor being deployed on live missions. What you will find and learn throughout this manual is how to operate with the limited equipment available to you, but still achieve a gold standard result.

Not having access to this high-tech equipment will without doubt, make you a more effective operator, as you will have to rely on your personal skills and tactical initiative to achieve your results.

I strongly emphasise throughout the manual the need to be able to design and build your own technical equipment, this is a skill which I feel all good surveillance operators must have. A large amount of my own equipment is self-built along with a number of other operational items which are illustrated throughout the manual.

The methods and tactics contained in this manual are already "out there" in the public domain, I have of course built on and in some cases adapted most of these methods and tactics through my own personal experiences and many years operating in this environment. I do not claim to know everything as this would be arrogant, but I have never failed to fulfil any mission that has been required of me.

Over the years and since leaving the military, countless times I have heard individuals on the 'circuit' discussing their time as a covert surveillance operator and of course name dropping. When asked about their time in surveillance, more often than not, it would actually turn out that this person followed a cash truck up and down the motorway.

Believe me, this is not covert surveillance.

Make no mistake, rural surveillance is a long, drawn out process, conducted over extended periods both day and night, there is often no set start and finish times as you begin to take on your subject's pattern of life. Ahead of you lay many uncomfortable, cold, wet nights just waiting to be engaged, not forgetting the hours upon hours of boredom while you wait for something to happen. Then over the radio comes "Stand-by, Stand-by" and your cold cramped body which has laid motionless for hours has to spring into life operating optics, recording equipment, sending timely and accurate information over the radio as you trigger the subject's movements. A good job done, but you're not finished yet; now you have to break down your hide, load up your Bergen which weighs over 130lb with all the equipment and extract across the fields at night by foot to your pick up point.

Rural surveillance is not easy, and is not suitable for everyone, it's hard work from start to finish. In my eyes however it's the most rewarding of disciplines to conduct.

If you have bought this manual to widen your existing surveillance skill set, to learn a new and challenging discipline or simply because this subject intrigues you, then I hope you enjoy it and learn all you hoped for.

For more information on training or operations please feel free to navigate around my website at www.crops.uk.com

Many thanks and enjoy

Ben

INTRODUCTION TO RURAL SURVEILLANCE

Continuous watching or listening to persons, properties, places, vehicles and objects by day and night in all weather conditions. Surveillance is conducted to gain covert video or audio evidence that can be relied upon in a court of law if required.

Topics Covered

- **What is surveillance?**
- **Types of surveillance**
- **The target / subject**
- **Target awareness levels**
- **The surveillance operator**

INTRODUCTION TO RURAL SURVEILLANCE

WHAT IS SURVEILLANCE?

Continuous watching or listening to persons, properties, places, vehicles and objects by day and night in all weather conditions. Surveillance is conducted to gain covert video or audio evidence that can be relied upon in a court of law if required. Gathering and production of timely, accurate records of all information and intelligence.

TYPES OF SURVEILLANCE

Overt

You will rarely carry out overt surveillance in the rural environment however, you may find that a client instructs you to carry out some kind of overt surveillance to act as a deterrent against an illegal activity, such as fly tipping or vandalism. This type of overt, deterrent surveillance could be conducted by means of CCTV, now prevalent in all inner city areas.

Covert

The most common type of surveillance and one that is conducted in complete secrecy of your subject or target location. It requires you and your team to remain totally hidden from the subject and all third parties within the operational area.

Technical

This is where you may be instructed to conduct surveillance on a subject who is very surveillance aware, where your presence or anything out of the ordinary would give your operation away. Perhaps the target area is too confined and lacks sufficient natural cover to conceal an operative, making the use of technical devices such as remote cameras or listening devices, the only way to gain information and intelligence.

Combination

The use of two or more of the above methods.

THE TARGET / SUBJECT

In today's world anyone could be subjected to some form of surveillance, either overtly through CCTV or covertly by an operational team, employed by a client to conduct this work. The categories into which your subject falls will dictate your method of operations.

UNAWARE

Someone who has no consideration that they would be under any form of surveillance, this person may have become complacent over a long period of time. Nearly all unaware subjects will do something to catch themselves out and of course, the covert surveillance team is lying in wait for this to happen.

SEMI-AWARE

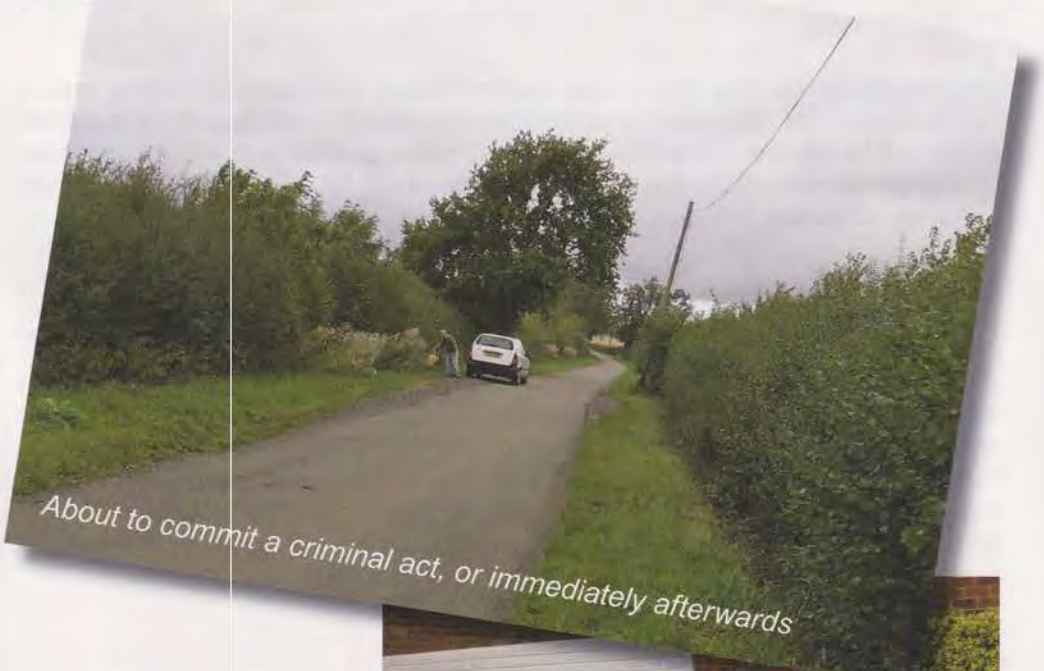
This type of person may have a small personal injury claim pending so they expect that at some point, they may be subject to surveillance. They may not know what to look out for but may conduct simple anti-surveillance moves. A well-trained team should quickly pick up on this activity, the subject will be on the lookout for things which are unusual in the area such as unknown vehicles parked nearby.

This is someone who is always on the lookout for people following and watching them, they are likely to conduct a number of anti-surveillance tactics in the hope of evading possible covert teams. This type of person will usually have a criminal background and more than likely have a working knowledge of surveillance tactics. You must not take this person lightly as they may have a counter-surveillance team on the lookout for you, so keep your wits about you. I would always say use a larger team in this situation.

The most dangerous of all subjects and likely to belong to a hardened criminal gang, drug dealer / supplier or even a terrorist organization. They would rarely leave their location and have hired help to carry out their dirty work for them. If this person was to step into the open they would defiantly use a counter-surveillance team. To gain evidence on this subject would take time and highly experience covert operators, possibly a man on the inside under the control of an experienced handler.

Subject's heightened awareness periods

When leaving the safety of their property or work location



About to commit a criminal act, or immediately afterwards

When returning to the safety of their property or work location

Required qualities of a rural surveillance operator

A rural surveillance operator will be expected to endure extreme environmental hardships and display physical and mental strengths well beyond accepted levels of human endurance. They must remain totally focused at all times throughout the operation as surveillance can be very boring and tedious work, especially if operating from a confined space such as a sub-surface hide.

They must be completely confident in their task, whether working alone or as a member of a team, be highly skilled with all their equipment, quick witted and able to think on their feet. They must not be afraid to think and work outside the box to achieve their goal. An excellent memory, perfect, colour eyesight and excellent hearing are all essential.

They should be confident speakers, able to make up a solid cover story at the drop of a hat, so as not to reveal their true intentions to an inquisitive third party. Most of all they must accept that surveillance is not just a job but a way of life, never 9 to 5 and Monday to Friday, but a life that will see them work 18 hour days, miles from home in all weather conditions.

The best operatives are not lazy and rarely take the easy option, they graft and dig deep inside themselves to achieve what others said was impossible.

Operator's background

The best operatives have a military background in disciplines such as reconnaissance, surveillance and intelligence, these people will already have a very strong knowledge base that can easily be extended. They are used to working long hours in difficult conditions with very little support or outside help. They will have attended a number of military courses teaching the required skills, those skills then put into operational use in hostile environments across the world. Continual use of their skills will turn these people into slick operators, helping them keep a cool head if things start to go wrong.

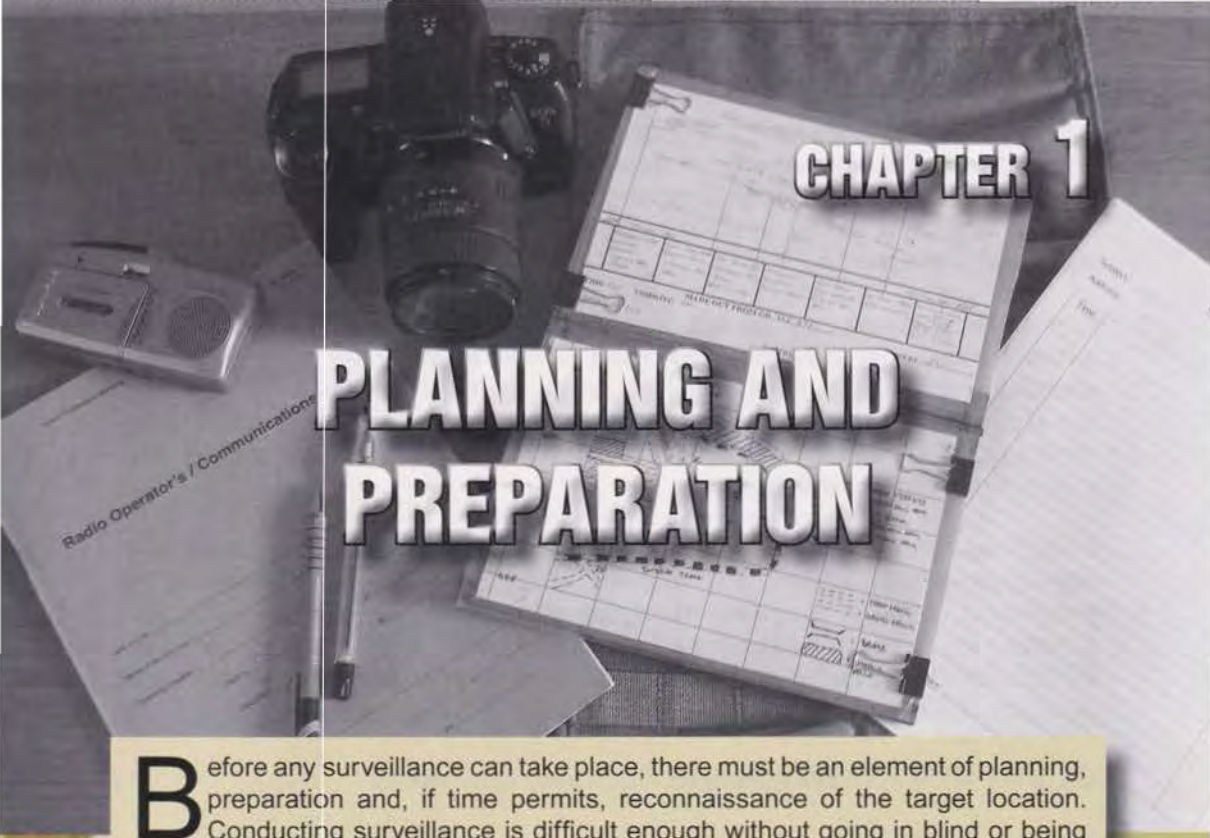
Leaving the military with a rank is also a good indication that they have leadership qualities and make efforts to better themselves, were willing to learn and put themselves in positions where they could fail but didn't.

Females

There is a place in this sector for female operators, some may disagree but I personally know of some very good women who are skilled in this area of operations. Women are conducting covert surveillance in the military all over the world and without female operatives, many jobs would not have been successfully achieved. Some argue that there are situations better suited to male operatives, such as long term operations within sub-surface hides for example. Perhaps that is true but a large number of surveillance instructions are conducted on female targets which can create problems for male only teams operating in an inner city environment.

Life experience

This is very important, a good surveillance operator needs to have a degree of life experience behind them, I know of many people in their mid-twenties who have more real time life experience then many people in their forties. Young operators should not be judged by their age alone.



CHAPTER 1

PLANNING AND PREPARATION

Before any surveillance can take place, there must be an element of planning, preparation and, if time permits, reconnaissance of the target location. Conducting surveillance is difficult enough without going in blind or being ill prepared. It's a fundamental mistake and one that could be costly, not only financially but to the reputation of the team.

Topics Covered

- **Client interview**
- **Sources of further information**
- **Delivering operational orders**
- **Model making**

Before any surveillance can take place, there must be an element of planning, preparation and, if time permits, reconnaissance of the target location. Conducting surveillance is difficult enough without going in blind or being ill prepared. It's a fundamental mistake and one that could be costly, not only financially but to the reputation of the team.

When a client approaches you with a possible surveillance task, or you are handed a task from the operations room, you need to make sure that the job folder has the information you require, if not, you must ask for it. Reopened jobs will always have lots of previous information for you to get your head into; the working practices of the previous operators on the task will of course dictate the quality of information in the previous reports, film and images.

If you have been handed a fresh task where there is little information, or at worst nothing more than a name and address, which can happen if the client is not interviewed correctly, you really have your work cut out. My advice would be to approach the client again before going any further and to ask for as much information as possible. Failing that, a detailed close target reconnaissance operation must be conducted before any live task takes place.

CLIENT INTERVIEW (questions which need to be asked)

STAGE 1: Client's intent

- What is the reason for the surveillance?
- What is the client hoping to achieve from covert surveillance?
- Is covert surveillance the answer?
- Has any other surveillance team been instructed previously or still committed, if so when and who is the company concerned?
- Does the client have any evidence or paperwork that could be of any use?
- What are the plans for the evidence gained, for example, will it be used in criminal or civil actions?

STAGE 2: Subject's details

- Is there a recent photograph of the subject?
- If not then a full A – H description must be taken. See below
- Is the subject a twin or is there another family member of the same sex, close to the subject's age? The last thing you want is to film the wrong person.
- Home address and telephone numbers, both land line and mobile.
- Work address
- Hobbies and interests
- Has the subject been in trouble with the police, are they known!
- If so why, when and where? If subject has a violent nature you need to know.
- Daily pattern of life; what time do they go to work, take children to school, collect the paper, arrive home from work? Do they work shifts and do they drive?
- What vehicle does the subject drive using the SCRIM pneumonic (Stage 4)

STAGE 3: Details related to subject

- Address of usual haunts - pubs, private clubs, friends and family.
- Address of schools if applicable.
- Details of associates
- Other possible vehicles the subject may use.

STAGE 4: Any other information

- A – H card: method of logging a person's details
- SCRIM card: method of logging vehicle details

Age	In brackets of 5 years (20 – 25yrs)
Build	Small, medium, large, fat, athletic
Colour	White, brown, black, tanned, yellow
Distinguishing feature	Scars, tattoos, large nose, looks like
Elevation	How tall are they in feet
Face	Eye colour, facial hair, chin
Gait	How they walk, limp, bowl, swing
Hair	Length, colour, style

Shape	Saloon, estate, hatchback, van, flat bed
Colour	Could be two tone
Registration	Private, diplomatic, military, foreign
Identifying marks	Dents, scratches, panels, broken lights
Make	Ford, Vauxhall, KIA, VW, Honda, BMW

SOURCES FOR FURTHER INFORMATION

- Telephone directories
- Yellow pages and business pages
- Electors register, local town hall / office
- County Court register
- Local newspapers
- Internet
- Facebook
- Twitter
- Google
- www.multimap.com
- www.upmystreet.co.uk
- www.192.com
- http://wtp2.appspot.com/wheresthepath.htm

Below is a screen shot of a page from 'where's the path'. An excellent application for matching the map with a satellite image of the actual ground

Local enquiries

Talking with people in the locality

- The postman, milkman
- Pretext call (face to face or phone call

If having a face to face meeting, always capture it covertly on film! (ID done)

- Close target reconnaissance
- Old reports and film

Stay away from the police, in my experience they will be of no help and may compromise your intentions before you're on the ground or even when you're in position. I once made the mistake of informing the local police of a job I intended to conduct. All they did was to send a patrol car out that kept driving past my vehicle really slowly. Doing this all day did nothing more than draw attention to it. Little did they know that I had been watching their wasted efforts from the tree line a few hundred metres away!

Now that you have interviewed the client and gained as much information about the subject, the next stage is to conduct a close target reconnaissance of the local area and the immediate area in detail, putting words into a picture. Once you have conducted your reconnaissance you will fully understand what you are facing and how best to achieve your objectives.

TEAM DEPLOYMENT RECONNAISSANCE - what to look for

- Route in
- Drop off point
- Covered approaches by road or on foot for both target and operators
- Obstacles
- Replenishment location
- Primary hide location
- Communications
- Trigger positions
- Type of trigger (human / technical)
- Technical devices needed (covert wireless cameras / transmitting bugs)
- All possible exits for both target and the team
- Overlooked by any third parties
- Other hide locations
- Pick up positions (more than one) for target if mobile
- Extraction route
- Team pick-up point

PLANNING PHASE

Once prepared with all this information, you can begin working on your surveillance plan and considering the following

- Size of the team required
- How the team will be made up, male and female operatives
- Timings
- Communications
- Types of vehicles to be used for the drop off and pick up
    - Car
    - Van
    - Motorbike
    - Boat
- Equipment
- Specialist equipment
- Costing
- Orders given to the team before deploying onto the ground

ORDERS or BRIEFING - The mission is broken down into several phases

All operations in the military are conducted after a set of orders (or briefing), these orders start with the very top ranking officers and filter all the way down to the section commander. He then writes his own set of orders to give to his men. This is a long process but one that works, the British military allow their section commanders who hold the rank of corporal, to make life or death decisions on the ground.

There are set headings in which orders are given, they are

- Preliminaries
- Ground - build a model of the ground if possible
- Situation
- Mission
- Execution - concept of operations broken down into phases
- Service & support
- Command & signals

Finished off with

- Any questions
- Question confirmation
- Conclusion
- Time check on all equipment to be taken
- Rehearsals

Breaking the order headings down even further

PRELIMINARIES

- Head count
- Attachments
- Duration of task
- Client details
- Map details
- Moon state
- Weather during task duration

GROUND - refer to the model

- In general
- In detail
- Route in
- Route out
- Safe havens - ERV's
- Target area

SITUATION

- In the last 24hrs - all movements to, from and around the operational area
- In the last 48hrs
- Has this subject been under surveillance before and if so are they now surveillance aware?

MISSION - this is to be repeated twice

- To gather the required evidence by covert film, still imagery and or audio recordings according to the client's brief to allow the client to take appropriate action required.

EXECUTION

This section of orders is now broken down into different phases, the type of operation you are conducting will dictate how many phases are to be used.

True Accounts

When operating in a foreign country you must ensure the vehicle's registration plates match the country or region you are operating in. I once did a job overseas where the vehicle had been prearranged and was fitted with UK plates, this job was compromised from the start!

'THIS WILL BE A 'SIX' PHASE OPERATION'

PHASE 1

- Route out
- Vehicles to be used and seating plan if needed
- On foot and if so, order of march
- Action to take in case of... (Actions ON)
    - Break down
    - R.T.C
    - Road diversion
    - Subject / target pre-seen
    - Compromise
    - Stopped on route
    - Lost communications
    - Requirements of the chase car

PHASE 2

- Drop off point
- What needs to happen at the drop of point?
- Exiting the vehicles if they are to be used
- Once on the ground actions to be taken
- Actions on...
    - Drop off point compromised
    - Drop off point unusable
    - Lost communications
    - Compromised

PHASE 3

- The insertion onto the target area
- Route, following a prepared route card
- Order of march
- Actions on...
    - Separation from patrol
    - Lost
    - 'Man down' medical plan
    - Target is pre-seen
    - Compromises
    - Third party awareness
    - RV's -- FRV - ERV

PHASE 4

- Locating and occupation of the hide
- Actions on…
    - Recce party compromised
    - FRV group compromised
    - Target pre-seen
    - 'Man down' medical plan
    - Work routine when hide is located
    - Compromised before occupation of hide

When 'on task' with eyes on the target, there may be a number of sub phases such as conducting a CTR and replenishment or relief in place if conducting a long term observation task.

PHASE 5

- Extraction to the pickup point, at end of task or if compromised
- Route and order of march
- Actions on…
    - Separation from patrol / lost
    - 'Man down' medical plan
    - Compromised on the extraction
    - Compromised at the pick-up point
    - Third party awareness
    - RV's – FRV - ERV
    - Positioning at the pickup point
    - Placing out the 'Cats Eyes' or marker
    - Pickup vehicle breaking down on route

PHASE 6

- Route in
- Picked up and in vehicle
- Actions on…

Same as the actions on for the route out

SERVICE & SUPPORT

- Rations & meals
- Medical plan
- Specialist equipment issue
- Replenishment
- Agencies on call
- Attached personnel

COMMAND & SIGNALS

- Passwords
- Code words
- Nick names & numbers
- Communications windows
- Channel timings
- Frequency changes
- Specialist communications equipment issue
- Attached personnel
- Emergency channel
- Batteries

MODEL BUILDING

Building a model of the site is the best way to brief members of your team about where they are going and what to do. It will help them identify and relate themselves to the ground.

Your model ideally needs to be in two separate parts

- Ground area in general
- Ground or target area in detail

When constructing your model, ensure that you use the OS map issued to that area, make a note of its sheet number.

Using the contour lines printed on the map to indicate the shape of the ground and relief, the height and shape of features.

Identify and copy all other features such as forestry blocks, buildings, streams, hedges, walls, tracks and roads.

In a military reconnaissance unit, each patrol member will carry his own small personal model making kit; this can then be collected to make one large patrol model kit if needed. Items to be included in a model kit are as follows

- Small pieces of coloured card, laminated to allow you to write on them
- Coloured strips of ribbon
- Plant pot sticks to pinpoint areas with the use of coloured cards
- Coloured chalk
- Green string and a North pointer (or a compass)

As well as this portable kit, you should always practise making your models from items found on location, for example cut turf to represent wood blocks and different sticks to create tracks and roads. There may come a time when you don't have your model kit to hand.

Model making kit

MAKING YOUR MODEL

Always start by creating a border for both models, thus keeping them separated. For this you could use logs, large rocks or anything which will stand out as a border.

Next start by digging out the soil within this border and place it to the side, dig down then flatten the base of the model pit to allow you to start creating the ground relief. Use the soil removed from the pit for this; ensure that you study the map to recreate the correct ground relief.

Once you are happy that the ground relief is correct, start thinking about adding detail, such as any forestry blocks, streams, tracks, buildings and so on. Again this can be done with your model kit, natural items or a mixture of both.

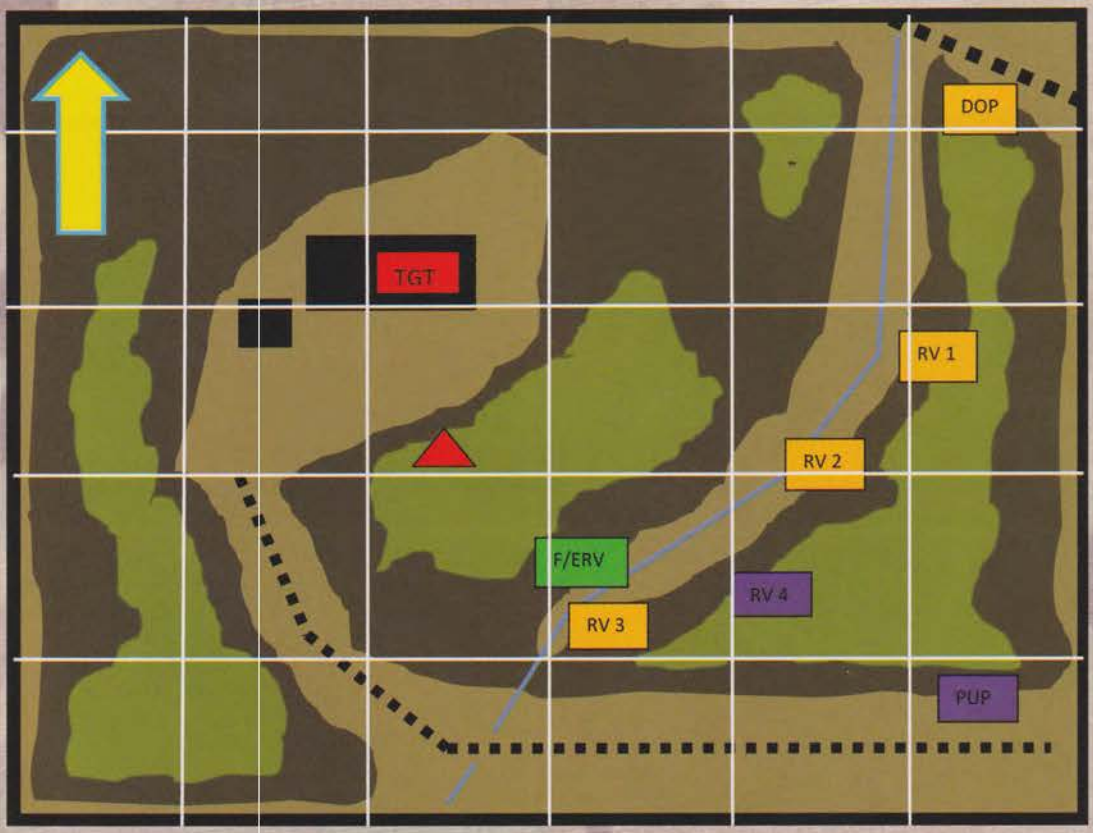
Your model should now look like a good representation of the actual ground you are planning to cover, all that remains to be positioned are your cards representing your DOP, PUP, R'V's, FRV, ERV and your hide location. Also, mark your extraction phase as this will be covered in your orders. Ensure that the target area is identified and all possible obstacles on route.

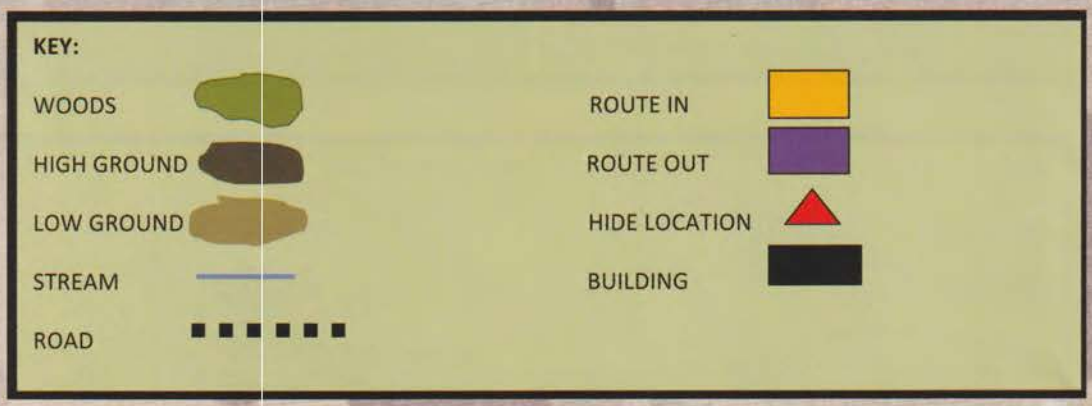
Finally finish your model by placing the grid system that relates to the map, tie string or para-cord to your border and stretch it across the model to form the grid squares. Use coloured card to mark the grid numbers (northings & eastings) and place next to the relevant cord line. Place your north pointer in a position where patrol members can see it, such as the top corner of the model. If you only have one north pointer, position it between the two models.

Soldiers receiving orders before a planned operation

Model - general

Ensure this model is made large enough to show the entire route in, from the drop off point (DOP) and your planned extraction route.

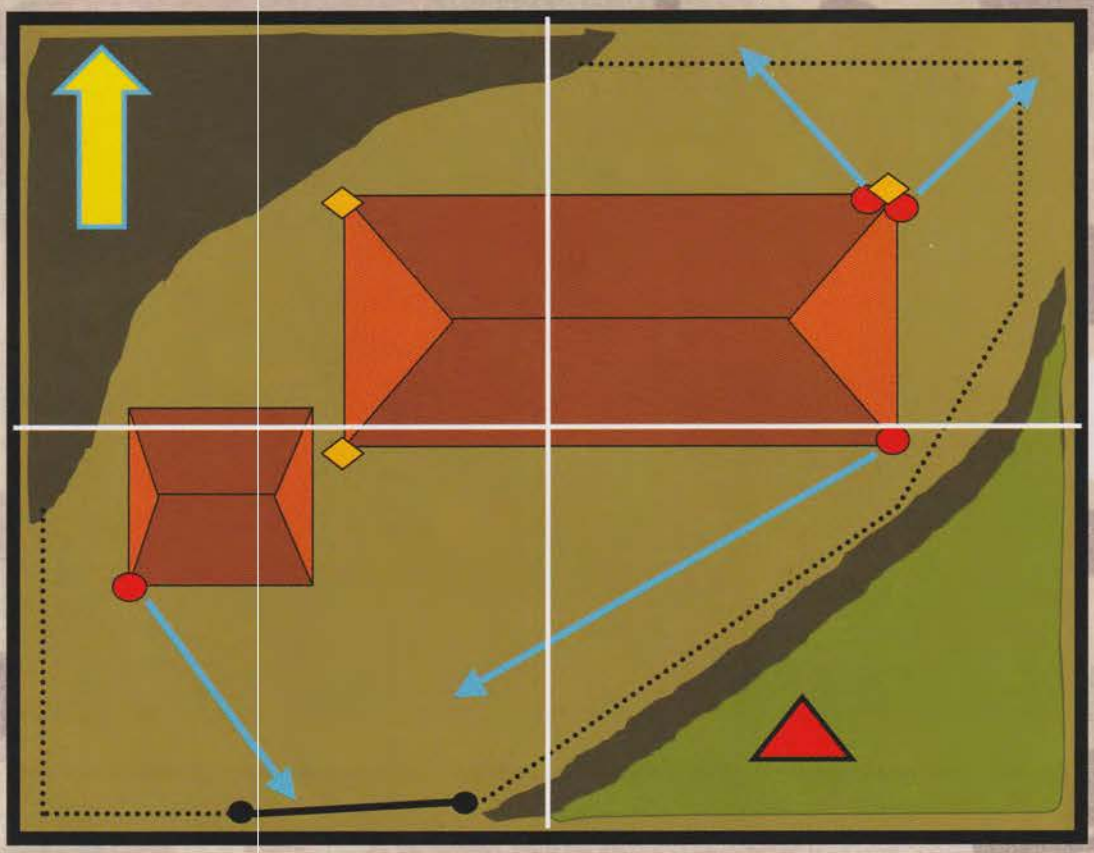


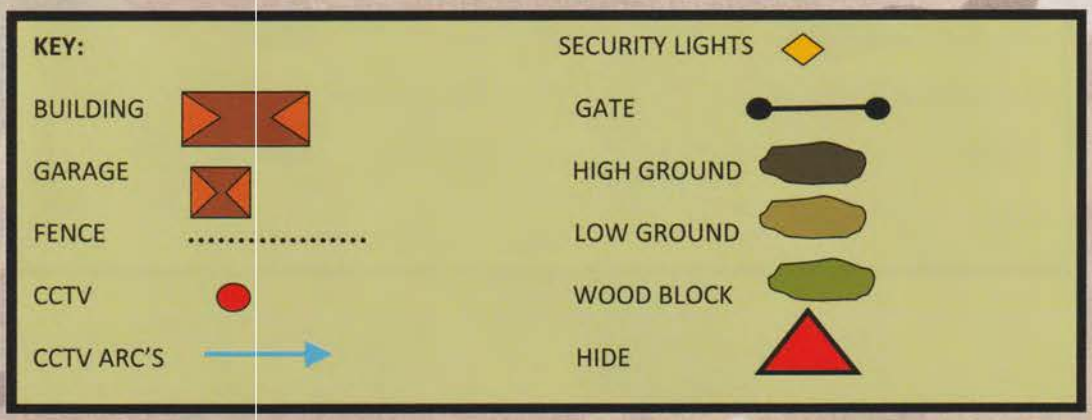


Model - detailed

Your detailed model should only include information about the actual target area, if you want to include the FRV and ERV that's fine, but only use it as a visual reference point.

On this model you must show all intelligence known or gained through an earlier CTR, such as windows and which way they face, positions of doors, security lights, CCTV and their coverage arcs.





Describing the model

As you can see the general model contains a lot of information. When describing the model, ensure the person doing so knows what everything means and is able to answer any questions.

In the photograph above you can identify the para-cord used to create the grid squares; orange card is used to mark the insertion and extraction routes. Coloured ribbon has also been used to indicate streams and tracks. The team leader in the photograph has also placed the actual map on the ground nearest to his men.

Whenever you are describing the model or running through your phases, always use a pointer. This means you can keep your distance and allows your team to see what you are describing.

Buildings

If operating from a building and carrying soil and earth indoors to construct your model is out of the question, you can always draw your map on the wall using chalk. This is a fast and effective way of delivering your orders however, you must be aware of ground sign. You have just drawn your plan of action on the wall, ensure that it is removed and washed away before setting out on the task.

CHAPTER 2

CLOTHING & EQUIPMENT

Conducting surveillance operations in the rural environment is perhaps one of the hardest disciplines to master, not only because you'll be dealing with inhospitable and isolated locations, but also with the added difficulty of the prevalent weather conditions you'll experience there.

Topics Covered

- **Personal clothing & equipment**
- **Team equipment**
- **Specialist equipment**

Conducting surveillance operations in a rural environment is one of, if not the hardest of disciplines to master. This is not only due to the isolated locations you may find yourself operating in, the weather conditions also play their part depending on the time of year.

For example, you may think that operating in the summer months is much easier, that is until you are crawling slowly towards your target area, wearing your full Ghillie suit and dragging your equipment behind you under the searing mid-day sun.

At the other end of the spectrum, located high on a windy hill top in a surface hide during February, with temperatures below zero and relentless icy rain and wind. In these conditions can be extremely uncomfortable, when you may be unable to move or consume hot food and drinks for days on end.

CHAPTER HISTORY

This chapter has been written from the author's years of real time operational experiences in such varying weather conditions. This first-hand knowledge will guide you towards the most effective way to use your equipment and which clothing you ideally need. Not what you have been told by some clothing salesperson.

I have heard two sayings over the years one is true the other totally false.

"Travel light freeze at night" - false!

"Any fool can be cold and wet" - true!

This chapter is broken down into two sections; the first covering personal clothing and equipment, the second covering team and operational equipment.

PERSONAL CLOTHING & EQUIPMENT

With personal clothing, you need to adopt what's known as the "layering" system, a technique of wearing different layers of clothing throughout your operations. Wearing a number of different layers in winter preserves your body heat by trapping the air warmed by the body between each layer of clothing. As you get warmer from physical activities such as digging, you can remove layers to cool down and prevent sweating. If items of clothing are wet with sweat, the body first has to dry the item of clothing before it is able to warm the body. The time of year will dictate how many layers you opt for, normally three to four is the maximum in winter.

Base Layer



This refers to the layer of clothing that will be next to the skin, it will be worn at all times so your base layer needs to be made from a light-weight material designed to wick away sweat from the body and disperse it through the fibres. As the material disperses the sweat this allows it to be dried by the body's heat. You can find these tops and underwear (long-johns) in all good outdoor shops; I have a number of different styles and brands, such as a long and short sleeved, in different weights with full and half-length zips on the front. The military still issue troops with a cotton thermal base layer which consists of a long sleeved top and full length long-johns. These are still very good items of clothing and can be bought cheaply in army surplus stores.

Mid Layer

This item of clothing would be made from a much thicker material and one that traps warm air from the body and if possible has a wind-stopper membrane to prevent cold air getting through. This item should be some form of fleece pullover or zip fronted, the time of year and location of operations will dictate whether you choose a light weight or a full weight item. Either way, the item must have a draw cord waist that can be pulled tight preventing warm air escaping.

Here are examples with a heavy wind-stopper fleece on the right and a very light weight pull-over top made from parachute silk. This top folds down to the size of your palm and can be kept in any pocket. In harsh winter weather it would be best to wear this item between the base layer and mid layer. This is my own silk top made from the parachutes used with 81mm mortar illuminating bombs (flares).

Outer Layer

Your outer layer must be selected to suit your environment, it should be some kind of disruptive patterned material (DPM) camouflage smock, a Barbour jacket or even a hi-visibility jacket worn during your insertion as a pretext cover.

Ensure that whichever outer layer you intend to wear, it has enough pockets to hold all of your personal items. The outer layers do not have to be waterproof however, windproof if possible and with a hood. When I conduct surveillance in an urban environment I always carry a hi-visibility jacket in the boot of my vehicle.

The Hi-Vis jacket gives you almost super hero powers by allowing you to go anywhere when used with a good cover story! A Barbour jacket is a common site around farmlands and small villages, not only are they warm and waterproof but if looked after will last a lifetime.

Outer Layer Bottoms

Trousers or combat bottoms must also suit your environment and be up to the job; jeans are a definite NO! They double in weight when wet and take a long time to dry out giving you discomfort and over time will start to rot. A pair of light-weight walking trousers will do for the insertion but again are not up to the job of a sustained operation in a rural environment.

Military issued DPM combat bottoms are ideal and come in a number of different styles; from light weight jungle issue, which dry out in no time to the heavier weight style with reinforced knees and backside panels.

Most military issue clothing these days is made from a 'rip-stop' material; a reinforced thread is weaved into small squares within the fabric, if you do catch them on a barbed wire fence, they only rip within that small square.

Outer Layer Bottoms

Shown below from left to right are a number of different styles of combat bottoms, light weight jungle issue, the latest multi-cam design with reinforced backside panel and pockets for knee pads. Finally a set of combat bottoms, which have had Ghillie material attached to the rear.

Shell Layers

This is the final stage to the layering system, only to be worn in bad weather conditions. This layer must offer 100% protection from the rain, made from materials such as Gore-tex. This is not only waterproof but also allows the body to breathe preventing sweating; Gore-tex can be very expensive but is an essential item of personal kit when operating in a rural environment.

I use the military issue Gore-tex suit, which comprises of a zip-fronted jacket with breast pockets and a hood, the trousers have a draw cord waist and elasticated bottoms; these suits can vary in price but are a must-have item.

Extreme cold weather layers

These layers are designed to be worn in extreme cold weather environments. Perhaps you are going to be static, below ground in a sub-surface hide or operating from some form of building. Either way, after a period of time you will become a casualty of the conditions if your body is not correctly insulated.

There are two types of filler, both of which have excellent insulating properties; these are natural duck down feathers or man made hollow fibre. Both have their pros and cons...

Down (feathers) is extremely warm, very light weight, can pack down into very small bags making it ideal when you have very little room for comforts in your Bergen. The bad side of down is that when it gets wet, it becomes heavy and the feathers tend to stick together causing the jacket to lose its warming properties.

Hollow fibre is also very warm but it can be a lot heavier and far more bulky, thus taking up more room in your Bergen. The up side is that when wet, the water is absorbed into the hollow fibre where it will dry more quickly and helps preserve the warming properties of the jacket.

It is important when choosing your specialist layer that you do not buy a cheap product, North Face and Rab make excellent jackets, I own one of each. If you are looking at the hollow fibre type, then 'Snugpac' is a well recognised brand; the Snugpac Sasquatch is a heavy-weight jacket that comes with a hood and is also highly recommended. Snugpac also offer trousers with the same hollow fibre insulation and with full-length leg zips, making them easy to put on. Some have reinforced knee panels which are ideal when operating from hides, a 'must have' item of clothing.

Hide Suit

This is by far the best item of personal clothing the operative can own, the suit is made with a soft cotton lining, hollow fibre filler and a Gore-tex outer shell. It has a wired hood and pockets positioned around the suit, which work well in the cramped environment of a hide.

With this item of clothing there is no need to carry sleeping bags or even take a bivi bag into your hide. The down side is that it's very heavy and will take up a lot of space in your Bergen, if you do purchase an item like this, pack it in a compression sack as you would a sleeping bag. These suits are very hard to come by and are very expensive, but worth every penny if you can find one.

SPECIALIST CAMOUFLAGE LAYERS

Here we explore the role of camouflage outer layers that match your surroundings, such as snow, desert, moorland or woodland. Surveillance is conducted all year round so a good operator will plan for all weather conditions and seasons. It may be that you are going to be operating in an environment where it is necessary to improvise. Create your own camouflage suit that blends in with your surroundings, this is easily achieved by spray painting, printing or dyeing a plain garment to the required design and colour shades.

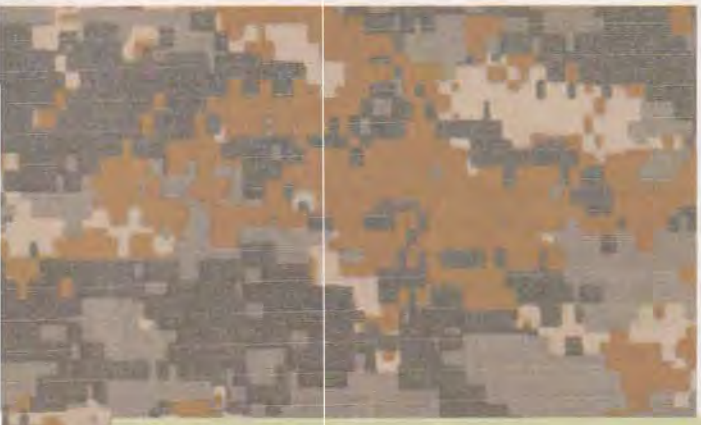
Snow

Reversible snow suits, designed to be worn in both open ground where the suit is all white, or in wooded areas where the suit has stencilled patches of green to create depth as pictured below. The suits comprise a hooded jacket with draw cords and pockets and the trousers have an oversized waistline with draw cord and over-the-shoulder braces, which button up at the front.

Desert

The main thing to remember about the desert is that it changes colour throughout the day, at sunrise and sun set the desert can look almost pink in colour hence the reason the SAS painted their Land Rover vehicles pink, nicknaming them Pink Panthers. In the middle of the day the desert is made up of mainly yellows, browns and white. In areas such as the highlands of Afghanistan where there are large quantities of rocks and stones, the ground becomes a mix of blues, greys with some light browns. The U.S. Military has taken this on-board when you look at their combat uniforms.

The British issue desert uniform works well in daylight hours however, it is worth noting that at night in open desert, this uniform will almost glow in the dark highlighting your movements. This is of course no good, when conducting covert operations.



The US desert digi-cam uniform

True Accounts

When I was serving in the military, conducting surveillance in the desert at night, I would ensure that my team were dressed in woodland green DPM clothing and had camouflage cream on their hands and faces to reduce their outline. Sometimes we would be in a static position for a number of days; our extraction would be arranged for a day time pick-up. This meant extracting from our location with the general population in the streets going about their daily business. The look on some of their faces as 6 armed men in green camouflaged uniforms with blackened faces emerged from a building or waste ground was unforgettable.

The new multi-terrain pattern (MTP) now in general service

Woodland & Jungle

Most rural surveillance is conducted from tree lines, ditches and hedgerows with the exception being the use of buildings however, even then the insertion to these buildings will often be via the above areas. There is no set rule to which camouflage pattern you use as each is designed for one purpose, to distort the solid shape of the person wearing it. Admittedly some patterns are better than others, due to the colours that are used and the quality of the material they are made from. The old British Military 'Combat 95' as it is known, is very light weight but tends to rip and wears out very quickly in the knee, backside and crotch areas. You can buy aftermarket combat trouser that are better made and will last much longer, these come with reinforced areas and lots more pockets.

When it comes to camouflage smocks, I will always go for the SAS windproof smock as they are light weight, windproof, have a large wired hood and dry very quickly.

Civilian Camouflage Pattern

A new style of civilian camouflage clothing has become very popular with hunters and country sportsmen. This printed design of tree bark and leaves has been proven to work very well in the rural environment. Available in trousers, jackets, gloves, hats, boots and even complete waterproof outfits and Ghillie suits. I have spoken to a number of operators who use this clothing and have said that they would not go back to wearing military issued clothing again.

KIT TIP

A good idea for your rural day sack is to obtain a set of DPM mechanic's one piece overalls, a size larger than normal. If you have to bail out of your vehicle and go into rural operations you can slip the overalls on top of your civilian clothes.

Jungle Environment

When the British Military operate in the jungle, they use a method known as the 'dry and wet' routine; this consists of each operator carrying two full sets of clothing. Because of the humidity in the jungle you are constantly wet; in time this will start decaying the body (fungal infections) and causing your clothing to rot. The first set of clothing will be worn all day every day, only getting washed when rivers are crossed. The second set of clothing is kept in a waterproof dry bag and only worn to sleep in, the wet kit is then either hung to air and dry or packed away in a second bag depending on the tactical situation. This dry kit will allow the body to breathe overnight giving the skin a chance to recover; as soon as the operator wakes up he puts his wet kit back on; the dry kit gets repacked into the waterproof bag.

Protecting the Extremities

The most important parts of the body are the feet, hands and head (brain). Without the use of your feet you will not be able to insert or more importantly extract. If your hands are too cold to operate your equipment efficiently, you will fail in your task. The body loses the majority of its heat through the head, the colder your body gets the less alert you become which in turn has a knock-on effect to your mission.

Socks

To fully protect your feet you need to carefully choose your socks and boots. In extreme weather conditions the feet can benefit from the layering system in the same way as the body can. Starting with a thin walking sock (liner) which is designed to wick away the sweat, then a medium loop stitched sock and finally a thick loop stitch sock. The loop-stitched sock is designed to trap warm air around the feet. In extremely hot environments a light to medium walking sock is all that is needed, these will give comfort and wick away the sweat. The British Military now issue one of the best hot weather socks I have seen in a long time.

Gore-tex Socks

These are to be used when your boots and socks have become saturated, such as crossing a river where the water has come over the tops of your boots. They come in different lengths such as low and high cuts, these are a must have item of personal kit. Once your feet have been dried and a fresh pair of socks put on, the Gore-tex socks can be worn over the top as a barrier, over time your feet will warm up and start to dry out the insides of your boots.

KIT TIP

Always keep a pair of normal socks, and your Gore-tex socks sealed together in a waterproof dry bag. After a week of wet feet, nothing lifts morale more than a clean dry pair of socks.

Boots

There are hundreds of different styles and makes of boot on today's market, all with fancy names and labels telling you they do this and they do that. The bottom line is you need a pair of boots that offer good ankle support, a good grip and will not fall apart after the first river you cross. Civilian boots are graded by seasons; a two season boot will be suitable in the summer months and will cope with light rain, whereas a four season boot will be very rigid but will withstand the harshest of weather. Their construction is also something to be carefully considered; boots with an all leather construction will only be waterproof to a certain degree, but once wet they will dry out a lot quicker than boots with a waterproof membrane such as Gore-tex; once wet they will stay wet unless dried out properly over time. Membrane boots will keep your feet completely dry until the water seeps in over the top.

Jungle boots are made of a leather lower section and a canvas upper, water drainage holes are located in the arch of the boot, these boots are excellent in hot weather environments but offer very little ankle support. The rubber sole has a steel shank running through the length to protect against sharp thorns and booby traps.

Gaiters

These are designed to be worn over the top of your boots, the idea being to act as an extra waterproof layer. They also keep the lower part of your trousers dry when patrolling through long wet grass. With a number of different designs on the market, one style hooks to the bottom bootlace, has a strap which wraps around the underside of the instep before been fastened. The pair pictured here are known as 'Yeti' gaiters; these have a strong rubber band around the bottom which is stretched around the sole of the boot, totally encasing it from the elements. Both types will cover to knee height.

GLOVES & MITTENS

Protecting the hands and more importantly the fingers, is a priority for any surveillance operator, losing the use of your hands and fingers will render the operator unable to function. With the range of products available on the market today, there is no reason why any operator should go down with cold injuries to the hands. If this happens, simple negligence will be the reason. There are many designs of glove made from many different materials, so choosing the right pair is critical.

Gore-tex gloves

These are completely waterproof but unless thermal lined they will not keep your hands or fingers warm. The British military issue gloves are very good; they have a leather outer, a Gore-tex membrane and thermal lining. The only down side is that they can be too bulky when operating the shutter release on your camera.

Neoprene gloves

Barbour make a set of neoprene shooting gloves, they have a small slit in the index finger allowing the tip to be pull back, this fingertip is then held back in place with Velcro. When wet the neoprene retains the heat in the same way as a diver's wet suit. I have seen many operators wearing these gloves but personally, I found that you lost all sense of touch in them.

Cotton gloves

The British Military issue 'contact' glove as they are called, are made of thin but tightly woven cotton with small rubber dots on the palms for grip. These are an excellent pair of gloves and I still use them today. Lightweight, quick drying and giving the operator a great sense of touch.

Mittens

More commonly used in extreme weather conditions as they are designed to keep all the fingers together increasing the body's own warming properties, of course the thumb is separated to aid with grip. The British military have designed an excellent pair of arctic mittens, which also have a separate index finger (trigger) should it be needed; this additional finger can also be used to operate equipment such as optics and cameras. They have a leather palm to aid with grip, thermal insulation and come with a separate Gore-tex outer mitten.

HEAD WEAR

It is said that the body loses approximately 45% of its heat through the head if not covered in extremely low temperatures. In an extremely hot environment, lack of head wear will contribute to a person becoming ill with a heat-related injury if left uncovered and not protected from the sun.

In hot sunny environments consider wearing a lightweight jungle hat, which has been designed for purpose with air vents around the side to allow your head to breath and a large brim to protect the face and neck from the sun. This brim can at times be too big and interfere with your vision, so an option is to cut it down.

Baseball caps can have a place in surveillance; they can be worn under the hood of a Ghillie suit preventing the hood from slipping down over the face when observing through optics. Baseball caps that have a 3D leaf design attached to aid concealment are available and these make excellent Ghillie headgear, adding depth and shadow to your face.

When the temperature drops below zero, you need to wear something which is waterproof and well insulated. I use a triple shell, Lowe Alpine hat that has fold down ear panels and a front peak. The outer shell is made of waterproof Gore-tex with an insulated inner and a fleece lining.

GHILLIE SUITS

The Ghillie suit was first worn by Scottish game keepers (called Ghillies) in the Highlands as a means of concealing themselves. This method is still used today by military snipers and covert surveillance teams who soon took on the idea of creating their own suits. By cutting hessian sandbags into strips and separating individual strands, they were then attached to smocks and trousers. Once attached, the clothing would then be soaked and dropped into a hole dug in the ground, filled over and left to weather and mat together, thus making the suits look more natural.

The use of coloured spray paints matching the local environment, added to the overall blending-in effect. For example, dark and light greens in the summer, light and dark browns for the winter.

Today's Ghillie suits have come a long way since these early versions and can now be purchased in a number of different materials, some are still made from cloth strips but most are made from man made fabric similar to military camouflage nets, they work very well to break up a person's outline. These modern suits are a lot lighter and cooler to wear than the old style, which when wet could double in weight, and in the summer would become unbearably hot. Having said that, I still use a Ghillie suit made of hessian strips, unlike the old style where the strips were attached to a set of clothing, these are attached to a hooded mesh waistcoat. You can find these new styles of Ghillie suits advertised in shooting and hunting magazines.

When a Ghillie suit is well prepared and time has been taken, you can use it as a standalone surface hide. By attaching elastic loops you can also add natural foliage to the suit, which will only further aid your concealment.

Close up look at a hessian Ghillie suit

The reason for spending so much time over the Ghillie suit, is because it is your best means of personal camouflage and self concealment. It will also keep you alive in a hostile environment.

Point to Note

You must remember that the Ghillie suit, when used correctly will offer great concealment to the naked eye and in most cases through night vision equipment. However, they offer no concealment against thermal imaging equipment.

TIC suit

This is an item of clothing similar to the Ghillie suit but with anti-thermal qualities. The suit comprises of trousers with over-booted ends, a hooded smock with a full face veil and gloves. The outer layer of the suit is designed and stitched in small square sections which hang loosely from the suit; the inner layer is made from a thin evaporated aluminium material (similar to that of a thermal blanket given to athletes after completing a long distance running event). The aluminium on the tick suit comprises of thousands of small holes which slowly filter away the body's heat. This heat source is so small that it is almost impossible to identify through a thermal imaging sight at close ranges.

PERSONAL EQUIPMENT

List of personal kit & equipment packed in your bergen rucksack.

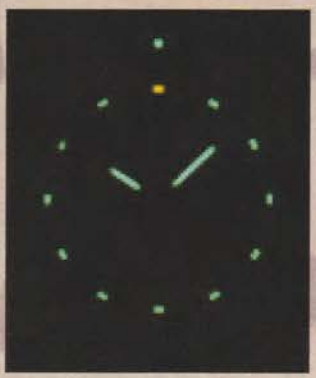
All equipment must be sealed in waterproof re-sealable canoe sacks.

- Sleeping bag or hide suit
- Bivi bag (optional)
- Roll sleeping mat
- Poncho with cord attached
- Warm kit (jacket & trousers)
- Ghillie suit (complete)
- Hat & gloves for inside the hide
- Gore-tex suit and socks
- Spare socks & foot powder in waterproof bag
- Small wash kit (task dependent)
- Water & rations to last till resupply
- Gas cooker, pot or metal mug to boil water in and a spoon
- 2 x disposable lighters
- 50 meters of thin para-cord on a fishing reel
- 10 x tent pegs
- Hide folder & log books
- Hide construction poles
- Cyalume light sticks (2 x blue, red, green and IR)
- 10 x sand bags

CARRIED BY EACH OPERATOR

Waterproofed and attached to clothing by cord and carabiner

- Mapping, air photographs and route card
- Compass and GPS
- Glow in the dark watch - 'Traser'
- Commander's cards & pencils
- Pacing beads or clicker
- Head torch with coloured filters & spare batteries
- Small knife
- Camouflage cream
- Personal role radio system with semi covert ear piece



TEAM EQUIPMENT

This equipment will be distributed between operators

- Patrol's medical pack (more than one if team is to split)
- 2 x ground sheets
- Large reel of green garden string
- 1 x large saw with wood and metal hacksaw blades
- 2 x small folding wood saws
- 2 x garden secateurs
- Camouflage nets (1 between 2) & thermal sheets
- Ghillie blanket
- Blind frame and poles
- Roof and door sections
- Digging tools (short handled tools that are easy to carry)
- Drops, pins and bull dog clips
- Waste bottle and bags for hygiene

OPERATIONAL EQUIPMENT

To be carried in a smaller day sack (grab bag)

- Covert wireless / hard wired camera systems
- Covert listening devices & recorders
- Technical motion detectors & ground sensors
- Still / video cameras and spare batteries
- Visual optics and spare batteries
- Tripods (small, medium, large) one of each
- Team's signal equipment complete with batteries
- Spare video tapes and SD cards
- Emergency flares

HOSTILE ENVIRONMENTS

- Ammunition for all weapon systems
- Signal and screening smoke grenades
- Clayrnore mines & other defences
- Helmet body armour and Kevlar hide blankets

SPECIALIST EQUIPMENT

- Ropes and other climbing gear (river crossings)
- Small chain saws
- Helicopter marker panels
- Anything else that is task related

After covering the kit and equipment list for operating in the rural environment, you can now see how your Bergen is going to weigh around 120lbs. If operating in a hostile environment this weight will increase further with ammunition, weapon systems and body armour.

As a rural surveillance operator your fitness is very important, if you are mentally or physically weak you will struggle to carry the weight of your equipment over long-distant insertions. Your body will start to weaken quickly in cold and wet environments and you will suffer with body pains and muscle cramps in the confined conditions of a sub-surface hide.

BREAKING DOWN THE LIST

This list has covered the basic items of kit and equipment required for rural operations, next is to break down the items individually and cover them in more depth to enable you to...

- Achieve the best results from your equipment
- Prepare equipment before deploying into the field
- Pack your Bergen the right way

Sleeping bag

If operating from a static location such as sub-surface hide, sleeping bags should be taken if operators do not have the option of hide suits. The thickness and quantity of the sleeping bags will be dictated by the time of year and size of team, if operating in the summer months then thin light weight sleeping bags will do, for winter months the sleeping bags must be thicker to offer greater warmth.

KIT TIP

Work with one bag between two operators, this way you can use a system known as "hot bagging"; this is where the operators rotate in and out of the sleeping bag so that it never gets cold and you minimise on equipment.

Bivi bag

The standard military bivi bag is made from Gore-tex, designed to be placed over your sleeping bag keeping it dry in bad weather conditions; this is always a good item of kit to carry as it can be used as a light weight waterproof layer if needed. Combining both sleeping bag and bivi bag makes an excellent sleeping system. However, don't consider using a bivi bag inside a sub-surface hide as they make a lot of noise and in cramped conditions are not the easiest things to get in and out of. Some bivi bags have a zip down one side to make getting in and out easier however, remember that if the zip is covered by a Velcro flap it will be very noisy to open.

Pictured is a sleeping bag combined with the bivi bag.

Sleeping roll mat

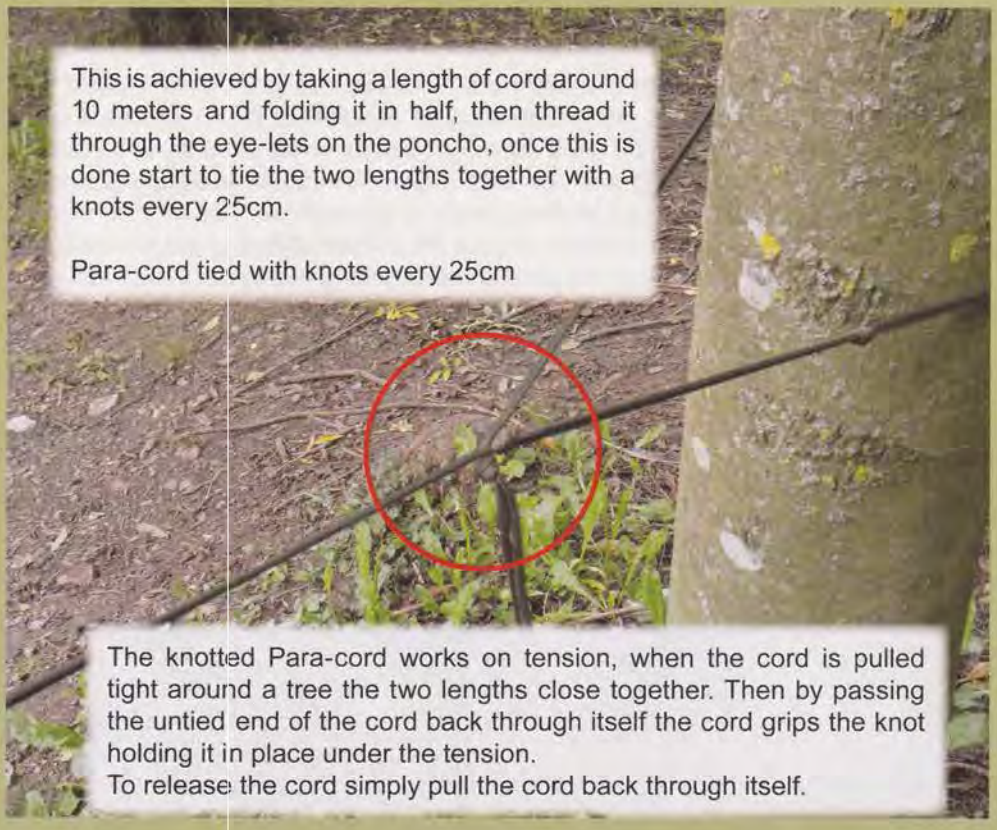
The idea of the roll mat is to be placed between the ground and your sleeping system to insulate the body from the cold as you sleep; there are two styles of roll mat

- Foam, which is more durable but bulky in size, some soldiers cut them down so that they roll up smaller and are easier to carry. The down side is that only a small percentage of the body is insulated from the ground.

- Inflatable rolls, which are a lot lighter and pack down much smaller, making them an excellent kit item. However, if punctured you will be forever repairing it.

Poncho with cord

The poncho is a large waterproofed sheet that can be made into a number of different style of shelters. There are many styles available but the ones used by the British military is by far the best on the market. Available in woodland, desert and multi-terrain DPM, they have a number of large eyelets which allow you to hang the poncho from trees to make your shelter. In the surveillance role, you are more likely to peg them down across your hide making the roof waterproof. Many people use bungee cords to hang them up (a bungee cord is an elastic cord that has a metal hook at each end) these are OK for a weekend camping trip but not in this line of work, instead use knotted para-cord at each corner and ridge sections, tied with quick release knots.



This is achieved by taking a length of cord around 10 meters and folding it in half, then thread it through the eye-lets on the poncho, once this is done start to tie the two lengths together with a knots every 25cm.

Para-cord tied with knots every 25cm

The knotted Para-cord works on tension, when the cord is pulled tight around a tree the two lengths close together. Then by passing the untied end of the cord back through itself the cord grips the knot holding it in place under the tension.
To release the cord simply pull the cord back through itself.

Wash kit

Your personal wash kit should be very basic and in truth is rarely used on a job. Fresh smelling odours will travel and may catch the attention of unwanted third parties. If you are going to carry a wash kit include the following items in a waterproof container.

- Cut down toothbrush and travel-size paste
- Small pack of baby wipes (unscented)
- Medicated foot powder

Foot powder needs to be emptied into a large reinforced plastic bag large enough to fit your foot, this way all the powder is contained in the bag and will not be spread all over the ground leaving ground sign. The powder can also be for use under armpits and crotch areas.

Water & rations

Every operator that deploys into the field must carry enough water to last them until a resupply can take place. If this is not going to happen for a long period or you are operating in an extremely hot environment such as the jungle, where resupply may not be an option, ensure you carry water purification tablets, a Milbank Bag or other filtration system.

KIT TIP

It's a good idea to waterproof a strip of tablets and tape them to your water bottles, this way you will always have some to hand in an emergency.

It's also a good idea to carry larger water containers that can be flattened out when empty, available from camping/ caravanning outlets. This will cut down on water resupply when operating in environments like the jungle, thus reducing movement, the risk of ground sign and compromise.

Rations

Rations should be considered in the same way, ensure each man is carrying enough food to last until a resupply can take place. The type of rations taken must be edible cold, if you will be able to warm your food, the military "boil-in-the-bag" style are best. You can also buy equivalent civilian versions, which are very good but tend to be expensive.

Cooking equipment

You may not always be on hard routine (unable to cook hot food or drinks), so carrying the means to make hot food and drinks is a must. Not only is this essential for morale but with a hot meal inside you, you'll find that lost strength and concentration will return. However, this doesn't mean you carry a complete field kitchen, think about weight and size. Nowadays you can buy some fantastic outdoor cooking systems that are very light weight and compact, especially the expedition type.

When choosing your cooker opt for gas, this will produce less odour and will not blacken your pan with soot like the solid fuel cookers do. They are a lot cleaner to use and are much smaller.

The old military issue '58' pattern metal mugs are excellent for cooking with, add drinking powder straight to the boiled water. Another option is to find a cooking pot that is the right size to fit the gas canister and cooker, such as the one I use pictured here.

Spoon

You may think a spoon is a spoon and you would be correct however, in the field where you have no resources to wash items, never use a wooden spoon as bacteria will embed itself in the grain and may cause illness such as gastroenteritis. A plastic spoon may break, so the best option is a metal spoon. I have seen operators attach their spoons to their clothing with a length of cord so not to lose it; in my opinion this is not hygienic. Once clean, store it in a bag and keep it with the rest of your cooking equipment.

Cigarette lighters

Always carry two or more and ensure that one or both are packed with your cooking equipment, it is important that they are waterproofed as a wet lighter will not work. Do not use a Zippo lighter as they will produce odour, they will also not last as long as two disposable lighters. The flints often outlast the fuel in disposable lighters, retain them to light a bit of cotton wool in emergencies.

Tent pegs

Use the pegs to hold down ponchos and thermal sheets which form the roof of your hide. Small door wedges can also be used in rocky areas and outcrops.

Hide folder

This is covered in chapter 7, Logging and Reporting.

Cyalume lightsticks

These are small plastic tubes about 15cm long, containing two chemicals that when mixed produce a light source. This reaction happens by bending the Cyalume until you hear the internal glass vial crack, then shake the Cyalume to mix the chemicals together, which allows the chemical reaction to take place and produce light.

Each man should carry a number of different coloured Cyalume sticks available in green, blue, red and infrared, which are used for a number of different situations. Blue is used at night for tactical light when digging your hide, red can be used in your hide when logging and reporting at night.

KIT TIP

Leave the Cyalume Stick in the wrapper, crack the stick and shake, then make a small cut in the wrapper, this will allow you to limit the amount of light given off.

Infrared Cyalumes can be used to covertly mark areas on the ground and identify friendly forces when in an operational environment. Infrared Cyalumes are invisible to the naked eye and can only be seen through night vision aids. A military reconnaissance unit will use Infrared Cyalumes to mark forming-up points on the ground and launching areas for fighting troops known as a NATO 'T' or line of departure.

When operating in built-up areas or buildings, Cyalume sticks can be used to mark entry and exit points of buildings, also to mark areas which may need special attention from engineers and are not to be entered.

Hide poles

These should be carried by each member of the patrol and are used to erect the hide's roof or to aid in supporting camouflage nets. The poles I use break down into smaller sections with elastic threaded through the middle, they have good flexibility that allows them to be bent into the shape of the ground.

KIT TIP

I asked the owner of a local camping outlet if he had any poles of this sort from tents which had been damaged and returned. The poles came in very bright colours, so I wrapped them in green cloth tape and spray painted them so they blend into their surroundings. I carry two large lengths, two medium lengths and a number of single elements.

Sand bags

Each operator should carry a minimum of ten sand bags in their Bergen; these are to be used in the construction phase of the hide if you have to dig away soil. Once they have been used the soil must be emptied and the sand bag taken with you. Never leave them behind even if they are ripped.

PERSONAL KIT CARRIED BY THE OPERATOR

The following information is to be used as a reference to an operator's own kit and equipment. This list is not set in stone and should be used as a guideline as in time you will come to know what kit you require.

Mapping, air photography and route card

These items are classed as sensitive documents and need to be kept safe, clean, dry and out of sight of unwanted eyes at all times, whether used in the planning stage or more importantly when deployed on the ground. In a tactical environment, these documents may require destroying if there's the possibility they could get into the hands of the enemy. Even in a private surveillance role, I have heard of the Target compromising his observers due to one of them leaving sensitive information about the intended target on the front seat of their car! To this end, take care of paperwork and only carry the minimum on the ground. Soldiers will often strap sensitive documents to a phosphorous grenade in the event of compromise.

Compass

This is one of the most important items to any rural surveillance operator, the compass and its uses are covered fully in the chapter on navigation. As a personal item, it should be kept in a protective foam case and attached to the operator by cord, either around the neck or inside the breast pocket of their smock.

Global Positioning System (GPS)

The use of a GPS is both a good and bad thing, some operators have become lazy and rely on their GPS to get them from A to B, plotting their entire insertion route into the GPS. Then simply holding it out in front of them and walking in the direction it tells them to go. By doing this they are forgetting the basic skills of how to use a map and compass.

Garmin 201 with wrist strap

Personally, I think a GPS should be used for a confidence check of a grid reference or for gaining an accurate grid reference of a location and, if you are unsure of your location and need to accurately locate your position. GPS equipment comes in all different sizes, prices and with many versions of software. The pictures below show two simple but effective GPS systems both priced at around £100.

Garmin Geko 101

Pacing beads & clicker

These are used to help with estimating the distance that you have walked and their use is detailed in the chapter on navigation.

Commander's cards

These are small A6 size laminated cards that contain information which the commander may need to hand at any time, these cards are as follows...

- Personal details of persons in the team
- Details and serial numbers of individual's kit and equipment
- Client's brief and subject related information
- Casualty evacuation card
- Serious incident report
- Sighting report
- If hostile, initial contact report and full contact report
- Shot report
- Code sheets and passwords
- GLAD report - Initial location report, covered in Chapter 8 - Hides.
- Guide brief
- CTR requirements & options

All these cards must be matt laminated so they can be overwritten in pencil.

Head torch

Easily one of the best items of kit invented, giving you light and keeping both hands free to continue with the job, brilliant! They come in many different makes, sizes and styles. Some are powered with AA, AAA or even watch batteries such as the one pictured. The other torch shown is very small but has powerful white LED's that have a number of brightness settings, a red LED with brightness settings and a flash mode for emergencies. The larger torch is powered by 3 x AAA batteries; this also has a number of brightness settings and a flashing mode. It has the capability to use coloured filters to be fitted in front of the white LED's to suit the tactical situation you are operating in.

KIT TIP

It's a good idea to weather proof spare batteries and attach them to the torch's strap.

Knife

When talking about a knife, I don't mean one which has a 15 inch cutting blade on one side and a saw on the other like Rambo had in the movies! In this role you will only need a small fold away blade such as a locking knife, Swiss Army knife with a number of tool options or the new style of multi- tool. Remember that in the UK it is illegal to carry a knife for any other reason than what it is intended for, such as camping and outdoor pursuits. If operating in a jungle environment you would be justified carrying a machete, the single bladed knife in the picture has a locking blade, which for safety, will not close on you until the release mechanism is operated.

Camouflage cream

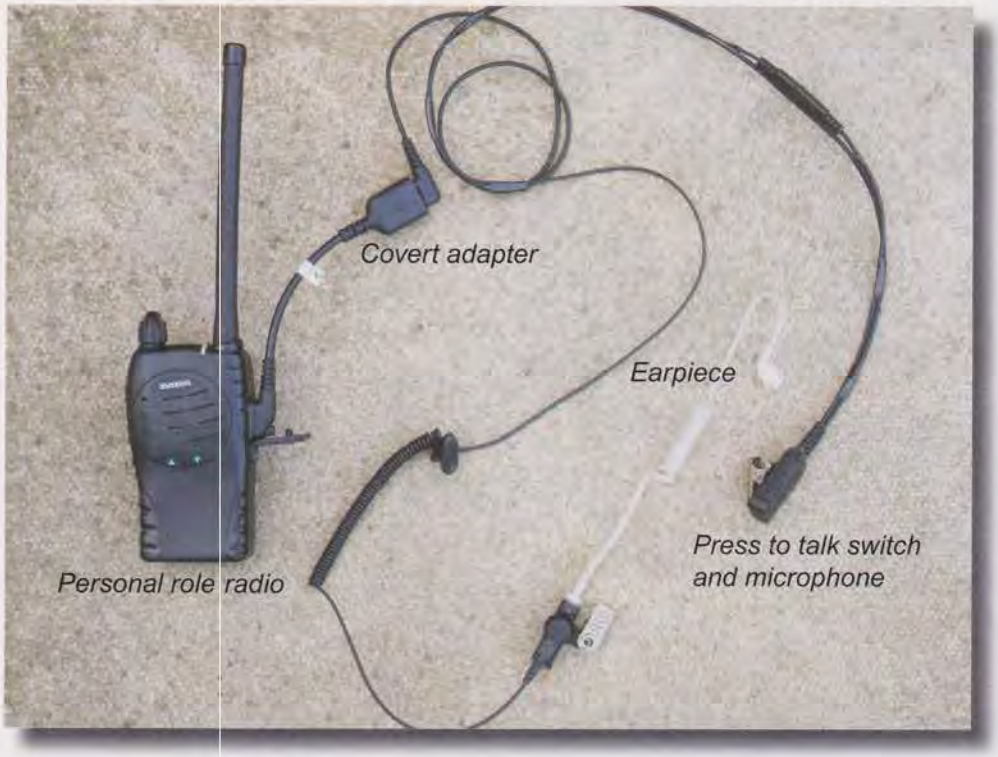
This personal item should be kept in every operator's pocket and be applied to the face, hands and behind the neck as and when required. It comes in many forms from tubes of single to multiple colours and compact cases similar to women's make-up kits. These compact case versions also have a small mirror fitted to the inside of the lid, to help when applying.

Personal role radio

This is a means of communication between operators within a patrol, there may be times when you need to pass a message to another and to talk normally would compromise the patrol. These are an excellent means of covert communications when conducting close target reconnaissance. There are many types of personal role radios on the market, everything from the cheap two way single channel to the more professional multi-channel radio sets. Remember that these radios are going to be used in harsh environments and often for days at a time, so I would always opt for the professional style for confidence and reliability.

TEAM KIT & EQUIPMENT

This section covers the minimum amount of equipment that any rural surveillance team should carry. It is not a list that is set in stone but a guideline to what has been proven to work on live operations in the past. The number of operators working in the team will dictate how it is distributed. The down side to having a small team is that this same equipment is carried by less operatives making each man's Bergen heavier. When splitting down the equipment try to make the weight as even as possible, especially if one member is carrying a heavy radio.



TEAM MEDICAL PACKS

These should be carried by the dedicated team medic, although every member of a rural surveillance team should be trained in basic first aid or have completed a patrol medic's course. First aid and pre-hospital trauma care is a massive subject, and one that is not covered in this manual. However, this section will cover the kind of medical equipment that should be carried and the different styles of medical bags which have been operationally proven for the job.

The operational environment will dictate what should be packed in your kit and how many you take. For example, in a hostile environment on today's battlefields, every man will carry his own personal trauma kit.

Team medic's kit

The medical kit shown on the left is carried in a specially designed grab bag to be worn over the shoulder, I'm trained to be the team medic and this is my own patrol kit that has been packed for operations in hostile urban environments.

It unravels from the small grab bag into a full laid out medical kit, the first picture shows the bag closed with "tuff cut" scissors ready to remove clothing and personal equipment to get to the wound. By unclipping the side and opening it out you would find battle dressings, tourniquets, quick clot gauze, and tape in the mesh pockets. With chest seals and burn packs in the clear plastic pocket.

When the pack is opened out fully, you find the rest of the medical equipment held in place by elastic loops. Such as: nasal airways, "J" tubes, chest decompression kits, different sized cannulas, fluid-giving set such as Hartman's solution and a stethoscope.

Personal trauma kit

Above is my personal trauma kit which I made from an old ammunition bandolier, it has been on operations with me for many years and still goes with me today. It contains 3 x US field dressings, 2 x quick-clot gauze, 2 x tourniquets, 3 x HemCon sponges, 2 x field bandages, gloves, nasal air way, 16 gauge cannular and tape.

Patrol team's trauma kit

The British military issue medical pack is designed to be zipped onto the side of your Bergen shown below; it's packed with similar equipment as the grab bag.

Here you can see the medical pouch attached to the Bergen, this is via two strong zips on each side and four small quick release clips located top and bottom. This picture shows how the medical contents are stored, the front flap has a number of elastic loops for holding equipment, there's a large clean plastic pocket for smaller items and the main compartment holds the battle dressings, burns packs etc.

KIT TIP

One thing to note with all medical equipment is that it has a "best before" date, ensure you check the contents of your medical kit regularly.

Ground sheet
This needs to be a good heavy weight waterproof sheet in green or brown, positioned on the hide floor to help protect your kit and equipment from any wet patches, the cold and damp ground and even dust.

Green string
Best to use green garden string as it has a waxy covering and is a lot stronger than most others. Ensure you carry at least one large ball of string, this will be used when constructing the roof supports of your hide.

Large saw
Ensure the team is carrying a large bow saw with both wood and metal blades. If you have to set up a hide in a building you may need to cut through thick wooden joists between levels. Also you never know when you're going to come across a metal chain, padlock or nail that prevents you from achieving your goal, with the metal blade fitted you can get through it.

Folding saw
Every man in the team should carry a folding saw. Used to cut down small trees and large branches when making the roof beams on your hide, when in the dark attach a length of cord to the handle and wrap it around your wrist, this way if you drop it you won't spend all night looking for it. The saw needs to be packed in the top flap of your Bergen.

Secateur garden snips
These too are carried by every man and used to create bush hides, surface hides and to cut away foliage which is to be added to your hide; as with the saw, attach a length of cord and pack the snips in the top flap of your Bergen.

Camouflage nets & thermal sheets

Over the years camouflage nets have changed many times. Starting with the very old style of string net and coloured strips of hessian woven between the strings. Today's nets are made from a strong nylon type mesh, with lots of small coloured nylon squares cut in such a way that they look almost three dimensional.

This design enables the camouflage net to disrupt large flat areas of the surface. The nets are also reversible to suit the time of year you are operating in, with light greens on one side and dark green and brown on the other. The British military nets are made with a thermal quality, which helps to conceal whatever is being covered although heat signature can still escape. To help prevent this, combine with a thermal sheet designed to stop thermal signature from escaping through the netting.

A personal camouflage net is approximately 2 meters square, larger nets can be carried if required. Whichever environment you find yourself operating in, there will be a camouflage net designed to suit your environment. Thermal sheets come in small packs which contain ground pegs, nylon cord and the thermal sheet itself. Pictured here

Ghillie blankets

A Ghillie blanket is a cross between a standard camouflage net and an extremely large Ghillie suit. At around 5ft by 9ft in size, they make excellent surface hides, large enough to conceal two operators.

KIT TIP

Attach the Ghillie blanket to a military poncho, this way you have a lightweight waterproof hide that can be used on rapid deployments.

Drop sheets (drops)

Used when operating inside buildings, they comprise large sheets of material or hessian, used to create the effect of internal walls within buildings and rooms. The full use and method of using drops is covered in detail in the chapter on operating from buildings.

Always task one team member with carrying the drops as a complete set, this should include 1 x large drop, 1 x small drop, drawing pins, bull dog clips and para-cord.

Roof & door sections

A useful method when constructing the roof of your hide is to use pre-made roof sections, which are carried as part of your hide kit. Time and care should be taken when building each section so that it lasts longer in the harsh outdoor environment.

How to build your roof sections is covered in Chapter 8 - rural hides.

Toilet hygiene

Two of the body's natural functions that we can do nothing to change, so you need to ensure that you have these functions covered. You cannot start urinating and defecating wherever you feel like, doing so will quickly attract attention to your location. It will not take long before the area starts to smell and attracts flies and other insects. When operating from a sub-surface hide you cannot keep getting out to do your business, it must all be done from within the hide.

Urine is the easy one, done by the use of a compressible camping water container or 5ltr plastic petrol can, whichever you choose to use, ensure that the hole is wide enough. Don't forget you will be doing this in a cramped and dark environment, the last thing you want is to miss and urinate over your kit and equipment.

Defecation is the tricky one, this takes time and practise to get right, the real tricky part is when you need to urinate and defecate at the same time. You now have to perform an awkward balancing act, holding the bottle in one hand, the bag in the other, and trying to support the weight of your body. All this whilst manning a sub-surface hide full of other operators in the total darkness. There are a number of methods you can use to do this.

- Cling film - I personally think this method is far too long winded and has a massive margin for error. By placing a sheet of cling film on the ground, and basically squatting and dropping; when finished, wrap it up into a ball, bag it and pack it away at the top of your Bergen.

- Sealable plastic bags - You need to use large re-sealable bags which you can roll the tops down creating a rim, this then holds the bag wide open. Hold the bag in one hand positioning it between your legs; support the body with the other hand then squat and drop as before. Re-seal and double bag when finish, place away in the top of your Bergen.

- Bin liners - Rolled down in the same way as the re-sealable bags, but the bonus with the bin bag is you know the opening is bigger meaning you're less likely to miss. When finished, tie the bag in a knot, turn inside out and tie a second knot, turn the bag inside out a third time and knot. Place away in the top of your Bergen.

Do not leave any body waste laying around for another team member to kneel on, it will burst the containing material and spread your waste everywhere!

If advanced reconnaissance has taken place and you know that you will be operating from a building, take along what I call the 'Car Box'. This is the method I use when conducting covert surveillance from a static platform such as a car or van.

Car box

Basically it's a plastic, click seal box about the same size as an ice cream tub but a lot stronger, and then all you need are black bin liners, baby wipes, packs of small tissues, nappy sacks and a strong elastic band. It works by lining the box with the bin bag, which is then held in place by the elastic band. Sit on the box (normally positioned on the back seat of the vehicle) as if it was an everyday toilet with your feet down in the foot wells of the car. When finished place all used tissues and wipes in the bag, knot three times and place in a nappy sack to contain the smell. This car box would be kept under the back seat next to my urine bottle.

KIT TIP

Never use nappy bags in the rural environment as they are scented and the smell will be carried over a very long distance!!!

The military now use a sanatoria product called a 'WAG BAG', this has evolved because most forward operating bases in Afghanistan have no sanitation systems in place to dispose of solid bodily waste.

It comprises a large plastic bag with a powder that turns waste liquid into a solid. Waste, toilet paper, hand wipes and a plastic bag with strong clip seal to place it all in when finished, this is then burnt. If operating from a building with a toilet, use the bag to line the pan.

Operators have been known to take Codeine Phosphate tablets prior to short ops to "bung them up" and prevent them from going to the toilet but this is not a good idea.

OPERATIONAL EQUIPMENT

There are guides that need to be followed when carrying and storing this type of equipment.

- Keep all equipment clean and dry at all times; never pack wet equipment away if at all possible. If you have no other option, clean and dry it at the next opportunity.
- Always keep lenses and optics that are not in use packed in their protective cases.
- Once back at your safe location always completely clean, dry and inspect equipment for any damage.
- Check that there is no moisture, misting or condensation behind the glass seals of all optics and camera lenses.
- Remove all batteries.

VISUAL AIDS - Day optics

These come in two categories, "day" and "night" and in a number of different forms, such as binoculars, monocular and high powered spotting scopes. Each has a night time counterpart offering the same extended visual power allowing operations to be conducted continuously over a 24 hour period.

Monocular

Magnification on the monocular operates in the same way, only with the obvious difference of having a single optical lens to observe through. These are excellent items as they can be carried in a jacket pocket.

Binoculars

Found in many different sizes and with a fixed magnification; the ones pictured are very powerful but heavy. Good if used in conjunction with a tripod when operating from a static location. However, they are too big to continually pull in and out of a day sack when observing on the move.

Magnification is how many times the subject is enlarged, for example "x 12" would magnify your target by 12. A target, which is 600 meters away would appear to be only 50 meters away.

Spotting scopes

Can be very powerful and ideal when conducting operations from a static location. The difference between a spotting scope and a pair of binoculars is that the scope can be zoomed in and out as required. One thing to note; the more powerful the scope, the narrower the field of view will become and shake will be more apparent. This equipment can be used in conjunction with a digital camera and is discussed later.

Night optics

Night vision equipment is now openly available to the general public and can be obtained quite cheaply, but remember that you get what you pay for. There are two types of night vision equipment, active and passive.

Active means that the equipment requires an infrared (IR) light source in which to operate, if you were to observe through the optic without an IR light source nothing would be seen. When an IR light source is introduced, the area in which observations are been conducted would be illuminated, infrared light is invisible to the human eye.

Passive equipment works by intensifying and magnifying the ambient light from the night sky, for example the moon and the stars.

This equipment will still work on an overcast night, passive equipment can also be used in conjunction with an IR light source, giving greater ability to observe into depth and shadows.

INFRARED LIGHT SOURCES

As mentioned above, ACTIVE night vision equipment will not work unless used in conjunction with an IR light source. Although PASSIVE equipment does not need the same light source, it will perform better with it.

An IR light source can be in the form of a single (or a number of) infrared light emitting diodes (IR LED's) clustered together. A standard white light torch can be converted into a IR light source with a IR filter cap fitted over the lens, this will turn the standard torch into a high powered IR floodlight.

• Single / multiple IR LED's can be found in most security shops, sold as CCTV night time illuminators, these work alongside the standard camera. The LED has a limited range even when used in large clusters as shown here.

• White light torches that have been converted work very well, because the torch is designed to produce a large beam of light, they can give you an intense directional beam illuminating areas of depth and shadow.

Flood light systems can be bulky pieces of equipment, but their uses make them a very desirable item to have. They can be powered from mains supply or battery packs, which will often be the case in the rural environment. Deployment of IR flood lighting is covered later. These items are not cheap and run into hundreds of pounds; if you are going to invest in this type of equipment ensure it is fitted with a day & night sensor to preserve battery life.

PORTABLE POWER SUPPLIES

When operating in the rural environment, you must aim to be as self-sufficient as possible. Although resupply is an option, (covered later in the book) this may not always be possible and should be considered a luxury. When purchasing surveillance equipment that you intend to use in rural operations, you must ensure that it will function on smaller power supplies such as 5 and 12 volts. Most surveillance equipment that operates from the mains electricity is actually only 12 volts, the power conversion (240v > 12v) happens in the transformer built into the power cable.

Portable power comes in two forms...

Battery

Carrying batteries to power each item of surveillance equipment can, and will add lots of weight to your kit. If you intend to use batteries or have no other option, then ensure the ones you carry are long lasting and heavy duty. For example; with hand held video recorders you can choose between 60, 120 or 240 minutes of operating power, in this case always opt for the larger battery.

Beware of large lithium batteries, these have been known to explode when submerged in water however, you will find they can be much lighter to carry.

Solar panels

Military-style folding solar panels can now be bought on the civilian market, with power ratings from (15 watt) 12 volts, up to (62 watt) 12 / 24 volts. These are housed in waterproofed camouflage material and carried with ease in your Bergen, they will easily operate all equipment within the hide. Using this method of power source eliminates the need for battery re-supply. However, care and consideration must be taken when deploying these panels, the more powerful models unfold to a large area, which may be visible from long distances, always think about possible compromise!


Courtesy DOD media room 2012

THE BERGEN RUCKSACK

This is the name given to the large rucksack (originally designed by the Norwegians and used by Special Forces) which is used to carry all your rural hide and observation equipment. There are many designs on the market, as always some are very good, others very poor. I would always use a military issued style Bergen as you know it's been tried and tested. Below is my personal Bergen which is the British Army's latest issue.

Bergen sizes are measured in litres, for example my Bergen has a capacity of 125 litres. Mine has been tailored and personalised for the rural surveillance role by adding extra pouches to the front, designed to hold specific items of equipment. I can now carry more equipment, having the pouches on the front means that I can pack essential items where they are more accessible without having to go into the main compartment. Every item of my surveillance equipment is packed in the same place every time, this way I know where each item is without having to search for it, especially in the dark.

How to pack your Bergen

Packing a Bergen is not as easy as you might think and every item has its place. In time, you will come to know the best location for each item. This may sound condescending but there is a skill to packing. Split your equipment into 3 groups; items for **immediate** use, items that **will** be required and items that **may** be required.

Immediate

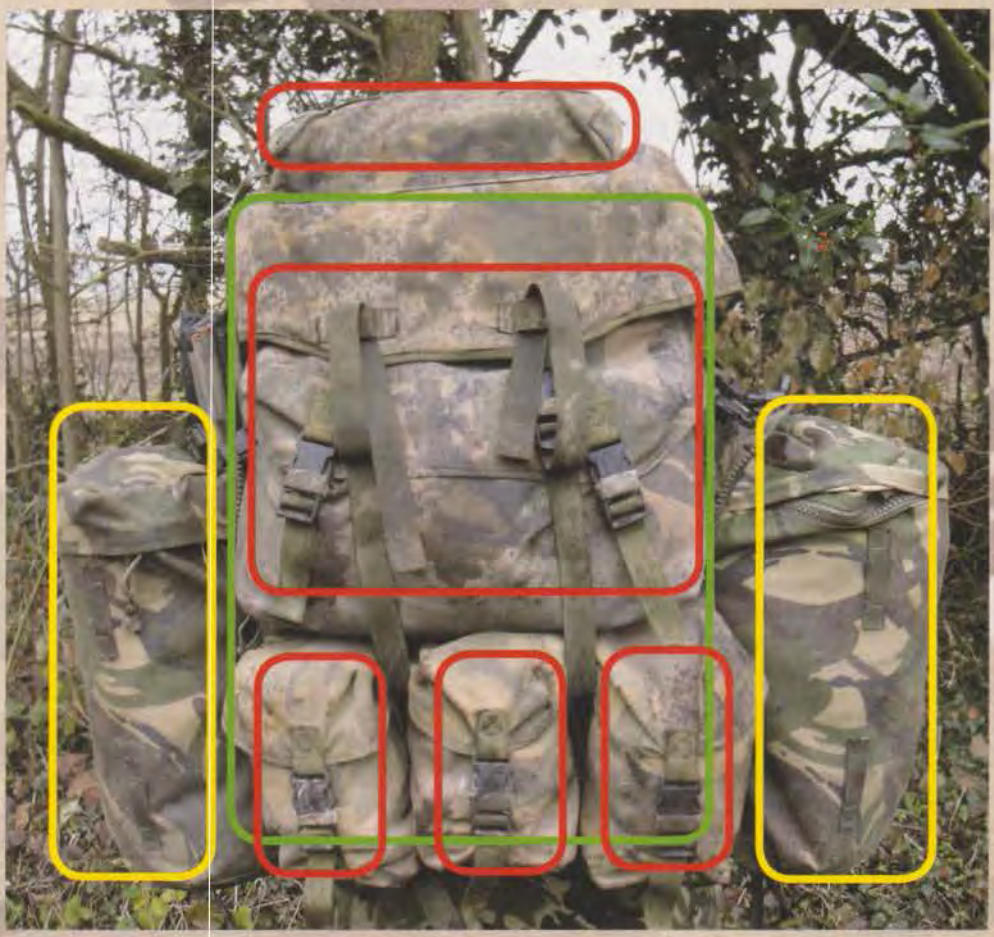
This includes all optical viewing aids, camera equipment such as hand held video and still camera bodies, telephoto lenses, tripods, radio communications equipment, batteries, Gore-tex shell layer and Ghillie suit. Pack these items in the external pouches. With your Ghillie suit under the top flap of the Bergen.

Will be required

These items should include camouflage nets, poles, cutting equipment, digging equipment, sand bags, log books, ponchos, thermal sheets, ground sheet, wire roof & door sections, pegs, hide suits or sleeping bags, roll mats, warm clothing, waste containers, water and rations.

May be required

Items which are carried just in case include, medical pack, technical devices such as covert cameras, microphones, IR flood lights, spare socks and Gore-tex socks. The batteries for these items can be carried inside the Bergen's main compartment.



The day sack

A day sack is just a smaller version of the Bergen and used for short term operations of 24 to 36 hours. Also measured in litres and with many designs like the Bergen, again I would always opt for the military issue day sack.

Splitting the equipment

The equipment listed above is the minimum, this equipment will need to be split and distributed between all team members; it should be done so that the weight of each Bergen is evenly matched as best as possible. All equipment needs to be packed in waterproof canoe sacks as pictured here, these will prevent water penetrating into your equipment. When personal kit is packed into these sacks it makes life that much easier, with one pull the main compartment can be emptied and your kit is still waterproofed, especially useful for river crossings.

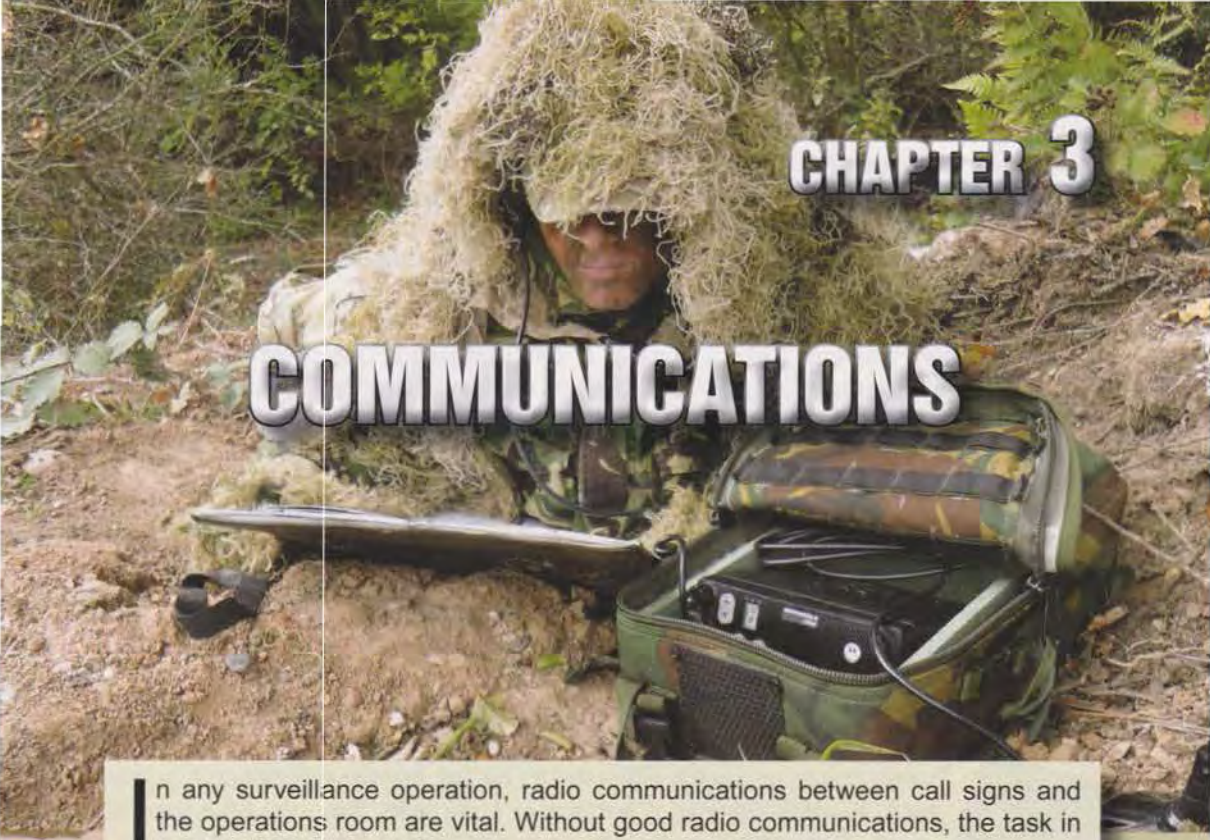
Specialist equipment

Specialist equipment means items that are not normally carried by the team as part of their everyday kit, but it has been identified that if a team is to successfully complete their task the item is going to be needed.
This type of equipment could be...

- Ladders / scaffolding rig
- Ropes and climbing equipment
- Inflatable boats or canoes
- Specialist pieces of technical equipment
- Materials used to erect false walls in buildings
- Chain saws, if operating in the jungle
- Other specialist items of environmental equipment

Any specialist equipment needed has to be considered in the reconnaissance, planning and preparations phase. When you're on the ground and come across an obstacle such as a ravine that you missed in planning and now cannot cross!

This chapter has been written as a guide only, the equipment and personal kit has been tried and tested over many years on live operations. Equipment is evolving all the time and new improved items are available on the market everyday.



CHAPTER 3

COMMUNICATIONS

In any surveillance operation, radio communications between call signs and the operations room are vital. Without good radio communications, the task in hand will be hindered from the start or may even fail.

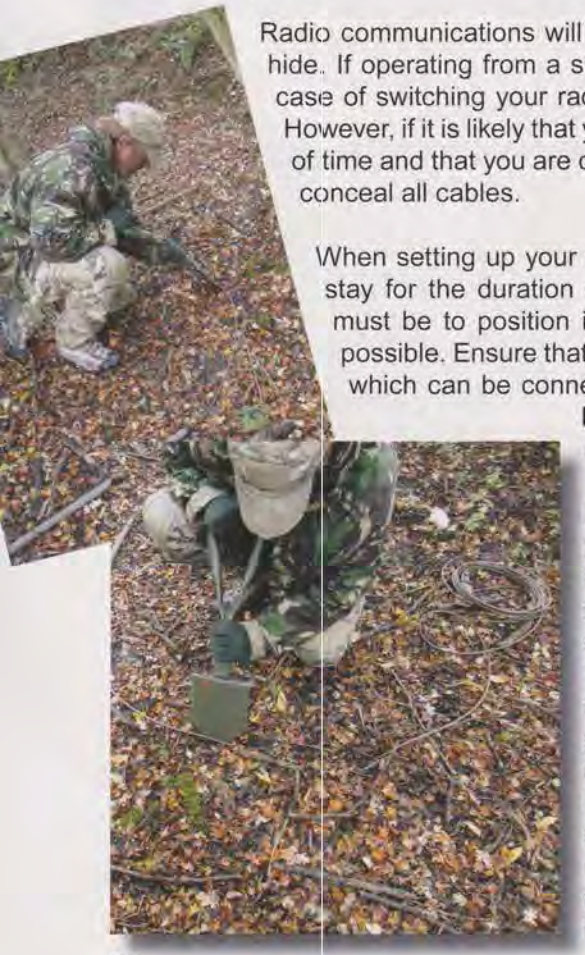
Topics Covered

- **Setting up communications**
- **Concealment of the antenna**
- **Basic communication procedures**
- **Phonetic alphabet & pro-words**
- **Bespoke rural antennas**
- **Radio frequencies**
- **Styles of radio**
- **Headsets**
- **Satellite communications**

In any surveillance operation, radio communications between call signs and the operations room are vital. Without good radio communications, the task in hand will be hindered from the start or may even fail. You need to ensure that you and your team are confident that all your equipment is working and if a fault arises, you know how to find and repair it. You may be operating in very remote areas where sending a technician out to your location is not an option.

Within the team you may have a number of different radios operating on different frequencies, for example: HF, VHF and UHF as explained shortly. If this is the case, ensure that you and the team are totally familiar with these frequencies and that you know which radio set is best for the particular work you have to do. On both training courses and during live tasks, I have experienced situations where the team leader and the second in command (2ic) declared that they knew how a piece of kit worked until there was a problem. At that point, the equipment was given to a more junior team member to repair. Clearly, not only is this scenario unprofessional but it may undermine the confidence the team have in their leadership. It is important that everyone in the team undergoes regular training on all pieces of equipment.

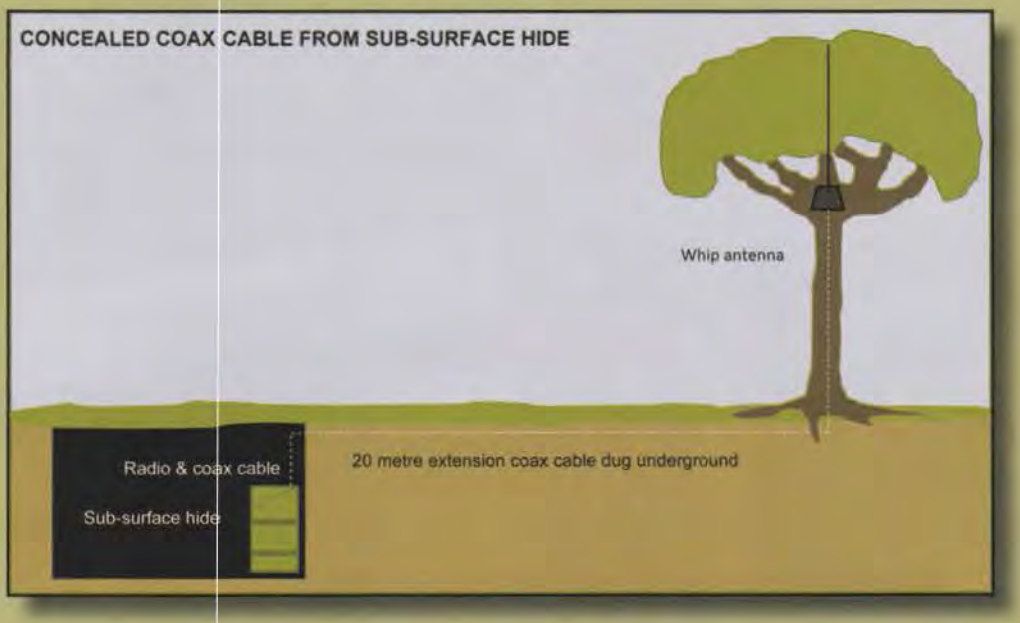
Setting up communications



Radio communications will need to be set up when constructing any hide. If operating from a surface or bush hide, this may be a simple case of switching your radio on and checking for a good reception. However, if it is likely that you will be in position for a sustained period of time and that you are constructing a sub-surface hide, it is vital to conceal all cables.

When setting up your radio inside the hide, place it where it will stay for the duration of operations. Your aim with the antenna must be to position it as far away from the hide's location as possible. Ensure that you carry extension lengths of coax cable, which can be connected between the radio and the antenna. I regularly carry a 10 metre and 20 metre extension coax on my tasks.

If your transmissions are being tracked by position-finding equipment, your antenna is not directly above the hide, whilst the area surrounding the hide may be compromised, your actual position is not. The second reason and most likely, is that the antenna has been discovered by a third party, remote positioning of the antenna may provide you with some time to extract. Finally, try to locate your antenna in a position that can be overseen by the hide's rear lookout or sentry. The last thing you need is a third party crashing through the hide's roof as they follow the cable!



Concealment of the antenna

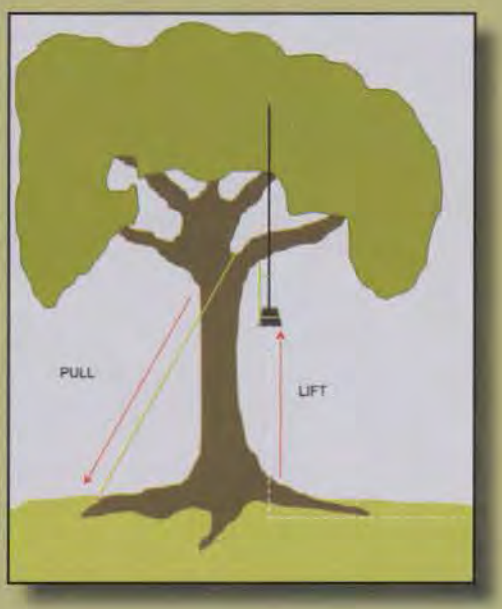
Having briefly covered the underground concealment of coax cables leaving the hide, the more difficult part is the concealment of the antenna which has to remain above ground. There are a number of methods that can be adopted to achieve good concealment.

Running the antenna against a tree trunk, then conceal it with natural foliage. Remember that over time the foliage will die and will need replacing.

I have a ¼ wave antenna which I have covered in artificial ivy, when placed against a tree amongst natural ivy, it blends in and virtually disappears.

Locate the antenna in a thick bush or patch of brambles, people and domestic pets tend to say away from these areas.

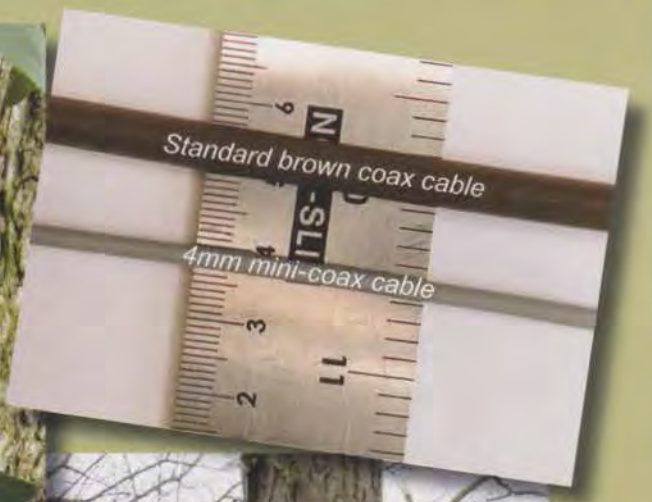
In some situations you may need to elevate your antenna to gain better range and reception. If this is the case, always start by running the coax cable from the hide towards the chosen tree. This will ensure that you have enough length in the cable. Remember, you need extra length to gain the height required.



Concealing elevated coax cable

Any coax cable leaving the ground must be concealed. Ensure that it blends well with the tree bark. I always use coax cable that has the brown coloured sheathing as it is easier to conceal. Failing this, black is the next best option. In addition, the use of artificial or natural ivy looks prefect when wrapped around the coax cable as shown below.

Standard brown coax wrapped with artificial ivy to conceal it

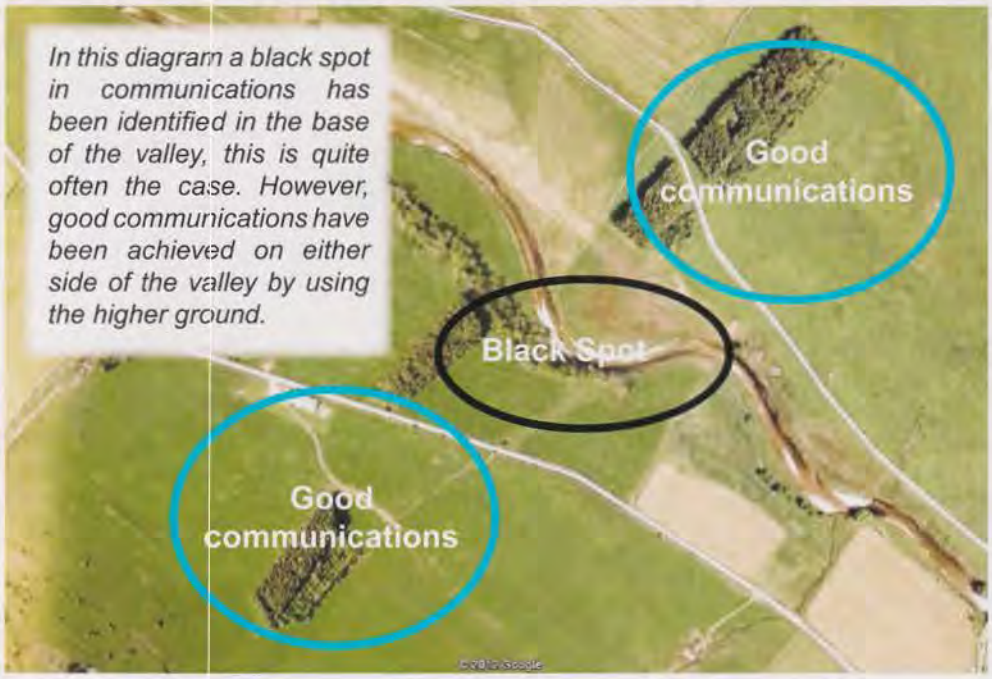


Mini coax concealed beneath the soft bark

SKILLS TIP

If the tree you intend to use has soft bark, simply cut a flap in the bark, carefully peel it back and feed the coax cable in behind.

This method works best with mini coax cable that can be sourced from good outlets, no more than 4mm thick and is easily concealed.



Signal black spots

An area on the ground which does not allow radio communications to be transmitted or received is called a 'black spot'. There are a number of factors that may contribute to this happening.

- If you are in dead ground
- If you are next to or near other more powerful transmitters
- If you are in very thick woodland
- If you are near buildings
- If the weather conditions are poor

However there are things that you can do to help compensate for these factors.

- Elevate the antenna or use a larger antenna
- Up the wattage output on your radio if possible
- Change to a different frequency
- Change to a different radio band (HF, VHF, UHF)
- Try moving the antenna to another area

Failing this you will have to move locations to find reception. There's little point observing your target without the ability to tell anyone what you can see.

ALWAYS, ALWAYS CHECK RADIO COMMUNICATIONS BEFORE CONSTRUCTING YOUR HIDE

The diagram above shows a typical example, now you must move yourself or your antenna out of the 'black spot', it's your only option to achieve communication.

Re-broadcasting stations - rebro

When operating in a rural environment, your radio communications from hide to operations room may be affected due to both the distance and natural high landscape features located between them. If this is the case, there may be a requirement for a separate team to be deployed on the ground and positioned at a halfway point, acting as a re-broadcasting station (or Rebro).

For example, there are a number of high features between you and the operations room. These high features are hindering your radio communications. You have tested all other possible positions but still have no luck in contacting the operations room. The only option left is to deploy a second team so that you can transmit your information through them. They will record the information in their log books before relaying to the operations room. This will continue back and forth between hide, re-broadcasting team and operations room throughout the task.

In a hostile environment this team could also double up as the back-up support team for the forward hide.

Lost communications

These events should be covered in your pre-deployment brief.

A set drill within the team would have been devised in the event of losing radio communications. If operating a continuous network where radio traffic is not governed by set communication timings or windows.

For example, if nothing is heard within two hours, a second team is placed on standby. If after three hours still nothing is heard, half the forward team will extract to a pre-chosen location. Here they will meet up with the standby team for a face to face meeting and if necessary hand over equipment. Before this happens, a full inspection of all radio equipment must be conducted.

A suitable area for the face to face meeting would be one of the chosen live letter box (LLB) positions. If you have more than one means of communications try that first but inform the operations room of your situation. It may be that you will continue to use this other means for the rest of the operation.

Communication windows

On sustained operations where resupply is not possible, you will have to carry a significant amount of batteries, however there is always a limit to how many you can carry. To assist in retaining battery life, it may be decided to enforce "communication windows". This is a set time throughout a 24 hour period where your radio is switched on and could be every hour, or every 2 hours, whichever is best suited to the task.

The operations room will however, have their radios on all the time so that it's possible to send important information between "communication windows" if required.

Another reason for using communication windows could be if you are part of a larger operation using the same radio network. Using windows will allow each team to send their information without interfering with other team communications.

True Accounts

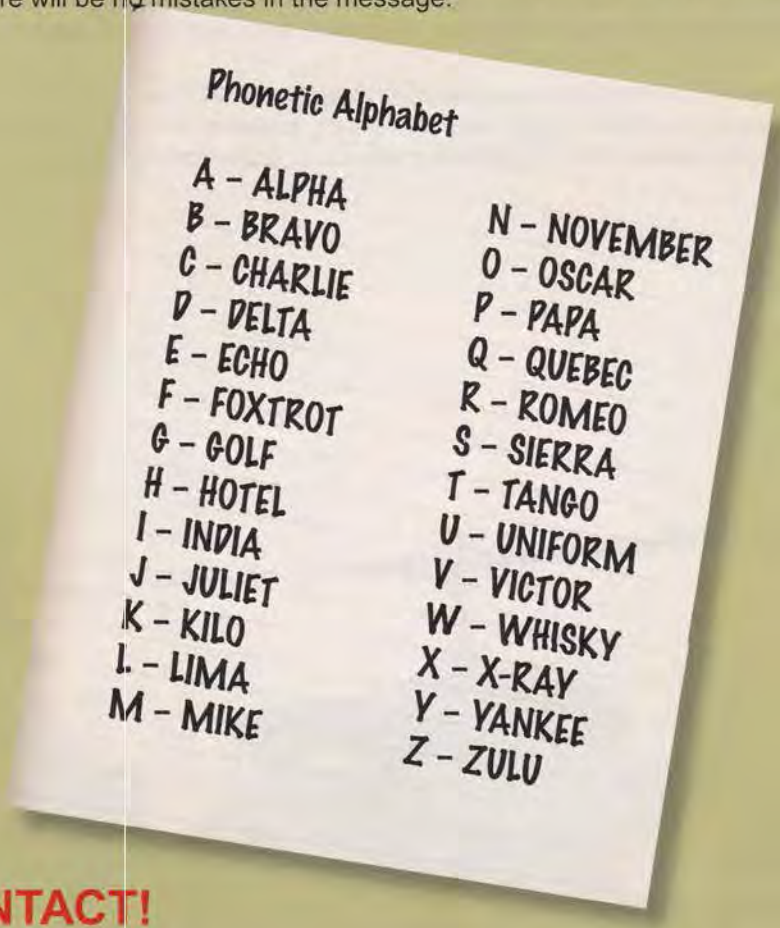
I once conducted operations in the African jungle where we were so isolated that our communications window was every 12hrs for 15 minutes at a time. We carried hand held rechargeable battery generators with us so that we could recharge our own batteries.

Our resupply was by helicopter every 12 days. Because of this, our Bergen rucksacks were completely full of kit and equipment with no other option but to carry 12 days food rations split into two sand bags tied around our necks. Luckily, the helicopter drop off point to our location was only 900 meters.

Phonetic alphabet

With the phonetic alphabet, each letter has a designated word starting with that letter. This alphabet is known and recognised worldwide and used by all members of the military, law enforcement groups and emergency services.

Letters pronounced over the radio often sound very similar, like S and F for example. Using the phonetic alphabet ensures each letter is clearly understood and there will be no mistakes in the message.



CONTACT!

When communicating over the radio, there is one word in particular that has a very specific meaning. 'CONTACT!' In a normal conversation one person may turn to the other and say for example, "can you contact work for me?" Clearly this would be taken as one person asking the other to phone their place of work.

In our area of operations the word CONTACT means that a call sign / team is in trouble. If this word is heard over the radio network, every other call sign will stop transmitting. This action ensures the radio network is free for the team in the contact. They can then speak straight back to the operations room or to any support groups on the ground. In short, never say the word CONTACT over the radio unless you are contact with the target.

Pro-words

These again are words which are used by the military and law enforcement groups. When talking on the radio, pro-words are used to speed up the conversation traffic between call signs. Here, a single word can represent an entire sentence. They are mostly used at the beginning and at end of conversations.

Hello	Used when first coming up on the radio network
This is	Words used to inform others of who's talking
Over	Finished your transmission but not ending the call, needing a reply
Out	Said at the end of your message when complete
Nothing heard	Letting the other call sign know that you did not hear their last message
Roger	Word said to let the other side know you under stand the message
Negative	Word used when something is unseen, not under stood or as a simple NO
Wait/Wait out	Used when a temporary break is needed in a transmission
Say Again	Repeat the message
Say all again from	Repeat apart of the message from a particular point
Radio check	Equipment check, that needs a response
Lima Charlie	The reply given to a radio check standing for LOUD & CLEAR
Relay to	Using a different operator or team to relay your information
Relay through	Telling a different operator or team that you are there and can be used as a rebro station
Stand by: Stand by	Target / subject sighted by trigger position
Eyes on	Used when target / subject in view and being watched or filmed
Eyes off	When target / subject is no longer in view
Not seen/Unseen	If the target / subject has been identified but you cannot see it at that particular time
Switch to other means	Will continue the message/conversation on the other form of communications
Minimise	Telling other users to stay off the network

Click system

There may be times when you cannot speak on the radio because the subject, or someone else is too close and by speaking would compromise your location. In these circumstances we use what is known as the click system. It is very simple but it works very well. If you press the PTT (press to talk button) on your radio, the person at the other end will hear a static clicking noise (squelching). This is the noise you are listening for to communicate with each other.

What do the clicks mean?

2 CLICKS	NO
3 CLICKS	YES
4 CLICKS	ASK ME A QUESTION
5+ CLICKS	STAND BY, STAND BY

Never use 1 click as this could be missed. If you click twice but only 1 click is heard, your partner will know it was 2 as no more followed. Below is a simple conversation.

4 CLICKS **ASK ME A QUESTION**

'DO YOU HAVE EYES ON THE TARGET'?

3 CLICKS **YES**

'IS THE TARGET ON HIS OWN'?

2 CLICKS **NO**

'IS THE TARGET WITH A SECOND MALE'?

3 CLICKS **YES**
5+ CLICKS **'STAND BY STAND BY'**

'ROGER THAT, STANDING BY'

Code words & nicknames

These are used in order to securely inform other teams and the operations room of your progress, intentions and locations when operating on the ground. With or without secure communications, these methods should always be used as a fail safe option. If a third party were listening to your radio network, they would not understand the meaning of the conversion. It is for this reason we use nicknames and code words which can reflect any theme you like. For example, I have seen this method used with themes such as football, space & planets, films, people's names, animals and so on. Nicknames and code words should be changed at different periods of operations; daily, weekly or monthly depending on the length of task. These printed sheets of nicknames and codes are simply known as code sheets.

Nicknames & numbers

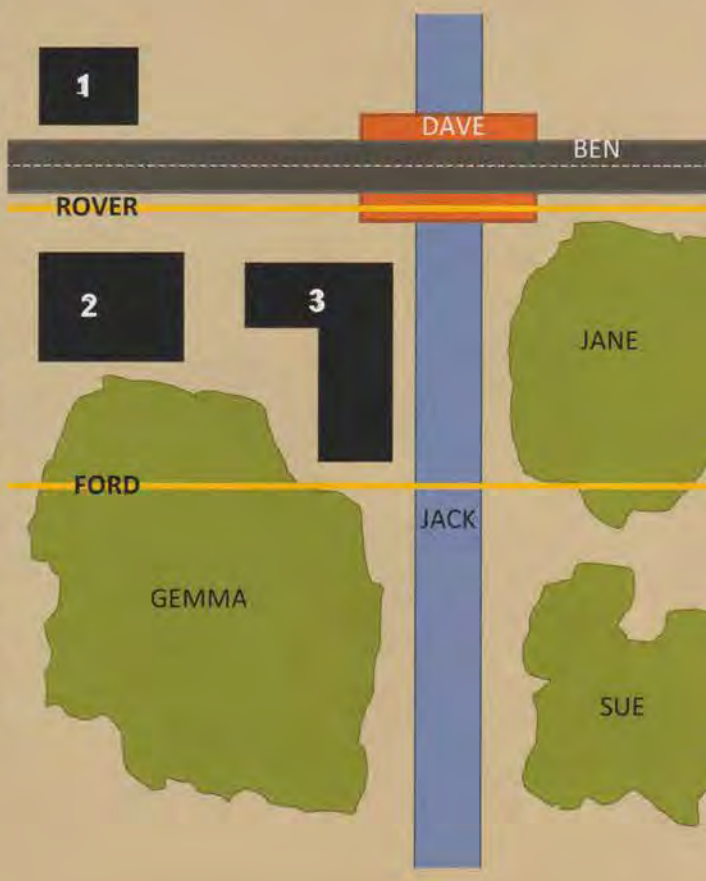
Nicknames and numbers can be given to places and locations which are within the area of operations such as bridges, buildings, fields, forestry blocks etc. These work in the same way as the code sheet and should be changed at set periods to keep them secure. I would always name bridges and forestry blocks and give everything else a number. It is not necessary to name and number everything on the map, doing this will make it very complicated, only do it for areas likely to be used.

Report lines

In the planning stages of your operation you will have conducted a detailed map study. It is at this stage that you will have marked imaginary lines on the map. Each line is then given a nickname or a number.

When your team moves around the ground and reaches one of these report lines, they can call the nickname or number over the radio as a secure method of informing the operations room and other call signs on the ground of their progress.

Report lines can also be used when searching large open areas of countryside, this is covered in more detail in the chapter on Observation and Search.



Simple code sheet

If using the code sheet below a simple message sent to the operations room from the deploying team could be. "HELLO 0 THIS IS B23 THAT'S ME APOLLO OVER" the operations room will come back with the following. "ROGER B23 APOLLO OUT" the team has just told the operations room that they are now at the drop off point. Apollo being the code for the drop off point.

REFERENCE	ENCRYPTION
LEAVING LOCATION	MOON
AT DROP OFF POINT	APOLLO
MOVING ACROSS OPEN GROUND	STAR
RV1	SUN
RV2	MARS
RV3	SATURN
FRV	JUPITER
HIDE LOCATION CONFIRMED	PLUTO
HIDE COMPLETE	CRATER
EYES ON (GLAD) REPORT TO FOLLOW	BLACK HOLE
REPLEN LOCATION 1 (LLB)	MILKY WAY
REPLEN LOCATION 2 (DLB)	NEPTUNE
EXTRACTION FROM HIDE	LIFT OFF
AT PICK UP POINT	ORBIT

Spot codes

The military use a map marking method called spot coding. By placing different coloured spots, each with their own number on road junctions, you can quickly create a secure movement's box. This is mainly used on road maps relating to an area of operations (AO) within a built up area where covert mobile movements are been conducted.

In operations carried out in rural locations, this method is still used for the dropping off and picking up of teams. When calling your spots over the radio, as an example never say 'GREEN TEN', always say 'GREEN ONE ZERO.' If there is some distance between two spots and you are asked by the operations room for a location report, your reply should be 'THAT'S MY CALL-SIGN BETWEEN GREEN ONE ZERO AND GREEN ONE ONE OVER'.

I have used purpose made spotted map books of entire towns and outlying areas when in the military, These are an excellent idea if conducting surveillance in the same areas for a long period of time. Over this time you will come to remember the spots without having to look at the map books.

Descriptive codes

Working on an insecure network means it would be very risky to call the subject's name or target address over the radio network, you never know who may be listening in. This is also the case for any vehicles and persons connected to your subject. So to keep your network secure, there are a number of words that can be used, which are internationally known and understood.

- MALE ALPHA
- FEMALE ECHO
- PROPERTY CHARLIE
- VEHICLE BRAVO
- UNKNOWN UK

Adding a number to these descriptive codes will allow you to trigger and report on a number of different people and objects at one time. For example, your subject will be known as ALPHA 1 if male or ECHO 1 if female. Any other persons associated will be known as ALPHA / ECHO 2, 3, 4 and so on.

Your subject's vehicle will be known as BRAVO 1. Any other vehicles associated with your subject will be known as BRAVO 2, BRAVO 3 etc. The same is the case for any properties used by your subject such as their home address will be known as CHARLIE 1, the work address as CHARLIE 2. Any other location will be given a different number as before.

If conducting surveillance and your subject meets with a person or persons who are unknown to you, they will be called UK ALPHA, ECHO and be given an individual number each. There are various code systems used by other organisations.

ANTENNAS

When operating radio communications equipment, it is very important that you use the correct antenna length for the equipment's frequency. Failing to do so will result in problems transmitting your information and receiving signals from other call signs, without which, the surveillance will fail.

In order to work out the correct antenna length there is a mathematical calculation you can use. Dividing the constant of 300, by your actual frequency, then divide the answer by 4 to give the correct length for a 1/4 wave antenna. Double that number to give the measurement for a 1/2 wave antenna.

Standard formula is .....300 over frequency etc

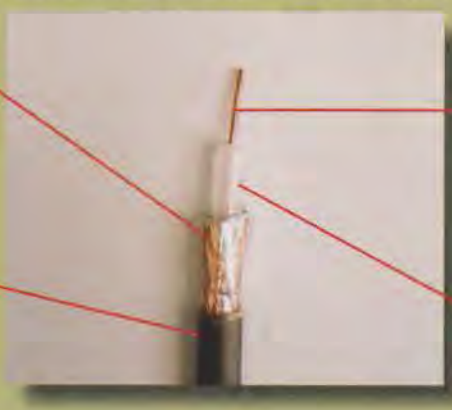
Let's look at the following calculation in order to establish our antenna length for a frequency of 174.00 MHz

$$\frac{300.00}{174.00} = 1.724 \quad \text{then} \quad \frac{1.724}{4} = 0.43 = 43\text{cms}$$

Dependable communications in the rural environment are often more difficult to achieve than in an urban area because you will be operating over greater distances. To overcome this, more powerful antennas such as adapted vehicle mounted whips and dipole antennas of different sizes need to be used. Whilst most military radios are designed to be used in a rural environment, commercial radios are not always up to the job. This leaves you with two choices. Either, get technical and learn how to make your own equipment as I have done over the years, or be prepared to pay a lot of money for someone else to make it for you.

A coax cable becomes a wire antenna

Standard coax cable is made up of a woven copper wire sleeve under the outer plastic sheathing. This acts as a shield preventing a signal from reaching the wire (antenna) which is inside a plastic tube located in the centre. When a section of the copper shielding is removed from the coax cable, normally at its end, this section becomes known as the antenna because it is now able to receive and send a signal.



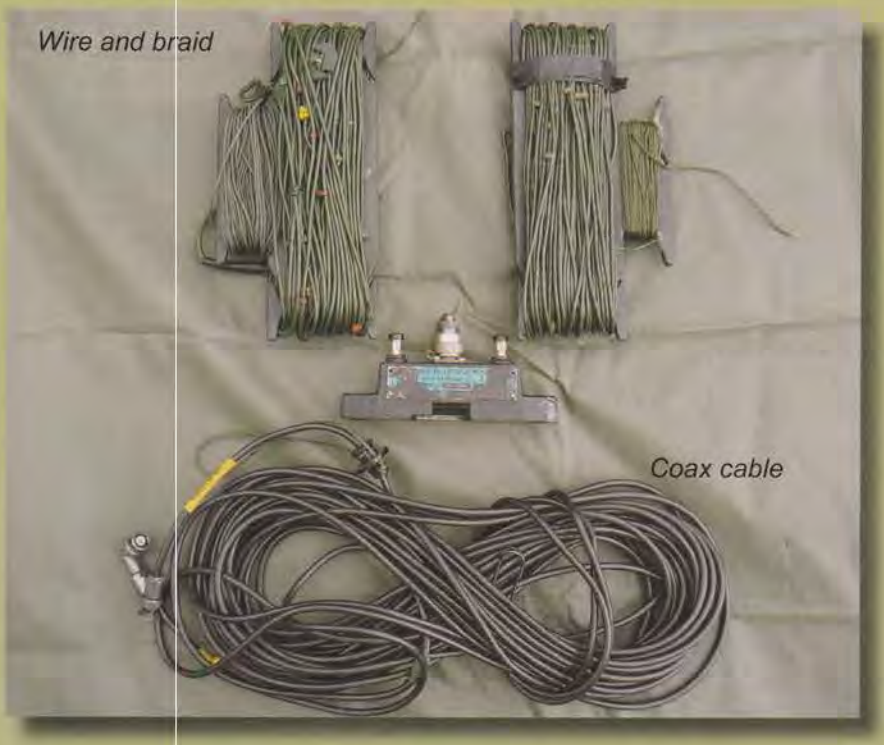
Dipole antennas

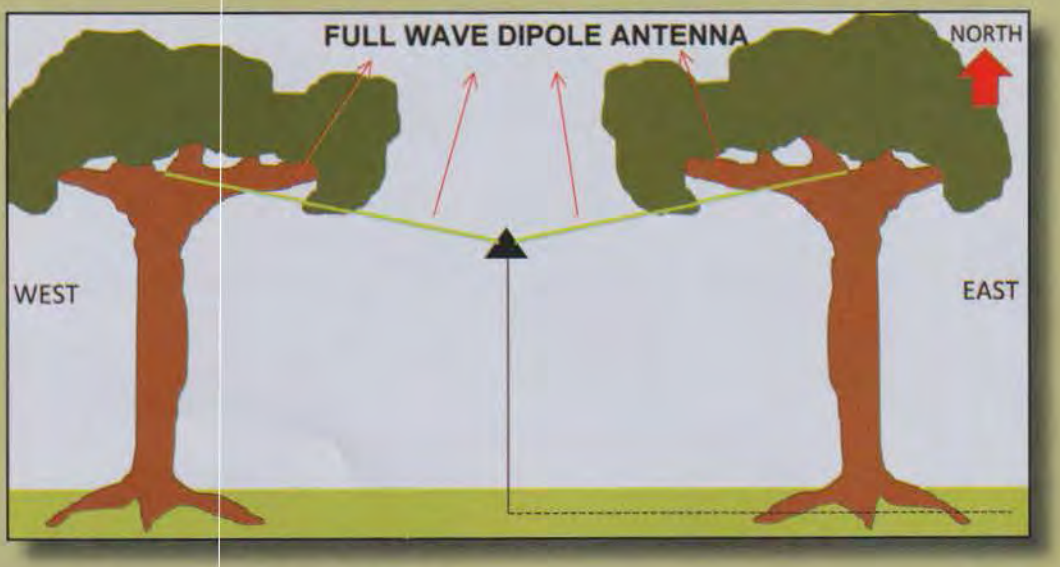
Unlike the standard antenna on a personal radio, which has the antenna wire coiled inside a rubber sleeve to make it compact, the dipole antenna unravels the antenna wire so it covers a wider area, which in turn increases your radio's transmitting range.

For example, a hand held radio with a short antenna of 10cms may have over 40cms of wire coiled around inside. If it wasn't designed this way it would make daily routine in a built up area very hard to use on a daily basis. Having over 40cms of wire hanging off the radio set in the rural environment isn't a problem. As once the hide is located and set up, you are static and can afford yourself with the best means of communications.

Dipole antennas can come in different sizes such as quarter, half and full wave length antennas. Your frequency will dictate the length of each antenna cable. The dipole antennas pictured here are ones I have made to be compatible with my radio systems and are used on a regular basis. You will notice that the smaller quarter wave antenna is shaped like a 'T' where as the half wave is more like a conventional looking antenna. I have designed them this way for easier carriage and better concealment when deploying on the ground. However there are times when a large dipole antenna will need to be elevated. Here, the antenna will have to be set up in a 'T' shape.

Before you start erecting the dipole you need to use your compass and find the direction of the operations room. Once you have this information you must angle the dipole to suit this direction, as shown in the diagram opposite.





Bespoke covert rural antennas

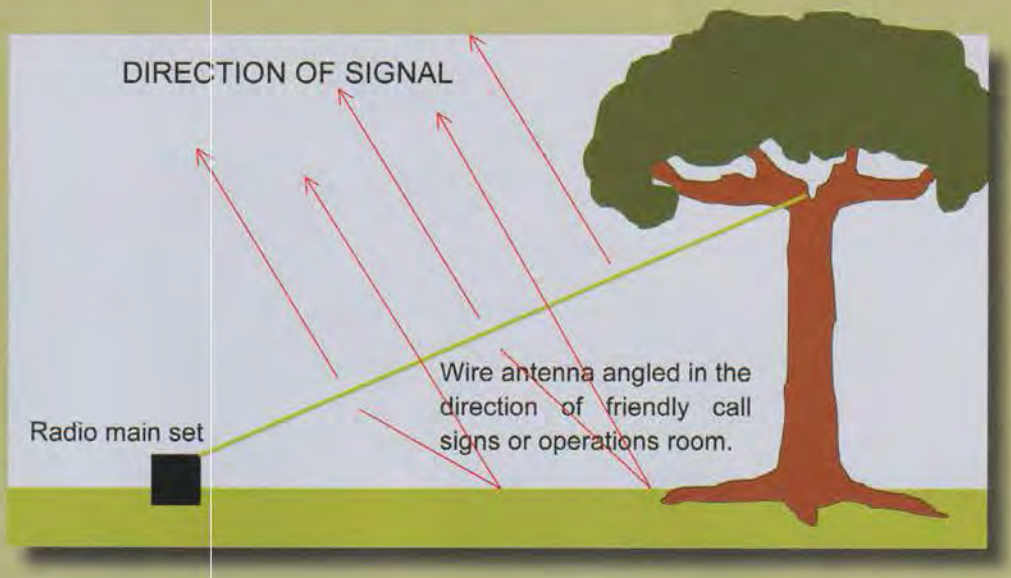
If the dipole antenna needs to face north, this will mean elevating the wire from west to east. This will give you the full width of the antenna facing north / south.

By taking both ends of the wire antenna, elevate and tie off, this is better shown in the diagram above. Only elevate as far off the ground as is tactically possible without risk of compromise.

Sloping wire antenna

This is similar to the dipole antenna but with only one wire to be elevated. Again, when using this style of antenna your will need to get the correct lengths to match the frequency that you are using. Next, by using your compass, find the direction of your operations room, for example north.

- Mark the direction of north on the ground
- Connect the wire antenna to the radio set
- Elevate your wire as high as is tactically safe, but remember you need to keep the wire at a sloped angle.
- Move the radio to the north marker, your wire should now be sloped and facing north as shown in this diagram.



Vehicle magnetic mounted antennas - mag' mounts

Vehicle mounted antennas are used to great effect in rural operations. With a few simple upgrades and when connected to a 12-volt vehicle radio set, this antenna will become one of your major methods of communication.

The 12-volt vehicle radio set operates on a much higher output wattage (20 watts is good) than the portable counterpart (5 watts), and when used in a rural environment, will achieve a range (distance) of 5 miles plus. Your mag' mount antenna, like the dipole, will need to be cut to the correct length for your operating frequency. Once this is done, you can start thinking about the modifications which will be needed, such as camouflaging and concealing it.

Upgrading your antenna

As covered in the deployment section of this chapter, your aim is to deploy your antenna as far away from your hide as is possible. To do this, you will have to extend the standard coax cable or make separate coax cables that can connect together.

If making your own coax cables, use the brown sheathed type, this can be found in electrical wholesale shops. A good idea is to rub with sandpaper to lose the shine and spray the coax cable with a moss green paint to assist in its concealment.

The antenna itself needs to be camouflaged, I have achieved this by spray painting it moss green and attaching imitation ivy found in hobby shops. Last of all is the elevation of the antenna, this is done by attaching green cord around the whip and base unit as shown.

Radio frequencies

There are three main frequency types available to the commercial sector, each performs differently depending on the environment in which it is used.

- High frequency (HF)
- Very high frequency (VHF)
- Ultra high frequency (UHF)

High frequency (HF)

Ideally deployed where greater distances are needed. For example, I have sent and received a message from over 200km. HF is openly available in the private sector which is excellent as it works very well in the rural environment. High frequency (HF) can be affected by the ionosphere, rising and falling throughout the day, low in the morning and rising to its highest point by the afternoon, it will start falling again in the evening.

Very high frequency (VHF)

This is a good all round option. It will give you a comfortable operating distance in a built-up area as well as long distances in the rural environment. Due to the popularity of VHF, crowding can often occur on the network. Crowding is where you can hear third party transmissions and likewise they may hear yours. Modern radio sets use a system called CTCSS that acts like a secure switch. When you transmit to a friendly call signs radio, the CTCSS will automatically open to receive your message blocking all other transmissions.

Ultra high frequency (UHF

UHF should always be considered when operating in built up, inner city areas. The height and depth of the buildings will however interfere with your transmitting signal. When buying your own radio sets (VHF or UHF) you may require a radio user's licence, this can be obtained from the radio communications agency (RCA) in the UK. Your dealer will be able to arrange this for you. There is an annual cost that varies in price according to the environment where you wish to operate. An inner city radio user's licence is far more expensive than a rural version and each licence will cover a number of radio sets. Once you have received this licence, you will be allocated your radio frequencies.

For further information see www.ofcom.org.uk

Digital systems

If possible stay away from digital radios, although they offer a more secure network they have short transmitting ranges potentially causing problems when operating in the rural environment.

Frequency changes

If there is a risk of eavesdropping or you are not operating on a secure network, it may be deemed necessary to change the radio frequency at set timings throughout the day.

For example, the frequency could be changed at 2359hrs every day or even twice a day such as 1159hrs and 2359hrs. Frequencies can also be referred to as channels. Your radio may operate on different frequencies depending on which channel you are on. These will normally be pre-programmed radio sets that cover a wide band within the HF, VHF and UHF spectrum.

This should all be covered in the pre-deployment orders and briefing.

Types of radio

There are two types of radio generally used in rural surveillance...

- Small hand held sets (personal role radio)
- Large 12 volt vehicle mounted sets

Each type has its particular advantages and disadvantages. That is why it is important to know the specifications and limitations of all your equipment.

Hand-held sets

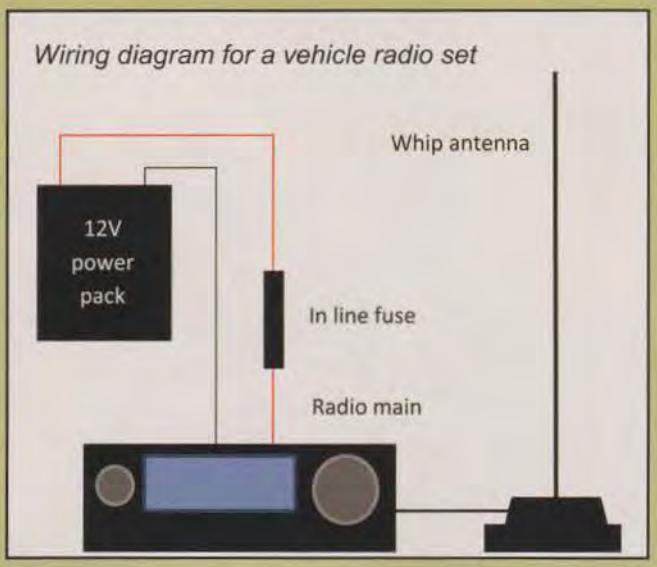
Personal role radios (PRR) must be carried by every member in a rural surveillance team, as it will be their main means of communication. At times, team members will be far apart and will only be able to communicate to each other through their PRR. Most PRR's are not powerful enough to cover large distances but will allow covert communications between operators. PRR's must be fitted with an earpiece and microphone, also known as a press to talk (PTT). These come in many forms, some are very good, others not so good.

When choosing your PRR it is always a good idea to pick one that has a number of different channels, this way you can operate a number of different teams on the same frequency. Always ensure that you are carrying sufficient batteries.

Vehicle mounted radio (VMR)

As you might imagine, the vehicle-mounted radio is a larger radio set concealed within an operational vehicle. It will be connected to a 12 volt power supply, either the vehicle's own battery or a second battery fitted inside the vehicle. Unlike the personal role radios with their small antennas, VMRs work in conjunction with the larger magnetic mounted antenna covered previously. Because of the larger power supply, these radio sets have much larger signal output, 20 watts is a good minimum to work with. It would not be practical to insert into your hide location carrying a number of car batteries. Instead you can use smaller and lighter 12-volt batteries that work just as well and can be recharged. These batteries can be found at outlets such as Maplins and other electrical stores.

Wiring diagram for a vehicle radio set



Pictured here is one of my own communication grab bags. Contained inside is the light weight 12 volt battery (that will give approx' 18 hours use), an 8 channel VHF radio main set and a coax cable to attach different antennas.

Portable covert radio communications

Head sets

Headsets are important when maintaining a covert presence in the rural environment, there's no point sitting in your hide watching the target if a third party can hear your radio traffic as they walk by or see you move your hands. I would place headsets into three categories, covert (wireless), semi-covert and overt styles.

Covert wireless ear pieces - not suitable for rural ops!

Small enough to fit into your ear canal and almost invisible. Coloured to suit the operative's skin or transparent, very good if operating in inner city areas. The wireless earpiece picks up the transmission from an induction loop worn around the operator's neck. A disadvantage is that wireless ear pieces can pick up interference and there's a chance your transmissions can be overheard, even by everyday hearing aids, as I once experienced in Switzerland.

This style of ear piece has no real place in the rural environment. If it were to fall out of your ear on a night insertion you'll need white light to find it. If you didn't feel it fall out you have no chance of finding it.

Semi covert

The classic close protection operator style.

Here you have a good sized PTT on a clip that can be positioned anywhere on your clothing, a second clip holds the base of the earpiece in position. From there, a clear coiled tube runs up around the back of your neck connected to a rubber grommet that fits in your ear. If it falls out of your ear it will not be lost. This is by far the best set up to use when operating in a rural environment.

Overt

Police Officer Style

Similar to the Semi Covert style but more obvious, comfortable and can be worn all day. It has the same clip-on PTT however, this earpiece hooks over the ear and is held in place with a rubber grommet. Your hearing can be affected by the sound of wind rushing between the grommet and your ear.

Operator's static headset

This style of headset is very overt and should only be worn inside the hide itself when on radio watch or stag. Radio stag is part of the hide routine, the individual operator's turn to monitor the radio network. The head set has a large comfortable ear piece which sits on the outside of the ear giving clear audio quality and has a microphone positioned right by wearer's mouth, restricting movement.

Computer satellite communications

The majority of modern communications is now conducted via satellite equipment. With the use of a wireless beacon connected to the world wide web, complex information and be sent virtually anywhere. I have been on tasks where all information has been sent via Skype, it gives the capability to send documents, make normal voice calls and send a live video feed by web camera.

By connecting a headset, this simple system becomes totally covert and can send live footage with commentary back to the operations room. A disadvantage however is the running cost. When using a wireless beacon it needs to be pointing in a southwest direction. Most are fitted with an audible alarm which will increase in pitch and speed as you move it around to find the best signal.

The pictures above show two types of wireless beacon that I used to send back live reports from Afghanistan. The beacon on the left also has an integrated global positioning system (GPS) fitted.

Mobile phones

Can be an excellent back-up method of communications when in an urban environment as transmitting stations are everywhere. In the rural environment population is less dense so the need for transmitting masts is reduced. It is highly likely that you will have no mobile reception or at best only a weak intermittent signal. Therefore never consider your mobile phone as a back-up method of communications in the rural environment.

If you are taking mobile phones with you, be disciplined and keep them switched off. When they have to be switched on, make sure they are placed in silent mode and the illuminator is switched off. Part of your pre operation recce should be to carry out a check for cell phone signal strength.

Satellite phones

These are widely used all over the world. Some operate on conventional mobile phone networks, store personal numbers on a SIM card and have much the same functionality as your mobile phone.

The two most popular makes are THURAYA and IRIDIUM; the THURAYA has a menu set-up similar to a Sony Ericsson and comes with a camera. This allows you to send pictures and emails. The IRIDIUM is a basic model but works just as well, the battery life is not always very good but a simple modification such as connecting a portable solar charger will give unlimited use.

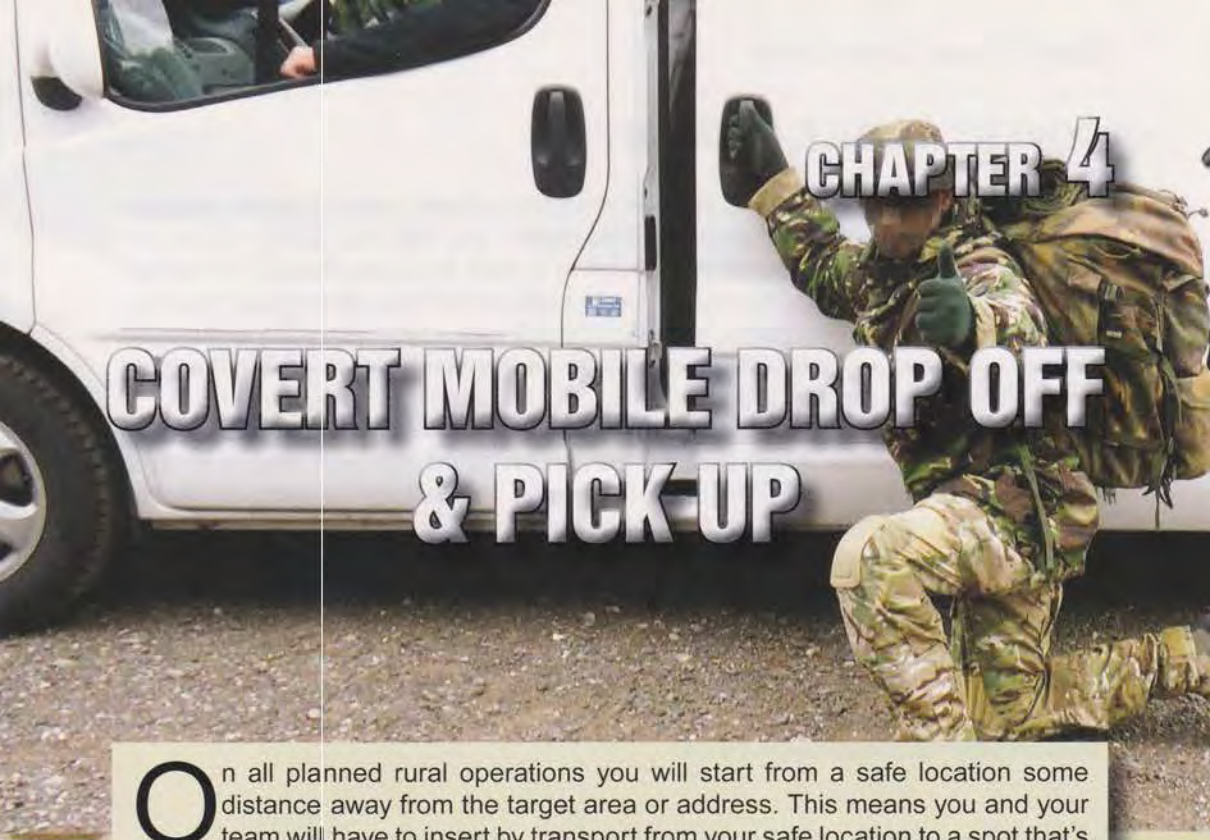
Some satellite phones can up-load images from a digital SLR camera or laptop computer, which can then be sent directly from the phone.

Touch screen pads and phones

These offer a small and compact yet powerful computer with the ability to make phone calls, send text messages and of course, send and receive email. With thousands of different applications available for these devices that are simply downloaded from the Internet, the main advantage is that you can personalise the phone making the system more geared towards surveillance. For example GPS mapping, IP camera monitor, London Underground mapping and the ability to convert the standard phone camera into an SLR lens with zoom, plus much more.

Communications equipment in both the main stream and specialist covert area is constantly evolving with exciting new developments appearing almost daily.

The aim of this chapter was to identify the basic equipment at your disposal, plus how and when to use it.



CHAPTER 4

COVERT MOBILE DROP OFF & PICK UP

On all planned rural operations you will start from a safe location some distance away from the target area or address. This means you and your team will have to insert by transport from your safe location to a spot that's as close to the target area as tactically possible.

Topics Covered

- **Planning and preparation**
- **Types of vehicles used**
- **Spot mapping**
- **Route reconaissance**
- **Deployment tactics**
- **Chase cars**
- **Insertion from the drop-off point**
- **Use of cats eyes**
- **Extraction methods & tactics**

COVERT MOBILE DROP OFF

On all planned rural operations you will start from a safe location some distance away from the target area or address. This means you and your team will have to insert by transport from your safe location to a spot that's as close to the target area as tactically possible. You may have to conduct the final part of your insertion cross country on foot as a patrol, this insertion will take a lot of planning and a good detailed map study. Careful attention will also be necessary when driving the route to identify possible drop off points.

Once the routes to the target area have been identified, the next step is to drive them during both the day and the night; this is your mobile insertion reconnaissance stage. It is always a good idea to film all possible routes to use in the planning stage as well as during the briefing. It's a good idea to show the whole team this footage in your brief but only from the 1 mile marker, any longer and interest will be lost.

The route reconnaissance party should consist of the team leader, the vehicle commander on the night and the drop off vehicle driver. Never use the same vehicle on the recce that you intend to use on the live job. If the drop off is to be by van, conduct your reconnaissance by car.

Types of vehicles

Car: Ensure it has four doors with room for all operatives and their equipment.

Commercial van: Ensure it has sliding side doors for ease of deployment.

Motorbike: Uncommon, but has been used as a method of quick deployment to insert a single operator

Boat: The only method of insertion if your target location is situated on an island. If you have a subject who monitors the roads but has a viable waterway within a suitable distance, you could insert from the waterway on foot instead of using the road. If you are going to use a boat, a full reconnaissance of the waterway must be conducted to include a river bank study of your drop-off location.

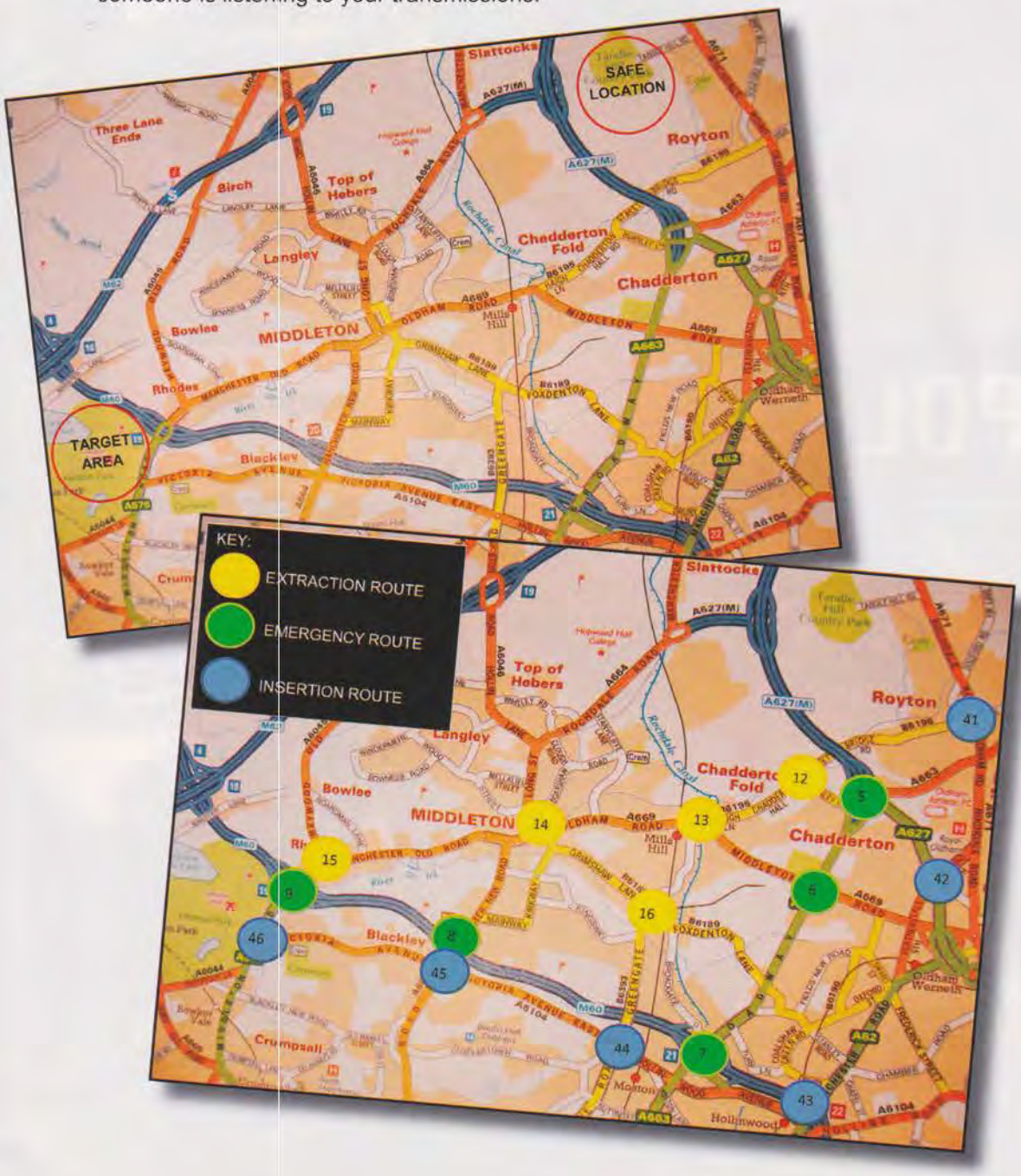
Train: Ideal if you are tasked with operating in a very close-knit community where everyone knows each other and their daily business, vehicles etc. Train stations usually have large numbers of unfamiliar people on a daily basis, being part of this crowd may keep you under the radar long enough to get into position at the start of your operation.

Aircraft: (fixed wing and rotary) Focused more at Military and Government level operations, as this asset is very expensive to have on call.

Spot mapping

Once you have driven all the intended routes (primary, secondary, escape, return) and are happy with all the necessary factors, the next job is to produce what's known as a spot map, coloured dots are placed on the road junctions, these are then numbered and you can use nick names as a replacement for street names.

This tactic is used by the military when operating in built-up areas as a quick method of identifying exactly where a call sign is located on the ground. Using this type of detailed mapping, your group's movements will stay completely secure even if someone is listening to your transmissions.



What to look for on the route in...

Vulnerable points on the road

Crossing points in built-up areas

Road junctions on narrow rural lanes

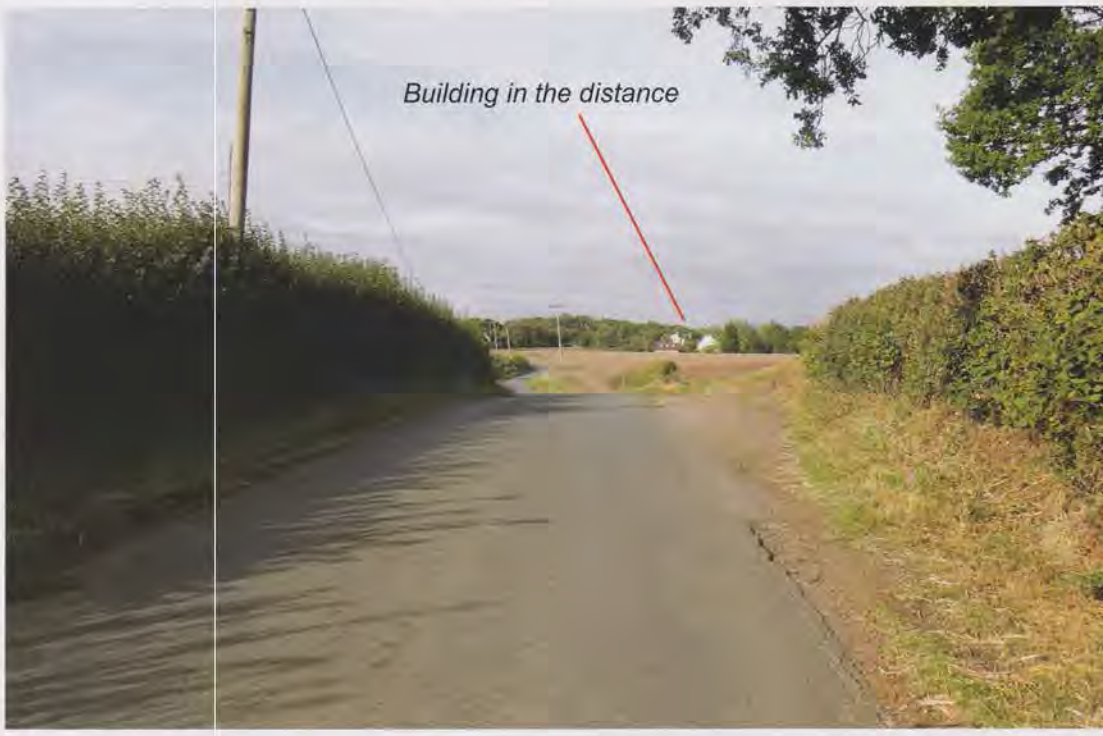
Safe havens on the route in and out if compromised

Use permanent or natural countdown markers to the drop off point from 1 mile out

Drop off point recce

When at the drop off point ensure a visual recce over the area is conducted, looking for ditches, obstacles such as wire fences and thick hedges that may need cutting through. Be aware of buildings in the area that may be overlooking the drop off point no matter how far away. For example, if the lay by shown in the picture below, was used at night, it could clearly be observed by occupants in the property seen in the far distance. Your actions may compromise you without you being aware of it. In daylight, never get out of the vehicle unless there is no other way to gain the required information, if you are seen poking around it may arouse suspicion.

If using a lay-by, park up and act naturally, removing something from the boot, or get out of the vehicle to make a phone call, whilst walking up and down during the call you can covertly film the location. If you can film as you drive past at a slower speed then do so, the less time spent in this location the better.



Communications black spots

Check your radio and phone communications throughout the journey, if at any time you lose signal make a note of it. These areas must be highlighted to all members of the team during "orders" phase before deploying.

Routes

Check all possible routes to your drop of point, on the night of the live operation your primary location may be compromised by other vehicles and people. Consider using your drop off point (if it is a lay-by) as a possible dead letter box resupply location.

Bad locations

Do not choose a location on a bend in the road, not only is it dangerous but it will not allow you to observe vehicles coming from the rear.

At night, don't walk in front of the vehicle's headlights or tail lights as this may draw unwanted attention.

Using a car

Although not unheard of, four males in a car driving through a small rural village can bring unwanted attention without you even knowing. Therefore consider using a female to either drive the vehicle or act as the front passenger; this looks more natural and should put people at ease.

A car should never be used to insert any more than two operators at any one time. If using the three man method, the team leader of the deploying team will sit up front with the other team member either lying across the back seat giving the impression of a couple out for a drive in the country, (if a female operator is present) or both operatives could be sat in the back as rear passengers.

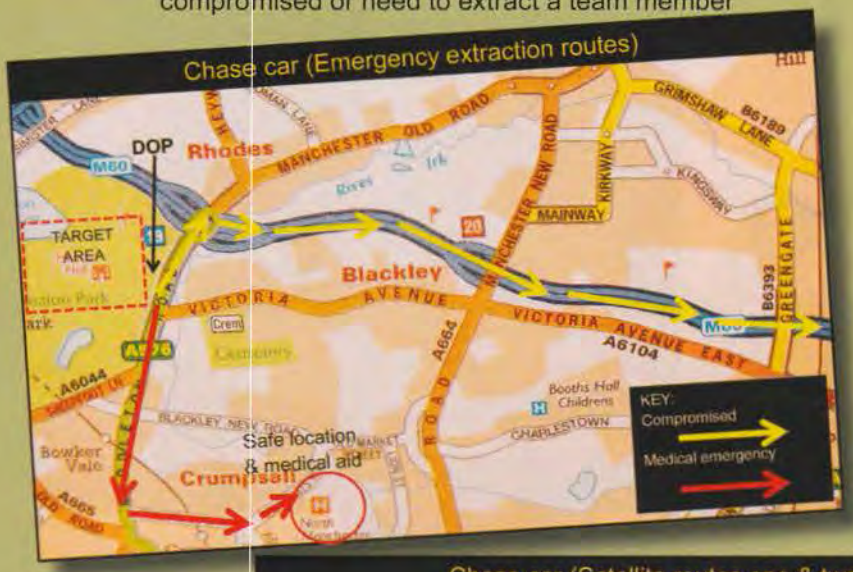
If possible, all equipment should be packed in each operator's Bergens and placed on the back seat ready to go, failing this in the boot. If travelling light with day sacks only, operators can place their equipment in the foot wells.

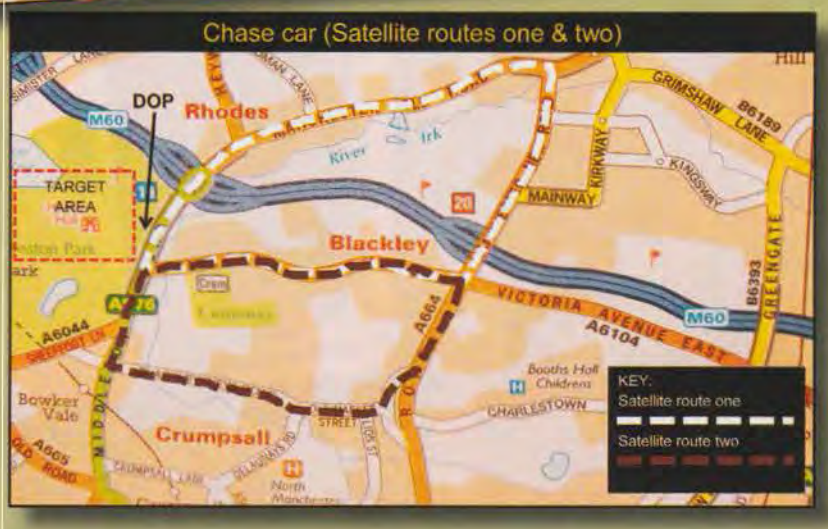
The chase car

All mobile drop offs should be conducted by at least two vehicles, the first is the chase car, sometimes known as the cover car, the second is the drop-off vehicle, which will contain the deploying ground team. In a more hostile environment, a further chase car would be used to the rear. All vehicles will be in communication with each other with the primary chase car giving a running commentary on the route ahead. The drop-off vehicle should maintain a reasonable distance from the chase cars so that it appears that the vehicles are not associated with each other.

Responsibilities of the chase car

- To affirm the route in advance of the hide team
- Act as early warning should the DOP / PUP be compromised
- Act as the emergency vehicle / team recovery in case of break down
- To stay within the operational area (satelliting) to act as a communications re-bro should it be needed
- Quick reaction force in support of the hide team should they become compromised or need to extract a team member





Using a commercial van

A van should always be used when operating with a large team. Up front will be the driver and the vehicle commander, the ground team complete in the back, within communication of each other. Although each operator has a radio, only the vehicle commander and ground team leader should be talking.

Often, inexperienced operators in the back will tend to talk to each other on route, oblivious to the fact that they can be heard from the outside by people in the street, so discipline is required when in the rear.

Remember that 9 out of 10 times you will be inserting at night, so once the side door is closed that is the signal to be fully tactical, which means no talking, no white light and no smoking.

When in the rear of the van do not sit on your Bergens as they contain the operational equipment such as cameras and optics, they are no good to you broken.

When inside the vehicle, loosen the straps on your Bergen and remove one of your arms, place your Bergen against the inside panels of the van so that you are facing inwards. This way when you get to the drop off point, you can use one hand to help each other up, but still have control of your Bergen.

Daytime rehearsals must be conducted

Counting down

At the one mile point, the team leader will switch on a red filtered torch and conduct a final check of each operator and their kit, the countdown will start with all members listening to the radio. At this point, anyone who doesn't hear the commentary will know they have a problem with their radio with limited time to sort it out. The ground team leader will repeat back the markers to the vehicle commander, letting him know that communications are good.

At 500 meters from the DOP, the driver will start to slow down using the gears, the military use a CMV - Civilianised Military Vehicle. This is a normal vehicle with a switch fitted that allows the brake lights, horn, indicators and interior lights to be switched off. This allows the driver to press the brake pedal without the lights coming on to signal his actions. It also eliminates the risk of horns and interior light been operated by accident.

400 meters is called and reply comes back.

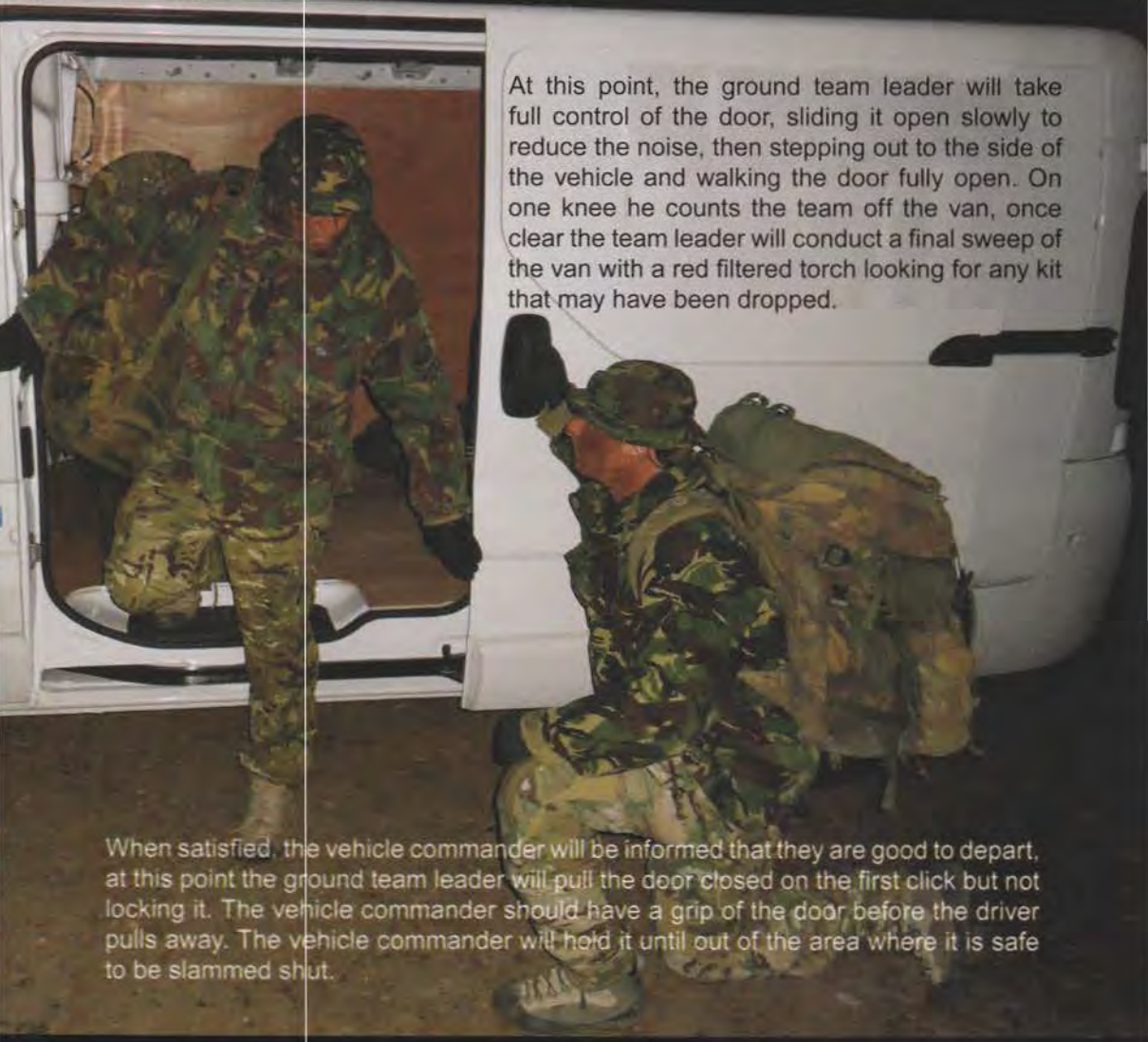
300 meters the vehicle commander opens his window and reaches down to the opening handle on the sliding side door (operating the handle but keeping a tight grip of the door so that it doesn't slide fully open). The team leader in the rear also holds the handle from the inside.

The team leader in the rear will only have a very light grip of the door. If the vehicle commander spots something to the front which doesn't look right, they can slide the door closed. Wind their window up and pass by. If all is going well the door will remain unlocked.

From 100 meters the vehicle commanders count down will be as follows
50 meters
25 meters
10 meters

5, 4, 3, 2, 1

CLEAR
GO, GO, GO



At this point, the ground team leader will take full control of the door, sliding it open slowly to reduce the noise, then stepping out to the side of the vehicle and walking the door fully open. On one knee he counts the team off the van, once clear the team leader will conduct a final sweep of the van with a red filtered torch looking for any kit that may have been dropped.

When satisfied, the vehicle commander will be informed that they are good to depart, at this point the ground team leader will pull the door closed on the first click but not locking it. The vehicle commander should have a grip of the door before the driver pulls away. The vehicle commander will hold it until out of the area where it is safe to be slammed shut.

The team leader will push into the undergrowth with the rest of the team, moving off the roadside and into cover, watching over the position. The team leader will then inform the operations room that they are on the ground and are preparing to move off. Next, inform the chase car to be on standby for any compromise, you could also ask them to drive past the DOP location then double back for a second and final drive past. Once the all clear comes back from the chase car, the team leader will get the team ready to move off and continue the insertion on foot.

Insertion on foot

Once the team leader is ready, the chase car and operations room are informed that the team is about to move away from the drop off point and begin the insertion. The team leader will conduct a map check and ensure the bearing on the compass is correct before moving off.

The team would have been briefed that there are a number of rendezvous points (RV's) which need to be passed through en route. These RV's should be no more than 800 meters apart.

By day, team members can use hand signals to indicate the RV points as they pass through them, at night use personal radios or if the tactical situation will allow, whisper to each other. Once at an RV, it's good practise to look back at and memorise the direction you have come from, if compromised this is the most likely route to be taken back to the pickup location.

If at any time the team leader needs to halt the patrol they will do so, this could be for a map check or to listen to see if they are been followed. If a halt is called, the team will go to ground and observe in all directions, known as observing your arcs. In the day time, team members will be well spaced but at night will be closed right up, laying prone and overlapping their ankles.

At night, use a tap on the foot to signal the moving off. The team leader will tap the foot of the operator to the right, who will then tap the foot of the operator to their right. This continues until the man next to the team leader taps. The team leader then knows everyone is ready to move.

If conducting a map check at night, this needs to be done under a light-proof shelter such as a Bergen cover or something similar. This should be located in or under the top flap of the lead scout's Bergen. This makes it easier for the team leader to get to it and pack it away when finished. The team leader will lay flat on the ground and place the cover over their head and map to contain any light. Using a small hand torch with a filter to prevent more light escaping.

If you have to move back through an RV point on your own and wait for the rest of the team, never locate yourself on the actual RV point. Push off to the side and in a position of cover and watch over it.

In the event of having to 'bug out' en route to the FRV, an ERV or the PUP, you should have been given a time frame to remain at each RV point before moving further back to the next one, remember you now have to move back towards the drop off point. Never think "I'll give it 15 more minutes". You have been given a set drill and timings so stick to them. The team leader will have carried out a time check and they may have selected a different route to head you off at your next RV point.

Once all the RV points have been passed through, you will arrive at the Final RV point (FRV), from there the team leader will conduct a 'hide location recce'. If operating in a team larger than four, the team leader will split the team in half, one half will become the recce party the other half the FRV protection group.

The role of the FRV protection group is to act as an over watch position while the recce party move forward, close to the target area in search of a suitable hide location. At this point the team's 2ic (2nd in command) will be in charge of the FRV protection group.

Insertion from drop off point to FRV

FRV protection

The FRV must be in an area of concealment, which will afford good cover from view but also allow over watch of the recce group. If possible, it must have covered approaches and exits. Once the recce team are in position the team leader will carry out a communications check back to the operations room, if communications are good this will be the hide location, if the communications are poor they will look elsewhere.

Before the recce party move off, the FRV party (if needed) will start to put on their warm and waterproof clothing as they may be staying in this position for some time. Once the recce group leave this location there is to be no moving. As the FRV party are doing this, the recce group are observing their arcs and listening for movement and any sounds.

Once the FRV party are ready, the team leader will give the 2ic a quick brief. This must cover timings, actions on and ensuring compasses are set with the bearing back to the previous RV point. This will now be known as the emergency RV point (ERV).

FRV brief

The teal leader will brief the 2ic on the following

- Return time of the recce group, ensure you give yourself plenty of time
- Actions on no return of recce group, wait 30mins then return to previous RV
- Actions at each RV
- Actions on compromise, hostile or non-hostile
- Communications check
- Time check
- Compass check, ensure the 2ic has compass set to the previous RV point
- The previous RV point will be known as the ERV if a compromise occurs
- Finally, any questions?

The recce group will drop any unnecessary kit, leaving it with the FRV party. They will need to travel as light as possible to manoeuvre quickly and easily. The team leader will give his group the same brief as the FRV party then move off in search of a good hide location.

Once the recce group has found a suitable hide location they will return to the FRV party. The team leader and 2ic will discuss what has been found; as this is happening, the recce group will take over the observations allowing the FRV party to remove their warm clothing, packing it away and getting ready to move off. The team leader may wish to conduct a longer listening wait before finally moving off.

Once the team has moved off from the FRV location, this will automatically now become the new ERV. If at any time the hide becomes compromised, the team will aim to head straight back to this location as it is somewhere that they all know. As soon as the team are at the hide location the work phase will begin on constructing the hide as detailed in the following chapter. On completion of the task the team will extract to be picked up in order to return to base.

The pick up

Once at the designated pick-up point, the team will move into cover and conceal themselves, facing out and observing their arcs. The team will then conduct a listening halt to ensure they have not been followed or observed. When the team leader is satisfied, the operations room will be informed over the radio that they are at the pick-up point and are ready to be extracted.

The operations room will acknowledge the team's extraction with the pick-up vehicles estimated time of arrival (ETA). At this point, the team leader deploys the pick-up marker (known as 'Cats Eyes') and crawls forward towards the roadside and positions the marker. He will then withdraw back to the rest of the team and will wait to hear from the pick-up vehicle commander over the radio on his run in.

What are cat's eyes

This is a method used to mark pick-up location for covert operators.

These would only be deployed at the side of the road at night. Use a reflective material to make the eyes, cut and glued onto the wooden board - shaped like a cat's head. Paint it black and fix to a metal spike pushed into the ground.

Here the team leader gives the "thumbs up" indicating it's safe to break cover

When the pick-up vehicle is close, the vehicle commander will call-up the ground team leader and inform him of their approach. From this point the communications between the ground call sign and vehicle commander will be continuous.

When the ground call sign has eyes on the pick-up vehicle, the team leader on the ground will guide the pick-up vehicle onto the cat's eyes. The vehicle commander will inform the ground call sign when the cats eyes are visible before bringing the vehicle to a halt. The driver will switch off all lights and if using a CMV he will use the kill switch.

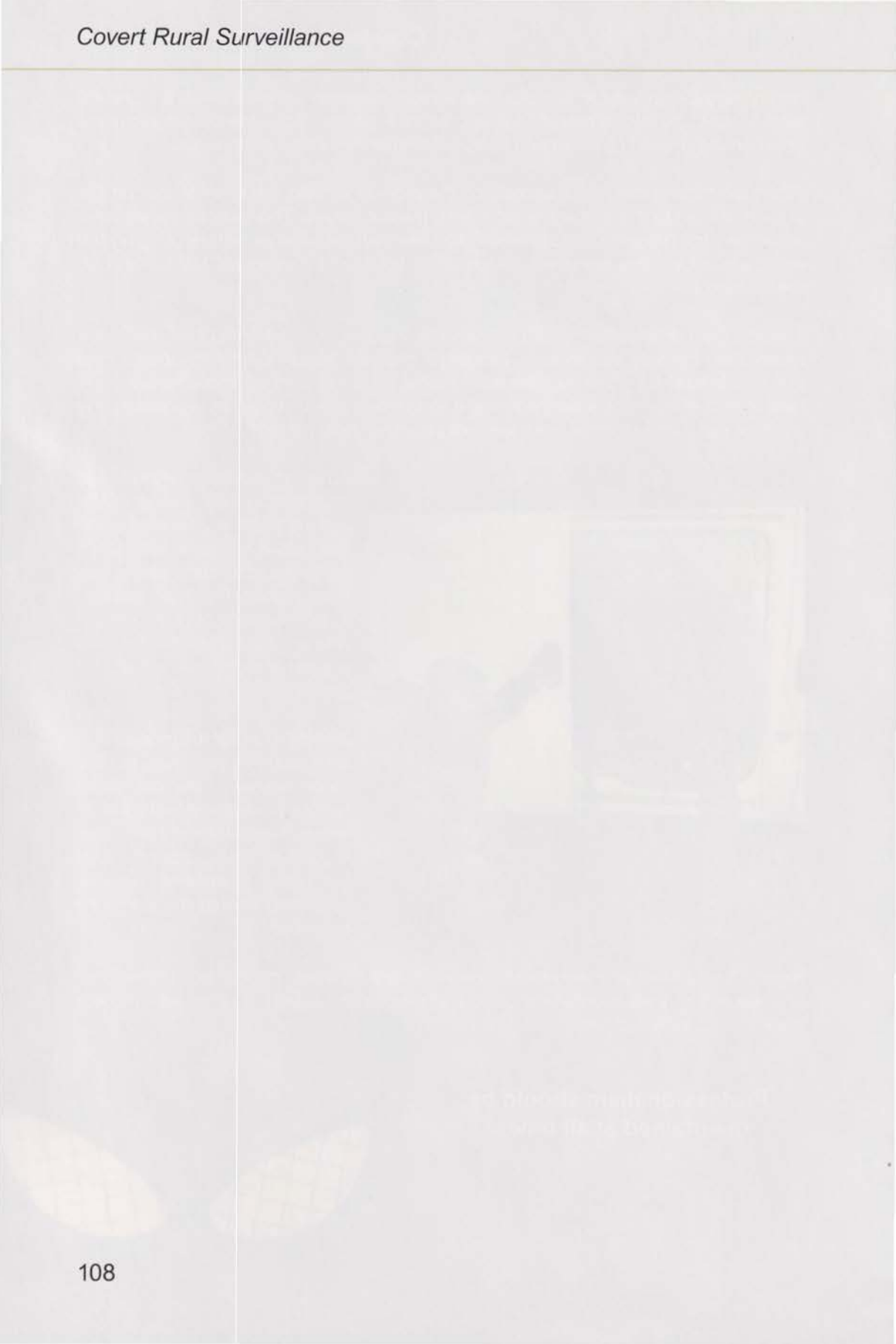
The vehicle commander will then open the window, reach behind him and once again open the side sliding door, keeping a grip of it so not to let it fly open. Once the vehicle has come to a halt, the team leader on the ground will move forward and take control of the door, slowly opening it so to make as little noise as is possible. He will then call the rest of the team forward counting them aboard.

Ensuring all kit has been loaded on board, a final sweep of the pick-up point will be made and the cats eyes collected. Once on board, the commander will slowly close the door passing it to the vehicle commander who will hold it closed. Once in a safer location he will shut it properly.

If using a car for the pick-up, the drills with the cats eyes are the same however, the car doors remain closed and locked at all times. When the car has come to a halt, the ground team will make themselves visible, only then should the doors be unlocked.

Remember to keep your noise and movement to a minimum once inside the vehicle, you are still in a situation which could be compromised. Do not relax until you are back in your safe location.

Professionalism should be maintained at all times.



CHAPTER 5

LAND NAVIGATION

Operating in the rural environment is all well and good when there is a footpath you can follow. The situation changes when there is no path, it's the dead of night with thick fog and you have a six kilometre insertion on foot, navigating through open fields and possibly woodland. Although this may sound like a mission in itself, in fact it isn't. Like everything in this job, it just takes time and practise to get it right.

Topics Covered

- **Basic navigation**
- **Grid references**
- **Basic compass work**
- **Bearings**
- **Advanced compass work**
- **Attack points**
- **Aiming off**
- **Pacing**
- **Measuring distance**
- **Route cards**

Navigation

Operating in the rural environment is all well and good when there is a footpath you can follow. The situation changes when there is no path, it's the dead of night with thick fog and you have a six kilometre insertion on foot, navigating through open fields and possibly woodland. Although this may sound like a mission in itself, in fact it isn't, like everything in this job it just takes time and practise to get it right. This chapter will cover only the basic navigational skills that you will require when conducting your insertion or extraction; covering the skills to get you to your hide location and skills which are used within the hide when locating your target.

What is a map?

A map is a bird's eye view of a plot of land that has been divided into squares and drawn to scale. It represents the fall of the land on a piece of paper which is used as an aid to navigation. It uses a number of symbols, which are found in the key on the map's edge, these are known as "conventional signs" and indicate physical objects on the ground.

Grid squares

The printed map is divided into small squares known as grid squares; these are different sizes depending on the map's scale.

- 1:50,000 Means 1cm on the map represents 500 metres (50,000cms) on the ground.

- 1:25,000 Means 1cm on the map represents 250 metres (25,000cms) on the ground, with this map you will see that the grid squares are larger and contain much more detail.

The compass

There are two general types of compass; the "Silva" lightweight plastic compass or the prismatic compass. The prismatic compass is used by military reconnaissance troops when in their hide locations, this is to direct accurate mortar and artillery strikes on enemy positions. These are excellent for static hide work but quite tricky to use when navigating over ground whilst on the move.

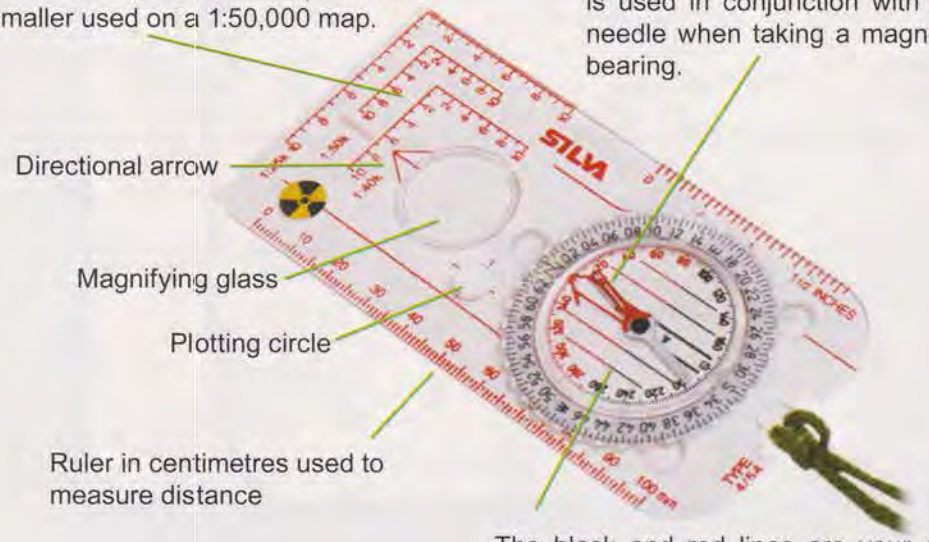
I would always use a Silva compass for all aspects of rural surveillance operations.

The compass bezel

This shows the outer numbers as "MILS" on a military compass, 6400 mils in total, which is more accurate than the civilian type which uses degrees, 360 in a full circle. The yellow box on the bezel shows the bearing of the direction you are intending to travel.

Romers
Used when converting a four figure grid reference into a 6 or 8 figure reference. The larger scale is used on the 1:25,000 scale map with the smaller used on a 1:50,000 map.

The magnetised direction needle; this will always point towards the magnetic north. The printed black and red arrow is used in conjunction with the needle when taking a magnetic bearing.



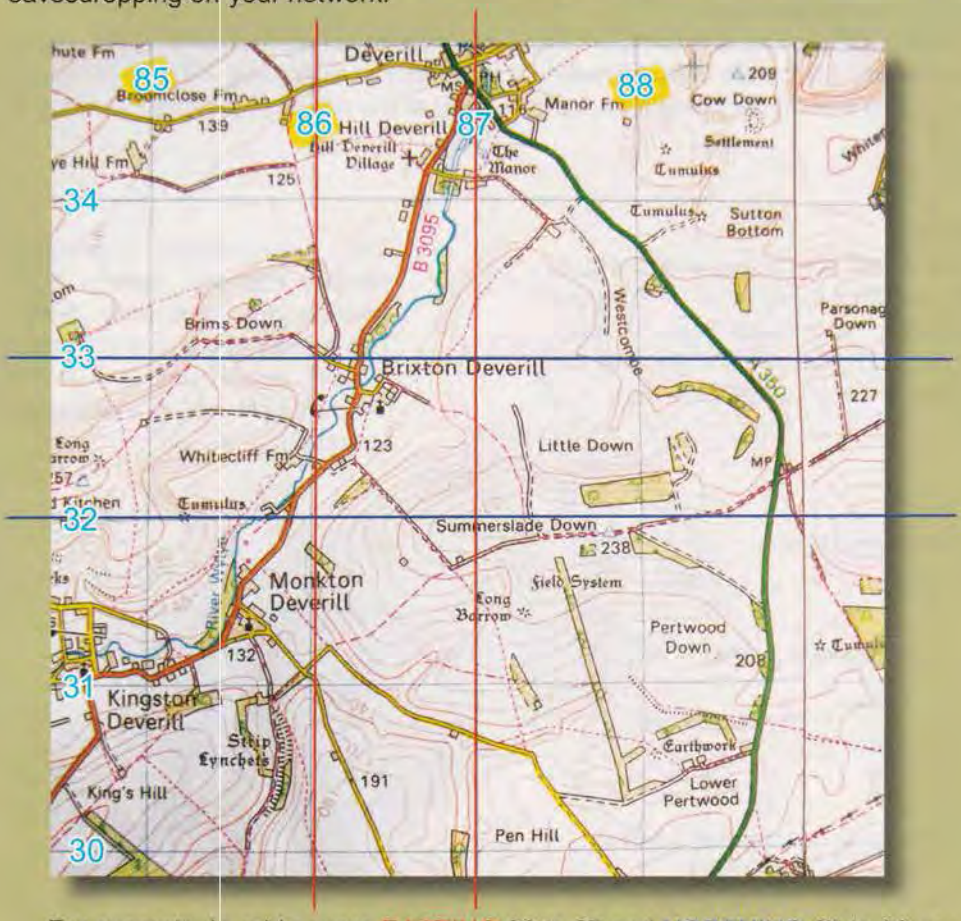
The black and red lines are your grid lines which are to be married up with the grid lines on the map when taking a grid bearing.

Each of these grid lines are numbered and known as Northings and Eastings, the horizontal lines are the Northings and the vertical lines the Eastings, shown here in blue and red.

If you need to inform the operations room where you are, you need to give them what is known as a "grid reference"; this reference number is made up from the figures given to each of the Northings and Eastings on the map. A grid reference can be a 4 figure, a 6 figure or even an 8 figure reference, which is the most accurate.

A 4 figure grid reference represents a 1 kilometre square around your location.

A 6 figure will pinpoint your location down to an accuracy of 100 metres, whereas an 8 figure will pinpoint your location down to an accurate 10 metres. When sending your hide location over the radio, always send it as a 6 figure grid reference, this will give you a 100 metre "box" around your hide location. The last thing you want to do is send an 8 figure grid reference pinpointing your hide, in the event someone is eavesdropping on your network.



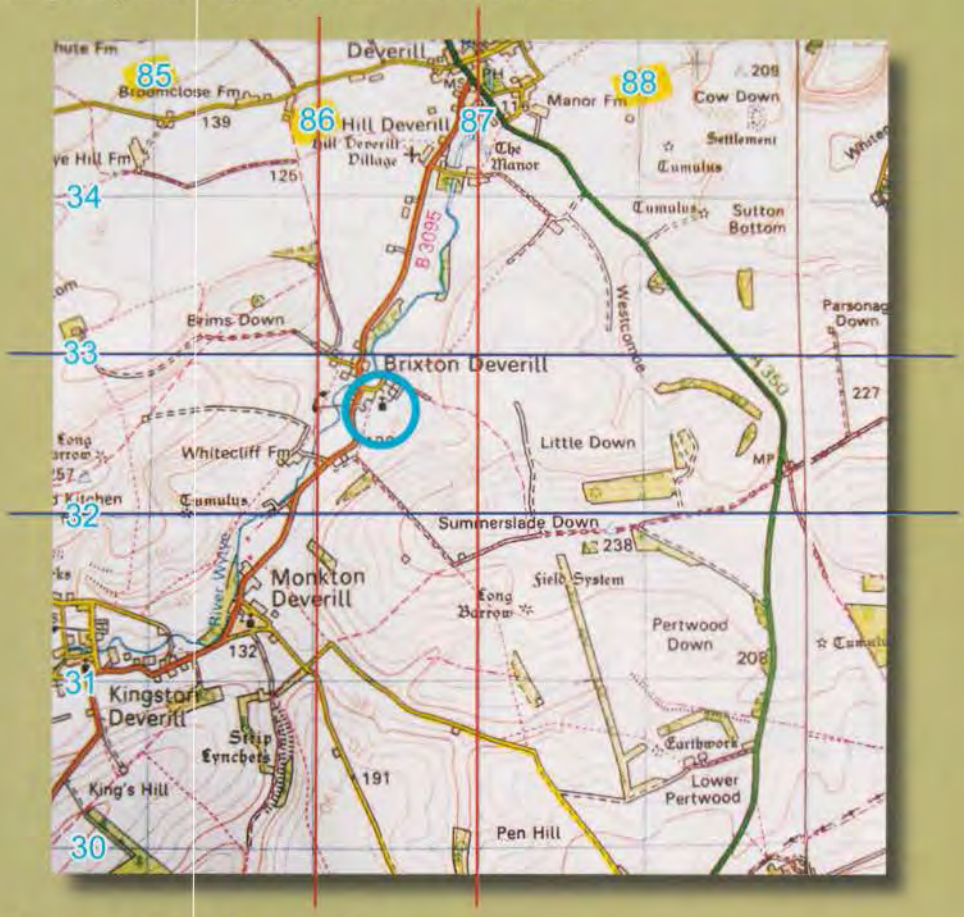
For example, in grid square EASTING 86 to 87 and NORTHING 32 to 33 you will find a church

How to work out your grid reference

There is a saying that states, when taking a grid reference "always move along the corridor then up the stairs". What this means is that you always start your grid reference with the number printed on the map going from left to right (Eastings), this is going along the corridor. Next find the numbers printed on the map going from bottom to the top (Northings), this is going up the stairs.

For example if you had to give the grid reference of the church within this square it would be EASTING 86 and NORTHING 32.

This gives you a 4 figure grid reference of 86E 32N



6 Figure grid references

When taking a 6 figure grid reference, use the romer on the edge of your compass to equally divide the grid square into 10 smaller ones.

This will then give you a 1 kilometre grid square split into 100 metre sections. Each one of these smaller squares now has its own easting and northing number starting from 1 to 9, 10 is the start of a new grid square. As with the larger grid square the eastings start from 1 - 9 moving left to the right, the northings starting from 1 - 9 from the bottom moving to the top.

Taking the 6 figure grid reference

On this map section, a grid square has been marked in yellow, we are going to take the grid reference for the small woodblock within the blue circle, specifically the bottom right corner.

Position the 1:50,000 scale Romer on this point and read off the distance to the Easting, which is 5 in this case. Then identify the Northing, which in this case is 3.

Add these numbers to the main grid numbers to achieve the 6 figure reference -

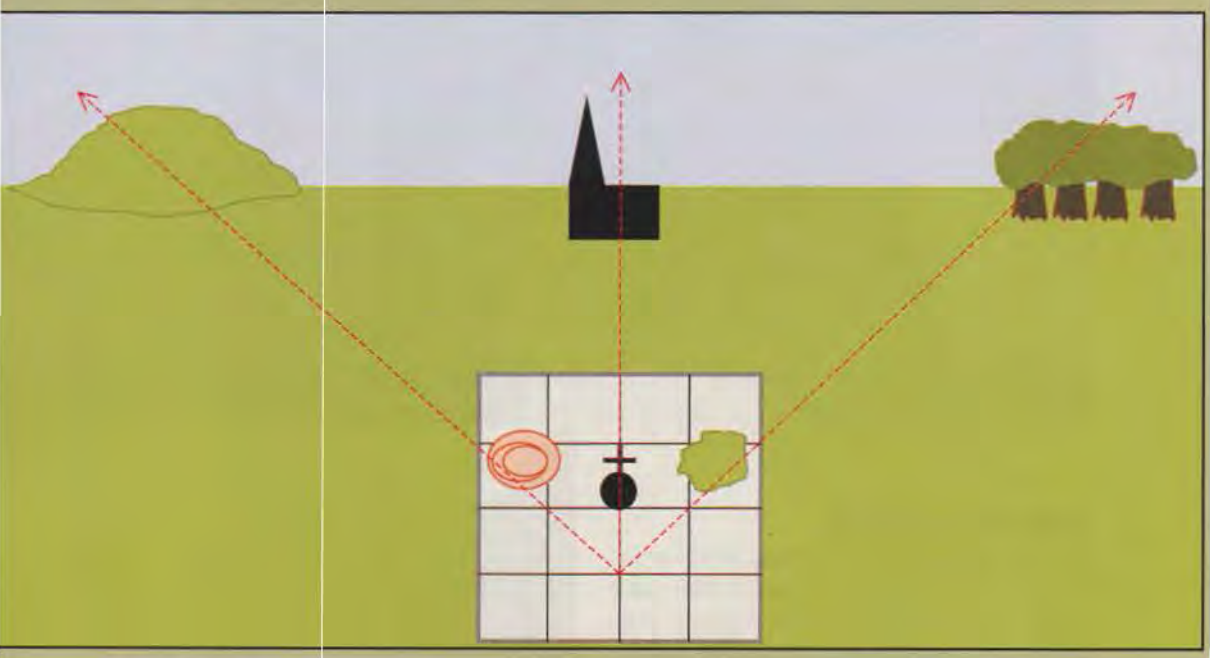
185E 743N

To calculate an 8 figure grid reference this process is repeated by splitting the smaller squares representing 100 metres into 10 even smaller squares that represent 10 metres on the ground.

For a really accurate 8 figure grid reference, a 1:25,000 scale map must be used; the detail is much greater and the grid squares larger, making it easier to work with.

Setting the map to ground & taking bearings

Setting or orientating your map to the ground is achieved in two ways; firstly you can rotate the map until the conventional signs and features printed match that of the actual ground. Alternatively, by using your compass, firstly find north and then rotate the map in your hand until the northing lines match the compass.



Bearings

There are two types of bearings, "Grid" and "Magnetic". Each are obtained in a similar way with a compass, but will give totally different results.

Grid bearings

A grid bearing is taken from the map from point A to point B. Place your compass edge at the bottom right hand edge of your location or feature; point A, ensuring that the directional arrow on the compass is pointing towards the location or feature you wish to travel to; point B.

Once this is in line, turn the compass bezel so that the north grid lines inside the bezel marry up to the grid lines on the map. Always ensure the bezel' north arrow is pointing towards the top of the map.

When the grid lines inside the compass bezel have been married up to the lines on the map, look at the printed numbers on the compass bezel, you will clearly identify your bearing shown in the yellow box within the bezel.

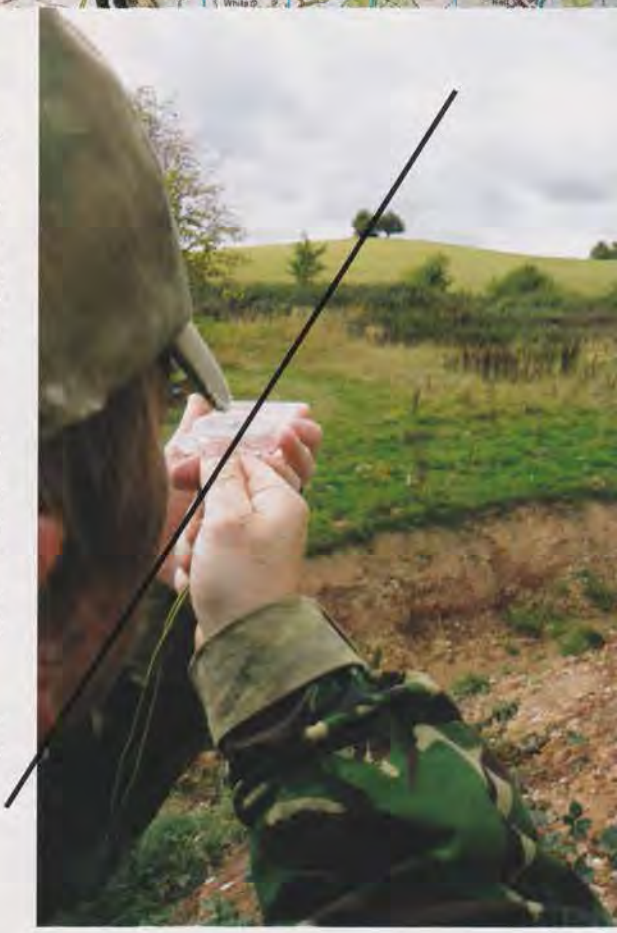
This number is your grid bearing from A to B.

Magnetic bearing

This is taken on the ground from your location to a feature or point that you have clear line of sight to. Ensure you can clearly see the next feature or point, by holding the compass up to your eye; ensure the printed directional arrow on the compass is pointing in the right direction.

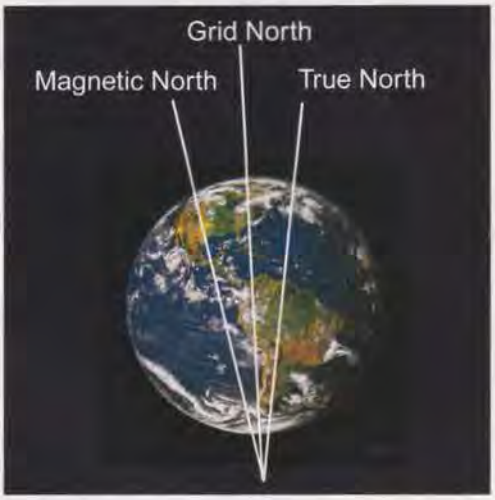
Next, by holding the compass firmly, rotate the bezel until the red arrow is lined up and pointing in the same direction as the magnetic needle inside the bezel. The number given in the clear or yellow box is your magnetic bearing, by walking on this bearing you will arrive at your chosen location.

Turn the bezel until the compass needle is in the centre of the printed arrow as shown in this photograph.



You must trust your compass. Once you have dropped down out of sight of your next location, into a valley for example, or if it has gone dark and the walk is taking longer than you expected, doubt may start to set in. You may feel that the compass is starting to take you in the wrong direction but trust it. As a safety measure, put an elastic band around the bezel to hold the bearing in place, this method should always be used when in your hide and your compass is set to your ERV point. With your compass in your pocket there is always a chance it could move, the slightest movement of the bezel could send you hundreds of metres off course if not checked.

When taking your bearings to the same point, you will notice that other people may have a slightly different bearing. They should only be out by one mil or so but this will happen, if it is more, change compasses. The name given to this is difference from compass to compass is "Individual Compass Error" or ICE.



The three norths

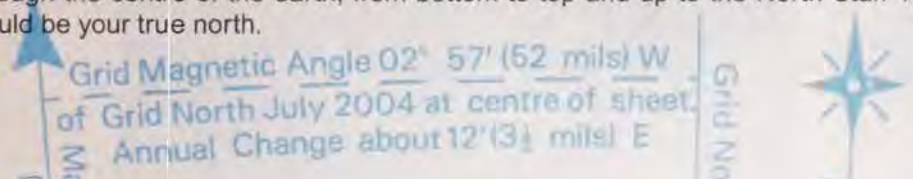
In navigation there are three norths, each one is very different to the others.

Grid north

This is dictated to us by the parallel lines (Eastings), which have been drawn on the map.

True north

This is the line or axis) that the Earth spins on. If you were to draw, a straight line through the centre of the earth, from bottom to top and up to the North Star. This would be your true north.



Magnetic north

Created by a massive lump of iron ore beneath the earth's crust, located around Hudson's Bay, Canada. It's this iron ore that the magnetic compass needle points to. As the ore is continuously moving eastwards, it creates a problem for navigators known as Grid Magnetic Angle - GMA. The compass points to magnetic north but your map points to grid north. However, with a simple mathematical equation this can be counteracted, the GMA is printed at the top of each map in degrees or mils.

Once you have worked out the annual magnetic change in (mils), you add or subtract this figure from your bearing. The rule to follow is...

- GRID TO MAG - YOU ADD THE GMA
- MAG TO GRID - YOU GET RID OF THE GMA

Back bearings

This is used to check a route already travelled or as a method of finding your location on the ground then plotting it on your map. This is known as a "resection" which is covered later in this chapter. When taking a back bearing on a military compass which contains 6400mils and more accurate than degrees, you can use a simple mathematical calculation which will give you the back bearing.

- If the bearing is over 3200mils then subtract 3200mils thus giving your answer
- If the bearing is less than 3200mils then add 3200mils, giving your answer

Example: A bearing of 5200mils would be subtracted by 3200mils this giving you a new bearing of 2000mils.

Above is the text book answer of carrying out a back bearing. However when you are cold, wet and have been on the ground for days with little sleep, the last thing you want to do is make a mathematical calculation, no matter how simple.

The quick and very simple method is to look at your forward bearing in the yellow box, then look at the number directly underneath. Shown here in the diagram:

Intersection

The intersection is used when you need to plot your subject/target on the map, so that you can give its location as a grid reference to other hides as a form of trigger. In the military, this is one method used when calling indirect fire onto a target.

To plot an intersection you must first know your exact location on the ground by way of a grid reference. If not, you will first have to find your location by GPS. This is very important when in the military, as you need to make sure your team and any other friendly call signs are not in the danger area.

Point the compass so that the directional arrow is pointing towards your subject; rotate the bezel until the magnetic needle is in the centre of the printed north arrow.

You have just taken a magnetic bearing to the target; then using your known GMA, subtract it to convert it to a grid bearing.

Remembering **MAG to GRID** get rid.

Once you have plotted the target's location on your map, calculate the distance from you to it, by counting the number of grid squares between both locations.

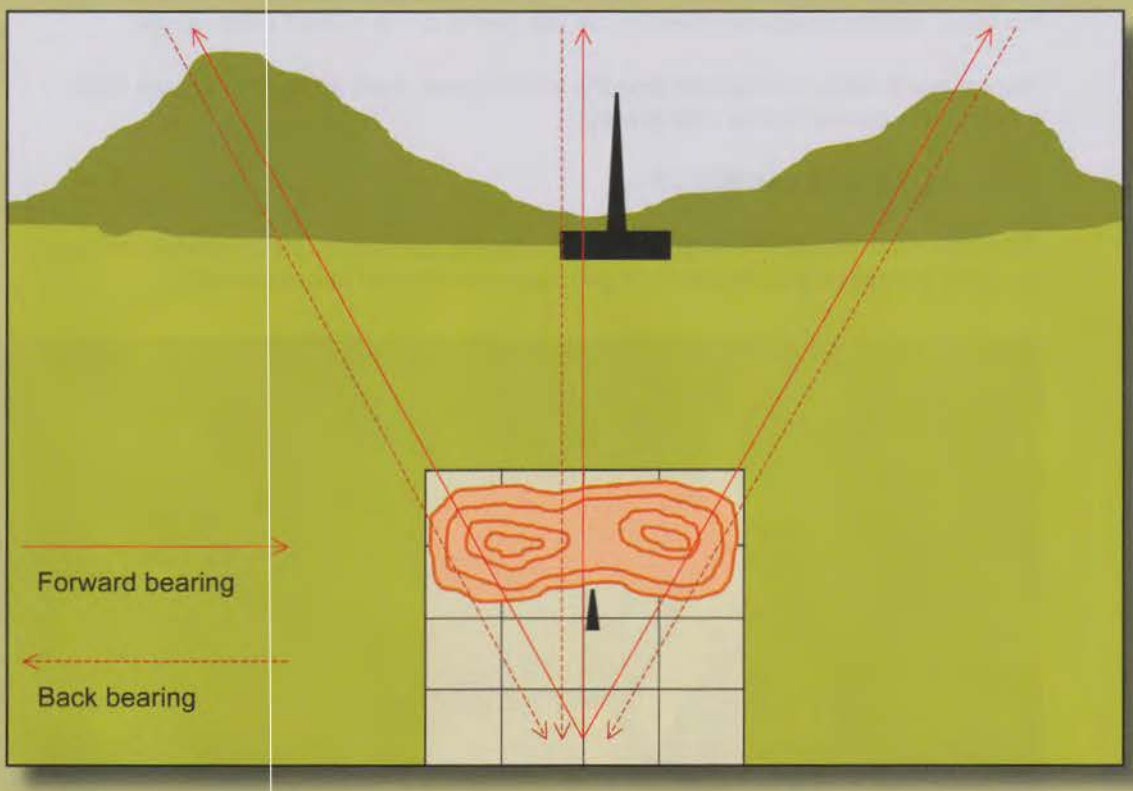
Resection

The resection is a method used to relocate yourself when you have become disorientated on the ground, you may have been dropped off in the wrong place. To do a resection you must be in an elevated position where you can clearly identify at least three landmarks some distance apart from each other.

From this position you need to take a magnetic bearing to each of the three landmarks and record them in a notebook, once you have the magnetic bearings you then need to convert them into grid bearings, this is done by subtracting your GMA from your original bearings.

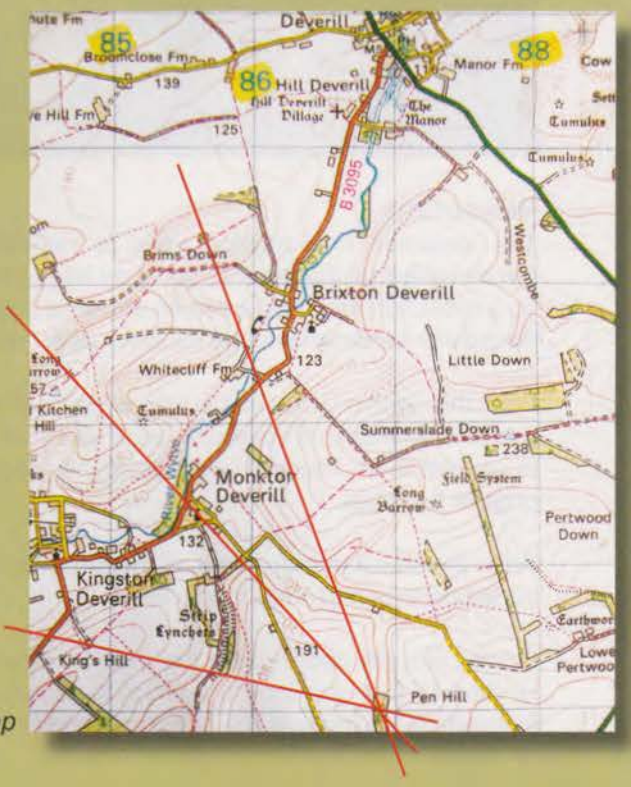
Write the new bearings down as the next stage is to turn your new grid bearings into back bearings and write them down.

Finally, plot the bearings on the map by drawing a straight line through the printed landmarks that you took a bearing from, what you should see is a small triangle forming on the map. At the centre of this triangle is your location.



Stages to remember

- Take a magnetic bearing
- Convert it into a grid bearing
- Turn it into a back bearing.



This is what you would see on the map

Walking on bearings

Once you have taken a bearing, your next step is to walk and follow it aiming for your next RV point. This sounds easy and in most cases it is, until the weather changes to fog or heavy mist or darkness falls, making your navigation much more difficult.

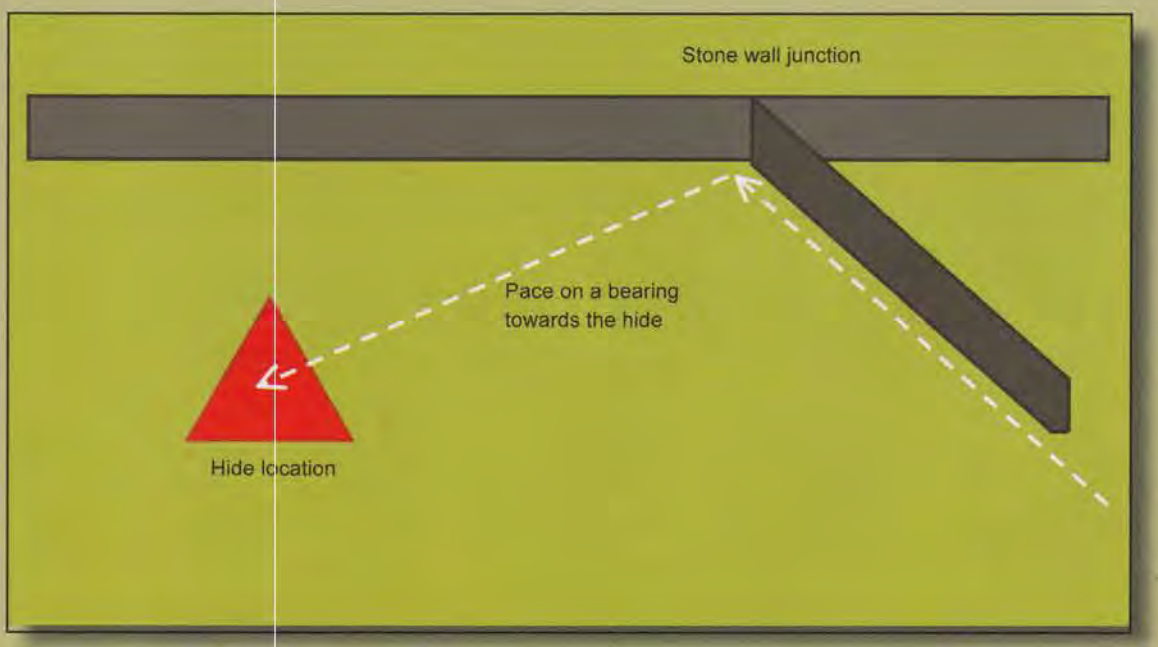
There are several things you can do to assist in this situation such as "Attack Points", using a system of "Aiming Off" and "Pacing".

Attack points

You have to locate your hide position in open moorland. Finding it in thick fog could prove difficult. However if there were two or three features nearby you could use these as your attack points. For example, navigate to a stone wall which is 100 metres to the right of your hide location.

When at the wall junction, fine navigate to your hide by pacing in the right direction. In this example the wall junction would become your attack point. This is a very good method and should always be used when operating in very bleak locations where there are very few features to aim for. Having attack points will help prevent you from walking too far and over shooting your intended location.

In the diagram you can see the river between the hide location and the target, this can be used as a safety measure. If you reach the river you know you have gone too far, and by going any closer could compromise the surveillance task.

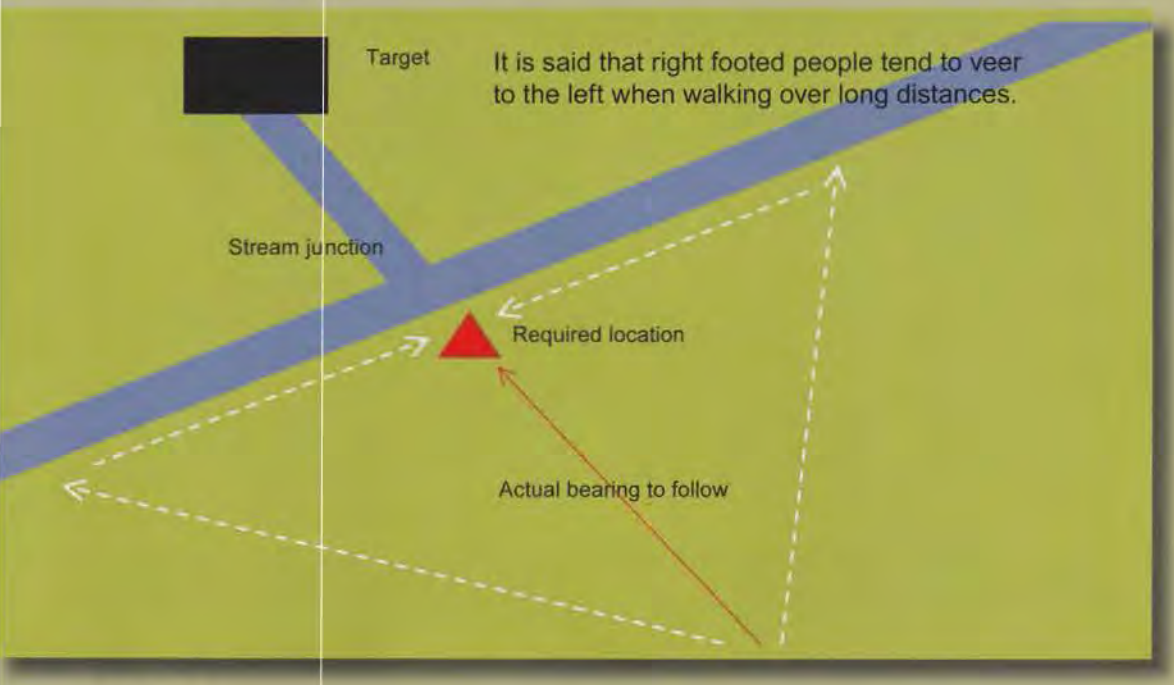


Aiming off

Unknowingly drifting off your bearing can be disastrous when covering a large distance, which is why you should keep your bounds (or legs) between RV points as short as possible.

The way to aim off is by conducting a map study to identify features which you can knowingly aim off for. For example, if you where tasked to meet another surveillance team already on the ground, and the chosen position was on a stream junction you could aim slightly to the left (or right) when taking your bearing.

This way when you reach the stream you know the stream junction will be down to the left or right accordingly.



Pacing

This is a method used by an individual to measure distance between points, both very simple and effective. If the mist is thick or you are operating at night or in a very close environment such as the jungle, all navigation is carried out using bearings and paces.

The first thing you need to do is measure out 100 metres on flat ground. Then start at one end and walk to the other, counting every time your leading foot hits the ground. Do this three times and take the average; I know that over 100 metres my pacing over flat ground is 63 paces.

This process should also be conducted uphill, downhill and when carrying a fully packed hide Bergen. You will note that your pacing will change. For example, if you are going uphill or carrying a lot of weight the number of paces will increase.

When pacing on the ground between RV points you must always start from zero, if covering large distances such as 800 metres it is very easy for a novice to lose count of their paces. For this you can use pacing beads or better still a doorman's clicker. This can be held in the hand and every time you place your leading foot down you press the clicker which will register the number of paces.

The pacing beads are separated into two sections on a length of cord, consisting of a group of nine beads and a group of five beads, as you walk counting your paces, at every 63 paces for example, you would move one of the nine beads up. Once all nine beads are up (900m), at the next 63 paces you would move one of the five beads up and pull all nine beads back down.

You now know that you have walked 1000 metres, this continues with each leg. Ensure that you reset the beads with each new leg.

Measuring distances

When inserting and walking to your hide location, each leg of your insertion will have been broken down into RV's, the distance between each RV is very important. Once you have identified the total distance, you can calculate a time estimate for your insertion.

The military works on an average of 4 kilometres per hour across regular ground; this does not include downhill or uphill sections. Navigating over this type of terrain will of course slow your movement down, the steeper these sections are the slower your movement will become.

On a map scale of 1:50.000 or 1:25.000 each grid square equals 1 kilometre when you measure vertically or horizontally, if you measure the grid square diagonally your distance becomes 1.5 kilometres.

Straight line distances

By using the edge of a piece of paper, place it alongside your chosen route. Using a pencil, make small marks along the paper's edge at every direction change. You will end up with a number of small marks on the paper which can then be measured against the map's scale printed at the bottom of the map.

Lengths of thin string can also be used in the same way as the paper, but instead of marking it, pinch it at every direction change. When you have covered your entire route, measure it on the map's scale.

Finally, you can buy a small device for measuring maps which looks like a pen. Instead of an ink nib it has a small wheel which is traced along your route. As you move it along the route a small marker moves up inside the device which displays your distance.

These methods will only show your distance as the crow flies in a straight line, not as the ground lies. To be totally accurate with your distance you will have to read the contour lines on the map as well.

This will allow you to work out the extra distance covered for dropping in and out of low ground. This incorporates what is known as Naismith's Rule which dates back to 1892. It is the formula to calculate time and distance.

Measuring tirne - always give an estimated time

The average person walks 4 kilometres an hour, this a good speed to work from. Below are some average timings to work from

Timings

- Average walking pace is 4 kilometres an hour on flat ground
- For every 10 metres of incline add 1 minute, if carrying heavy loads add 2 minutes
- If having to climb over a rocky section add 2.5 minutes

Naismith's rule states that time can be gained back on gentle downhill sections such as 1 minute for every 30 metres. It then states that steep declines may require adding this time back and on some rocky sections, more time may need to be added, this is a pointless exercise.

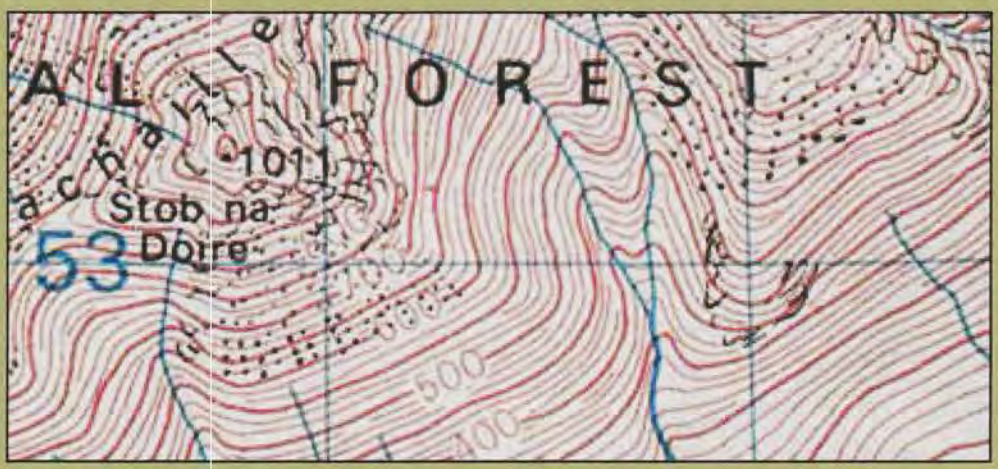
- If you are on a gentle downhill do not adjust your timings as it is better to be early than it is late.
- If you are climbing down a rock face then double the amount of time as it took you to climb up, again better early that late.

Contours

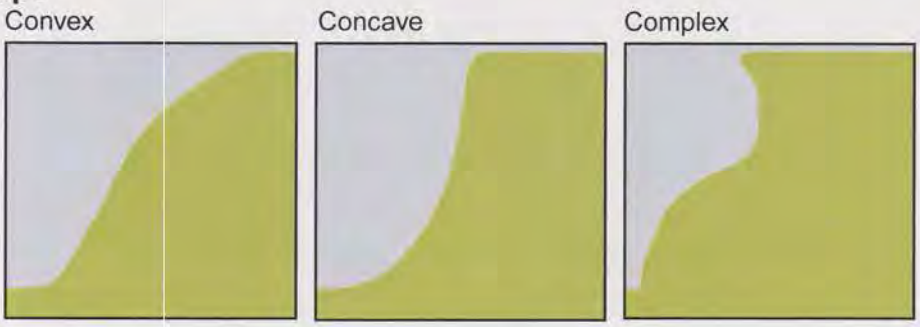
Relief (or the shapes of the ground) on a map is shown by contour lines which are orange / red in colour, normally indicating 10 metres between each one on 1:50,000 map, and 15 metres on a 1:25,000 map scale.

The closer together the contour lines are, the steeper the slope. Along the contour line you will see a printed number; this is the height of the ground above sea level at that point.

With practise, a good operator can look at a two dimensional map and visualise what the ground actually looks like, with this skill, planning routes will become easier. Not only will contour lines indicate changes in height, but they will also allow you to see how the ground is shaped, thus helping with your time estimates.



Shape

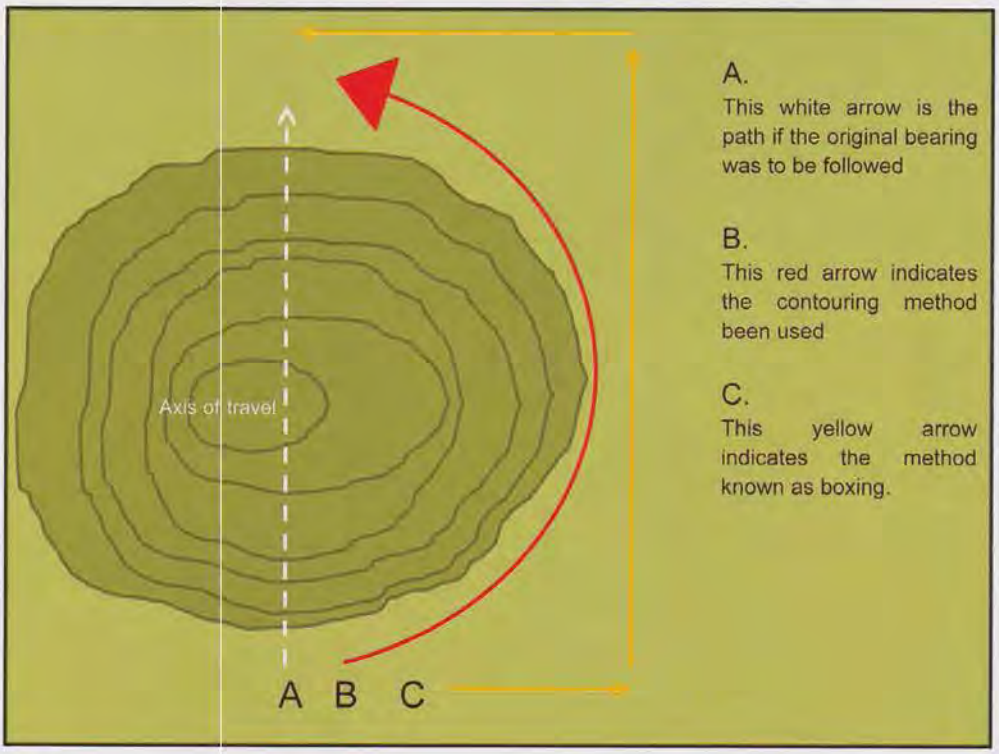


Contouring & boxing

This method of navigation should always be considered when faced with a very steep feature, there are two reasons. Firstly it is very energy and time consuming to climb up and over large features when carrying heavy equipment on your back, secondly it is tactically better to stay within the low ground preventing any possible compromise via sky-lining as you cross over the peak.

A second method used is known as boxing, by looking at your map and working out the distance in metres required to navigate around the feature, this distance is then converted in to paces. Was this is done simply pace around the feature.

For example: 128 paces to the right, 256 paces forward back on the bearing, and finally 128 paces left to bring you back on to the axis of travel.



Route cards

Before tackling any cross-country route, the team leader and 2ic will complete what is known as a route card. There is a set format that should be followed to ensure all the necessary information is listed.

Carried out correctly, the team should be able to insert using only the route card and a compass without having to calculate bearings and distances on the move.

Each leg must start and finish at an RV point. These points should be in a recognisable location (such as a corner of a wood) and achieved by following a magnetic bearing.

LEG	FROM	TO	MAG BEARING	DISTANCE	DESCRIPTION & REMARKS
1	250 672	258 677	2300 mils	600 metres	small copse with stream to left side
2	258 677	266 681			
3	266 681	?			
4					
5					
6					
7					

The route card contains all the correct information required for the insertion, looking more closely you can see that the grid reference FROM and TO always continue on to the next leg, for example.

Your first TO grid reference (258 677) becomes your second FROM grid reference and so on.

Always write your bearings as magnetic, as this is what you will be using on the ground. Always take the distance of each leg and finally any information you feel you would need to help you remember and identify the RV location.

Once you have reached your first RV, the team leader and 2ic will look at their route card and set their compass to the next recorded bearing. Check the distance of the next leg and take a mental note of the next location's description.

When happy, move off remembering to count paces. It is always good practice to have more than one person pacing, this way if you do lose your count, you can check with the other counter to ensure you don't overshoot your RV.

This chapter has described the basic skills required to navigate over land. It is now down to you to practice and fine tune these skills until they become second nature.

CHAPTER 6

FIELD CRAFT

The basis of all rural operations relies on basic personal fieldcraft skills. These particular skills are taught to infantry soldiers during their basic training and become the building blocks for more advanced techniques. This important basic training is the reason why former infantry personnel, especially those who specialised in reconnaissance, surveillance and sniping, make great rural operators in a civilian role.

Topics covered

- **Cover**
- **Movement**
- **Camouflage**
- **Concealment**

FIELD CRAFT

The basis of all rural operations relies on personal fieldcraft skills. These particular skills are taught to infantry soldiers during their basic training and become the building blocks for more advanced techniques. This important basic training is the reason why former infantry personnel, especially those who specialised in reconnaissance, surveillance and sniping, make great rural operators in a civilian role.

This section will be broken down into three categories

- Cover
- Movement
- Camouflage and Concealment

Cover

You will have to consider both cover from view and cover from fire, the latter concentrates more on the hostile side of operations. For example, cover from fire would take the form of a solid object such as a building, wall, large mound of earth or a deep depression in the ground. A position which will protect you from effective fire - bullets. I have seen many inexperienced operators putting themselves in harm's way because they don't have a full appreciation of the penetrative power of a bullet. They think that a thick bush will protect them, a kind of 'if they can't see me they can't shoot me' attitude; how wrong this view is. Cover from view could still utilise the examples above but in this case would also allow features such as hedges, thick brushes and forestry blocks to be used.

When attempting any form of covert movement across ground in a rural environment, you must consider that your next move will offer the required cover but also conceal intentions. By this I mean, do not let yourself become watched over unknowingly so that your subject or others can second guess your next move or final destination, always move from cover to cover. If this is not always possible and you have to cross open ground, think about dog-legging' to add deception to your movements.

When using cover, try to use positions which allow you to observe through it rather than around it, this will limit the chances of being seen. If using solid objects to cover your movement such as walls, then consider removing a brick to act as an aperture to observe through, this may sound like a lot of work but bricks can be removed very quickly by scrapping away the mortar between them. If you are going to remove bricks you must guard against light flooding through by hanging a piece of netting, to cover the hole.

Observing through cover - these snipers are not only using cover to observe through, but also as a method to conceal themselves in order to take their shot.

Movement - sudden movement and livestock

Nothing catches the human eye quicker than movement and the faster the movement, the more chance there is of being seen. To this end, when moving into your final over-watch or hide location, it must be as slowly and deliberate as possible.

Try not to rub or knock against trees or long grass as the movement will be amplified as it travels up the feature; in the jungle this is known as telegraphing. If you were to sit on high ground observing the tree canopy with a patrol moving beneath it, as they knocked into trees or used them to aid their progress, you could clearly spot the route they were taking; this is the same in long grass.

It is not just your movement that will give your position away, livestock will do this for you if you're not careful. Cows are inquisitive and will move towards you to have a look at what you are doing. So if a farmer or an observer sees a herd of cows moving from one end of a field to the other, they will be suspicious.

Sheep on the other hand do the opposite, if they sense something out of the ordinary or get spooked, they will run away making as much noise as possible, again drawing attention to the area.

If conducting close target reconnaissance of a farm compound, be aware of farm dogs that may be untethered and free to roam around. Their bark will give your presence away and they could also attack you. Farm geese are also very territorial and can be dangerous, they will not hesitate to attack you. If they do not attack, they will certainly alarm anyone in the area by making an outrageous amount of noise.

COVERT MOVEMENT TECHNIQUES

Over the years, a number of different methods of movement have been devised to allow operators to move around the battlefield, conducting their missions whilst drawing the least attention to themselves.
The techniques we will cover are

- Leopard crawl
- Crawl & drag
- Monkey run
- Roll over
- Ghost walk

Some are now considered out-dated and no longer taught in basic training. They are also sometimes given different names by different training staff.

Leopard crawl

This method of movement is to be used when close to your target area or in possible view of the subject, you would of course be wearing your Ghillie suit at the time.

In the prone position and by alternating the weight from the left side to the right, use your feet to grip the ground in order to push yourself forward. With your forearms flat on the ground to raise the weight of your upper body and assisting with the forward movement. You should stop regularly to observe your direction.

Crawl & drag

On many occasions you will have to crawl into position, dragging your hide Bergen behind you on a length of rope which is tied around your waist, as seen here in the picture. This can be exhausting when wearing a Ghillie suit and your Bergen weighs over 45 kgs in the middle of a hot summer's day.

Monkey run

This is commonly used in built-up areas as a quick method of moving around whilst you remain relatively low.

By clenching your fists move around on your knuckles and toes, again this method can be used when having to drag your Bergen into position.

Roll over

This is a method used to cross over high features when there are no other options available, otherwise you will be skylined. This method is as it sounds, lock the arms into the sides of the body and simply roll over the crest of the feature.

If you are carrying a Bergen, then attach a rope to it and throw the rope over the crest, then roll over. Once over yourself, take a hold of the rope and pull your Bergen towards you.

Ghost walk

The ghost walk is to be used when in close country, such as a thick forestry block or when moving around a building in total darkness without the aid of night vision goggles. This is a very time-consuming method of moving but one that will ensure your movements stay as covert as possible. When placing your feet on the ground, start from the outside of the heel and slowly roll the foot inwards as you step forward. This will help spread your weight; if you were to step on an object that might give you away, you should feel it before your whole weight is on top of it.

A: Slowly raise your hands above your head, checking the area above you. Once happy, start moving your hands down the sides of your body and to the front of you; ensure this is done slowly. The aim is to feel any dangerous objects, which are in your path. If operating in a hostile theatre this should be done without gloves as you may be feeling for trip wires.

B: Once you are happy with your position down to shoulder height, start working your way down to your waist, continuing to feel out to the sides and front of the body.

C: Finally work your way down from your waist towards to ground, using the same technique. Once at your feet you must now feel the ground, if there is anything in your path slowly move it to the side. Remember if in a hostile theatre you are checking for mines and pressure plate devices.

Moon phases

Most insertions will take place under the cover of darkness, late at night or early morning before the sun comes up. Either way, you must be aware of the moon phase for that period, this must be checked and covered in your briefing phase, the moon phase can be checked via the internet very easily.

If possible avoid inserting on the night of a full moon. Attempting this can be very dangerous and could lead to compromise. If crossing open ground your patrol may become silhouetted against the background, anyone observing this area would identify your patrol as a number of black objects. The light from the moon can be so strong that it will create shadows increasing your chances of being seen.

CONCEALMENT

Concealment is the art of using objects and features within your environment and using them to your advantage, enabling you to complete your operation.

Concealment takes many forms, many of which you would not normally consider unless they were pointed out to you. For example, using the darkness of the night, heavy fog or shadows created by buildings or large trees, moving within the shadows will keep you concealed.

You can also use the environmental conditions to your advantage, rain will help conceal the noise created by your movement and limit the visibility of your subject, allowing you to get closer. However, you must remember ground sign as footprints may be left in soft wet mud. Wind is a double edged sword, high winds can cover the noise of your movements but if blowing in the wrong direction could also compromise you. Remember that sound travels a long way at night, so too will unusual smells.

CAMOUFLAGE & CONCEALMENT

This is your primary defence when conducting any form of covert rural surveillance, without this your operation is set for failure from the very beginning. At all stages of your operation, detail must be given to your personal camouflage. As a surveillance operator your very basic means of camouflage is your clothing. This must consist of a number of different natural colours that blend into each other, this is known as disruptive pattern material (DPM). It works by not allowing the human eye to focus on any one individual colour when surrounded by similar colours in greater amounts. As you walk across the countryside you may have to change your camouflage a number of times in order to stay concealed and continue to blend in with the different surroundings.

This leads us on to the two different types of camouflage, first is 'natural' and secondly 'artificial'.

Natural camouflage

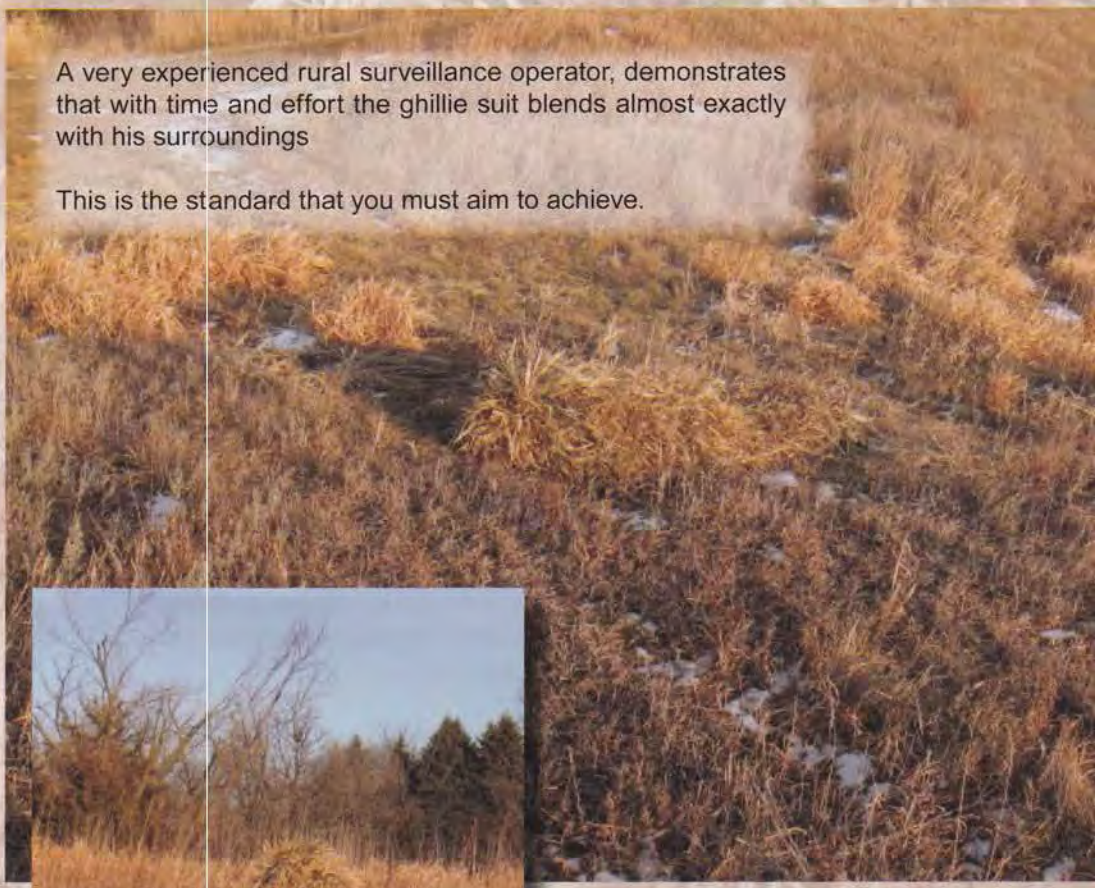
This consists of using vegetation and foliage that is found growing in your area of operations; all team members must be able to master using this natural aid. This of course does not mean that if you are moving through a wood block, you must cover yourself in tree branches trying to replicate a tree, by doing this you are more likely to stand out.

As soon as you cut the natural vegetation it will start dying, the hotter your environment the faster it will wilt and will have to be refreshed regularly. A good idea is to use the 'buddy-buddy' system and keep an eye on each other's camouflage. Not only do you have to keep replacing your camouflage when it wilts but you must change it every time your surroundings change. This can be very time consuming but must be carried out.

In the picture, you can see how this sniper has attached natural foliage to his Ghillie suit; he is using only a small amount of the dead fern (natural) as his artificial Ghillie suit offers him the largest area of camouflage. By combining the two it works very well and is the method which should be aimed for every time.

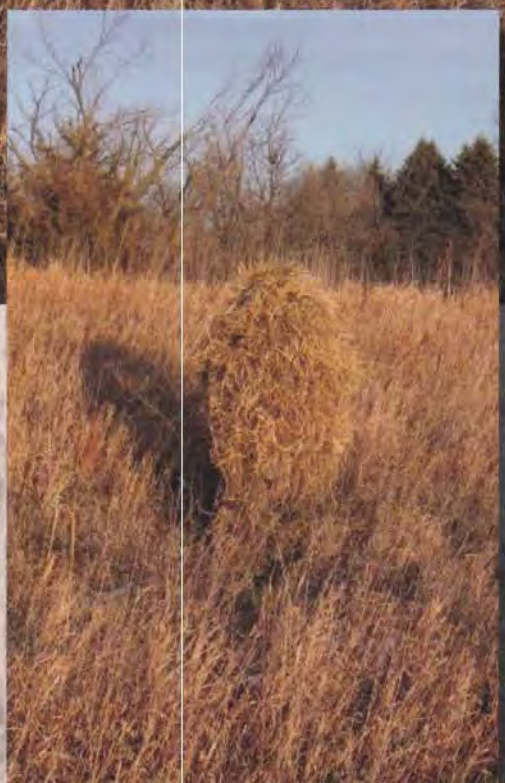
Artificial camouflage

This comes in the form of man-made materials such as nets, cloths, Ghillie suits, spray paints, foliage and face paints. All are designed to help with camouflage, concealment and blending in. If you are going to buy any form of artificial camouflage it is always a good idea to look at the environment you will be working in and purchase something appropriate, take your time and get it right. There is nothing more unprofessional than an operator turning up in DPM clothing that blends with his surroundings but then put on a man made commercial Ghillie suit that stands out from a mile away! Also consider your equipment, this needs the same amount of effort and time spent on it, as this will be at the front of your final location.



A very experienced rural surveillance operator, demonstrates that with time and effort the ghillie suit blends almost exactly with his surroundings

This is the standard that you must aim to achieve.



Face paints - camouflage cream

These are the final form of artificial camouflage that can be used to aid you. They come in many different styles, single and multiple colour sticks, compact cases in multiple colours. Irrespective of whether you are operating in an environment of green and browns or the arctic snow, you can now buy creams to suit all needs.

When used correctly, these creams will help you blend into your surroundings. Ensure you cover your face and remember to cover your neck (back & front), ears and hands, your wrists and lower forearms. Even if you intend to wear gloves, you must still cover your hands with camouflage cream as you never know when you might have to take gloves off.

Applying camouflage cream

Above are a series of photographs showing the different stages when applying camouflage cream to the face, this method should be copied for the neck, ears and hands. Camouflage cream needs to be worn by all members of the surveillance team no matter what their skin colour.

1: First a light green base layer is applied all over the face, ears, and neck. This is known as the 'block' and is designed to remove the shine from the skin. Always opt for a light colour as the base layer, this way it can be built upon with darker colours. Ensure that the base layer is applied heavily, when you sweat it will wipe away.

2: Next add a darker green patch of cream to the face, what you are aiming for is to break up the straight lines within the face, such as the bridge of the noise, jaw line, ears, chin and cheek bones. When applying this layer, only a small amount of cream is needed, simply use one finger to apply cream to the required areas.

3: Finally you need to add a bit of brown to add depth to the face, in this photo you can see that the operator has covered his with a good amount of camouflage cream. Compare the lips in the second photo to this final one. When applying your camouflage use a mirror to ensure you have covered all the areas required. If you do not have a mirror then use the buddy-buddy system and apply each other's cream.

Once the face, neck and ears are covered don't forget the hands and wrists.

Requirements to aid camouflage and blending in

There are a number of basic elements that need to be considered every time you deploy onto the ground, by conducting these you limit the chances of being seen. Personal camouflage is your aid to blending into your surroundings, here I cover the main points in greater detail.

- **Shine**
- **Surface**
- **Shape**
- **Silhouette**
- **Sky lining**
- **Shadow**
- **Spacing**
- **Smell**

Shine

Shine is one of the main reasons for compromise in the rural environment; the smallest reflection will be spotted from very long distances. For example, the natural colouring of the human skin stands out in the rural environment, even more so if you have spent the time breaking up the body's shape but have forgotten the face and hands. No matter what colour your skin is, it will shine when placed against a backdrop of matt colours such as greens and browns. Soldiers are taught in basic training that there can be too little or too much camouflage cream, this is not always true but there is a right and wrong way to apply it as detailed opposite.

Equipment has been camouflaged using artificial materials. Spray painted tripod, camera lens covered in sprayed green tape with net and Ghillie to help break up the shape of the lens. Antenna with artificial ivy attached to it and moss covering the base plate

Concealing and camouflage kit

Surface

Unnatural surfaces or large areas of a single colour will also draw attention to your location; a large surface must be broken down into a number of natural matt colours of greens and browns to help it blend into the environment.

Flat surfaces will reflect light unlike a rough uneven surface, which will absorb it. For example, a Ghillie suit is a mass of uneven materials, which makes it so effective.

Shape

A person's shape is very noticeable and distinct, even at long distances. For example at 600 metres with the naked eye, a human body will appear wedge shaped as the head blends into the shoulders. At 400 metres and you can start to identify large items of equipment and at 200 metres, bodily features can be recognised. To combat this you need to break up the body's outline, starting with the head and shoulders and then any equipment you are carrying.

A

B

C

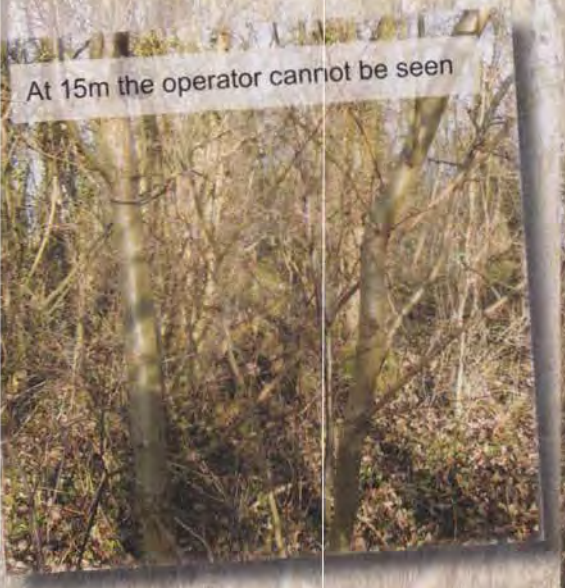
Above you can see the stages when breaking up the body's outline

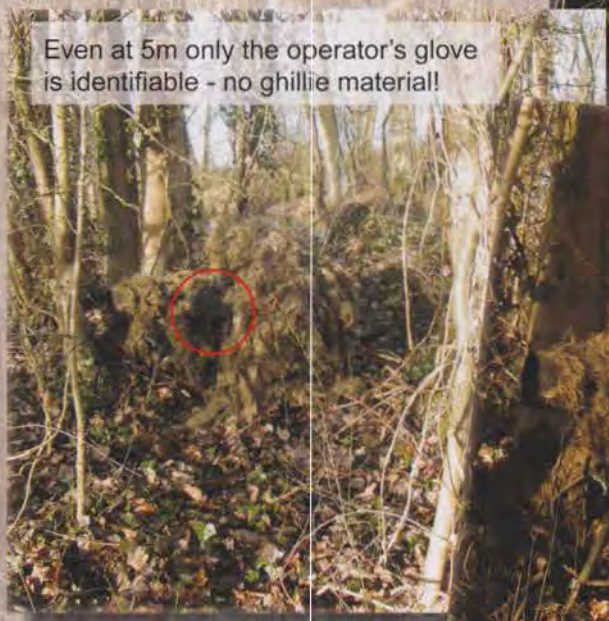
A. The operator shown here is wearing a range of camouflage clothing which will act as the base layer helping him to blend in. He's wearing the new style multi-cam trousers with removable knee pads and a classic windproof smock.

B. In this picture the operator is now wearing his hessian Ghillie suit and gloves with Ghillie attached. The hood is up, removing the solid shape line between the head and shoulders.

C. Finally the operator pulls down his face net, which aids to the removal of any shine from the face.

The next stage to this technique would be to add natural foliage from the local area to the Ghillie suit.





These pictures were taken in winter, from different distances moving towards the operator each time, they show how well the Ghillie suit works in the woodland environment.

Silhouette

This is most dangerous at night where there is a clear sky and a full moon, I have seen the moon shine so brightly that it would be less risky to insert during daylight hours. If you are having to insert or move across open ground in this situation, you need to look for areas of heavy shadow such as forestry blocks, dead ground and tree lines. If you were to observe a patrol crossing the open ground on a bright night, you would see that each individual crossing as a very prominent black shape against a very pale grey backdrop, almost as if they were backlit. The picture, although taken in the day time, still shows how operators can become silhouetted against the backdrop of open ground.

Sky lining

Similar to silhouetting when crossing open ground at night, sky lining occurs when an operator or patrol moves over the top of a high feature instead of navigating around it and becomes highlighted against the horizon. This can happen due to poor skills or taking the quickest route rather than carefully following the contours around a feature. If the patrol were being watched, the observers could easily count the number of patrol members and guess their direction.

Occasionally there is no other way but to go over the top, if this is the case then various drills need to be carried out. Make a full scan of the ground with night or thermal vision optics across the crest of the feature whilst laying flat on the ground. If necessary drag your Bergen behind you moving very slowly, cross at different times and at different places if possible. Once your team is across you must put in a long halt and listen to see if you have been seen and ensure you are not being followed.

Shadow

This is more dangerous in built up areas or when conducting a CTR (close target reconnaissance) of a compound. You must be aware that just because your body is hidden behind a wall, your shadow might not be. Remember that your shadow may be much larger due to the angle of the sun, always look at the ground around your feet, if your shadow is in view then move.

You can also use shadow to your advantage by only moving within it. If you can get from A to B by moving in a shaded area then use it. When observing from inside a building, always stay to the rear of the room in the shadows, never near the window's edge. This will be covered in the chapter on operating from buildings.

Spacings

Nothing in nature is evenly spaced, this must be recreated at all times when operating on the ground. When moving as a patrol it is better to be observed as an individual rather than a large bunched-up team.

In this picture you can see this six-man team moving across the countryside, notice the amount of space between each man. This team are moving in a formation known as an arrow head, the team leader will have opted for this formation as they are approaching a building

Smell

Smell will compromise you and your location if you are not careful. Never wash your operational kit such as your Ghillie or camouflage clothing, only hang them out to air and dry naturally.

If you use washing powder, the clean fresh smell will be overpowering in a rural environment, which will attract wildlife and people. Before any rural operation you should not wash your body with any scented soaps, gels or deodorants as this smell will stay on your skin for days.

Livestock and people will be able to smell anything sweet in the rural environment such as tobacco, cooking food, hot sweet drinks and strong coffee, these items will contribute to your hide and position been compromised.

Light - infrared patches & micro torches

A few years ago there was a trend in the military to buy 'glow in the dark' key rings, which could be attached to items of kit so that they could be found in the dark. A professional operator shouldn't be looking for his kit in the first place! However, these key rings will only compromise your movement and location. In fact every task you conduct on the ground could be compromised by the use of these items.

True Accounts

I was a member of the directing staff on one particular course reconnaissance course where the hopeful students were on their sub-surface phase of the exercise, they were given 12hrs in which to dig and construct a hide and have eyes on the target area and begin live time reporting. After which, it was time for the members of the directing staff to conduct their walk around and try to find the student's hides.

As I came close to the six figure grid reference that this team had given, I started to scan the ground with my night sight to see what I could see. At first nothing, so I started to move in closer and closer stopping and scanning each time. Then as I scanned over to my left a strong light source was coming from somewhere in the distance, So, lying down, I started crawling towards it. I then realised it was coming from the aperture of the students hide.

As this was the training phase of the exercise and not the final test, the students were aware that staff members will be walking around, so I let the hide commander know I was there and asked him to send out his rear protection which he did. I asked the young lad on rear protection to walk with me then gave him my night sight; I asked him to scan the ground and tell me what he could see. He said "A bright green light coming out of the ground!".

I told him to go back to his hide and inform the commander of what he saw and then to continue with the task. The exercise finished late morning and all teams were told to extract from their hides but not to dismantle them, as all teams would take a look at each other's to pick up hints and tips. I asked the team I had visited to remove all their kit from the hide and place it down so that I could see it; on inspection I found that one of the lads had a 'glow in the dark' key ring on his day-sack. It just so happened that his day sack was used as the grab bag next to the aperture. I then informed the rest of the students about the compromised hide and how it came to be. Safe when it's training but not when it's for real!

It should be in the team's standard operating procedures (SOPs) to check each other's equipment before deploying on any task. This should of course be conducted in the dark and not only by eye but also with the use of an infrared device. The smallest amount of light will be seen from huge distances at night, particularly when observed through night vision equipment pointing in your direction.

Even your own night vision devices can compromise your location if discipline is not adhered to. For example, when you remove your eye from the optic's rubber eye cup, green light will be emitted onto your face. This small amount of green light will create a massive light signature to any other night vision equipment.

Torches should not be used at night time if possible and if they are required, only use a very small amount, a pin prick in a colour filtered cover.

Never use white light!

In short; if you're conducting any covert operations, remove anything that glows in the dark. If operating in a hostile environment keep your infrared patches safely stored in your pockets until required.

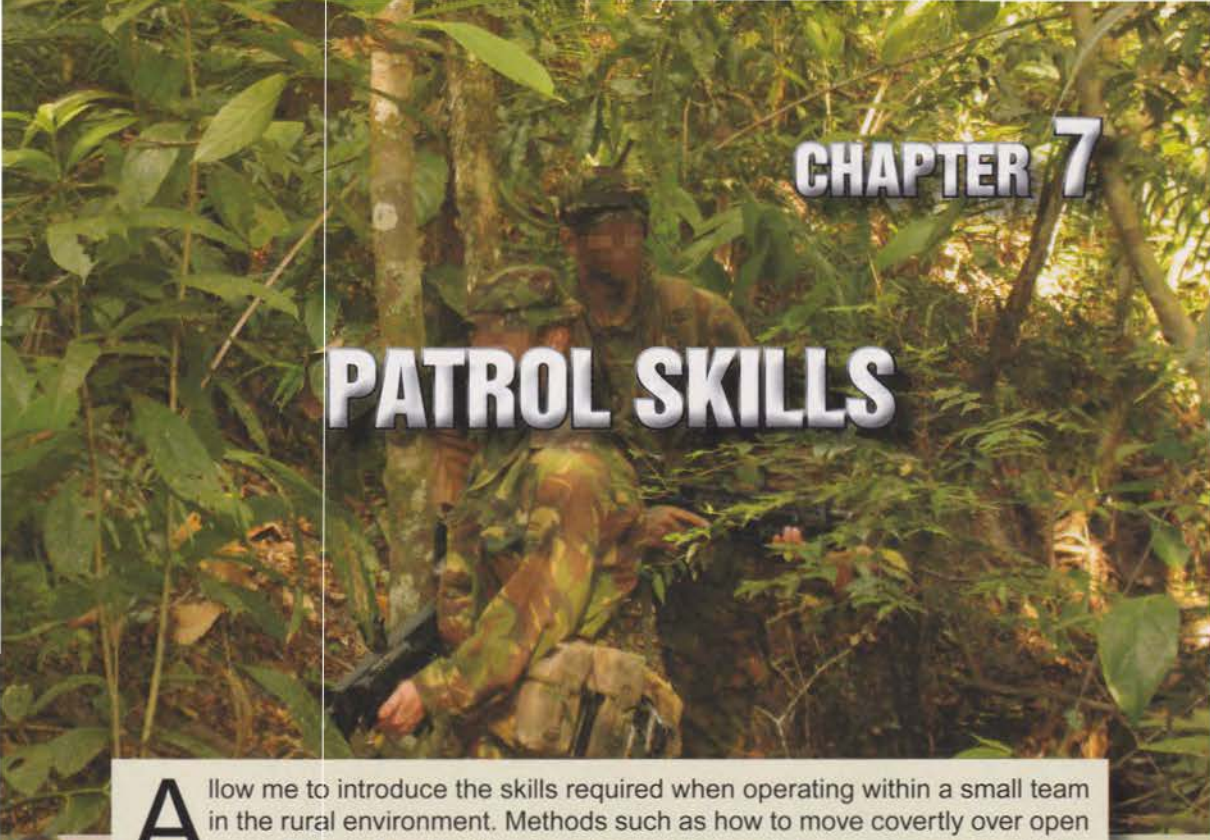
Noise - loose equipment

There's nothing more unprofessional than hearing an operator walking around with all his equipment banging against him and making a noise. A classic mistake is a half-filled water bottle that's sloshing around.

I remember a few years ago in training, being told to jump up and down so that the directing staff could see if they could hear any kit rattling around in my pouches, they never did with me but some of the lads were unbelievably loud.

This same sloppy practice still happens today and any good operator will always conduct this test before deploying on the ground. Make sure all equipment is taped, tied or strapped down to prevent unnecessary movement. All cameras and optical equipment should already be packed in protective foam cases to prevent damage.

Loose kit will fall off and will be lost on the ground, this could compromise your whole task.



CHAPTER 7

PATROL SKILLS

Allow me to introduce the skills required when operating within a small team in the rural environment. Methods such as how to move covertly over open ground by day and night, crossing obstacles and ground considerations. What things to stay away from and standard operating procedures (SOP's) that the team should be working from.

Topics covered

- **Formations**
- **Hand signals**
- **Obstacle crossing**
- **River crossings**
- **Contact drills**
- **Target indication**
- **Man down drills**
- **Helicopter landing sites**

PATROL SKILLS

The aim of this chapter is to introduce you to the skills required when operating within a small team in the rural environment. Methods such as how to move covertly over open ground by day and night, crossing obstacles and ground considerations. What things to stay away from and standard operating procedures (SOP's) that the team should be working from.

Formations

There are a number of different formations, designed and used to cover the ground tactically. If patrolling in heavily wooded country or even jungle you will need very small spaces between each team member, if searching a large open area you may need extremely large spaces between each man allowing a large area of ground to be covered.

Normally the tactical situation will dictate this, the photo above was taken of my team operating in the jungle. Here the team are in what's known as a single file formation with fairly normal spacing between each man. This spacing would close up when back under the tree canopy due to the density of the vegetation.

Spacings

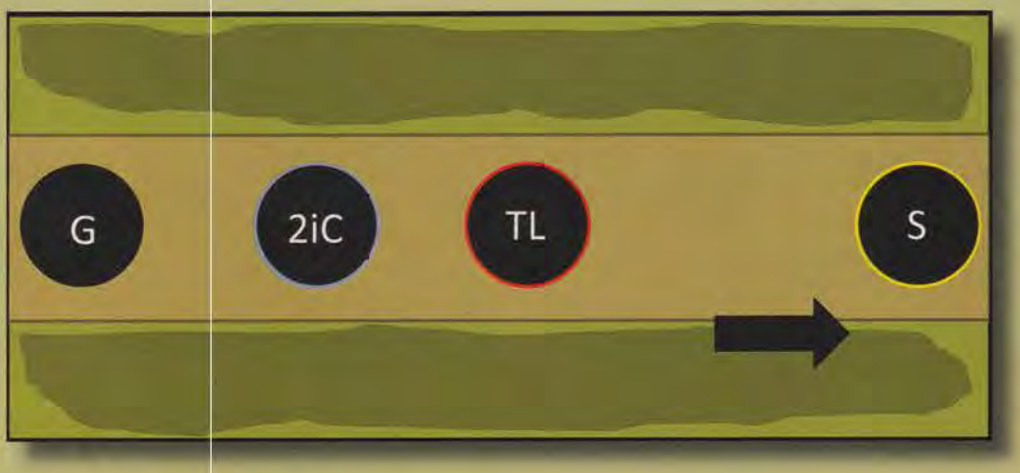
These are very important and should be managed by the patrol team leader and 2ic, when operating at night all spacing between operators need to close up, so the back of the man in front can be seen.
At times and if moving through very thick wood blocks at night, there may be a need to hold on to the Bergen of the man in front.
Day time spacing can be anything between 10, 30 or even 50 meters between each operator, depending on the terrain the patrol is crossing and the task in hand.

There are four formations which will be covered

- File (single)
- Staggered file
- Arrow head
- Extended line

File - single

This formation would be used when patrolling along a narrow track, tactically it has its pros and cons. For example, if you where operating in a hostile environment your fire power is very limited to the front and rear, as only one man can return fire if compromised. However if compromised from the side, all patrol members can turn and face the threat, looking at the diagram below shows how this formation would look on the ground.



Lead scout distance

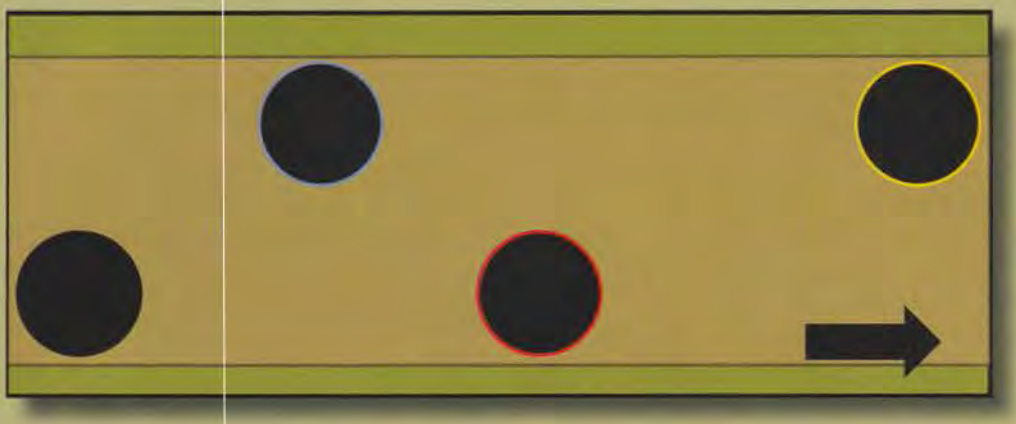
The diagram above shows that the distance between the Team leader and Lead scout is the greatest; this is how all patrols must be conducted. The lead scout must be the most experience member within the team, not only is this the most important job of all patrol members, it is the most demanding, their senses need to be on full alert 100% of the time.

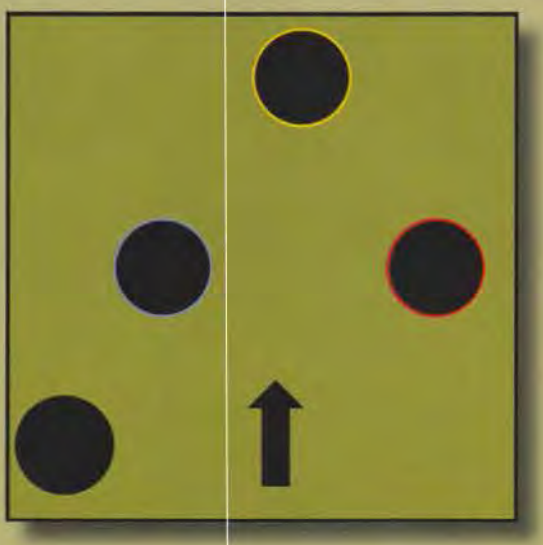
The lead scout's roles include, counting paces, scanning the ground and picking the best route to covertly navigate across the ground.

Staggered file

This is very similar to single file and will be used in the same situations, such as moving along tracks that are wider. If the patrol were to be compromised from the front or rear, the two patrol members could use their weapons in defence. If from the side they could still turn and face the treat and form a base line.

A base line is where all patrol members are next to each other, creating a straight line or sometimes known as a wall of fire, each patrol member would at this point be facing the direction of the threat.





Arrow head

This formation is used when crossing open ground, the name given for the shape created by the patrol on the ground. The lead scout will be at the very tip and again have the responsibility for scanning the ground in front.

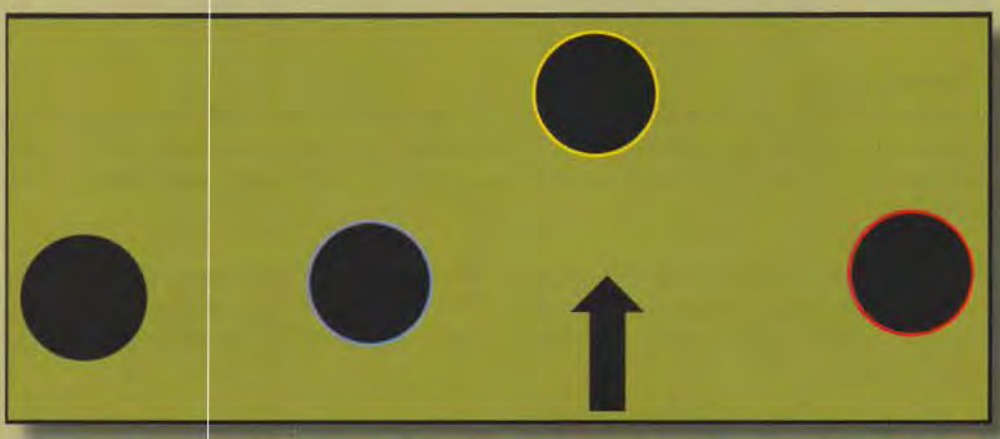
When crossing ground such as rolling hills, the lead scout should instruct the rest of the patrol to wait on the reverse side of each slope, the scout and team leader will push forward to the top of the feature in order to get "eyes on" the next section of ground. Once the team leader is happy the patrol will move off, continuing this method each time.

Extended line

This formation can be used when crossing open ground but leaves the flanks weak and open to attack, unlike the arrow head where you have good all round coverage.

If the patrol has been tasked with searching a large area this is the best formation to use, you are able to cover a lot of ground with minimal manpower. This formation can also be used as a sweeping method when moving through woods, although control and movement can be difficult when pushing through thick undergrowth.

Some patrol members will be forced to move slower than others as the vegetation differs, causing the line to break and creating problems with visual communication.



A reconnaissance patrol moving along a wood line in staggered formation

Patrol considerations

Years ago, I was taught an acronym for the considerations when planning or physically moving across any stretch of ground, the acronym is **OCOKA**

- Observation
- Cover & Concealment (already covered in field craft)
- Obstacles
- Key terrain
- Avenues of approach

When inserting into your hide location, always use this as a guide line for your actions, time and care should always be given no matter what the situation.

Observation

It could be that you have to insert along a well used public footpath through the countryside in daylight hours, if this is the case you need to act as naturally as possible, carrying all your surveillance equipment in a day sack away from prying eyes.

Be observant and have a reason for being there, think of a good cover story in case you have to interact in a conversion with a third party. You must always be thinking "tactics" as you move towards your target area, scanning the features around you and looking for

- Wood blocks which could be concealing 3rd parties
- Dead ground that would allow you to move in cover
- High ground - you could be overlooked or from where you could over watch
- Fields which have live stock in them
- Walls, gates and fences
- Buildings which may compromise your movements
- Areas in which you would be silhouetted if crossed over
- Signs of other people, in or close to your location

If you are inserting wearing civilian walking gear that's fine but remember, as you get close to your target area you must find a location where you can break track and change into your Ghillie suit. This must be done in a concealed area away from the footpath and not over looked, once you have broken track you need to make two choices.

1. Get changed in to your Ghillie suit as quickly as possible and go to ground, wait listen and watch before moving off.

2. Break track immediately go to ground and conduct your listen and watch drill then get into your Ghillie suit once you are happy.

A sniper pair observes and scans the ground to their front before committing to crossing

Short halts to conduct observations

These will always differ depending on the size of your patrol, if you are alone there is only you to worry about, so you can carry out observation halts at any time. If however, you are in a patrol of 6, you will have to carry out a set drill. This drill can be done in two ways depending on whether it is night time and day time. Halts should be conducted before crossing any open ground, observe to your front selecting your best route and signs of any third parties or livestock.

When conducting halts in daylight hours, the team must remain as spaced out as is tactically possible, if you are only stopping for a very short time it may not be necessary to form an "all-round defensive formation", patrol members can go to ground where they are but must cover their arcs.

All-round defence is where a patrol has halted and gone to ground ensuring that 360° are being observed.

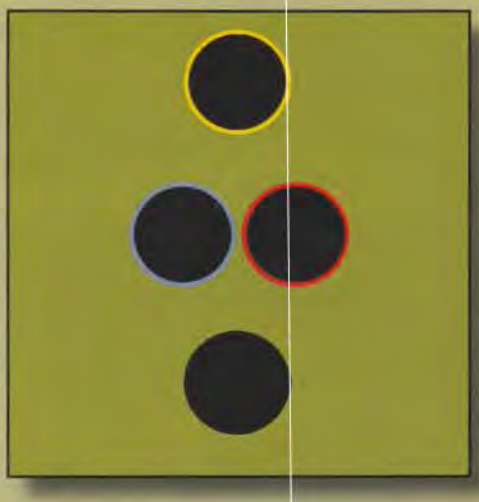
Daylight all-round defensive formation is where the operators are spaced widely apart, observing outwards with the command element in the centre.

At night this formation is still conducted in the same way however, much closer together. If the patrol is conducting an extended listening halt, team members will close right up and cross feet.

The lead scout goes to ground facing forward keeping his legs apart, the second operator will close in, move to the lead scout's right side and go to ground keeping his legs apart but resting his left foot over the top of the lead scout's right foot.

This continues until all patrol members are in and the team is complete, at this point the team leader will ensure that he has operators observing 360°. When happy, the team leader will lift and lower their right leg, the operator whose leg gets lifted knows they have to pass on the signal. This continues around the team until the team leader has their left leg lifted, at this point the team leader knows all members are in.

From this point there is no need for talking!

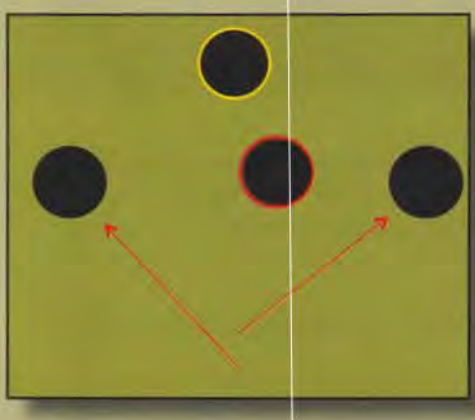


Dark hours - closed right up

Looking at the diagram you can identify the command element in the centre, now if the team leader wanted to conduct a map check they would remove the light proof sheet carried under the top flap of the 2ic or scout's Bergen. Both team leader and 2ic can then lay flat on the ground under the light proof sheet and carry out a map check, using only a small amount of light.

Moving into the halt 6 man drill

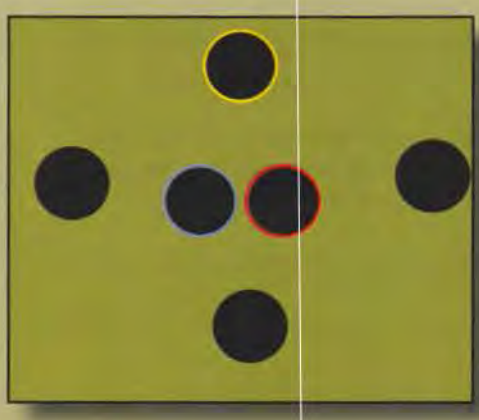
When the team leader calls for a halt, the lead scout will acknowledge this over the radio then push forward on the bearing until they find a suitable location for the halt to take place, ideally an area of dead ground or thick undergrowth.



Once there, the lead scout will signal to the team leader that a suitable location has been found, if in daylight hours the lead scout will push forward to observe the front.

Next the team leader will go firm in the location pointed out, the next operator in the patrol will keep walking forwards until given the hand signal to push left and observe his arcs, the next will be signalled to push right observing their arcs.

The patrol 2ic will be the next in and will be positioned with the team leader, when the final operator is close enough to see the command element they will turn about and face the rear, in the direction just travelled.



Ready to move

When the team leader is ready to move off, he will inform all team members over the radio to prepare to move, at this point the patrol will move off towards the next RV.

If moving in darkness, all communications must be conducted over the radio, the scout will still look for a suitable location but this time, once one has been found, the lead scout will remain in the position.

As the other patrol members close in, the team leader will physically show them to their positions. When the last operator is in and in position they must say over the radio "last man in position", this is good practice and should be used all the time informing the team leader of the last man's position.


Overlapping feet

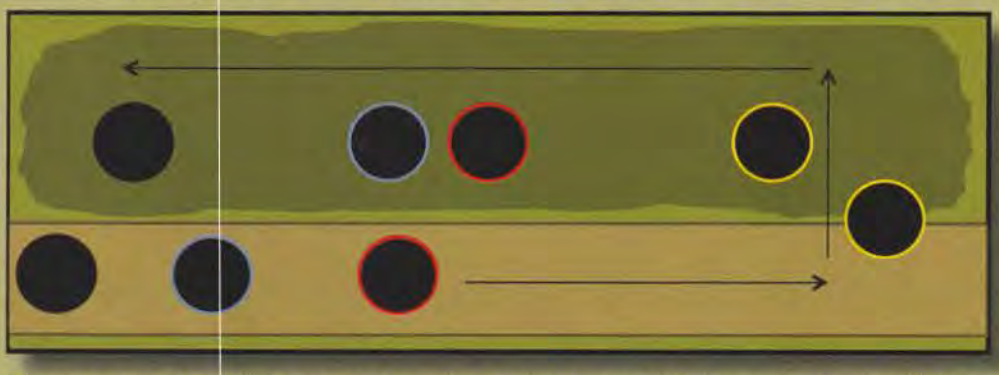
When patrolling, never look behind you whilst still walking, this is when accidents happen. If you are going to look around and behind you, stop, stand still, then look round, once you are happy face forward and patrol off.

Snap ambush

This is a drill that should always be conducted before entering any overnight layup point (LUP), pick-up point (PUP) or hide location. This is how it works, the team leader will give the signal to the lead scout to break track and form a snap ambush. The scout will look for a suitable location and then break track by side stepping left or right, taking up one knee. When the team leader comes level they will break track and so on until all patrol members are off the track, the lead scout will then push inside and rejoin the patrol.

The patrol will have been put into their positions by the team leader, ensuring they are spaced out covering the track they have just walked. If the patrol has been followed by a third party they will walk straight into the ambush site, this method can be used to observe only.

From the diagram, both members on the extreme left and right flanks are spaced wider apart, they can act as early warning should the patrol have been followed.



The team leader will be located in the middle to control the ambush should it be sprung. After a period of time and once the team leader is happy they will start the next phase, moving into the final hide location or to the pick-up point. Remember once you are in position there is to be no talking or moving, you must remain motionless until told otherwise. The smallest movement could compromise the ambush.

HAND SIGNALS

It is not always possible or tactically sound to talk to each other when out on the ground however, messages and commands still need to be communicated between patrol members. When verbal communications are not tactically possible, hand signals are used to pass important messages between the patrol members.

There are a number of hand signals which are used on a daily basis by the military and some specialist ones used by Reconnaissance and Surveillance troops as illustrated below.

ON ME
A cupped hand over the top of the head indicating that the team leader or other patrol members are required to close into this position

TL / 2ic
Fingers on the sleeve indicating that the team leader or 2ic is required, one finger denotes the team leader and two fingers, the 2ic

DOUBLE
Fist clenched out to the side in a fast shaking movement up and down to indicated the need to run or move fast, towards himself or to a required location when used in conjunction with a directional point.

OBSERVE OR RECCE GROUP

Hand loosely clenched to form a circular tube and held up to the eye indicating the need to observe a required location for signs of third party or suspected movement, also used in the FRV to inform the Recce group to close in and prepare to move.

LISTEN

Cup the hand around the ear indicating the need to stop and listen for signs of third parties.

STOP

This can be done by a flat hand as shown or by a clenched fist raised to the side informing the rest of the patrol to go firm and stop where they are.

GO TO GROUND

Flat palm faced down, then raise and lower to indicate the need to lie on the ground or go down on one knee.

RV

Hand pointing down to the ground, then moved in a circular motion at waist height to indicate the RV location, the next stage is to show which RV it is as shown below.

RV NUMBER and FRV

In this picture the operator is indicating RV1 this is denoted by the single finger held up, if RV2, 3 and so on is to be indicated then the required fingers will be held up. When at the FRV the signal is to punch your fist towards the ground

BREAK TRACK

Two fists together held in front of the body then in a snapping motion, indicating the need to remove the patrol away from a track and into the undergrowth.

SNAP AMBUSH

Flat hand held in front of the face with fingers apart.

OBSTACLE

Hand held out to the side with crossed fingers in the air, followed up by the type of obstacle.

WATER

Hand held in front of the body, flat hand with palm down, make a wave type motion across the body indicating a water feature.

TRACK or ROAD

As before however this time keeping the palm flat and move across the body horizontally

BUILDING

Hand held out to the side with flat palm upper most, then pinch together the thumb and fore finger as shown in the picture

OVER THERE

Arm outstretched, move in a chopping motion from waist to shoulder, facing the direction to indicate which way to go

ENEMY / TARGET SEEN

Thumb in the air facing down towards the ground

ALL CLEAR

Thumb in the air facing upwards

FACE THAT WAY

Arm outstretched, move in a chopping motion from chest to head, facing the direction to indicate which way to face

CUT

Arm out straight with fore and second fingers extended to form a 'V' indicating wire cutters

SINGLE FILE

One arm out to the side with fist clenched facing to the sky above the head, indicating single file formation when patrolling

STAGGERED FILE

As before, with one arm above the head and the other at waist to shoulder height, indicating staggered file formation when patrolling

ARROW HEAD

Both arms outstretched creating a 'V' shape behind the body, indicating the need for arrow head formation when crossing open ground

EXTENDED LINE

Both arms outstretched to the side indicating the need for an extended line, used for searching and crossing open ground

TAKE PHOTO

Hands held in front of the face as if holding a camera

FILM and RECORD

With the left hand hold out to the front open palm to create a 'C' shape then with your right arm bent head height and your fist clenched as shown in the picture

50 / 50

This is used to indicate the buddy-buddy system, for example when in the FRV and the Recce party needs to keep over watch whilst the FRV party get their warm kit on, this is done with a clenched fist then extend the little finger and thumb and shake up and down

REMOVE BERGENS
This is shown by gripping the shoulder straps of the Bergen

BOOBY TRAP
Arm out to the side with your hand bent into an arch facing the ground as shown

OKAY
Hand out to the side making a circle with the thumb and fore finger to indicate very thing is okay

RADIO
Clenched fist held to the ear indicating, needed on the radio or use the radio

SLOW DOWN

Arm out to the side, hand extended with palm down, then move arm up and down like a flapping wing indicating the need to slow down

MOVE UP

Arm and hand extended to the rear then with a forward swiping motion indicating the need to close in or move forward, move level

ACTIONS ON & SOP's

Every patrol should have a number of set drills laid down for different events that they may come across on their insertion, mid-operation or extraction. These drills are known as "actions on" or SOP's, which stands for standard operating procedures.

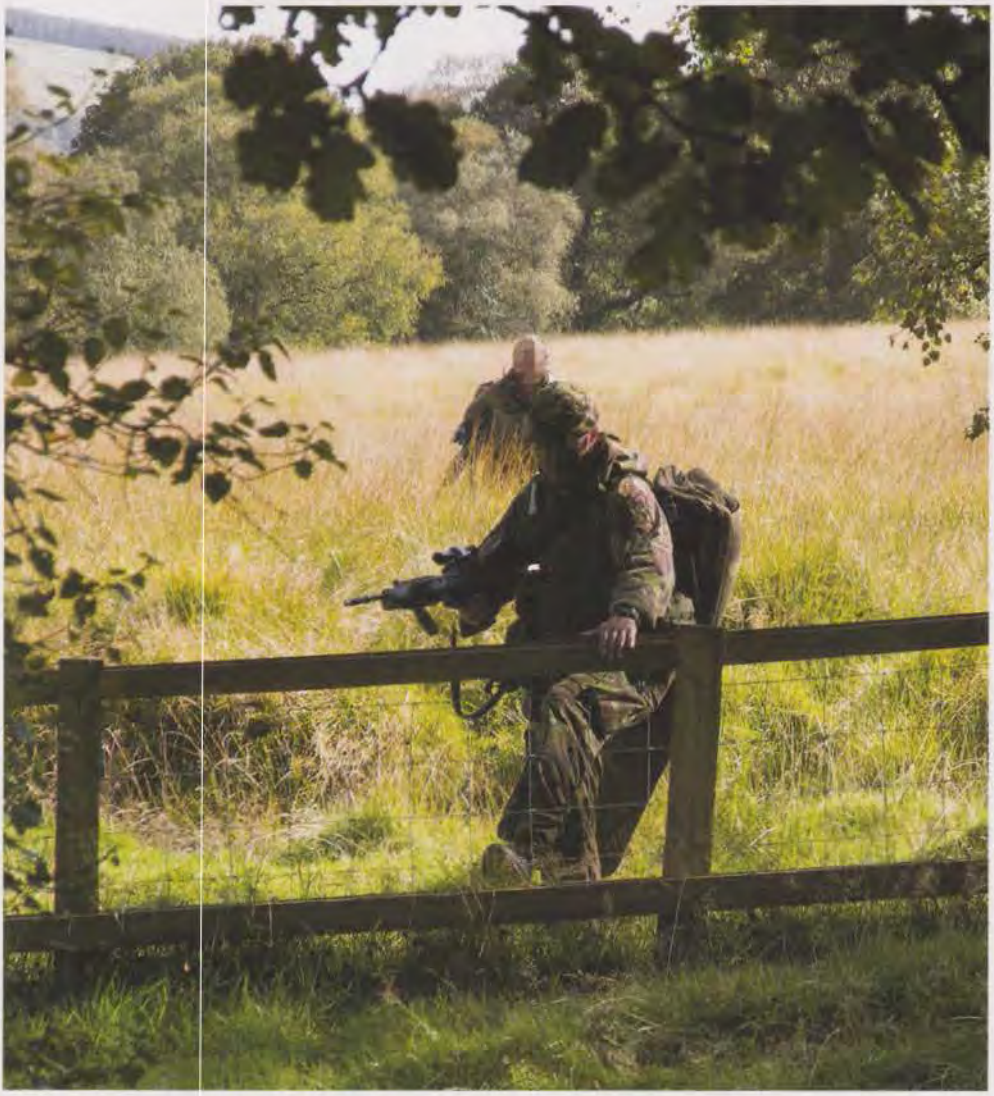
It is down to the team leader to practice the team in these drills so that they are slick, effective and become second nature to each operator.

OBSTACLE CROSSING

So what is classed as an obstacle? Anything that will slow down or hinder the movement of your patrol, remembering that obstacles can be man made or natural.

It is the man-made obstacles that need more attention, as they may have been put in place to channel movement or to slow down or deny movement, in a hostile environment this type of tactic is used to channel a patrol into an ambush or other form of attack.

Although this fence will not stop the patrol it will slow it down and force it to make more noise, especially if the patrol is carrying heavy loads, which when operating in the rural environment is 9 times out of 10.

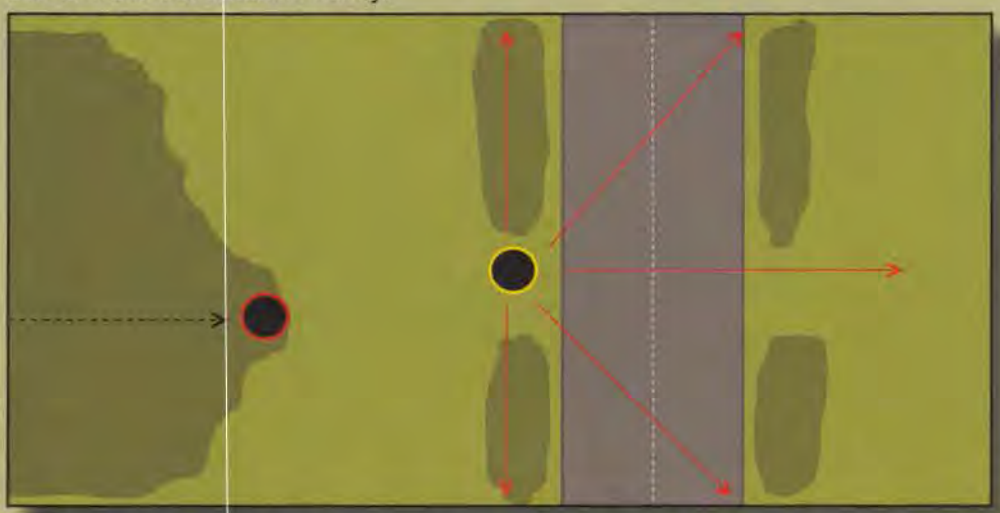


Roads, tracks and bridges are also classed as obstacles and should be treated the same way as any fence. Water obstacles are very different and will be covered in detail later in this chapter.

Some obstacles can be avoided by detailed planning, others can be by passed by taking a new route, some can be crossed with specialist equipment such as the river crossing, but the majority will be crossed on foot conducting a number of set methods (SOP's). Known as the open gate and closed gate methods, both achieve the same end result only one is more time consuming than the other.

On the approach to any obstacle, the lead scout will give the team leader the hand signal indicating an obstacle or inform him over the radio of what's to his front, the scout will give a quick assessment of what is seen. For example a road, at this point all patrol members will go to ground observing their arcs as the team leader moves forward to join the scout and take a look at the obstacle.

As the scout pushes forward to take a closer look at the obstacle, the team leader will act as over watch / cover man, the scout then reports back what is found. Depending on the tactical situation, the scout may or may not cross the obstacle there and then to get a look at the ground in depth. If not, the scout will return to the team leader and wait for a plan to be reached. If the scout crosses the obstacle and the tactical situation allows it, the scout will stay on the other side of the obstacle and observe in depth, maintaining communication with the team leader via radio. With the information gained by the scout, the team leader will decide which method to use to cross the obstacle safely.



In the diagram above, the team leader has moved forward and the scout is checking out the obstacle, looking in all directions for signs of man made interference, such as hidden devices. The devices could be anything from an explosive booby trap in a hostile theatre, to a motion sensor to detect any movement in and around the subject property.

The team leader will use the **open gate** method on this obstacle, pushing the scout over to the far side. With the scout now observing, it's safe for the patrol to cross.

Open gate - how it works

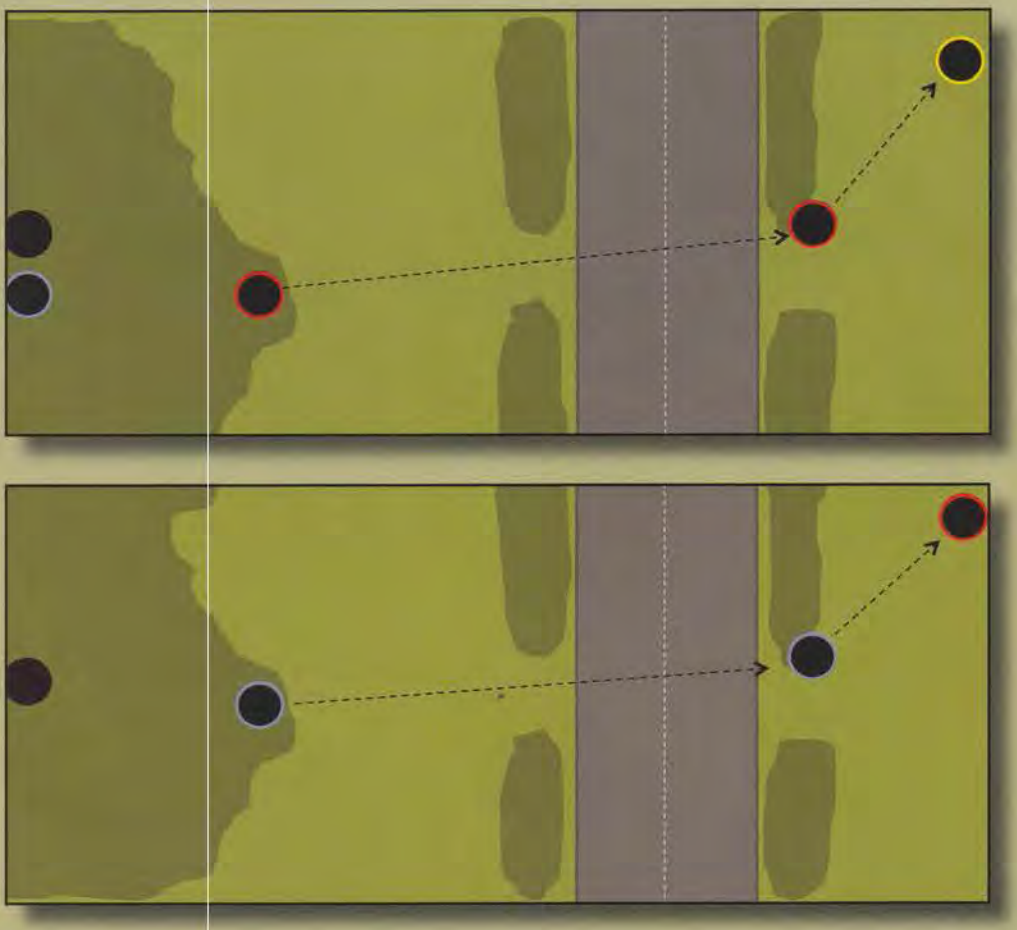
The team leader will inform the patrol that the open gate method is to be used, once all team members have been informed, the team leader will break cover and walk towards the obstacle and cross to the other side.

Once there, the scout will break cover and patrol off, continuing the direction of travel as before, the team leader will take up the scout's position and call forward the next operator via the radio.

When the next operator has crossed the obstacle and taken up position, the team leader will then patrol off after the scout. This will continue until all operators have crossed.

Each time a member of the patrol crosses the obstacle, the next operator in line is informed over the radio and moves forward to cross.

The patrol will continue on its original direction of travel, maintaining its formation and retaining its original spacing.



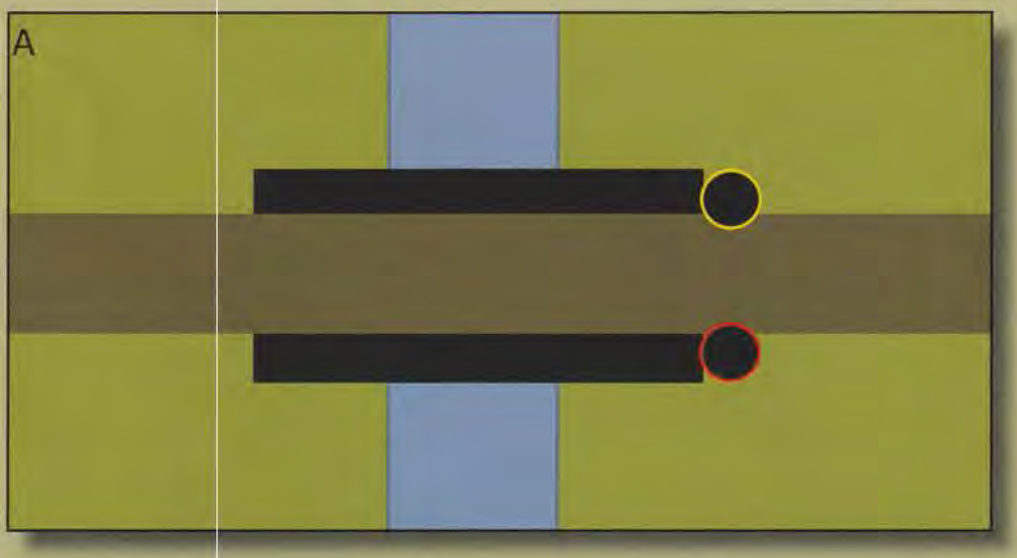
Closed gate - 6 man drill

This method is used on wider obstacles and those situated in more hostile environments however, this is a very good method to use in all instances, if time permits. It will take more time as there are more moving pieces but will offer the best security to the patrol.

As before, the lead scout will give the hand signal or inform the team leader over the radio of the obstacle, at this point the patrol will go to ground with the team leader moving up to the scout's position.

The scout will then move closer to the obstacle as the team leader gives over watch, the scout will take a detailed look at the obstacle, relaying the information back to the team leader via the radio at all times.

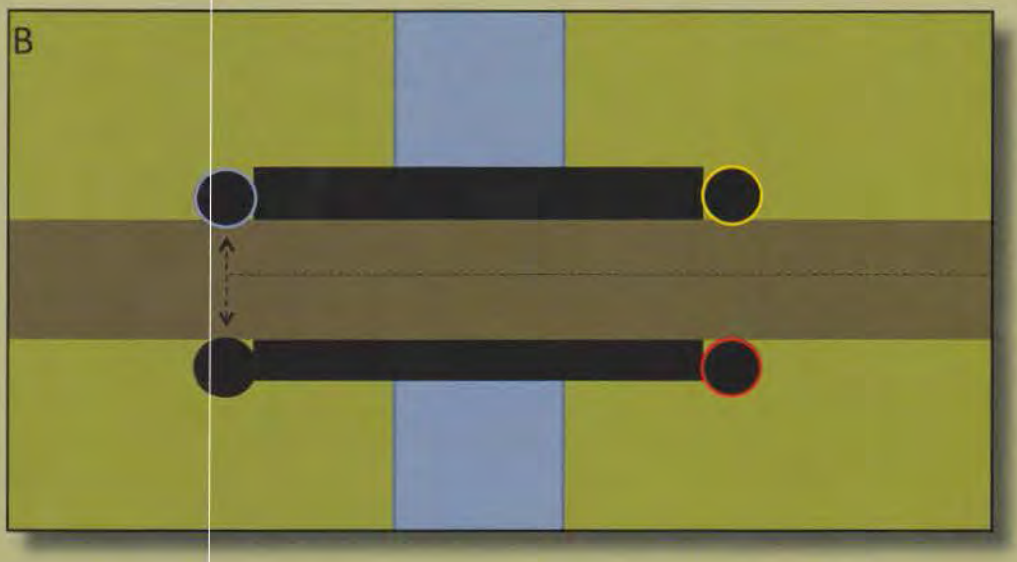
Once the team leader is happy with all the information required a decision will be made to which method is to be used. In this example the obstacle is a bridge so the patrol will conduct the closed gate method.



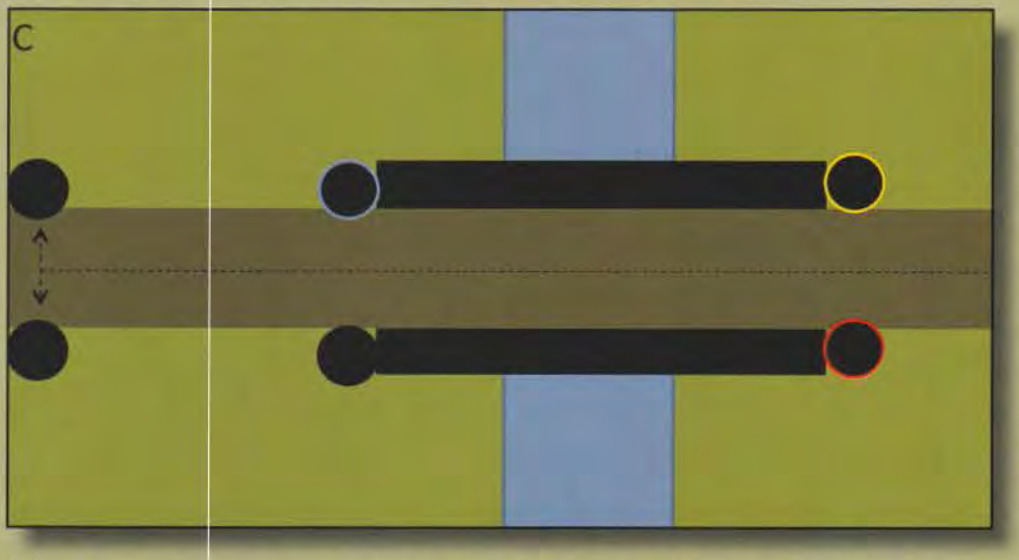
A. Looking at the diagram you can see the scout and team leader are positioned on the home side of the obstacle observing their arcs, the rest of the patrol are located behind them also in cover and observing arcs.

B. Once the team leader is happy all members of the patrol will be briefed on what is about to take place, the team leader will then call the rear two men forward via the radio.

They will move from the rear of the patrol through the team leader and across the obstacle to the far side. Once across, the two operators will take up positions of observation and inform the team leader they are ready to receive the next two operators.

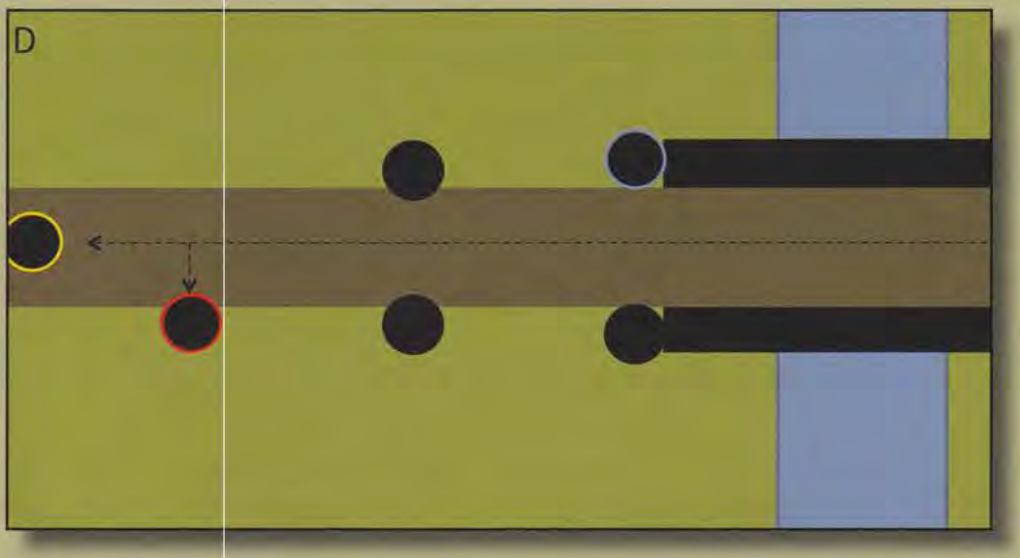


C. The team leader will call for the next two operators, giving them a brief that they are to cross the obstacle and push past the other two operators securing the far side and to take up a more in-depth position of observation.



When they are across, they will inform the team leader of their position and give the all clear to cross. If this was a military patrol, the 2ic would cross first with one other, this gives an element of the command structure on both sides of the obstacle.

D. Next the team leader and scout will move across the obstacle pushing through the patrol to the front, here the team leader will go firm allowing the scout to continue patrolling forward on the original direction of travel. You can see that the patrol is now back in it's original formation.



Other obstacles

When patrolling across a rural setting there are a number of other obstacles that you may come across, such as gates, fences, hedges and walls. You may even be unlucky enough to come against a combination of all of the above. If this is the case, you need to know the different methods of crossing and which is the best to use.

Gates

There are many kinds of gates but all have the same purpose, to keep things in or to keep things out. You can normally gauge this by the type of gate and the way it is locked, for example...
If you came across a tall solid gate which cannot be seen through, with some kind of wire defence along the top and a large lock, you would assume that the owner of this gate has something on the other side they don't want you to have a part of.

At the other end of the scale, a gate that is closed but unlocked such as one found on a public footpath, which allows you to pass through reminds you that it can be locked and you're not free to go anywhere you please.

On approaching the gate the scout will conduct the same drill as before, going to ground and notifying the team leader of the obstacle. A gate is a man made obstacle so other factors must be investigated. Is the gate over watched by CCTV or other technical devices like infrared beams or motion detectors, which can be identified by eye or perhaps more sinister devices such as pressure pads which can't be seen.

If operating in a hostile environment, you need to think about the tactical situation and consider that this gate may be booby trapped or even covered by fire, with an enemy force positioned in over watch so that as you conduct your drills a compromise could take place.

This is known as a "choke point", vulnerable point or being "channelled in".

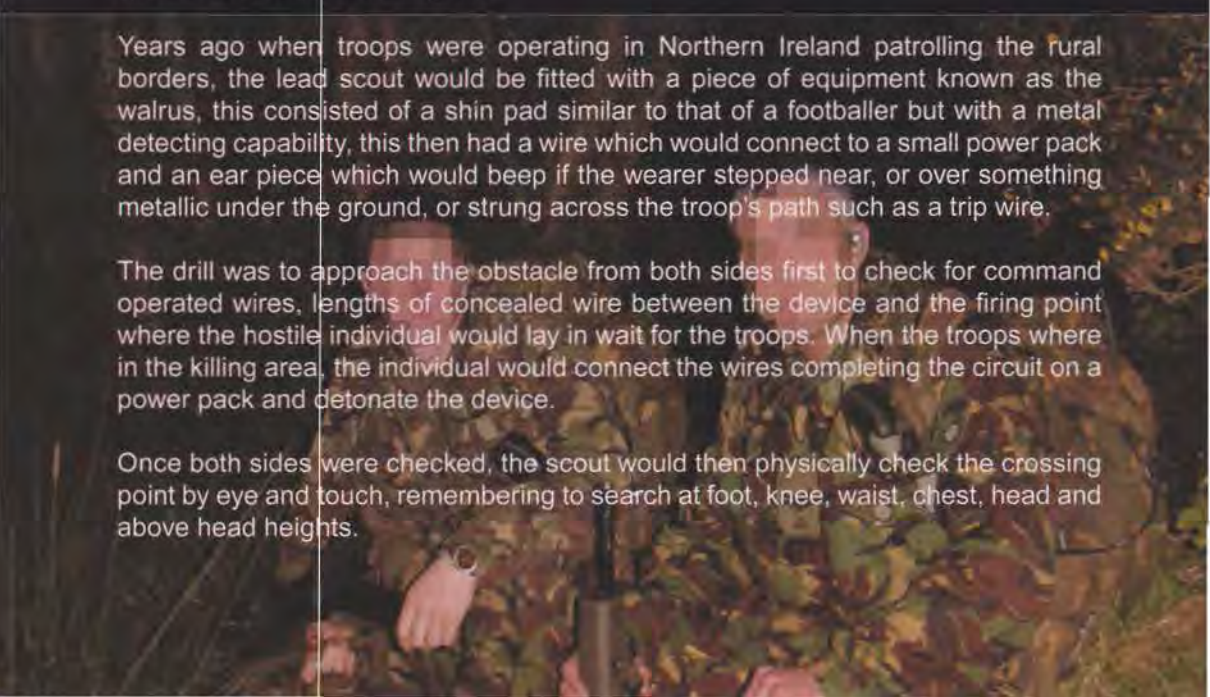
Considering all this, the obstacle still needs to be crossed, so the scout will push towards the gate looking for signs of CCTV or the other devices already mentioned. Once convinced that there are devices, the scout will move even closer to conduct a close inspection of the gate looking at how it is locked, what is on the other side if it can be seen and if there are any wires attached to or near the gate. Check from all angles and both sides if possible and then, if all's well, decide on the best course of action to cross it.

If the gate is locked by a chain and padlock but is too tall to climb over, do you cut the padlock, or the chain and hope that you can conceal your presence somehow?
If you can't go over it, can you go under it? After all, you are carrying digging equipment.

Both these methods will depend on the tactical situation and how close you are to the target area, you must always remember ground sign.

What is the gate made of? This may determine how it is crossed. Is it wooden, metal or both, is it a kissing gate which will constrict your movement due to your equipment, if so you will have to remove your equipment and pass Bergens over one at a time making this a very slow obstacle to cross.

Once the scout has conducted the reconnaissance and has moved back to the team leader, all the information will be passed over and a recommendation of how it should be crossed will be given.



Years ago when troops were operating in Northern Ireland patrolling the rural borders, the lead scout would be fitted with a piece of equipment known as the walrus, this consisted of a shin pad similar to that of a footballer but with a metal detecting capability, this then had a wire which would connect to a small power pack and an ear piece which would beep if the wearer stepped near, or over something metallic under the ground, or strung across the troop's path such as a trip wire.

The drill was to approach the obstacle from both sides first to check for command operated wires, lengths of concealed wire between the device and the firing point where the hostile individual would lay in wait for the troops. When the troops where in the killing area, the individual would connect the wires completing the circuit on a power pack and detonate the device.

Once both sides were checked, the scout would then physically check the crossing point by eye and touch, remembering to search at foot, knee, waist, chest, head and above head heights.

Crossing a gate with equipment

The scout will approach the gate from a side angle using the direction which affords most cover, once at the gate he will remove his Bergen or heavy kit and place it on the ground.

He will cross over the top of the gate keeping as low as possible as shown in the picture below. If the gate is loose and may make lots of noise when crossed, a second operator will approach at the same time as the scout, remove their Bergen and get into a position to hold the gate firmly as the scout crosses. Each operator in turn will then do the same.

You can see that the operator is keeping his entire body as close to the gate frame as possible, crossing any other way would cause you to be skylined. Be aware that if crossing a gate which is not solid, the silhouette of your body will be on show through the gate as you cross, so this must be done as quickly as possible.

Once the scout is over, the second operator will pass both Bergens over before crossing, the scout will take both Bergens and move away from the gate in to a position of over watch.

The second operator will stay at the gate and collect the next operator's Bergen as it's passed over, once over the second operator will move away. This continues until all patrol members have crossed.

Fences

A man-made obstacle designed to keep things in or out.

Types of fence you may come across

Solid 4ft and 6ft garden panels positioned between concrete posts, the panels slide into grooves in the posts holding them in place. Sometimes these panels can be lifted up to allow you underneath.

Wooden post driven into the ground with metal wire box section between, these can be crossed with little effort by using the box section as if it were a step. Then using a post to balance yourself simply step on and over, below are two styles of wood or wire box section fences.

Wooden posts with barbed wire between are simple to cross by using two methods. The first method is to position yourself in the middle of the wire fence where there is more movement in the wire. Use either your weapon, a strong stick or even your hand to press the wire down, lowering its profile so you can step over.

If the fence is too high to step over then it becomes a two man crossing drill, one operator will have to create a wider gap between wire strands. This is done by standing on a lower strand forcing it down, then at the same time lifting a higher strand to create a large enough gap for your patrol to get through. This drill will continue in the same way until all members are across.

Pushing down on the top strand of the barbed wire fence to allow the patrol to step over

Lifting up and pushing down on the middle strands of the barbed wire fence, this allows the patrol to pass through

Metal Mesh Security Fence

If you are faced with this kind of obstacle your first action must be to look for technical devices such as CCTV cameras, these may not always be located on the fence itself but over watching it from a distance as covered in the section on gates. Touch sensors may be fitted to the fence itself, these detect the vibrations made when someone is trying to climb it. There may also be motion detectors such as PIR beams, powerful spotlights and of course pressure pad sensors laid underground.

Fixed Electric Fence

These are most commonly used by farmers to keep their livestock contained. Although they will not kill or injure, they will give you an unpleasant shock, especially if your clothing is wet or the wire is placed at waist height. There are two ways of crossing over these fences. If the fence is positioned too high to step over, lay an item of clothing over the top such as a smock or your roll mat. Alternatively, find the power source which is typically a pair of car batteries in the corner of the field and disconnect them, remembering to re-connect once all patrol members are across.

Non fixed electric fences are often found in large grazing areas where there are few fences or hedges. In these vast areas, farmers can use mobile electric fence systems to contain their livestock. These fences are not harmful to humans and in most case can be stepped over however if they are too tall, find the power supply and remove it, remembering to re-connect once the patrol has crossed.

Hedges

At worst, hedges can be impossible to cross over let alone scramble under. A typical hedge found in most parts of the countryside can be so thick and interlocked that the only way through is to cut it, but this would mean leaving unwanted ground sign.

A tall spindly privet hedge can be pushed through with a little effort, by parting the thin spring-like branches. In most cases I would stay away from crossing hedges and look for an easier way to cross, even if this means hand railing the hedge until you find a gate or much easier crossing point.

A point to note is that if you are planning to cross over or through a hedge which is bordering a road or small track, you will more than likely encounter some kind of fence on the other side, as many farmers use some form of fencing on the inside of their fields.

Walls

Again some walls can be impossible to cross, for example they could be 20 foot height with barbed wire running along the top and CCTV cameras positioned every 50 meters. There is no way of knowing what's on the other side waiting to greet you so why take the risk.

Some walls are protected by some form of deterrent, such anti-vandal paint which can be applied anywhere and doesn't dry, thus leaving the victim covered in thick wet paint over their hands and clothing, for us this would also be classed as leaving ground sign.

Broken glass cemented into the top of walls is an old favourite used by shopkeepers on their perimeter walls to stop thieves climbing over and breaking into storerooms. This method of protection or deterrent is more commonly found in inner city and poorer communities where petty crime rates are high.

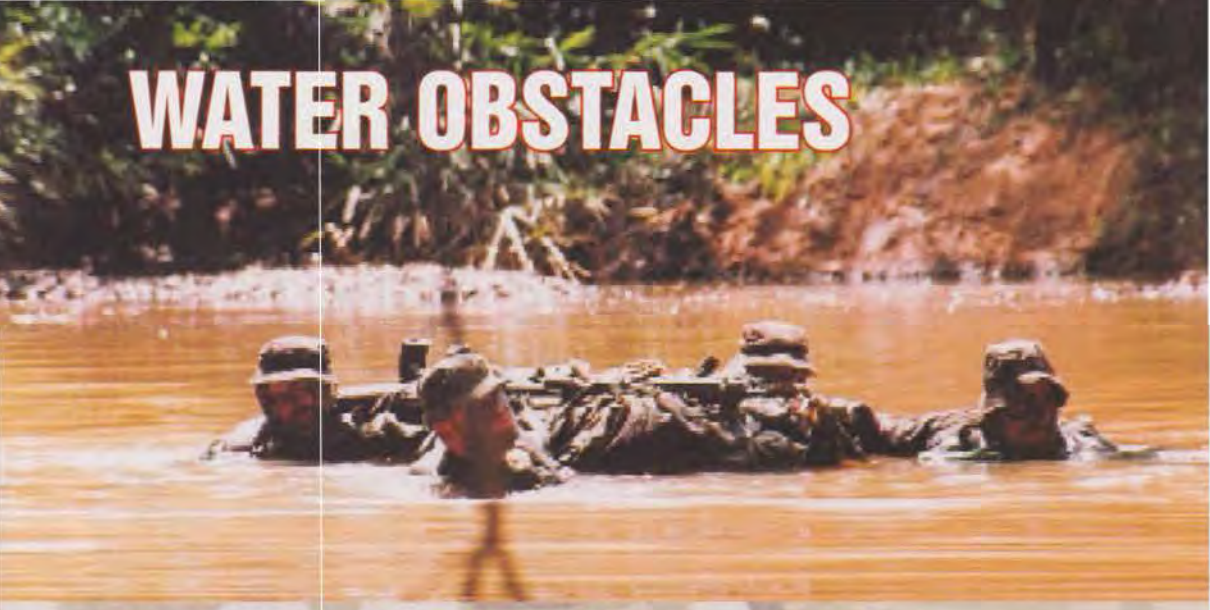
If operating in these environments, you must keep this in mind before climbing over walls or using them to elevate equipment, cutting your hand on glass will be the end of your mission.

Also be aware that if working in a hostile environment, glass and wire could be covered in human excrement to cause maximum infection to the victim.

Other walls that you come across can be simply climbed over, but remember to observe what's on the other side of the wall before you cross. It may only be 4 foot high on your side but could have a 40 foot drop on the other, always check first.

Dry stone walls bounding fields are easily crossed with care but can be fragile and a collapsed wall leaves ground sign, they are easier to climb at junctions with other walls or using "through" stones which protrude on both sides. Also take care if it has been raining, moss grows on the stones and can make them extremely slippery.

WATER OBSTACLES



RIVER CROSSINGS AND WATER FEATURES

These are the most dangerous of obstacles that you may come across when operating in the rural environment. In this section, methods and techniques will be covert but the author accepts no responsibility to any injury or losses caused if any of this section is recreated in training or on live operations.

When conducting your initial map recce' and before deploying onto the ground, you can identify any water features between you and your target area, this is the time to plan your route around such features. The water features that cannot be navigated around will have to be crossed. As with all obstacles, reconnaissance must be conducted and considerations made for the time of year, freak weather such as recent heavy rainfall and possibility of flash floods. For example, during winter, water levels are generally much higher due to rainfall and melting ice. You must also consider the temperature of the water you intend to cross, there is no point attempting to cross the water if you get half way and your body fails with the cold making you a casualty.

Although in the summer, water tends to be more shallow and slower flowing, this can change very quickly with a heavy rainfall, rivers can become swollen and break their banks in a matter of hours. If on your insertion you crossed a shallow river but then had three days of heavy rain you may find that crossing over the same river on your extraction is impossible.

After all the information has been gathered, you will know which method is most effective to cross the obstacle

- Fording / wading
- Swimming individually or in pairs
- Slack line
- Tension line
- Bergen rafts

Bank reconnaissance

Before any operator crosses the water, a full reconnaissance must be carried out on both home bank, the bank you are standing on, and the far bank you intend to cross to.

When the scout signals to the team leader that there is a water obstacle ahead, the team leader will give the signal for the rest of the patrol to go to ground and observe their arcs. The team leader and scout will move forward and take a first hand look at the feature; from here the team leader will make the decision to bring the rest of the patrol into position.

Next the team leader and the scout will walk the bank in both directions looking for a suitable entry point and exit point on the far side.

What to look for

When conducting reconnaissance, look for river banks that are not too steep and that will allow you to enter and exit the water with ease, check the depth of the water at your intended entry point by using your hide poles. In the worst case, you can manage a steep entry bank as Bergens can be lowered down but the exit bank must be as flat as possible.

You must identify anchor points on both sides, these are to be used when setting up a rope line if needed. Both natural and tactical conditions will dictate these points, if the river is fast flowing or you are the advance party of a much larger group intending to cross at this point.

Look at the speed of the water and also the direction. Never conduct river crossings on or just after a bend, as the speed and force of the water can easily be misjudged.

After the reconnaissance has taken place, the team leader will have a better idea of which method is to be used in crossing this feature, he can then brief patrol members on what is ahead, what is required and which method is going to used to cross.

Fording & wading

If the water is slow moving and looks to be no more than waist deep, this method is simple and will get your patrol across in quick time. If you are going to be on the ground for an extended period of time once across, you may want to remove lower clothing and boots, replacing them with your Gore-tex bottoms and light weight shoes before crossing. There's nothing worse than entering a hide already wet through if it can be avoided.

Next, take one of your hide poles and fold it in half, use it to steady your position in the water, giving you three points of contact at all times, always check the depth and condition of the river bed before taking your next step.

If carrying Bergens, remove one shoulder strap on the side opposite the flow of water, if the water flow is from the right, carry your Bergen on your left shoulder. This way if you did trip and go under the current will wash your Bergen away from you and not drag you along with it.

This is more important when crossing faster-flowing water.

Enter into the water facing the direction of flow, by using your pole lean into the current using your body weight to make the pole more stable. Facing the direction of flow will help keep your knees straight as the force of the water will push against your knee caps, if you were to face in the other direction the water would keep forcing the knees to bend and cause you to go under.

If operating in a hostile environment and carrying a weapon, ensure that it is attached around the body, under your other equipment such as your Bergen, this way all other equipment can be cut away but you still have your weapon.

Once across, you must take up a position of over watch, when all patrol members are across, the team leader will take a tactical halt to see if you have been followed, when happy change back into your dry gear and move off.

Swimming - one or two men crossing

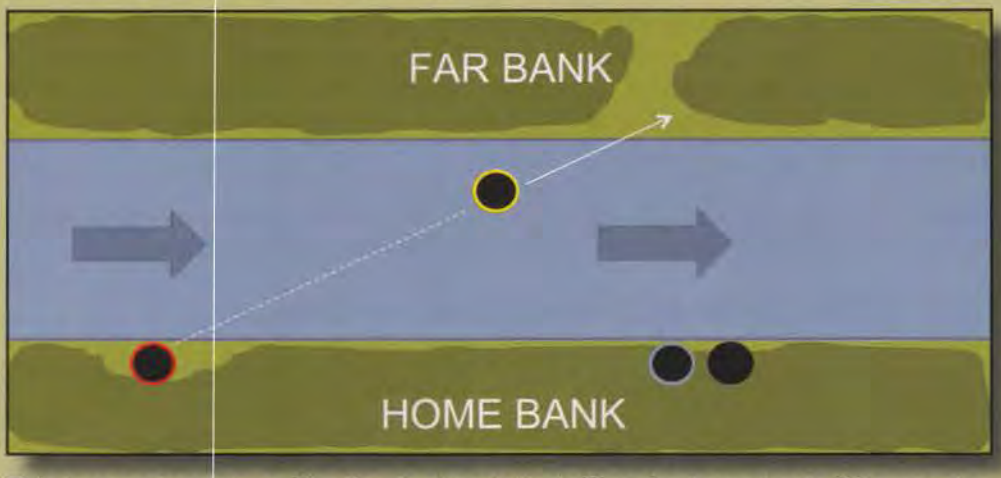
If the current is too strong to wade, the next method is for one member of the patrol, normally the strongest swimmer, to be prepared to enter the water and carry a small line across to the far bank.

Before anyone can enter the water, there are a number of drills that are to be carried out. The swimmer needs to remove all dry clothing and place on their full Gore-tex suit and light weight shoes, this is for two reasons.

1. This is still a tactical situation and concealment will be required on the far side.
2. It will offer protection to the swimmer from foreign objects in the water as well as from the low temperature.

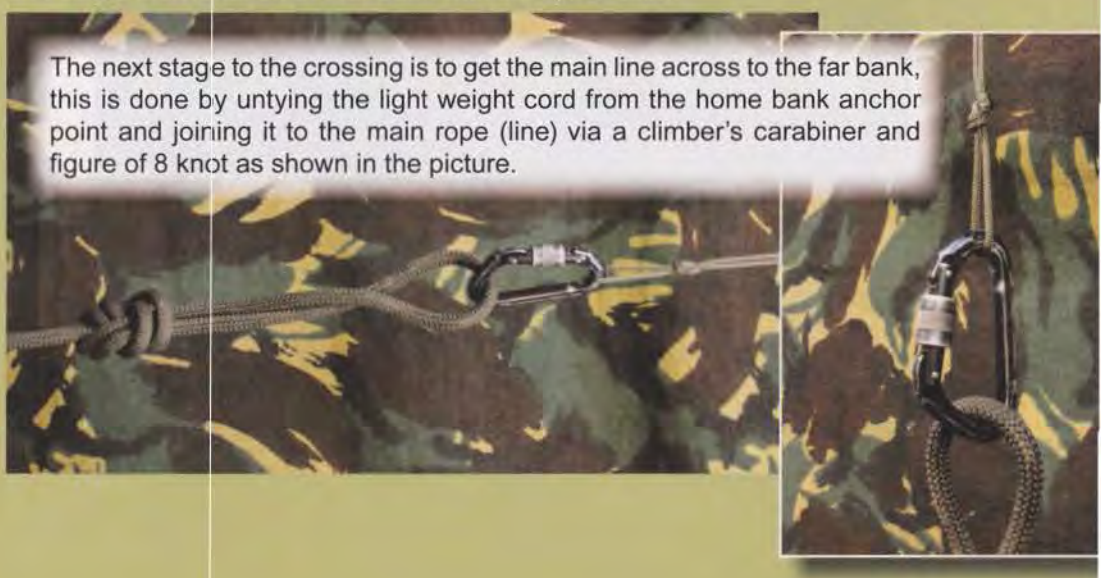
Once the swimmer's clothing is packed away, the patrol will head up the river bank to the point of entry, here a lightweight length of Para-cord will be tied to the home bank's anchor point, then half the patrol will move further up the river bank to a different entry point. The swimmer moves further up the river so that he can swim with the current rather than against it, should the swimmer get into difficulty he will be carried towards the rest of the patrol who can help with recovery.

The swimmer holds the cord throughout the crossing, do not tie it around the swimmer with the intention of reeling him in if there's a problem.



This is very dangerous. The line is already tied off on the home bank, if it were also tied around your swimmer there is no breaking point. If for example, a large section of deadfall such as a branch was washed down river as your swimmer was crossing, the object could get caught in the line and drag your swimmer to his death.

Help the swimmer into the water and if operating in a hostile environment, ensure his weapon is tied around his body. Once the swimmer is across and on the far bank, his role will be to attach the cord around the anchor point and signal with a thumbs up to the rest of the patrol. At this point speed is very important, the team has a wet and single individual on the far bank with little protection.



The next stage to the crossing is to get the main line across to the far bank, this is done by untying the light weight cord from the home bank anchor point and joining it to the main rope (line) via a climber's carabiner and figure of 8 knot as shown in the picture.

Once attached the patrol member (swimmer) on the far bank can start to pull the main line across and secure it into position.

Two types of line crossing

- Slack line
- Tension line

Slack line

The slack line is a fast and safe method which can be used to aid large numbers across open stretches of calm water, with the line attached at both home and far back just lying on the water's surface. This allowing operator's to clip their equipment on and swim across using their Bergen's as a flotation device as you can see in the pictures below.

Setting up is very simple and requires two climbing carabiners and a second length of line which is used in the recovery when the complete patrol is across.

These pictures show the slack line being set-up, step by step

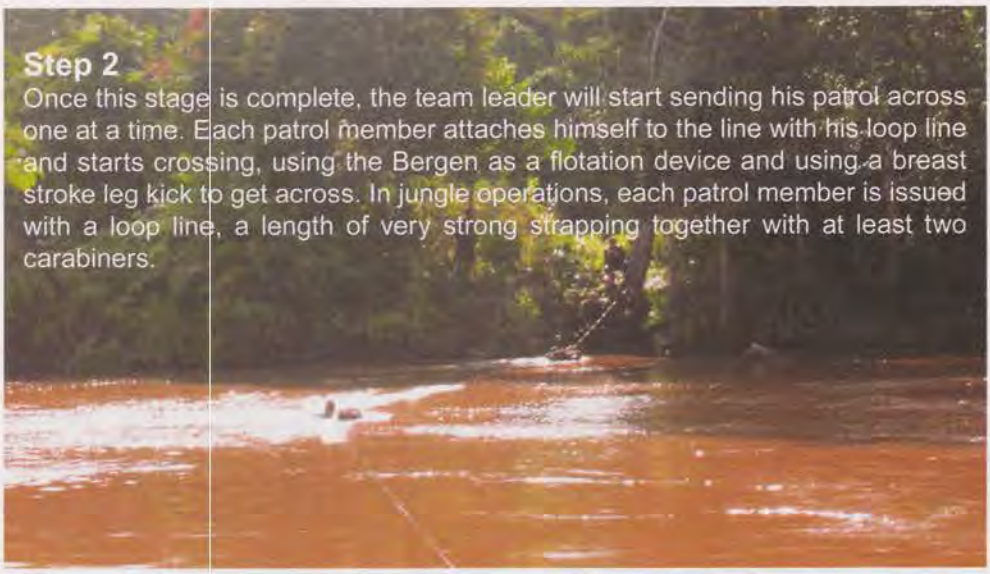
Slack line

Step 1

Thanks to the swimmer, the line will already be positioned and fixed around the anchor point on the far bank, for example a tree truck.

The same then needs to be done on the home bank as shown.

As you can see, both carabiners are secured around the anchor points holding the slack line in place by the figure of 8 knot. The recovery line is then attached to the carabiner on the home bank.



Step 2

Once this stage is complete, the team leader will start sending his patrol across one at a time. Each patrol member attaches himself to the line with his loop line and starts crossing, using the Bergen as a flotation device and using a breast stroke leg kick to get across. In jungle operations, each patrol member is issued with a loop line, a length of very strong strapping together with at least two carabiners.

If in a tactical environment, the operator will place their weapon on top of their Bergen, keeping it out of the water and close to hand in case it's needed, the Bergen will become a firing platform.

Here you can see the loop line attached to the operator's kit and the slack line

Step 3

The last patrol member to cross is known as the recovery man, it is their job to attach the length of retrieval cord to the home bank carabiner. When this operator crosses, the cord will be carried across enabling the team to retrieve all equipment simply by pulling on it.

Tension line crossing

The reconnaissance phase, getting the lead line across the water and securing of the main line is the same procedure as for the slack line method. The only difference at this stage is that you now need to use military 12mm black static abseiling rope for this task, this type of rope has no elasticity which makes it ideal for tension line crossings.

Standard climbing rope should not be used as it's impossible to get the required tension. Most climbing ropes are designed stretch up to three times their original length before snapping.

Depending on the tactical situation you are operating in, your team leader may first of all send half the patrol over to secure the far bank. If this is the case, they will cross using a Bergen raft which is covered in the next section.

Step 1

The 12mm static rope is across the water and is secured in place by a figure of 8 knot and a carabiner; this is fixed around the chosen anchor point on the far bank.

How to tie the figure of 8 knot.

Step 2 - Creating the tension

There are two types of tension lines, one which is put in place by reconnaissance troops ahead of the main force which is then over watched until the main body arrive, or once up is left in place without security.

The other is set up as the patrol arrives and is removed once all patrol members are across, this kind of crossing would be used to move company strength bodies of around 200 + men.

To create the tension required it takes more than one or two operators. The more manpower you have the easier this task will become. The rope on the home bank now needs to be formed into the tension lever, this is done by tying a figure of 8 knot in the rope to create a loop as seen in the picture below.

This rope is then pulled back on itself towards the anchor point creating the tension on the line, before being passed around the back of the anchor point and tied off.

To tie off, wrap the rope around the tensioned line at least 5 times, thread the end of the rope back through the last loop, tie off once and tie off again.

At this point the recovery cord can be attached to the carabiner if the system is to be collapsed. When half the patrol is across and on the far bank, the tension system on the home bank can be dismantled, the patrol on the far bank can then recreate the tensioning system to allow the remaining members of the patrol to cross safely.

Once the tension has been created, it is safe to start sending over the patrol.

Below are some pictures of my team conducting a tension line crossing in the jungle, because of the amount of equipment carried, my team made a Bergen raft which was then clipped onto the line.

The patrol members are now able to attach their equipment to the line and start their crossing. As before, the last patrol member to cross will bring the recovery line with him so that the system can be dismantled before the patrol moves off.

At the next break, all ropes and other equipment used, needs to be rolled out and hung to dry before repacking.

Bergen Rafts

Your personal Bergen can be used to create an excellent flotation device or raft with a number of Bergens attached to each other. An operational Bergen can weight over 100lbs, so think about the number of Bergens you want to use. As a rule I would say no more than 4, if operating as a six man patrol you could clip two Bergen's together and cross in pairs.

There are a number of other advantages of using Bergen rafts

If you have a casualty, they can be lifted on top of the raft keeping them dry, or if operating in a very hostile environment you may want to think about positioning your GPMG (general purpose machine gun) or LMG (light machine gun) on top of the raft with your gunner behind his weapon scanning the far bank as you approach it.

Also think about placing any sensitive materials on top.

The British army issue Bergen is excellent for making rafts as they have a number of anchor points, if operating in the jungle where the side pouches are not fitted, you can zip them together creating a really solid platform.

Attaching Bergens together

All you need is a number of climbing carabiners. Although Bergens are made from a waterproof material, they can leak so extra care and time needs to be taken in the preparation phase before entering the water.

I always use a heavy weight canoe sack in the main compartment of my Bergen, this can be rolled up to create a water tight seal, plus all operational equipment is also sealed in similar smaller bags, don't forget to pull the draw cord under the top flap and knot it with the pull cord; then the outer pull cord and finally make sure the elastic on the top flap is fitted correctly around the top.

Straps are pulled tight as this all helps with the waterproof seal; a Bergen that gets wet inside is a heavy Bergen.

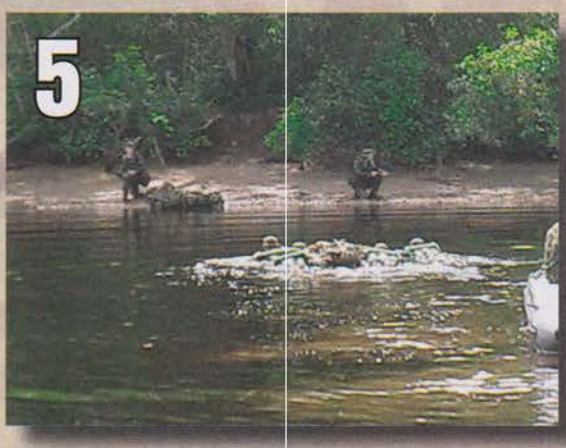
The pictures below show a pair of Bergens attached using the two different methods.

The Bergens pictured on the left have had their side pouches removed and are zipped together; the Bergens on the right have been attached with a carabiner

When using four Bergens, attach them together as two pairs. Using carabiners, attach the two pairs together at the base of the Bergens as shown below.

Your Bergens are going to be heavy, so to make the raft easier to carry, tighten all the shoulder straps before carrying into the water, strap side up.

Below are a series of pictures of a reconnaissance team entering the water from the home bank, crossing the river towards the far bank and then securing it ready for the rest of the patrol to cross.



CONTACT DRILLS

This section covers basic 4-man drills and tactics, which are used by reconnaissance soldiers operating in hostile environments, they are known as contact drills. These drills have been developed in case a patrol comes into contact with an enemy force firing their weapons onto the patrol in an effective way, also known as effective enemy fire (EEF). The patrol members will be well rehearsed with the actions and drills needed to extract themselves from the killing area and back to a position where their next move can be calculated.

Contact can come from any direction, to simplify communication on the ground, when contact happens it's going to be called as either

- Contact right
- Contact left
- Contact front
- Contact rear

When it happens, every member of the patrol will instinctively shout it out, then automatically go into the correct drill. When patrolling in a hostile area where an enemy threat is present, the patrol commander will be giving a running commentary of the ground. Identifying locations and areas which the patrol may use if contact were to happen, this will encourage the patrol to think as one formation and not as individuals.

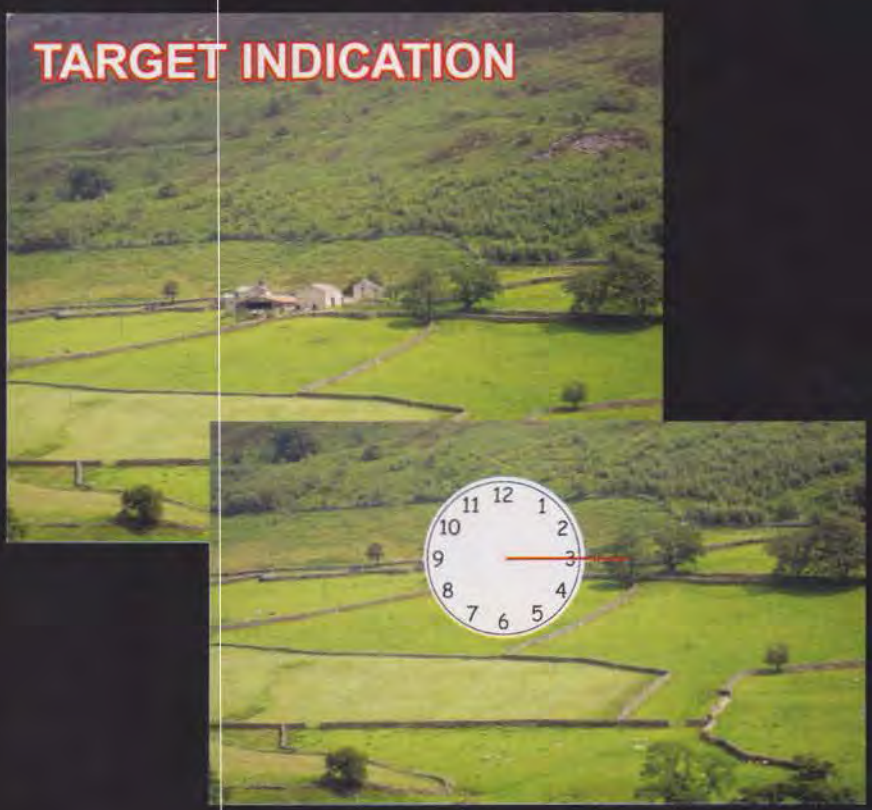
A contact can be anything from a short exchange of gun fire between one or both sides, to a prolonged process where a patrol is pinned down and the need for target indication is required.

Target indication is a method used to give the location of an enemy position, or individual on the battle field, the quickest method is known as "watch my tracer". This is where soldiers position tracer tipped bullets into the known enemy's position, this is then observed. Where the tracer rounds land is where the enemy is located.

A tracer round contains a small amount of phosphorous at the base of the bullet, when fired the phosphorous ignites and burns either red or green. This can then be clearly observed by eye.

Once located, any member of the patrol could give a full or brief target indication, this will include the range, direction by the use of a superimposed clock face on the ground with 12 o'clock always facing forward, proportionate features and a description of the enemy if seen.

The next stage is the issue of a fire control order, which patrol members (if not all) are to open fire and at what rate, rapid rate of fire or a much slower deliberate rate of fire.



RANGE 300, BUILDINGS, THREE O'CLOCK OF BUILDING, 2 LONE TREES, BASE OF RIGHT HAND TREE - ENEMY ANYONE NOT SEEN?

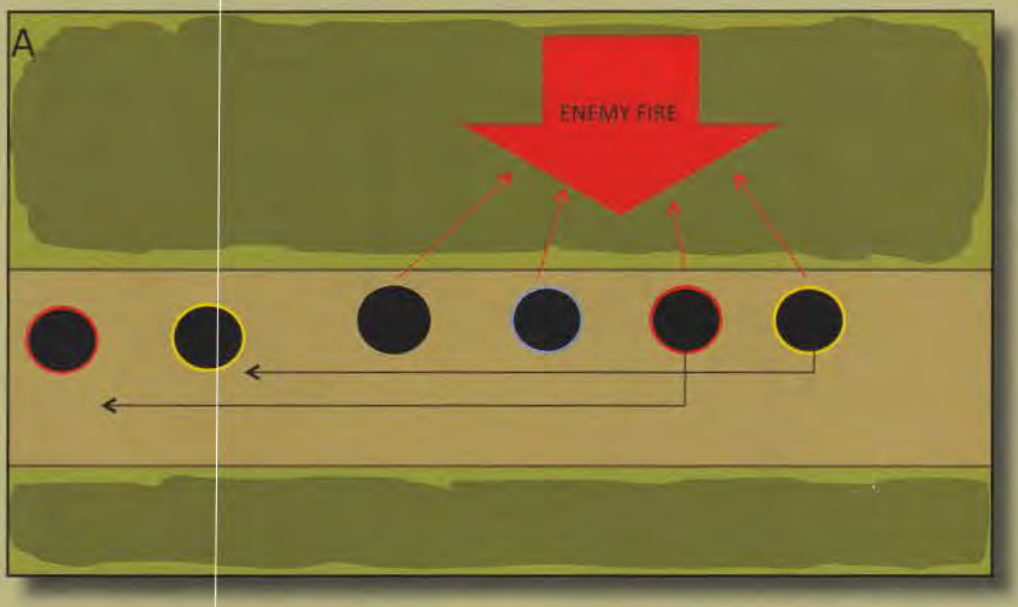
Contact left or right

Single track and "CONTACT LEFT" has been given,

Firstly all patrol members shout "contact left", at the same time they will turn to face the direction of the threat and begin returning an extremely high rate of fire back in that direction, smoke grenades are thrown and the team leader makes the call to which way the patrol is to peel. Back toward the direction they have come from or into unknown ground in the direction they were travelling?

For this example, the patrol will peel left back in the direction they have come.

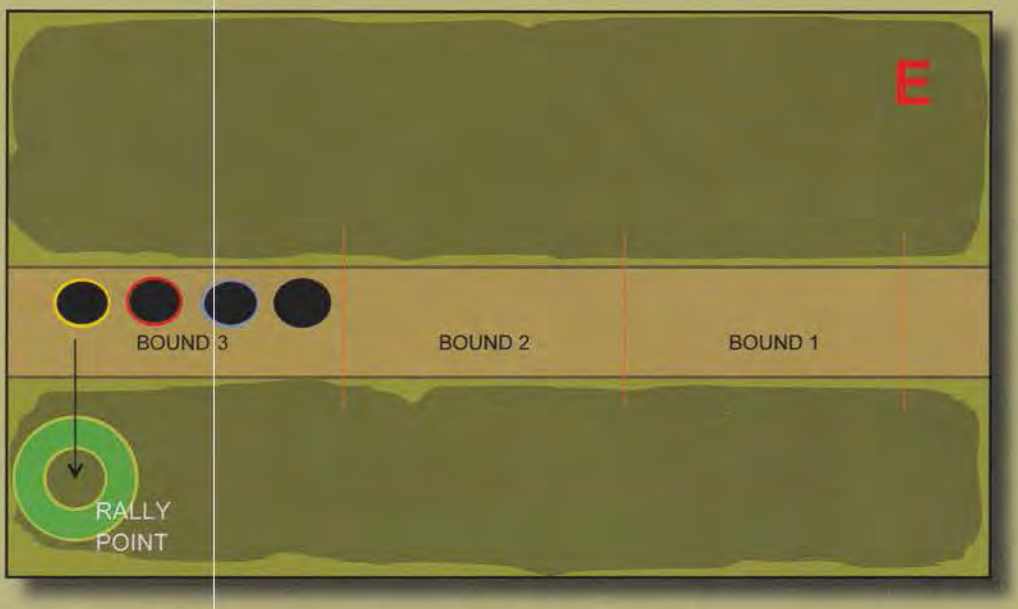
Looking at the diagram (A) you can see that the lead scout and team leader are peeling left back in the direction they have just come, moving behind the rest of the patrol. You must always peel behind the patrol, if you where to go around the front you would run into the line of fire.



As the lead scout peels past the team leader, he will tap him on the shoulder indicating that he has left his position and is now mobile, the team leader being the next member to move will stay in position a few seconds longer before peeling, again tapping the next man on the shoulder which will continue throughout the drill.

Waiting at least 3 seconds before moving off, prevents all patrol members moving at the same time and not giving covering firing to those moving.

In the diagram above (B) the patrol is now out of the killing zone and away from effective enemy fire, at this point they will go silent, this means all operators will stop firing.



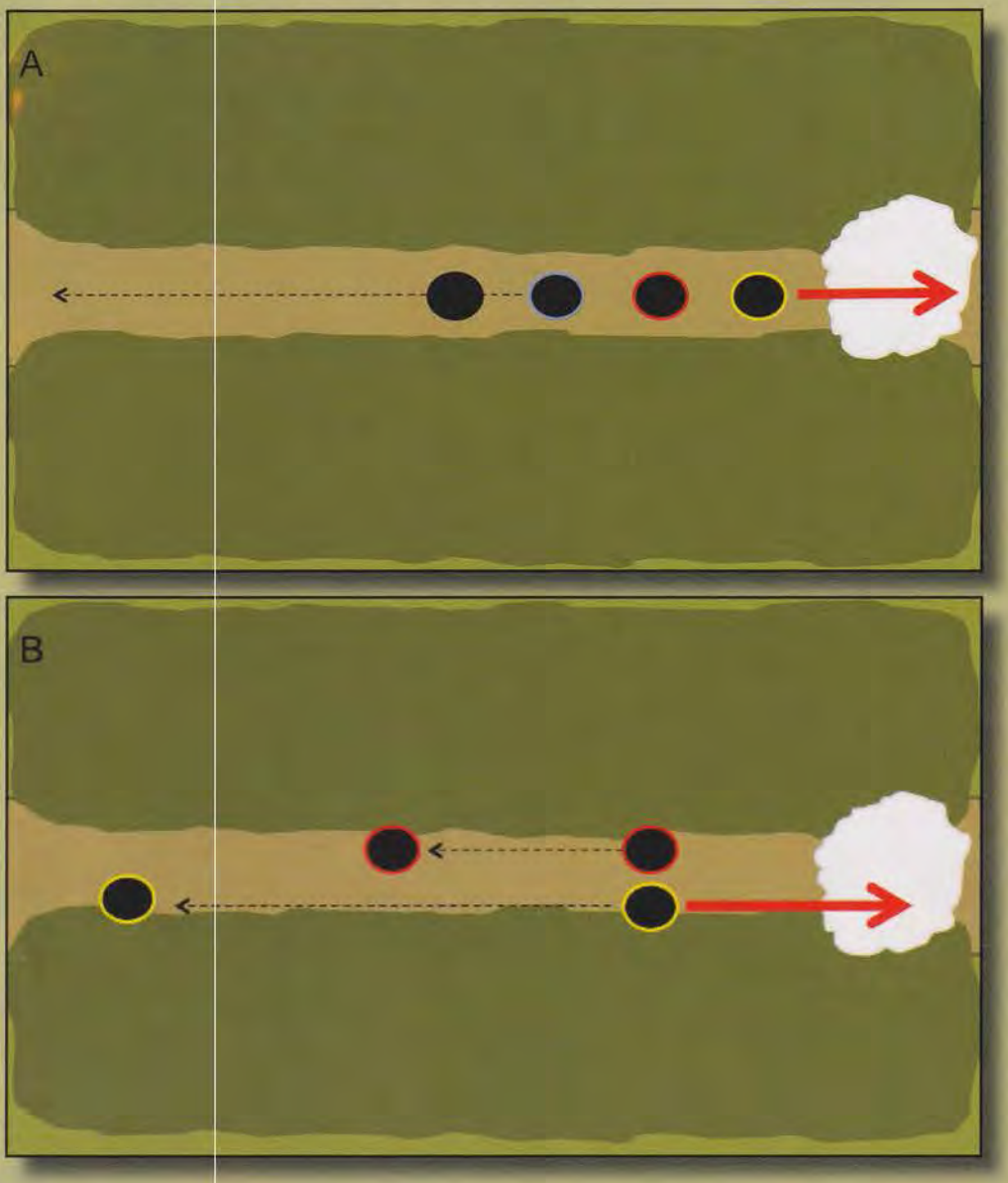
They may choose to continue to peel back, covering each others movements or a member of the patrol may have seen a suitable place in which to break track, if this is the case "Rally Rally Rally" must be given over the personal role radios (remember the patrol has now gone silent so there is to be no overt talking, use only radio and hand signals to communicate) the rest of the patrol will follow on.

Once in the rally location, there will be no talking or moving other than to place a fresh magazine in your weapon, the patrol will form all-round defence and listen to see if they have been followed. Once happy, a quick check must be conducted to make sure there are no injuries or missing equipment, inform the operations room of what has just happened and then move off to a layup point. Here the patrol may spend a period of time conducting admin, area security and awaiting possible orders from the operations room of their next actions.

Contact front or rear - Isolated drill

In diagram A, the patrol is moving forward when they come under contact from the front, at this point all patrol members shout "contact front". This time however, only the front patrol member (lead scout) can return fire; a massive rate of fire directed to the front will be given followed by the detonation of a smoke grenade from the second patrol member (team leader) to cover their movement.

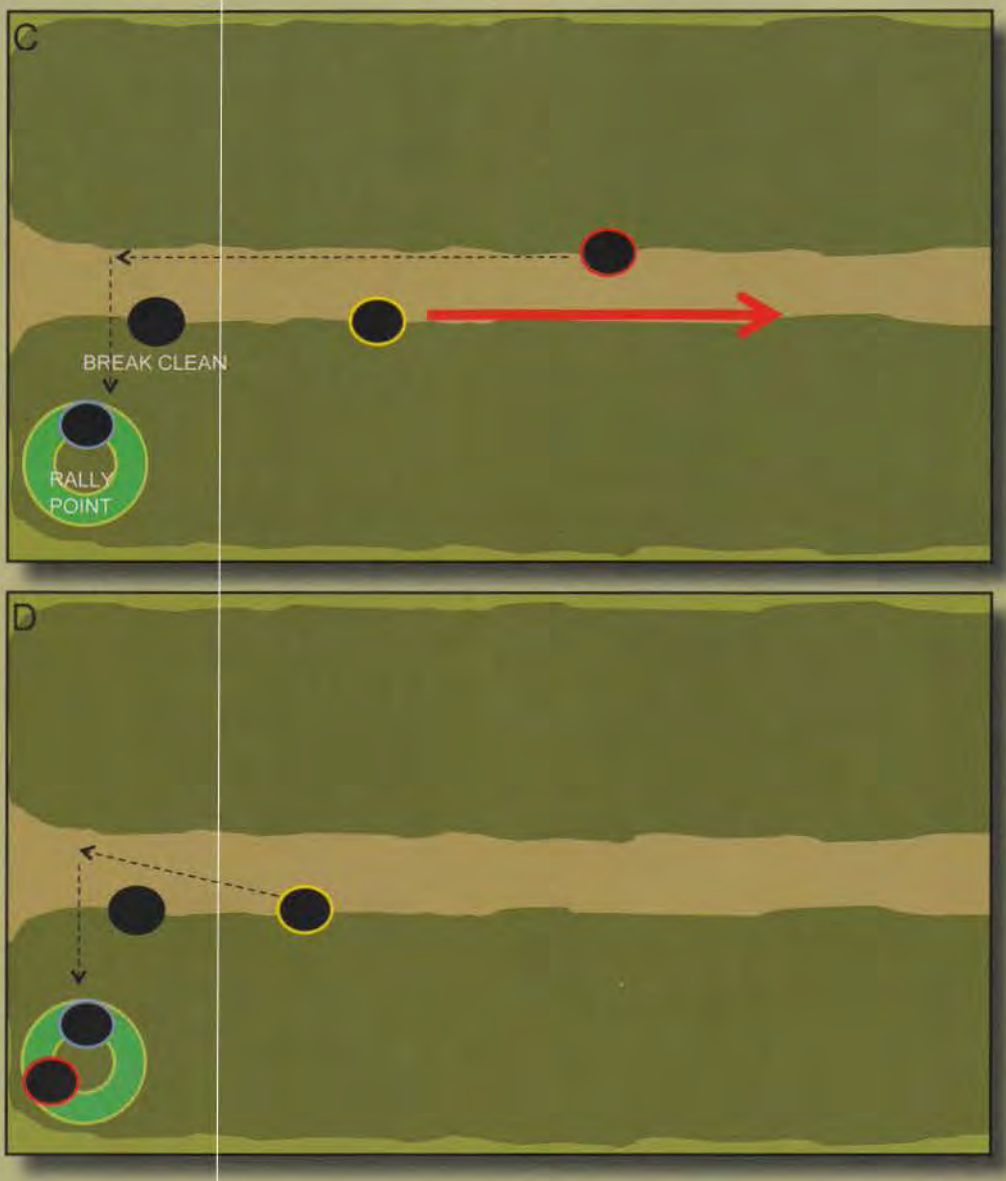
The lead scout will turn inwards and run towards the team leader, when level with the team leader they will both return fire in the direction of the enemy. As this is happening the rear two patrol members will have extracted back to locate a break clean point and a rally location (B), the forward pair will now start to extract backwards covering each other's movement with fire if still required.



While the forward pair are fighting their way out of the killing zone, the two rear members have taken up their position to the rear (C). The 2ic has identified a "break clean" point and has marked it by placing down the gunner; he then moves into the rally location securing it and waiting to direct the rest of the patrol onto him.

At this point the patrol goes silent.

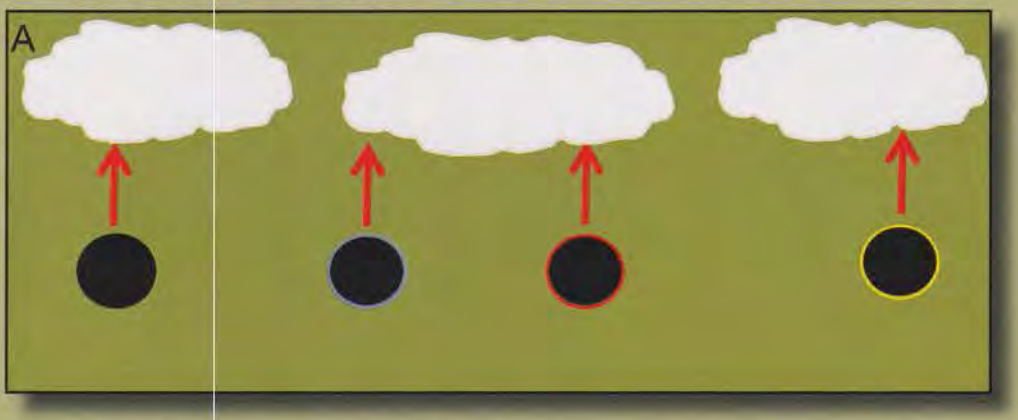
The 2ic is now in the rally point, (D) calling in the rest of the team onto his position. At this point he will be giving individuals their arcs to cover, creating a 360° protection. A quick head count and replenishment of weapon magazines will be conducted before moving off.



The two contact drills covered so far have been aimed at confined areas such as tracks, these next drills are to be used if the patrol becomes under contact in the open ground. As before the enemy threat comes from all directions but now the drills are very different due to the open ground.

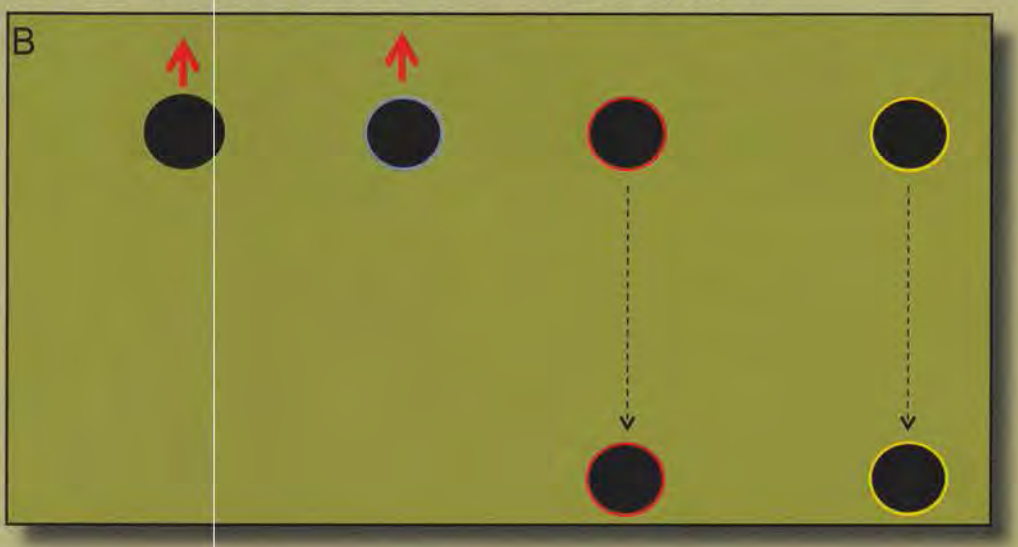
Contact left or right - extraction in bounds

In the diagram below (A) the patrol has been contacted from the left, as before they turn to face the threat and shout "contact left" and return maximum fire.



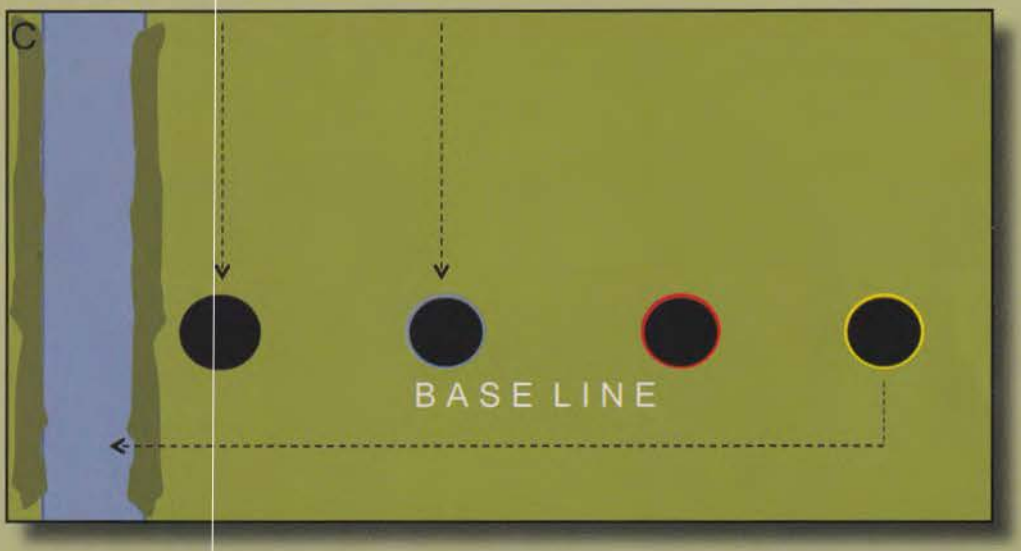
As the patrol is out in the open, they now need to get as much distance between them and the threat. This time a number of smoke grenades are thrown, the drill is for the patrol to break into two pairs that can support each other's movements with fire.

In this next diagram, (B) the team leader's pair will bound back first as the 2ic pair give covering fire. Once the team leader's team have gone firm and are returning fire, the 2ic will identify that the rate of fire has increased and will bound back with the gunner. This will continue until "BASE LINE" is heard, this indicates that no more bounds are to be taken and that the patrol must stand by to peel.



Once "BASE LINE" has been shouted the rest of the patrol will repeat it, this is so everyone in the patrol hears it and understands what's going to happen next, for example peeling and then the break clean. In the diagram below the team have extracted back to a stream running along the bottom of a ditch, the plan is to peel left (C) and go silent once down in the ditch.

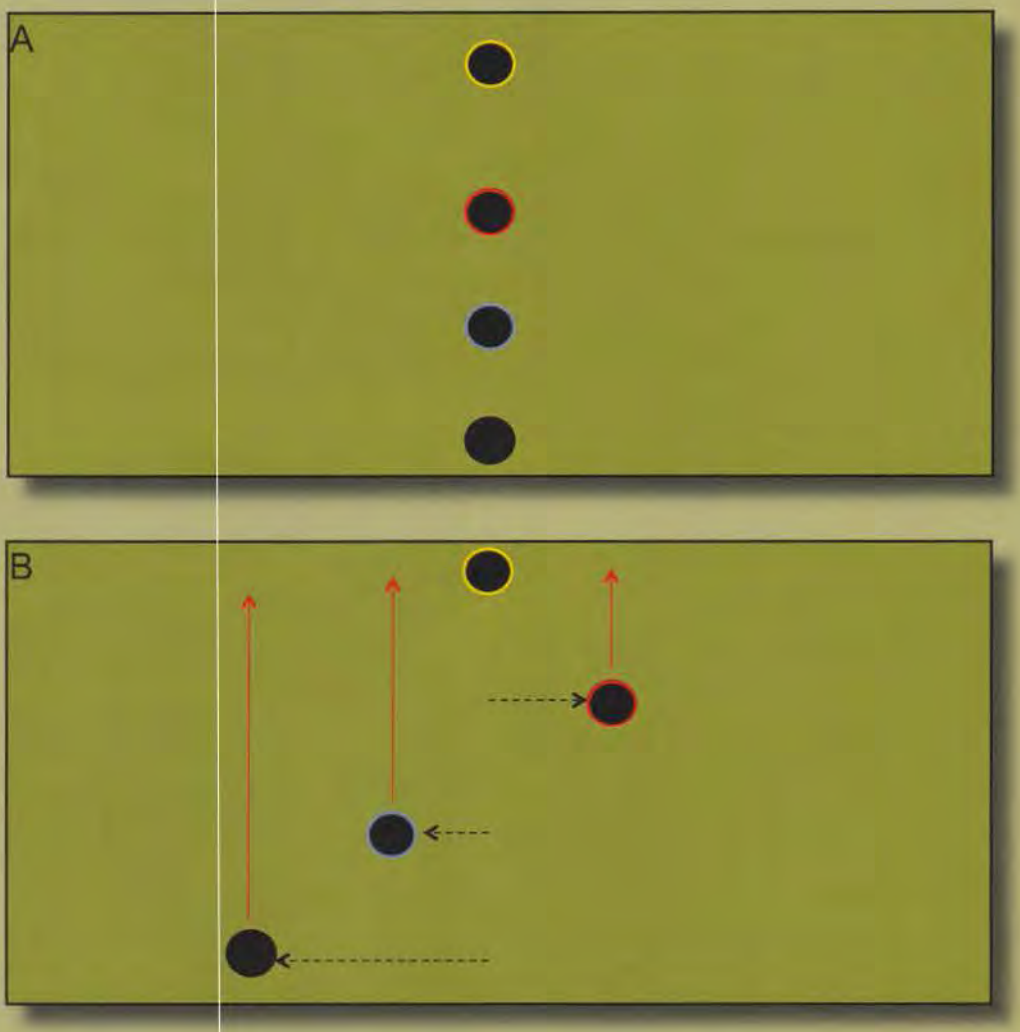
Now that the patrol is out of contact and has gone silent they are free to move into their rally location.



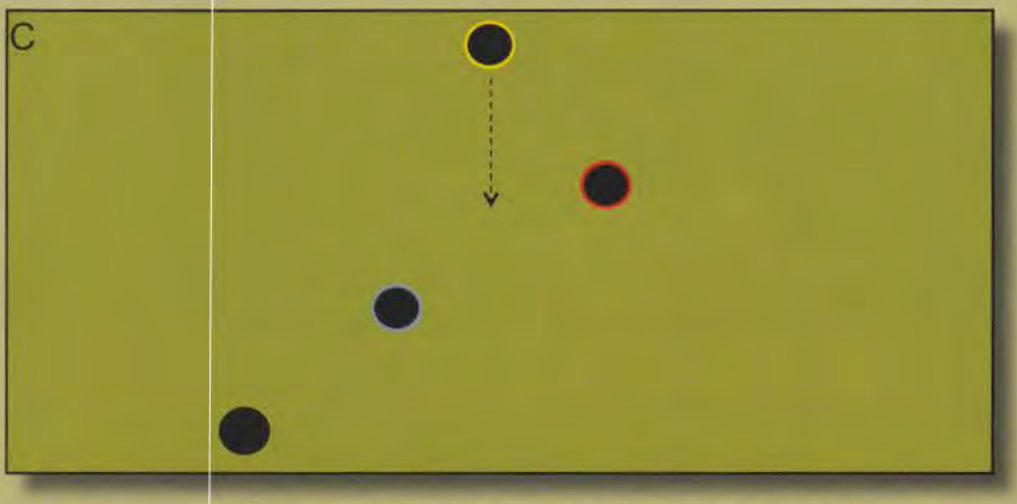
Contact front or rear

Previously when the patrol was contacted from the front, they had no room to manoeuvre so their drills were confined, initially only one patrol member could return fire. This time when the patrol is contacted, they have freedom of movement and can position themselves into a dominating force.

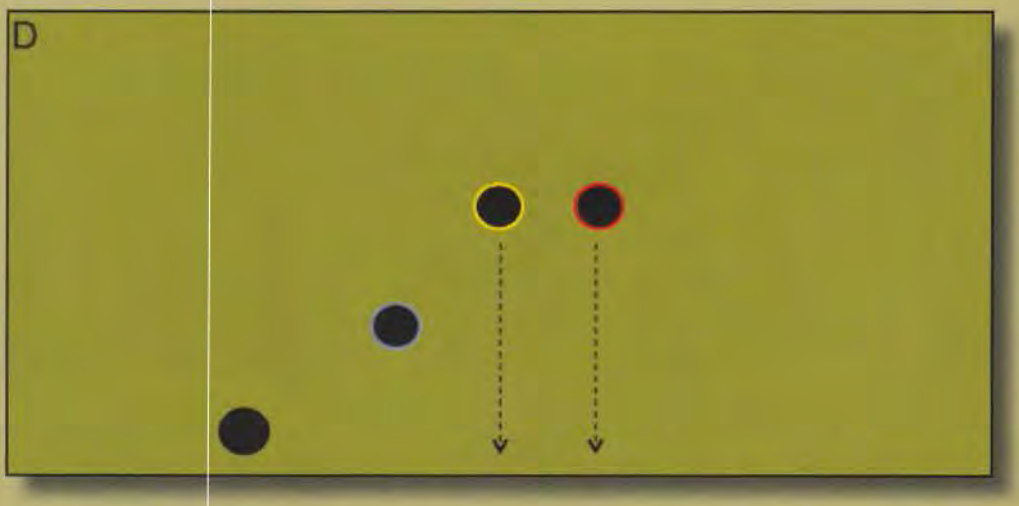
The diagram (A) below shows the patrol moving in single file across the open ground, when they come under contact from the front, they will move into a fighting formation (B) which gives them maximum fire power in the direction of the threat. This formation would be the same if they were contacted from the rear, only the patrol would turn and face the threat.



The next step is for the patrol to start extracting back out of the killing zone, with the scout moving first turning inwards and running towards the team leader (C). When level with the team leader, the scout will turn to face the threat once more and continue firing.

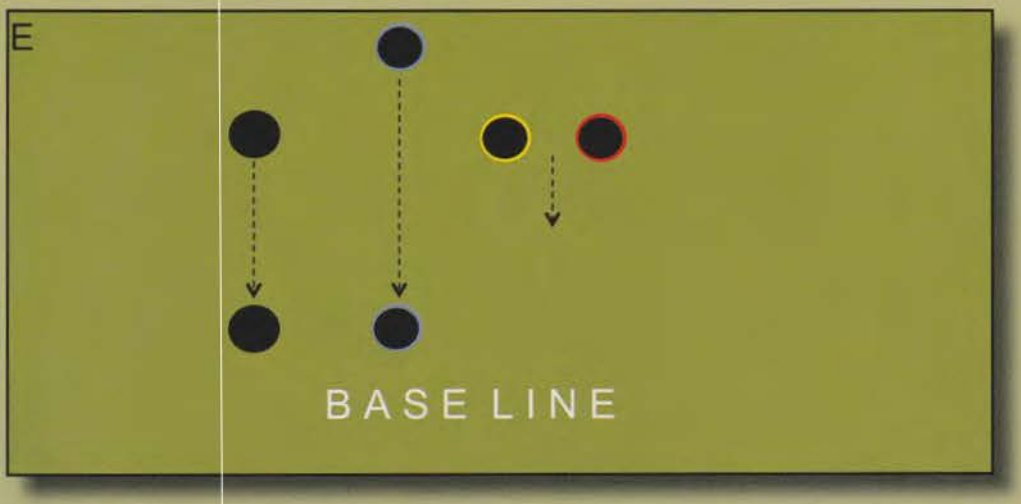


The two forward patrol members are now to move as a pair, once ready they will get up, turn in towards each other and extract back towards the rear man (D).



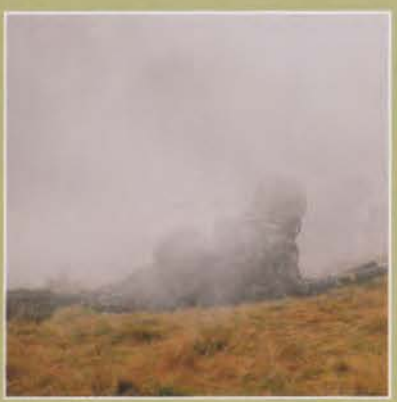
Finally, the third and fourth patrol members will prepare to move, as soon as they hear the rate of fire increase they will both get up, turn inwards and extract back either level with the first pair or a bound behind them (E).

This will continue until the patrol is out of the killing area and can break clean into a rally point.



In the military, these drills are practised over and over again, week in week out, this is because they save lives.

In these pictures you can see reconnaissance soldiers practising these drills with live ammunition.



Courtesy US Airforce - DOD Media

MAN DOWN DRILLS

There is an old saying in the military, "Orders never survive contact" which means you can plan for everything or so you think, but on the day and on the ground, you will find that things never work out the way you planned.

This is where your Standard Operating Procedures (SOP's) come into play, although you can't account for all scenarios you may be faced with, you can set in place basic team drills that can be adapted if required.

All operators are taught from their very basic medical training, that the rule of combat life support is self help first, if you can stop the bleeding yourself with your personal trauma kit then that's what you do.

As a SOP when a man goes down, everyone in the patrol shouts "man down" either over the radio or aloud.

If you are operating in a hostile environment and are under effective fire, the rest of the patrol need to overpower and suppress the enemy, which in turn will aid in your extraction. When a patrol is still in contact but are having to extract a wounded patrol member, they will have to do this by dragging the wounded along the ground on their belt buckles, staying as low as possible so they are not injured.

When conducting any type of medical trauma training I will ensure it is always done on the belt buckle, to the operators it becomes second nature to stay low.

If in a non-hostile environment, you should still aim to conduct self-help first if possible, you will also have the capacity to call 999 requesting the emergency services. If this is not possible by mobile GSM means then inform the operations room giving type of injury and a grid location, they can then call the emergency services for you.

Courtesy US Airforce - DOD Media

METHODS OF EXTRACTING THE WOUNDED

There are a number of ways that wounded, non-walking members can be extracted off the ground, they are based on hostile operations but can be adapted for all environments.

One / two man drag

This is done by both operators lying on the floor either side of the wounded, gripping the wounded member's clothing or equipment start dragging the wounded towards an area of cover. This is very hard work but is the most likely method to be used whilst in the killing area.

Extraction loops

You may need to remove the casualty's equipment before they can be moved. If this is the case, grip them under the armpits and drag. You can make extraction loops which are made from lengths of cord twisted together and then covered in green cloth tape; these can then be placed around the legs and under arm pits to aid with carrying and dragging the casualty.

The light-weight stretcher

This is actually a military issued poncho which doubles up as a light-weight stretcher, to create the stretcher lay the poncho down so that you can see the webbing straps running along all four sides and one down the middle, you will see there are hand loops stitched into the webbing loops to aid you in carrying.

Next fold the poncho in half, ensuring that the middle webbing strap is facing upper most, this is then ready to use; this is a very quick and simple method of extraction.

If operating in a hostile environment, one of these lightweight stretchers should be prepared before deploying and carried under the top flap of an operator's Bergen.

The light-weight stretcher is excellent for extracting a casualty over a medium distance once out of contact, if working as a four-man team the extraction party would look something like this.

Having only two operators carrying the casualty, one to the front and one in the rear, is very tiring. The operators will swop roles throughout the extraction, alternating between carrying the casualty and moving out to the front, acting as lead scout and early warning if in a hostile environment. In a non-hostile environment, this operator would be navigating the team to the nearest main road or town.

NEXT STAGE IN THE EXTRACTION

Hostile drill

As soon as the patrol is out of the contact area and have gone silent reaching their rally point, or even a lay-up position which would be a much greater distance away from the contact point, the casualty can now be stabilized and a casualty evacuation arranged. At this point, the team leader will send a full contact report and full casualty report. The next stage is to decide if the mission can continue or must be aborted.

Non-hostile drill

A decision must be made whether the task can continue or should be cancelled until a later date, this may depend on the client and availability of subject.

Helicopter landing sites - HLS

There are a number of reasons why you may be required to set up an HLS, for example in a reconnaissance capacity you may be asked to set one up for incoming friendly troops who are going to assault an enemy target, or as an emergency casualty evacuation site.

If operating in a hostile environment you must consider placing out operators as over watch and protection for the HLS and possibly the incoming aircraft.

There are set dimensions, which are used when setting up your HLS, each aircraft requires a specific-sized area which must be cleared before it is safe to land.

The dimensions needed are shown below

TYPE & SIZE OF AIRCRAFT	DIMENSIONS IN METRES		
	A	B	C
LYNX	6 M	14 M	25 M
PUMA / MERLIN	13 M	35 M	50 M
CHINOOK	15 M	60 M	100 M

Methods Of marking

You must always inform the pilot of what he's looking for and how it is marked on the ground. If using smoke to signal the location of the HLS, it must be a smoke signal in a canister with a light green body if using British issue smoke grenade.

Do not use smoke screening which comes in the dark green canister as this will render your landing site useless.

Inform the pilot of what colour he is looking for, this way he can confirm that he has seen your HLS. In a big operation there may be more than one HLS being used in a close area.

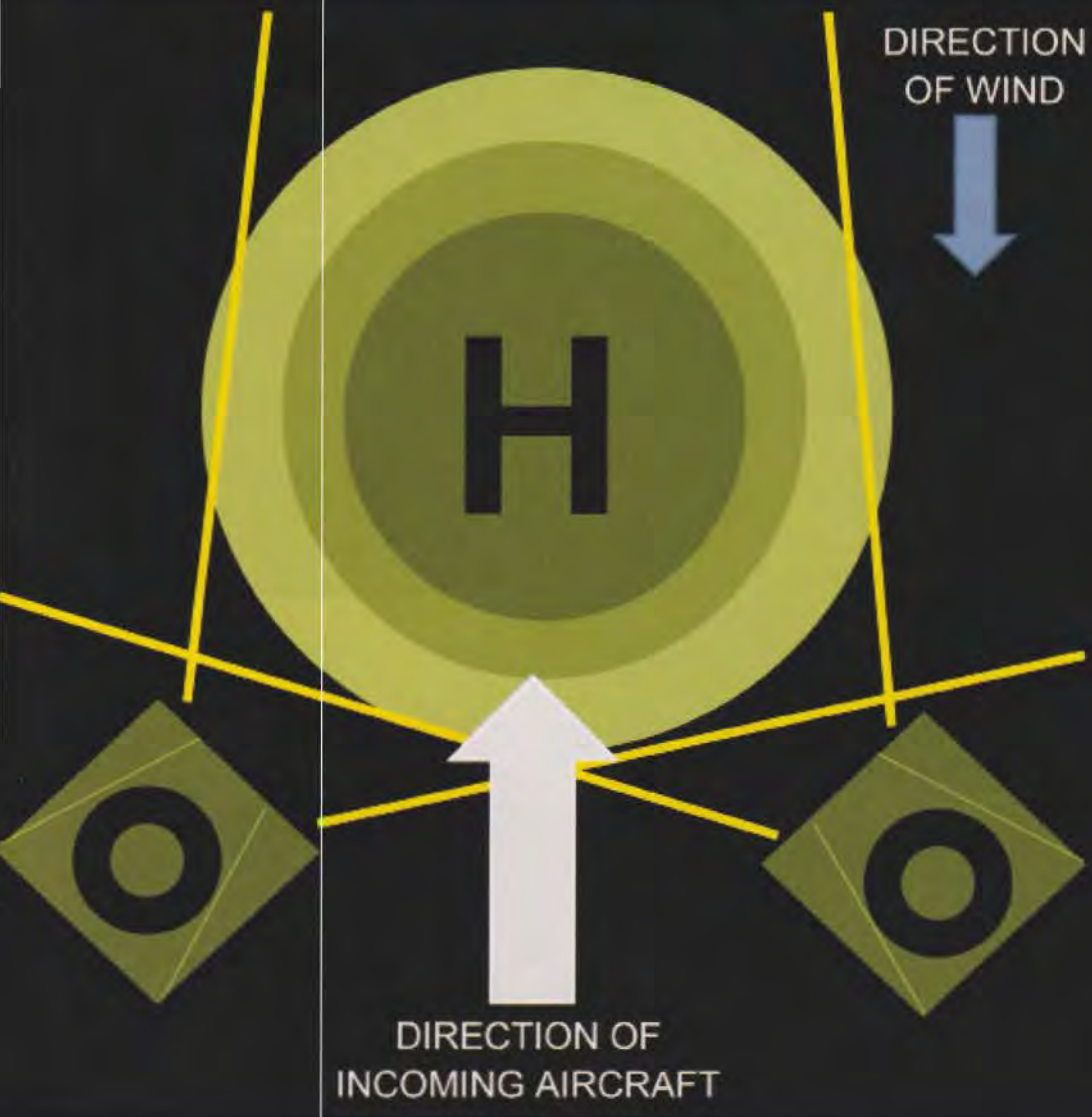
Marking methods

- Coloured panels
- Cyalumes (coloured or IR)
- Smoke
- Flashing strobe
- Torch light
- People
- Vehicles
- Ground flares
- Paint "H" on the ground

Marking at night with vehicles

If marking the HLS at night using vehicle head lights to illuminate the area you must always ensure...

- The aircraft is landing into the wind
- The vehicles head lights are facing in the opposite direction to the approaching aircraft
- All aircraft occupants are em-bussed and de-bussed from different directions, ensure you have been told what they are
- If you have troops getting off the aircraft and other troops getting on make sure you have two holding areas
- No soft head dress and all antennas folded away before getting on the aircraft
- Nobody goes near the aircraft until you get the signal from the pilot



Winch Holes

When operating in the jungle there are very few natural breaks in the tree canopy, this canopy can also be too high to allow helicopters to land and extract operators from the jungle floor.

To create a HLS large enough for even the smallest of aircraft to land would take considerable time and effort and place the construction team in great danger. Alternatively we use a method called a winch hole, this hole is cut into the tree canopy at ground level and once the trees have been felled it creates a hole large enough for a helicopter to lower down a line from the on board winch.

Before any work can commence on the winch hole a check for dead fall must be carried out, this includes naturally occurring gaps you intend to use.

Deadfall is where large branches have broken away from the tree high up in the canopy, they become entwined in other branches and over time start to decay. At some point this dead wood will fall to the ground, hence the name deadfall.

Deadfall is one of the biggest killers in the jungle, always conduct a full check above you looking at the canopy. The down draft from the hovering helicopter could break the deadfall loose bringing it crashing down on top of you.

Methods to create the winch hole

There are a number of different methods which can be used

- Carrying a number of small chain saws
- Axes and handsaws
- Wrapping explosive detonation cord around the tree trucks a number of times to create a cutting charge.

When the aircraft is hovering above the winch hole, the downdraft created will close the hole slightly, ensure that you cut the hole large enough to prevent it from closing right over. There is a danger that the winch cable or basket may get caught in the tree canopy.

Marking the hole

Due to the thickness of the tree canopy, it is pointless using signal smoke, panels or strobe lights. You can use a marker balloon which can be inflated and positioned above the canopy through the centre of the winch hole; this balloon can be fitted with an Infrared strobe light for night time extractions.

Key terrain

Always conduct a good map study before going out onto the ground, then double check each leg once on the ground as the lay of the land is always changing. Pick routes which will be easier defended and offer good escape routes, ensure there are lots of options such as PUP, DOP, LLB, DLB etc.

Areas that afford good cover from view and stay away from MSR's (main supply routes) and high ground that will give others a good observation of your approaching direction. Stay away from areas of tactical importance, if you were seen using them this could tip-off the enemy or a third party of your tactics and intentions.

Avenues of approach

Don't be lazy and take the easy option because you're tired, wet and haven't slept well in days. At the first sign of taking the easy route you will be caught out, stay professional at all times.

True Accounts

On a training exercise some years ago, two teams were given the task of conducting a CTR on a small farm in the middle of January, with snow on the ground and an icy wind in the air. After conducting a map study and looking at some air photography two avenues of approach became apparent. The first was to follow a small valley into the back of a wood block approximately 200 metres from the farm and try to observe from there, (remembering that this is January).

The second was to insert up a small stream with high banks that afforded good cover and which came along the side the farm. The longer serving team leader said "I'll take the wood block, I'm not getting wet". "Happy with that" I said to myself and off we both went to get our stuff sorted, we set off on task and found the stream. I slowly moved my team into it, the water was cold but only came just above the knee so it wasn't all that bad. We moved slowly through the water because of the rocks in the stream bed, getting closer to the farm and stopping every so often to scan the ground.

We were about 50 meters away when we heard an exchange of fire and trip flares being set off illuminating the wood block and to our joy, the farm as well. The team in the wood block started to extract back under fire with more of the occupants leaving the farm to join in, this gave my team the perfect chance to gain the information we were looking for. After a good look around the farm we extracted back towards our pick up point, the vehicles came and extracted us off the ground. The team which had been contacted had missed their pick up and had to arrange it for a much later time and at a different location, by the time they were brought in off the ground my team had changed into dry kit, had eaten and were in their sleeping bags.

The lesson from that story might be, never take the easy option!

CHAPTER 8

CONCEALED RURAL HIDES

A hide is a carefully constructed position that affords excellent radio communications, concealment and allows covert observations to be staged. Offering sustainable protection from the environmental elements, the hide will extend the mission and occupant's survivability.

Topics include

- **Types of hide**
- **A hide's 5 key elements**
- **Locating the hide position**
- **Hide construction**
- **Defences and devices**
- **Occupation**
- **Routine**
- **First and last light checks**
- **Extraction**

WHAT IS A HIDE?

A hide is a carefully constructed position that affords excellent radio communications, concealment and allows covert observations to be staged. Offering sustainable protection from the environmental elements, the hide will extend the mission and occupant's survivability.

TYPES OF HIDES

- Long term sub-surface
- Mid term belly hide
- Surface hide
- Bush / bramble hide
- Ditch
- Tree line screening
- Technical

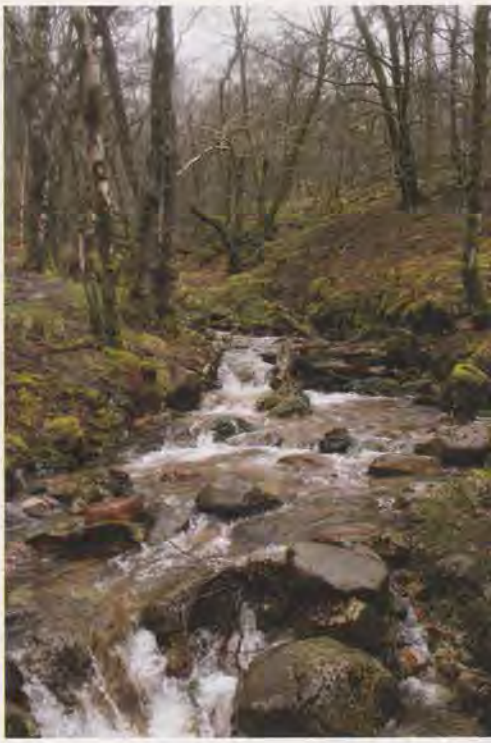
The hide must offer five key elements

- Communications
- Observation
- Concealment
- Sustainability
- Survivability

The construction of any hide is broken down into phases

- Locating the hide position
- Constructing the hide (work phase)
- Deployment of defences and technical devices
- Occupation
- Routine
- First and last light checks

Locating the hide



Your chosen location must have a well-covered approach, if possible more than one. Remember to consider overhead cover if operating in a hostile environment where an air threat is present. The hide's location should ideally be away from footpaths and vehicle tracks. Not all tracks will be marked on your maps, particularly if the map is some years out of date. You will usually insert in the dark and will miss spotting some paths.

Once the probable hide location is identified, the team leader will put the team in an all-round defensive position. They will lay motionless using all their senses to listen for any third party that may have followed them.

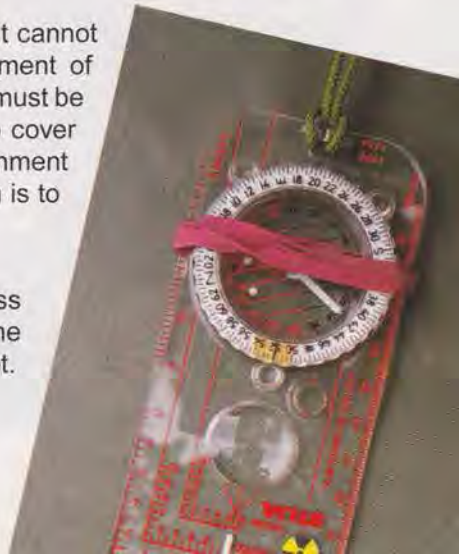
When the team leader is satisfied that the team is safe, radio communications will be checked back to the operations room and any other call signs on the ground. If communications are good, one team member will be delegated to conduct a clearance patrol with the team leader, leaving the other members in position over watching the target.

The clearance patrol will be looking for any dead ground, tracks, water, wildlife, farm animals, buildings and possibly a better position for the hide location. They should also search to the rear for the Bergen hide, once satisfied they will return to the rest of the team and conduct a second listening watch.

Bad locations

If possible, stay away from water sources as they will attract animals, flies and potentially humans. If there is heavy rainfall, there's the risk of your hide flooding so locate your hide on higher ground, remembering not to sky line yourselves. By using higher ground, you will also afford better observation of the target and approaches.

Think about the dead ground around your position, if it cannot be observed by eye you must consider the deployment of technical devices. If operating in a hostile theatre, you must be able to defend your position using claymore mines to cover your extraction if compromised. If not in a hostile environment and your primary hide is compromised, your main aim is to extract back to the ERV and arrange pick up.



Ensure that all team members have their compass bearing set to the ERV. Place an elastic band around the bezel to stop any movement when placed in the pocket.

Isolated positions

Some experts insist that you should never use isolated positions for hides. My opinion is that you should try and avoid them however, if there is no other location which affords observation of your target area, then you have no other option.

You must always consider the environment. For example, if operating in a hostile environment I would always opt for a cover group over watching the isolated position. This would provide me with back up on call if it were needed. Alternatively, consider the deployment of a technical device, which will allow you to move back and into the over watch position.

I have constructed a large number of covert hides within urban environments, positioned in various locations such as roundabouts, in this particular case it acted as the trigger for waiting call-signs who were mobile. These locations would be considered as isolated however, if you conduct your insertion drills correctly and are disciplined within your hide, you should be fine.

This location was used in a "live" surveillance operation for the trigger position on the target as they left their workplace

Split hides

Occasionally, when operating in large teams or when the only position available will not accommodate the complete team, you will have to consider using a split hide. This means constructing two smaller hides of equal quality and concealed to suit their surroundings. The forward hide will be known as the primary hide where all observation takes place, the rear hide is known as the secondary and it is where all administrative activities are conducted. There must be radio communication at all times between the two positions, with the secondary position responsible for the rear protection and over watch of the Bergen and primary hide.

If the task is likely to continue for a lengthy period, the operators in the forward hide will need rotating with the team members from the secondary hide. The changeover of manpower should only be done before first light or after last light.

Never conduct a change over at midday as this could compromise the hide. When moving between hides in the hours of darkness, there is a simple method you can use to accurately locate each position known as a track plan. The track plan is a marked route, and should be the only route used for all movement between hides.

There are a number of stages to creating your track plan

- Clear the ground of any loose sticks and dry leaves that will make noise as you move around, push them to the sides as in daylight this will help with locating.

- Cut away all tree branches from ground to waist height. Some people will suggest cutting to head height but the track plan is a compromise due to the ground sign it leaves. Just try and limit the damage and move around on your hands and knees. Conceal the fresh cut marks on the trees with mud.

- Run a track plan cord between the two hides. This is done by laying out cord that is then held in place by wrapping it around the tree trunks. There are two positions for this cord, day time where it is low to the floor and night time when it is raised to knee height in order to hold and follow. If the threat of compromise is high, the cord should be removed by the team leader, as part of his first light checks. The cord can then be put back in place on the last light checks.

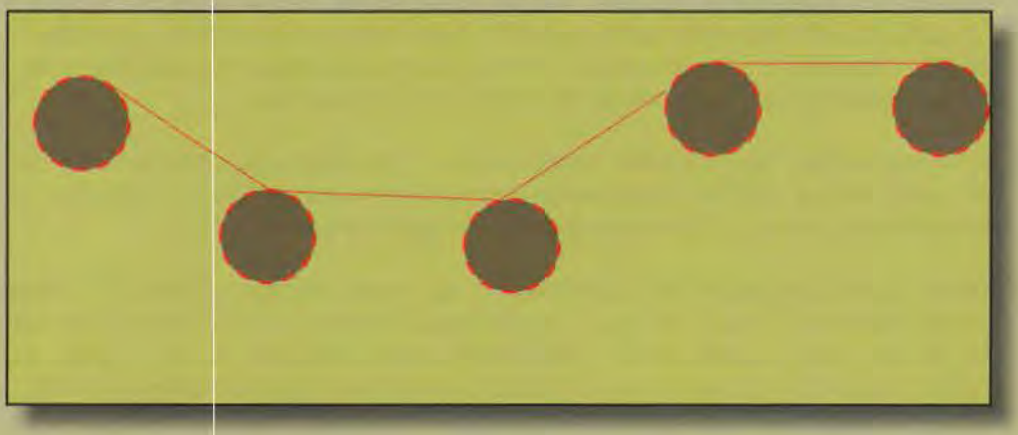
KIT TIP

Keep your cord on a fishing reel with a carabiner attached to the end. This way you can reel your cord in and out preventing it from knotting. The carabiner allows you to attach the cord without the need for tying knots.

Below are two diagrams of how and how not to set-up your track plan.

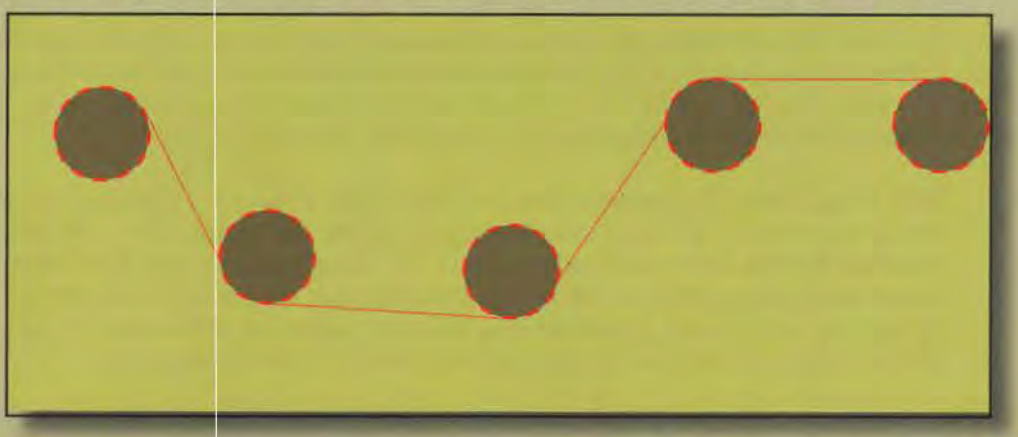
The correct way

You can see that the cord has formed a very definite path to hold and follow.



The incorrect way

On this diagram it is clear to see how confusing this track plan would be at night.



Operating a split hide

The team members located in the rear hide need to be in the same state of high alert as those in the primary hide. Although this hide is classed as an administration area, a sentry rotation must be established from the outset. Boots are not to be removed at any point other than to change socks; this should be done one boot at a time.

COMMUNICATIONS BETWEEN HIDES AND OPERATIONS ROOM ARE VITAL!!

GLAD REPORTS

Once the team leader has returned from the clearance patrol and is still happy with the chosen location, the next stage is to send what is known as a GLAD report back to the operations room via radio. The aim of this report is to allow the operations room to locate the team on their larger scale maps and gain an understanding of the ground where the hide is located.

- G – grid reference of hides location (6 figure only)
- L – limit of vision in meters by day and night
- A – arcs of what can be observed by day and night
- D – dead ground that cannot be observed - give grid references

GLAD REPORT			
CALL SIGN..... DATE..... AM / PM			
GRID (6 FIG)			
LIMIT OF VISION			
ARCS	LEFT	AXIS	RIGHT
DEAD GROUND			
GRID (6 FIG)			
LIMIT OF VISION			
ARCS	LEFT	AXIS	RIGHT
DEAD GROUND			

CONSTRUCTION OF THE HIDE

Area security

Irrespective of the type of hide you are about to construct, there is one rule which should never be broken. As soon as the hide's location has been identified, no team member should walk on the ground in front of it. If possible, mark a boundary line with a piece of string. Anyone crossing this boundary line will leave ground sign. This is the closest point of your hide to the target's location. If a hide is going to be compromised it will generally be through ground sign and bad discipline.

The team leader will identify one team member to over watch the target area as the hide is being constructed. This important role is rotated through all team members until the hide is completed and consists of listening to the radio, keeping logs of any movement and looking out for possible compromise by third party.

Sub-surface hides

The decision to construct a sub-surface hide should not be taken lightly as it is a massive task. I have seen sub-surface hides that have taken a four-man team three nights to complete because of the ground conditions.

The top soil may look workable but after digging down two feet it often turns into slate, rocks and tree roots. Remember that you will be working at night, so before first light all your work has to be concealed. You then have to move all your equipment to a layup position. Rotate a sentry over watching the construction site throughout the day before returning each night to finish work on the hide.

Stores required

- Spades/Picks
- Saws & secateurs
- Sandbags
- Ponchos and ground sheets
- Thermal sheets
- Wire roof sections
- Cord and pegs
- Camouflage netting

KIT TIP

All digging tools should have a cord sling attached so when not in use, they can be slung across the body and not lost, broken or cause injury to other team members in the dark.

Ground preparation & digging

Mark the area of the hide with empty sand bags by laying them on the ground. Remove your ponchos and lay them on the ground to protect the surface area around the hide in preparation to remove the soil.

Remove the large canoe sacks from your Bergens, leaving them empty and ready to be filled with the soil from the hide. Once filled, carry your Bergens away to the chosen area where the spoil will be disposed of and concealed. Do not try and fill your Bergen's to the top with soil, you will not be able to lift them; a cubic metre of soil is weighs around 1 tonne.

Before any soil is removed, a suitable location must be found to discard it. Any soil that is removed needs to be concealed to the best of your ability, remember ground sign gets you compromised.

Do not use your ponchos to carry soil. I have seen this done many times and it usually ends with operators ripping their ponchos rendering them useless. Poncho's are used to waterproof your hide. They are no good if ripped!!

All operational kit should already be packed in your grab bags, (day sacks) so all that's left in the Bergens is the hide construction kit, which is about to be used. The depth of the sub-surface hide is very important. You will need to dig to a minimum depth of 1.5 metres with the observer's area a minimum of 2 metres. Anything less and you will not be able to move around once inside the hide with the other operators and equipment. The overall size must be large enough to support a rear sentry, rest / administration area and observer's area.

With the sandbags marking the shape of the hide and the ponchos protecting the ground around the hide from disturbance, the next task is to de-turf the topsoil. If in a wooded location, first remove any dead fall and place to one side, this will be replaced at the end of construction to conceal your hide.

I once constructed a belly hide 100 metres from a small river. Once the location used to discard the soil was full and concealed, the rest of the soil went into the river.

De-turf

Remembering not to walk in front of the hide's location, cut the turf as shown in the diagram on page 222.

- Roll the forward section onto the sandbags in front protecting the ground.
- Cut and roll from the centre outwards to both sides, this way there will be no obvious cuts in the ground.
- Make sure when cutting the turf that it is neither too thick nor too thin.
- Ensure all turf is rolled onto the sandbags with care.

Cut the turf larger than the hide needs to be, this will help in giving it a more natural look when repositioned.

If sand bags have been used around the edges (adding strength to the walls), the extra length of the turf will lay better when placed over the top of the sandbags.

Some 2 hours into the construction of the hide and it's still only half a meter deep, thanks to rocks and tree roots.

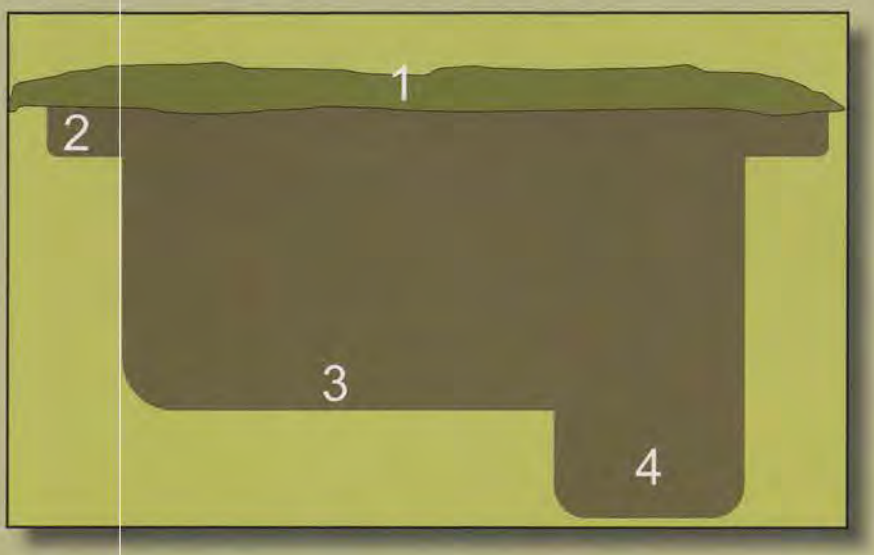
Cross section

The reason for having a lip around the hide is to help disperse the weight of the roof away from the edges of the hide walls, making it stronger and safer to operate from. Sand bags can also be used around the lip to strengthen and hold the roof sections in position. Remember that your hide is to be dug around the position of the observer aperture. You are going to be operating from this hide for some time, so get it right and make it as comfortable as possible.

Taking time to get it right is saving time!

Cross section diagram

1. Top earth
2. Lip
3. Floor of hide
4. Always dig the area around the observer deeper to give a seated position. This adds comfort and makes life easier. Make sure it is at the right height for the aperture and for any optics that are to be used.



Constructing the roof

You're aiming to construct a roof that does not dip with the weight of the top soil once it is replaced. Remember to replace any dead fall removed at the beginning of the construction.

The roof needs to be watertight with all poncho edges and roof sections tucked in and held in place under the top soil. The thicker the roof, the smaller the thermal signature emitted and the warmer it will be when occupied.

Your roof can be constructed in two ways, firstly by materials carried in with you such as poles and wire roof sections; secondly, by natural resources such as thin tree trunks and their branches that are weaved together to form a strong structure.

List of equipment carried in

- Poles
- Wire roof sections
- Ponchos
- Camouflage nets
- Thermal sheets
- Cord & pegs

Poles alone will not be strong enough to support the roof of a sub-surface hide. You will need to cut small trees and use good quality dead fall, ensuring that it is not rotten. When cutting small trees with saws, remember you will be leaving ground sign. So cut trees as far away from your hide's position as you can. Camouflage the fresh cuts with mud and moss. Lay a scrim scarf or something similar at the base of the tree to collect the sawdust, helping to reduce ground sign further.

Remove any unwanted smaller branches from the tree at that location but do not drag them across the ground as this will leave a clearly visible path to your position.

Once you have what you need, lay the cut trunks and branches across the hide, resting them on the lip and use full sand bags to hold them in position.

Aim to make a grid system with the spars, crossing them over and under each other. Use smaller branches to plug larger gaps by weaving them between the spars. There may be a need to tie some of the cross members together with cord, making the roof as strong as possible.

The next stage is to position your wire roof sections. These will help disperse the weight of the topsoil and protect the ponchos from snagging and ripping on any sharp cuts of wood. Roof sections allow you to cover a large surface area very quickly and speed up the construction process. Next, cover the roof sections with thermal sheeting.

Now that the roof sections and thermal sheeting are in place, the next stage is to lay the ponchos over the top ensuring that they overlap each other. Fix the ponchos under the sandbags positioned on the lip to hold them in place whilst you peg them down. Make sure the ponchos are as tight as they can be and by pegging them down you know they will not move.

As it rains, the roof will get heavier and any weak spot or dips in the ponchos will quickly fill with water and start to sag inside the hide. In conditions of severe rainfall, water may pour into the hide. Using tent pegs pushed into the ground will limit the amount of movement under any extra weight. The wire roof sections are designed to disperse the weight of the topsoil and will prevent sagging, as the ponchos have a more consistent surface area.

MAKING ROOF SECTIONS

To make your roof sections, you need a roll of green, plastic coated chicken wire (small weaved style) which normally comes in rolls of 1.5m by 10m lengths. Cut the wire into three sections of 1.5 by 3m. This will leave you a 1.5m by 1m section for the rear door.

The next stage is to cover the chicken wire sections with sheets of hessian fixed with hot melt glue and small zip ties, attaching the two together to create a solid roof panel. When cutting the hessian, ensure you cut it larger than the wire section so that you can fold it over the edges giving you two sides to glue together. By using car spray paint you can break up the surface area of the large square panel by creating a DPM pattern as seen in the pictures.

I leave an extra overhang of hessian on each of my roof sections. This is so they overlap each other creating a stronger roof once the top soil is placed back on top. The door panel is made in the same way. I always attach elastic loops to my rear door panel for attaching foliage.

Camouflage nets

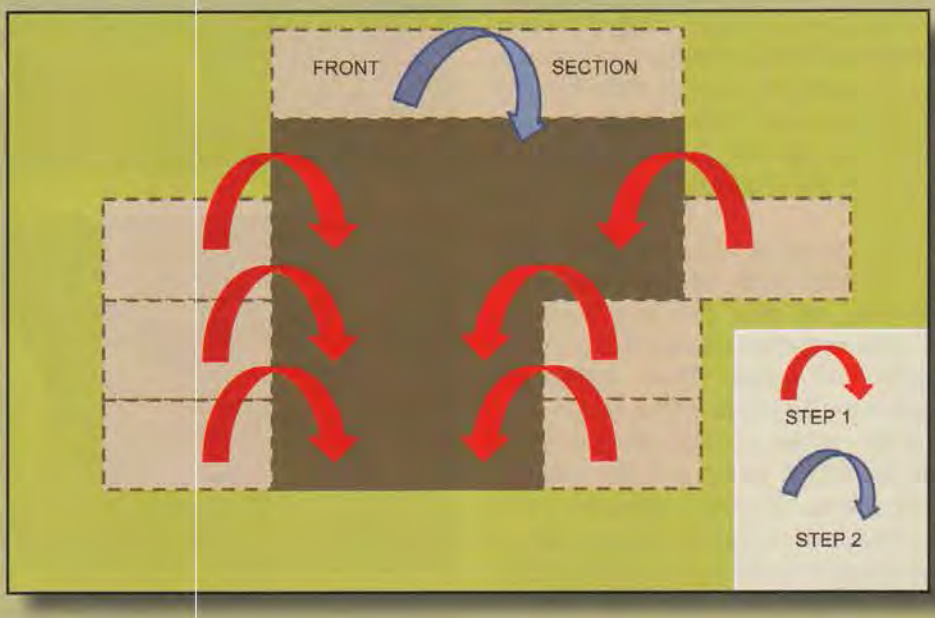
Camouflage nets are positioned at the rear and front of the hide. The rear net positioned in such a way that it covers the location of the rear door. This way, when the team leader removes the rear door to make the first and last light checks, it limits the amount of light entering the hide. This will also conceal the rear sentry while observing their arcs. The net at the front covers the aperture to give more depth and to prevent light travelling through the hide.

All nets should be pegged into position, this will reduce the movement of the top soil on the ponchos. Once ponchos are wet, high winds can result in the topsoil slipping off the roof. The nets will help hold it in place.

Replacing the top soil

Starting with the sides, roll the turf back into the centre, ensuring that you make the edges neat by pushing them tight against each other. Then slowly roll the front section back making sure the edges are tight. Finally, replace any deadfall, brambles or leaves.

Collect all equipment and place back in your Bergens to be concealed in the Bergen hide. This is a smaller form of sub-surface hide, which needs the same amount of effort spent on its construction.



You may think it unnecessary to conceal the Bergen in a specific hide, as it will only have empty Bergens in it. On every course I have run in the past, I always find at least one team's hide by finding their Bergens first. Once I have the Bergens, it's a simple case of looking for ground sign, I will find them.

Make the effort and get it done right!

Rear door

To construct your door, use the pre-cut wire door section, attaching turf and foliage to it using elastic loops. Attach a length of cord to the wire mesh, this is so that once you've occupied the hide, the last man in can pull it closed sealing the hide. Once the door is sealed, it is only opened for first and last light checks, or if the hide is compromised and you have to extract.

Sub-surface door open

Door closed

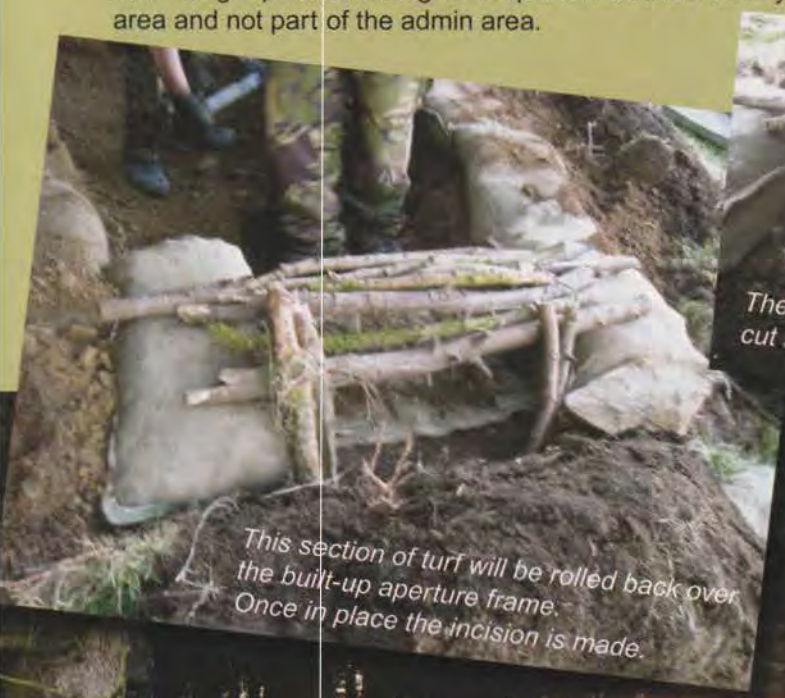
The aperture

What is the aperture? This is simply the hole created at the front of your hide to allow you to observe your target. A key thing to remember when creating your aperture, is to make it only as big as it needs to be, an oversized aperture could result in your position been compromised.

There are many ways to create an aperture, here's how I create 90% of my sub-surface apertures. Enter the hide and position yourself in the observer's location. With a sharp knife, make a small incision through the turf at the point where the optics will be positioned. Then slowly pull the turf inwards to create the opening, just large enough for the optical lens or for the operator to observe through.

Reposition the camouflage net over the aperture. This helps to conceal any optics that may be positioned there. All optical lenses should be covered with fine green mesh to help prevent shine. Once the optics are positioned at the aperture, make sure the lens of the optic is not poking out of the front of the hide.

Finally, a material drop is hung at the rear of the observer's position. This will ensure that no light passes through the aperture and will clearly denote that this is a work area and not part of the admin area.

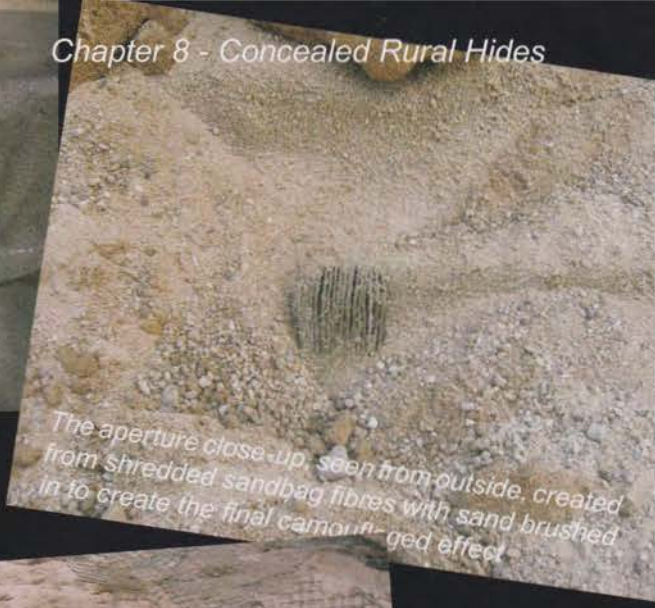


This section of turf will be rolled back over the built-up aperture frame. Once in place the incision is made.

The optics are placed on this shelf cut into the ground

The aperture of this sub-surface hide has been exaggerated for the photograph

The aperture from within the hide



The aperture close-up, seen from outside, created from shredded sandbag fibres with sand brushed in to create the final camouflaged effect

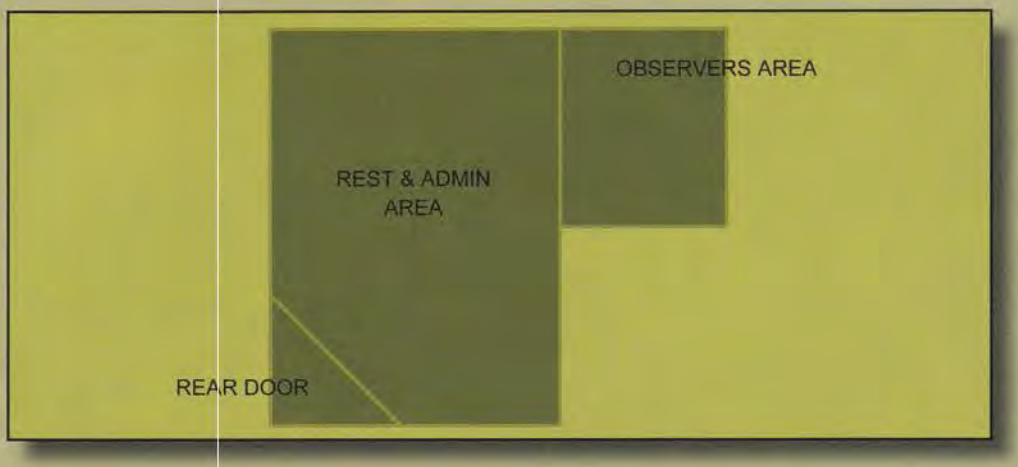
One of the construction team points out the position of the aperture

BSC, Telic 9... Excellent job done!

DIFFERENT HIDE SHAPES

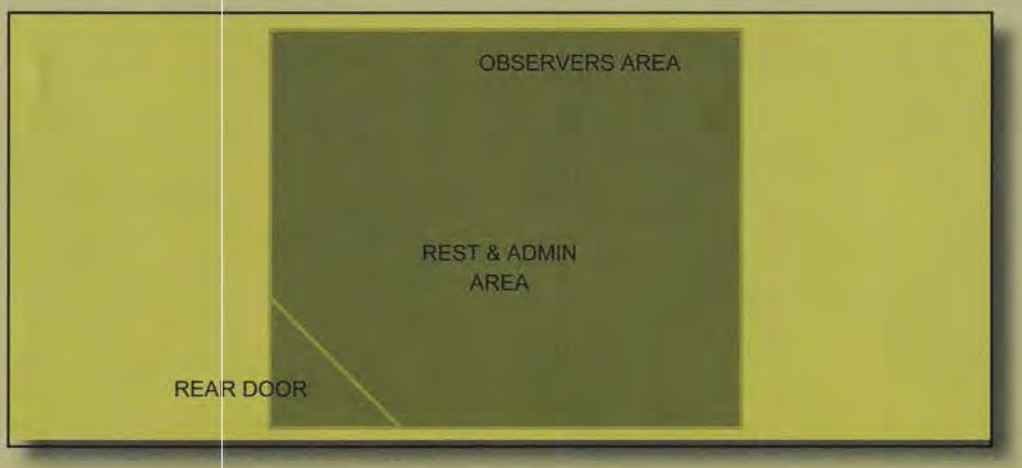
'L' shape

This is by far the better shape to adopt. The nature of the shape automatically gives you two separated areas; a working area for the observer and the rest / admin area. Use material drops to separate them. The 'L' shape will also mean less digging.



Box shape

This may look as if it offers more room inside. However there is no separation between areas. In both styles of hide remember to use material drops to limit the light passing through the hide. When the first and last light checks are being conducted, light will flood into the hide. If a third party happens to be observing your area, this change in light could attract attention. When removing the rear door always do so slowly.

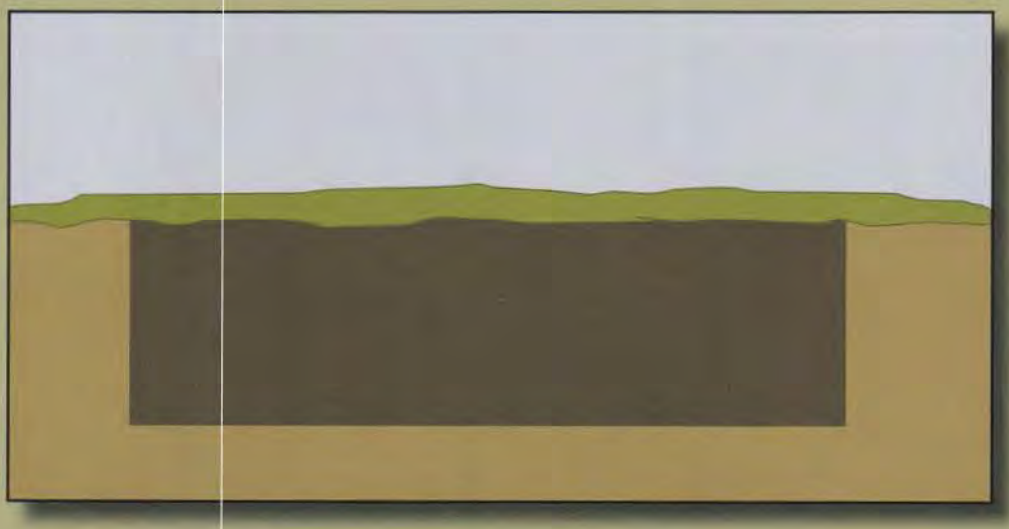


Mid term belly hide

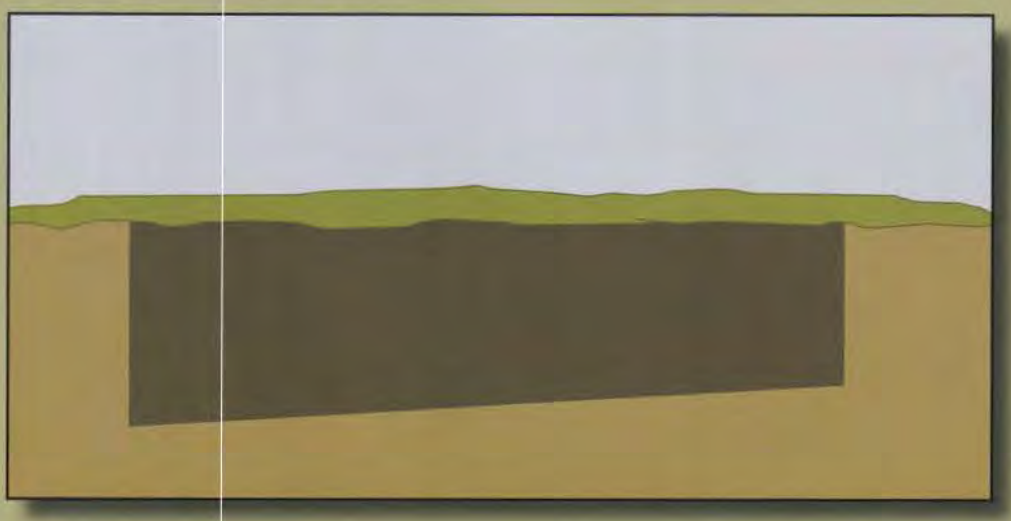
The mid-term belly hide is constructed in the same way as the sub-surface hide apart from the size and depth, which are different. The advantage of the belly hide is that it is much quicker to construct and it leaves less ground sign. The belly hide is a dug-out position that allows no more than two operators to lay in a position of observation. This hide offers good concealment and overhead cover.

The depth of the belly hide should be no deeper than 1 metre. Anything over this is unnecessary and a waste of time. The belly hide can be dug in two ways, either with a flat floor or a sloping floor. If using the sloping floor method, ensure the deeper end is at the entrance to the hide. Using a sloping floor is more comfortable but much more restrictive at head level.

Belly hide with flat floor



Belly hide with sloping floor



A two-man belly hide from a “live” operation

Although it was to be used over a sustained period, a belly hide was considered the better option over a full sub-surface hide due to the time frame available to make the position operational.

NATURAL SHORT-TERM BELLY HIDES

When conducting your search for a hide location, look for natural dips, holes and depressions in the ground. These make excellent natural belly hides as most of the work is done for you. All that is needed is to construct a roof.

Step by step pictures of this technique

The depression has been located and hide poles positioned to create a frame for the roof. Next the poncho is stretched over the poles making the hide weatherproof. A camouflage net is then positioned over the top. Finally, natural foliage is placed on top helping the hide blend into its surroundings.

The aperture of the hide is marked.

SURFACE HIDES

The surface hide is the bread and butter for any covert rural operator. It involves finding a position that will afford concealment for a short period of observation and is used on 90% of rural surveillance operations.

The one thing we cannot second guess is the weather. Everything else we can plan for, so always carry a full DPM Gore-tex suit. This can be worn as your disruptive layer under your Ghillie suit in the winter season or simply carried in the event of bad weather during summer.

The modern Ghillie suit, covered in chapter 2, is one of the best items of equipment you can carry. In some situations, a good quality Ghillie suit is all that is needed for your hide. An experienced operator will be able to carry everything they need to mount a rapid rural operation by deploying on to the ground with only their pre-packed rural day sack (grab bag).

Suitable locations

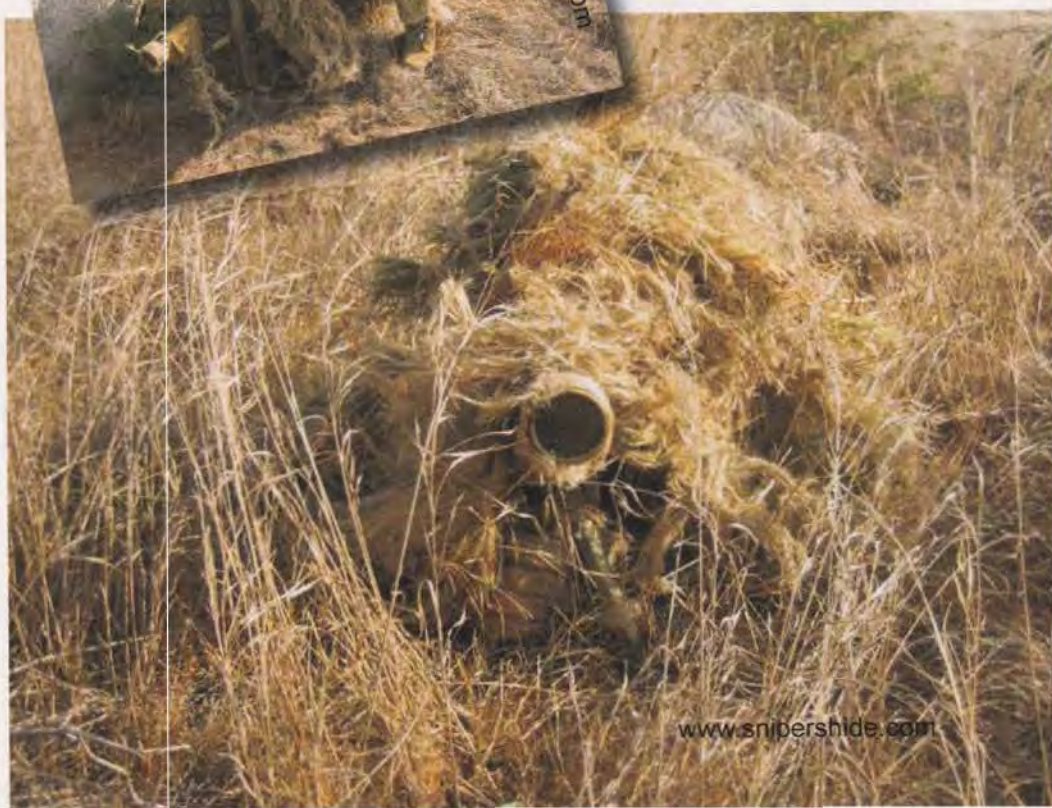
The location you chose will be dictated by the characteristics of the ground, your ability to see the target area or subject and the required result. It may be that you can observe in comfort from hundreds of metres away in a standoff position, or you need to be less than 15 metres away, right on top of your target. This may happen if you have to obtain audio recordings or deploy a covert camera system.

Once you have located a suitable position for your hide, the next stage is to concentrate on your personal camouflage. Your aim is to blend with your surrounding area.

A good technique here is to remove your Ghillie suit out of view of the target area, but still within a similar area of ground. Turn your suit so that the Ghillie is face down and pull it along the ground. This will attach ground foliage to the strips of Ghillie giving it a natural look.

The next step is to move back into position, ensure that your equipment is also camouflaged and that it blends with its surroundings. Consider setting up your equipment completely out of view of the target area. Once set up, slowly crawl forwards with your equipment in hand. If need be, set up a small section of Ghillie net in front of where your equipment position will be. This will aid in concealing movement.

In this picture you can see how effective a small screen can be. This screen should not be any larger than a sheet of A3 paper. Any larger, and you are entering a completely different technique known as screening, covered later in this chapter.



BAD WEATHER

Surface hides in the form of Ghillie suits, are great when the weather is fine. You don't have to worry about keeping equipment dry and out of the cold and icy winter winds. In bad weather situations, I use a relatively new item to the world of concealment products, known as the Ghillie blanket.

A full size Ghillie blanket measures 5ft x 9ft, its construction consists of a large net section which has hundreds of coloured garnishing attached. It is a modern form of the individual camouflage net issued to reconnaissance soldiers and large enough to conceal two operators with ease.

To date, the Ghillie blanket is one of my most used items. Not only is it very lightweight, but it rolls down small enough to fit under the top flap of my day sack.

I use two methods when deploying the Ghillie blanket in bad weather...

Individual bivi hide

I have created this hide by using a double hooped waterproof bivi bag and a half section of a full Ghillie blanket. I favour the hooped bivi bag because its tent-like construction gives you reasonable working space inside, useful for setting up optics.

Attach the Ghillie blanket to this side of the bivi bag as shown in the picture using a hot melt glue gun.

For extra insulation from the cold ground, I have glued a section of roll mat to the inside base of the bivi bag. Not only does this keep me off the cold ground but it also provides some comfort.

An individual bivi hide, custom built by the author.

Two man desert and arid area ghillie hide

This two-man desert Ghillie hide is used in areas of ground that is too hard to allow digging. Here, a surface belly hide is your only option. Because of this, the roof section needs to be rigid enough to support its own weight when elevated.

I have taken a British desert-issue poncho, chicken wire cut to size and a full sized desert Ghillie blanket, by simply attaching the three elements together it creates a light weight, portable shelter and hide. This, when used in conjunction with your hide poles, can create an framed position very quickly.

Once pegged in place, it is large enough for two operators and their equipment. If a rapid method of concealment is needed it can simply be placed on top of the operators.

Constructing the desert hide roof section

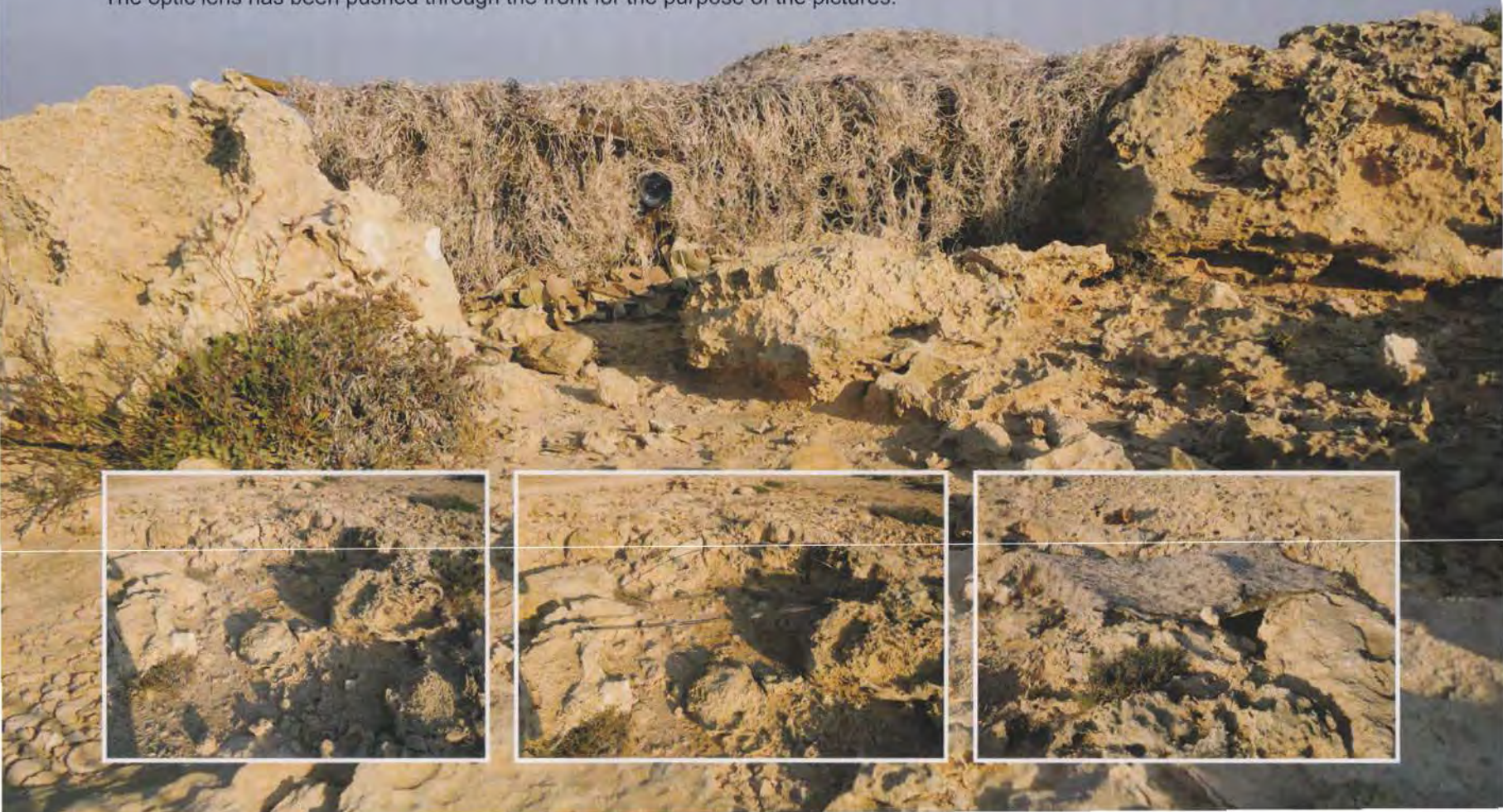
- Lay and stretch the Ghillie blanket out on the ground
- Then place the poncho over the top ensuring it is central
- Position the chicken wire on top of the poncho
- Attach the three together using cable ties.

The Ghillie blanket is longer than the issued poncho giving it an excellent overhang. This overhang of Ghillie should be used as the front edge of your hide.

Operational two man surface belly hide

Pictures of a live two man Ghillie hide in an arid environment.

The optic lens has been pushed through the front for the purpose of the pictures.



Both the light weight portable hides on the previous pages will give sustainability and survivability to operations conducted in bad weather. Carried under the top flap of your Bergen, it makes them very quick to erect and begin observations.

Although I have described this as a desert hide roof section, it works very well in areas of dry grassland. I have even used it in an urban setting where a disused sandstone building was the hide location.

BRAMBLES

These really are excellent places for concealment. Most people and larger domestic animals tend to avoid them, which for us is great. A bramble hide should never be used to conceal any more than two operators.

Constructing the hide is carried out in a similar way to the bush hide however, not as much work is required to achieve the end result.

Individual hide

Ensure you are wearing thick combat clothing with a hooded smock, gloves and eye protection. Identify your entry point as you would with the bush hide and start cutting away the bramble stems from ground level. There is no requirement to cut the stems any higher as they are flexible and can be moved out of your way.

Once you reach a position which affords observation of your target area, stop. There is no need to go in any further unless your feet are poking out of the back. You now need to start cutting away the stems to your sides, giving you more manoeuvrability. Once cut, slowly roll from side to side to widen your working area.

If the chosen patch of brambles is large enough to support a roof section then use it, this will help with your sustainability. It will also stop the bramble barbs from snagging on your kit and equipment. Some people might suggest wearing your Gore-tex suit over the top of your clothing as the barbs won't grip to the fabric. My opinion is that if you wear your Gore-tex and it gets punctured it will be rendered useless. If you must wear your Gore-tex, at least wear it under your combat clothing.

Two man bramble hide

A two-man bramble hide can be constructed very quickly, by both operators cutting away the bramble patch from the floor. It is best to start at the rear, moving forwards and around both sides. Once all stems have been cut, use your hide poles to lift the blanket of entwined stems free of the ground. Bend the poles to give height then push them into the ground. This will create a cavity between the ground and brambles for the operators and their equipment.

NEVER WEAR A GHILLIE SUIT WHEN CONCEALING YOURSELF IN BRAMBLES

Bush hides

These make excellent short to mid-term hides and are very easy to construct. What you are looking for is the thickest, darkest, densest patch of vegetation you can find. It may be a large group of tall thick bushes, or a thick hedge line covered in brambles like the one pictured below.

Typical bush hide

Stores - equipment

- Secateurs
- Saw
- Spade/Pick
- Wire roof sections
- Flexible hide poles & camouflage nets
- Cord & pegs
- Poncho / Gore-tex suit
- Gloves

Once a suitable location is identified, radio communications have been checked back to the operations room and any other call-signs on the ground.

The next stage is to walk around the position checking for any sparse patches of vegetation or sections which may lead to compromise. As with all hide locations, never walk on the ground to the front of your aperture location.

Action on bad location

You could find yourselves occupying this position by day or night depending on the situation. If occupied at night, you always run the risk that the next morning when first light checks are conducted, the location is not as good as first thought.

If this is the case, you may have to extract or limit the amount of movement within the hide during daylight hours. A good tip is to erect a camouflage net within the bush to add extra cover.

Next is to identify an entry point into the bush. This will need to be as low to the ground as possible and out of sight of your target area.

Construction

Once the entrance has been identified, the next stage is to place a member of the team as over watch. This role will rotate through all team members.

Unlike both the sub-surface hide and belly hide, which takes the whole team to construct, this hide only allows one person at a time to work on construction of the position. Start by cutting a tunnel into the bush and push out all cuttings to a second operator who will be collecting them. Do not discard any cuttings as they may be needed later.

Ensure that gloves are worn in this phase and if constructing at night, consider wearing some kind of eye protection as the deeper into the bush you go, there's more chance of a branch sticking in your eye.

Creating the tunnel is a slow and painful process that can only be done by one man at a time, laying on his front using the secateurs to cut at the base of the upward growing stems. Next, cut the stems above you just before they tangle together. By removing the minimum amount of foliage you'll retain the density of the bush.

As you tunnel further into the bush, think about changing direction and adding a dog leg but only if the bush is large enough to support it. The dog leg will help to prevent a straight-through light situation, that will highlight the occupant's position in the bush.

The hide itself is hollowed out in the same way. Remember that the further in you go the thicker the branches will become, so at some point you'll need a saw. Once in the centre start removing the much larger branches attached to the main trunk.

Follow the length of the branch to the point where it starts to split and tangle with other smaller branches, this is where you need to cut first, then cut it at the trunk. Working in this order will prevent movement in the bush when cutting. It will be easier to cut through a main branch when it's still attached to the trunk.

The next stage is to clear the floor and think about digging down. If operating in a hostile environment, you will need to dig down to knee depth as a minimum and building up the sides by sand bagging the removed soil.

Roof construction

Some form of overhead cover should be considered. This could be anything from a single camouflage net suspended above head height to a complete roof using poles, ponchos and wire roof sections.

Either way, you should always hang a camouflage net as a minimum. Any roof element will have to be prepared outside the hide and carried in.

1. Start by pegging out a section of camouflage net as shown in the top picture, a personal camouflage net will be large enough.

2. Position a pre-cut section of chicken wire on top of the net and attach with cable ties. If possible, allow for an overhang of net.

3. Finally, lay your poncho over the top, this is not to be attached. By placing the poncho over the top, this will prevent the wire section from snagging on itself when you start to unfold it in the cramped conditions of your hide.

Roof section folded along the longest edge

How to fold

Lay the roof section out flat, fold in half down the longest edge, fold the top outer edge back to the centre, turn it over and repeat forming an elongated W shape.

Fold up the bottom third of the elongated roof and fold the top third back over.

Once inside the hide, the roof section can be unfolded and you will end up with the net uppermost.

Finally, take your poles and bend them into position under your roof section.

Holding the roof in place, push the ends of the poles into the ground to stop them from moving.

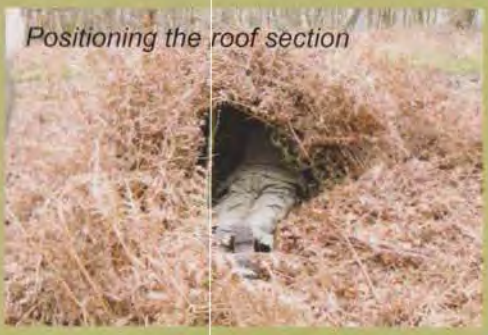
Use as many poles as required to securely hold the roof up, the stronger the better.

Once the roof is in place, start looking for any sparse areas within the hide and plug them with the cuttings you retained. Hang a camouflage net or fine mesh at the front of the hide to help conceal the aperture and drape it over the optics. Also, hang a net covering the rear access tunnel, this will limit the amount of light entering the hide.

Creating the void

You can now begin to move your equipment in and set up the observer's position. Identify the location for the aperture and create it.

You may be required to create more than one aperture in the bush. This is fine as long as netting is hung to cover each of the apertures. This way, they can be disguised when not in use.



Positioning the roof section

Always hang drops behind the observer's position in order to give extra depth and to help prevent movement being silhouetted.

Your radio antenna can be positioned inside the hide. If more range is needed, elevate into the bush to gain more height. If this method is used, confirm that the antenna is not poking through the top of the bush.

Roof section in place

Inside the hide

Hidden, with rear bung in place

Occupation

If the bush hide is large enough to store all equipment and Bergens, there is no need to construct a Bergen hide as well. Keeping everything in one area is always best. Once all equipment is inside the hide and the operators have occupied it, a final check of the hide should be conducted. If all is in order, pull the rear bung into position and the hide is now operational.

The bung

The bung is made by tying the rest of the larger cuttings together. This is then attached to a length of cord which runs into the hide.

The picture below was taken of a two man bush hide on a live surveillance job. The insertion route carne from the woodland to the rear.

DITCHES

I always look for a hide position that is located in a ditch bordering a hedgerow. Nearly all ditches that run alongside hedges offer great concealment with covered approaches and exits.

The down side with ditches is that they are always waterlogged, more so in the winter when the water can be deep. The solution is to source items that can be used to raise you above the water level giving you a platform to work from.

Always keep your eyes open for such resources when inserting, as you never know when they may be needed. The countryside is littered with plenty of discarded items, which can be used to make your life so much easier.

Be aware that farmers are very protective of their ditches as they spend a lot of time and money maintaining them. Ditches are also used by some idiots for fly-tipping causing the farmers to be on a higher state of alert.

The roof

The roof is the first thing that needs to be constructed when using a ditch. This gives cover from view, thinking about farmers protecting their ditches. The roof is constructed in two ways

First, by using your poles, poncho and camouflage nets, push your poles into the bank on either side of the ditch. Then roll your poncho out and secure it to the hedge at the front allowing a gap for you to observe through and then peg it in place at the rear. Next, roll the camouflage net over the position ensuring that it is hanging over both sides of the poncho creating depth to the sides. Peg them in place and add natural camouflage.

Next roll the camouflage net over the position ensuring that it hangs over both sides of the poncho creating depth to the sides, peg them in and add natural foliage to finish.

In some situations, the full size Ghillie blanket attached to the poncho (as pictured earlier in the chapter) would work very well if, for example, your hide was located in or on the edge of a corn field. The desert colouring works very well against this backdrop. All you would need to do to complete the concealment is to add natural cuttings of corn.

The second method is ideal for operations in the summer when the chance of rain is limited. For this you need to position your poles as before, but this time just roll out your camouflage net stretching it across the ditch resting on the poles. Secure the net to the hedge at the front of the ditch and peg down at the rear. Don't forget that you have the hedge between you and the target / subject so you may need to cut an aperture into the hedge.

Pull the camouflage net out at the sides to create more room, ensuring that you peg it down before adding any natural foliage to the top.

If you feel the need to deploy technical devices do so, but ensure the cable does not fall into the water. Whatever you place out must be well concealed.

TREE LINES

If the only position that affords good observation is a sparse tree line, then you should use it. Here are a few tips which can make your operation more successful

Ensure you are wearing your Ghillie suit, which blends into your surroundings and stay low, move on your belt buckle at all times.

Approach the position from the rear, taking your time to observe to your front as you slowly move forward. Once you are satisfied that you can clearly observe your target, dress back and set up your equipment. Remember, the same amount of care will be needed to camouflage your equipment as yourself. Once this is done, crawl forward and observe.

When moving towards your observation position, you may not clearly observe your target unless you sit up. However, by doing this you would break the skyline, look to re-position yourself between two trees which are close together or better still find a tree with a spilt trunk and observe through the middle.

Screening

Alternatively you may choose to erect a screen and operate from behind it. This method can involve anything from a quick construction using your hide poles, washing line pegs and a camouflage net to a much larger self-supporting and purpose made structure.

Quick deployment screen

Using your hide poles, you can either erect a straight screen or curved screen. For the straight screen, position your pole above head height, preferably between two trees. Next, hang the camouflage net over the pole and secure in place with your washing line pegs.

If you opt for a smaller curved screen, simply push one end of the pole into the ground. Bend the pole to give the height and shape required and push the other end into the ground.

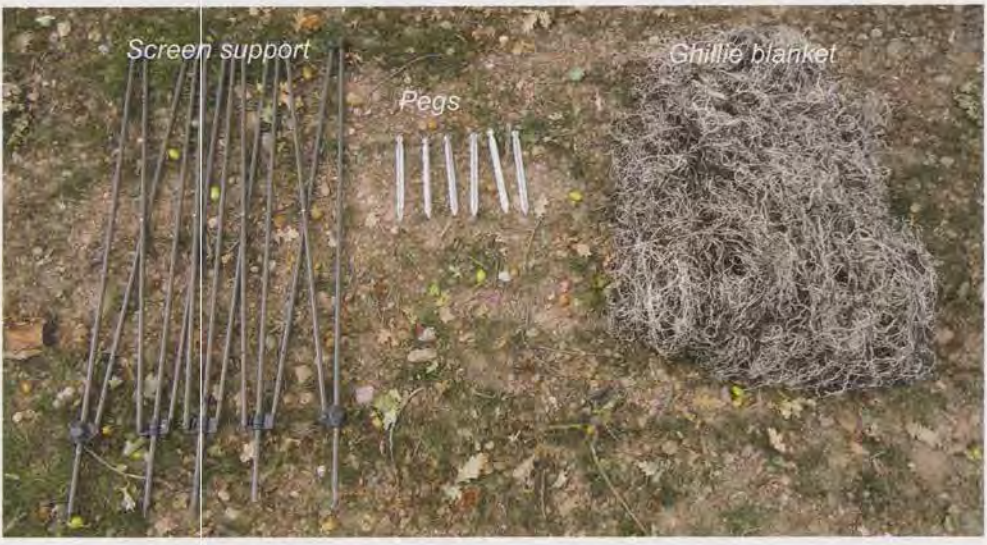
Pictured here are both methods

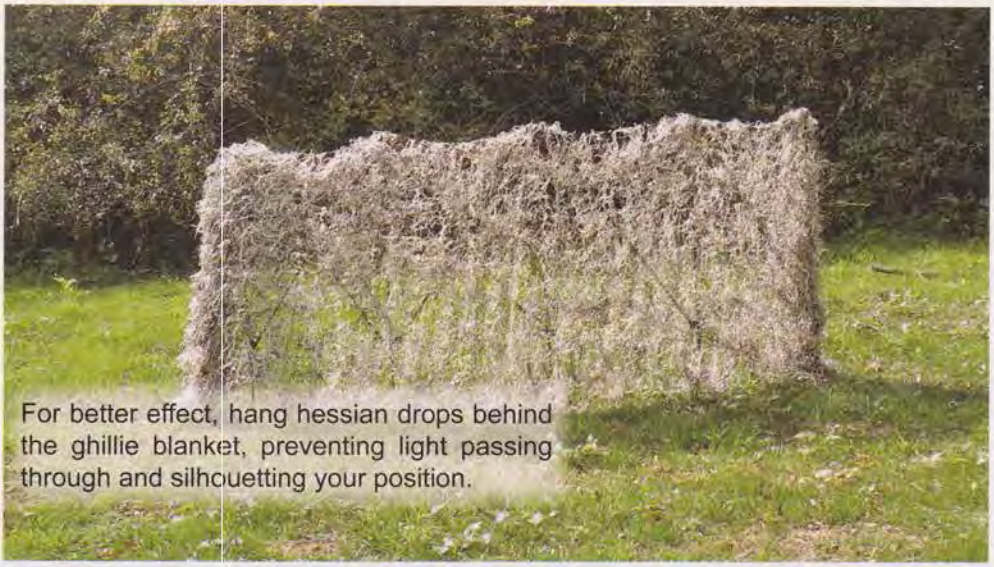
This screen was set up 5 metres from the tree line

Self-supporting screen

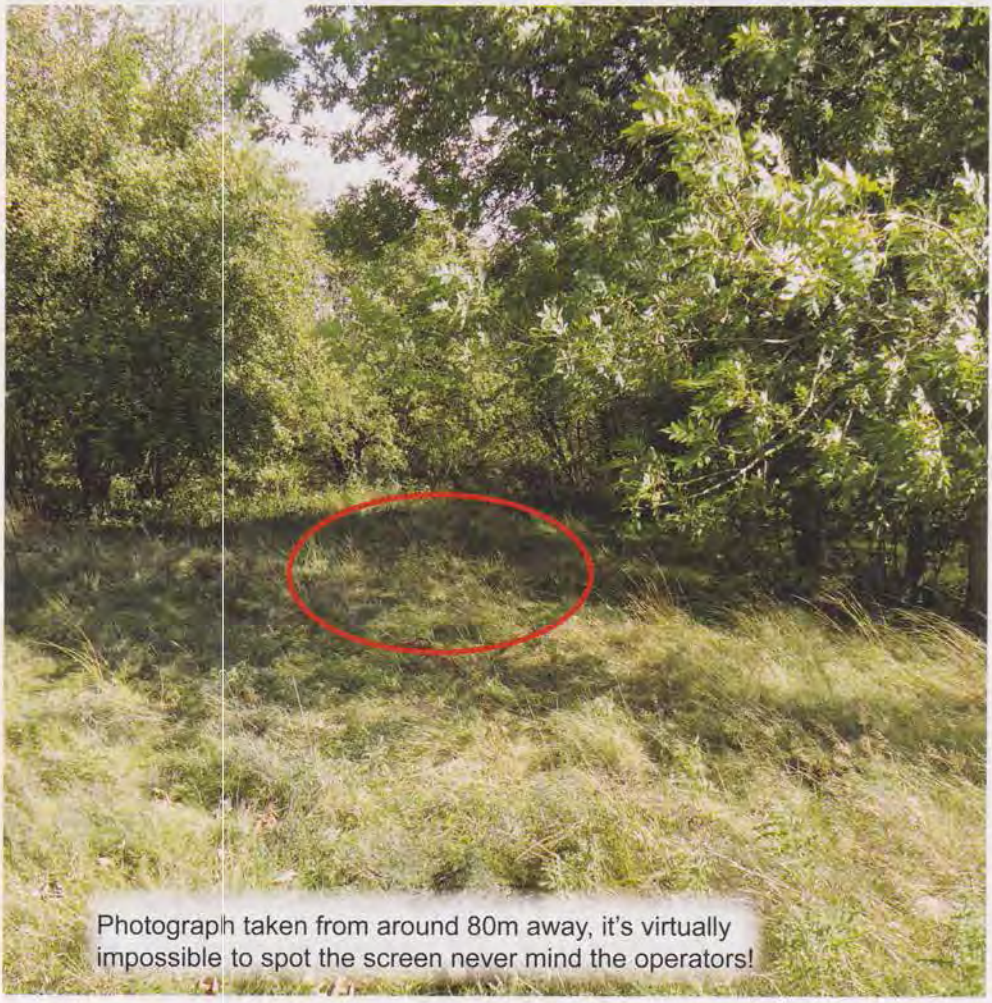
If you are able to locate your hide at least 200 metres from your target area, giving you more freedom of movement, consider using a self-supporting screen. These screens are quite bulky to carry but remember, you're not going to be "leopard-crawling" with them on your back. They comprise an extendable metal frame and Ghillie style blanket, which acts as the screen. Once set up, stay below the screen to allow you to move around freely. You must remember that this type of screen offers no protection from thermal imaging equipment.

These screens are a large item of equipment so a good cover story must be given if compromised by a third party. I always carry a book on bird watching and if I am approached, I calmly tell them "I'm bird watching". Because of the extended range between yourself and the target, there would be no reason for the third party to suspect anything else.





For better effect, hang hessian drops behind the ghillie blanket, preventing light passing through and silhouetting your position.



Photograph taken from around 80m away, it's virtually impossible to spot the screen never mind the operators!

Mirrored screens

A relatively new concept, originally for hunting and can be adapted and used effectively when conducting rural surveillance on a target area from moderate distances. These screens are particularly suited to deployment in woodland where they are most effective, when opened the screen is angled to reflect the ground in front and avoiding glare from the sun.

Even from close range it's very difficult to spot against the wooded backdrop. It's important to keep your head below the top of the screen or the effect is lost.

The reverse side of the screen.

TECHNICAL DEVICES

Once the hide is complete, you may want to place out technical devices. These devices could be anything from a covert camera system, remote ground sensors or even microphones. Whichever device you choose to deploy, it must be concealed with the same amount of care and effort as was spent constructing the hide. If you are placing out devices, remember that they are there for two reasons. (A) Monitoring an area of ground which you cannot physically do from your hide location, or (B) to act as an early warning system from any possible threat.

There are two types of device

- Hard wired
- Wireless

Laying a hard wired device

- With the cable positioned and fixed in place inside the hide, the cable can then be run out of the hide where it is carefully dug into the ground to conceal its presence.

- With a knife, make a deep incision to the depth of the blade. Do this in short sections checking each time as you push the cable into the ground then close it back over. Continue this action, remembering to put at least one dog leg in the length of cable.

- Position the device ensuring that its concealment blends with the surrounding environment.

- The operator positioning the device needs to be in communication with another team member back in the hide. Once the device is deployed, the operator on the ground can ask the hide to switch the device on.

- If microphones are used, the operator will ask the hide if they can hear the sounds made by the operator. This is to ensure they are working. Be careful not to dig the microphones too deep or conceal with too much foliage as this may interfere with the sound quality or impede their effectiveness.

- If cameras are being used, the operator will ask the hide if they are working. If the answer is yes, the hide will then inform the operator to walk the dead ground ensuring they are positioned correctly. It's essential that the carnera's position will not miss any movement in that area.


An Infrared floodlight

- Infrared lighting can also be deployed as a technical device. These lights can be operated by a switch located in the hide or wired to a ground sensor. This way, when the sensor's beam is broken, it will automatically switch the lights on. You will be observing through night vision equipment during the dark hours, so when the lights are tripped your attention will be alerted by the brightly lit area. Infrared lights can be fitted with a day/night sensor that will switch the unit off in the day time saving power and reducing the need for resupply. When the daylight starts to fade, the unit will automatically switch to standby ready to be tripped.

- Ground sensors must be checked by the hide to ensure they are working and positioned correctly.

Deployment of covert passive infrared motion sensors (PIRs)

When operating in small numbers or even in pairs, the use of PIRs is vital. Because of the lack of manpower, all eyes should be facing the target area or subject, leaving the rear vulnerable.

The sensors are positioned in locations that are considered potential danger areas such as covered approach routes, tracks and gateways. Once deployed, they can be monitored from within the hide.


Wireless kit


Sensor

Live deployment of PIR motion sensors

Here you can see that the sensor has been concealed in the tree's root. This was a vulnerable point for the hide, with no other way of monitoring throughout the task. This location was also used as the pick-up point at the end of the task.

The sensor was concealed behind natural foliage with only the PIR window visible

Laying a wireless device

Wireless devices are a lot quicker to deploy due to the fact that no cables need to be concealed. I am not a fan of wireless equipment for warning purposes, as the kit may not function correctly in very harsh environments, which will increase the risk of compromise. A wireless system works on a frequency signal similar to that of your radio. If something were to block that signal at a later stage of your operation, your device is useless. You then have to retrieve it and hope you don't run into a third party.

There are several reasons why wireless equipment can stop working including flat batteries, you will have to resupply these devices with fresh batteries during the operation and each time you do this, the risk of compromise increases.

Hostile defences

If you are operating in a hostile environment, you may be required to deploy kinetic defences such as claymore mines, trip flares and ambush lights. These should be deployed with care. Claymore and ambush lighting cables need to be dug in as before and concealed. Trip flares once deployed, are solely monitored from the hide. There should be no connection between the flares and hide location.

Non-lethal devices

A non-lethal method of alerting your hide is to use military Infrared fireflies, which have been fitted with a trip mechanism. These work in the same way as the trip flare and are activated when the pin is pulled out of its housing. In the case of the flare, intense light will be generated, with the firefly, a covert strobe light will be activated illuminating the area with a bright flash.

WHILST DEVICES ARE BEING DEPLOYED

One of the operators inside the hide will be laying out the ground sheet, positioning kit and doing a final check that all equipment is set up.

This is the time to complete any necessary administration as there will be fewer operators inside, making it much easier to move around. Only operational kit and minimal personal kit will have a place inside the hide.

COMMUNICATIONS

There are a set of rules to be followed concerning communications within the hide

- All coaxial cables leaving the hide must be dug in and concealed under the topsoil. They must be run as far away from your hide location as is possible.
- If using an elevated antenna, the coaxial cable leading to it must also be concealed and at best be fixed, or run up the tree truck behind the bark.
- The antenna must be concealed within the tree and must not stand out.
- Always start with your largest most powerful communication set up, as it is better to down size than lose communications in the middle of an operation.
- Keep all signalling equipment safe, clean and in one location (grab bag).
- Ensure batteries are kept dry and out of the elements.
- Always use a head set when in the hide. The last thing you want is a third party to hear you over the radio.

True Accounts

On past courses, I have seen coaxial cables that have been dug up by animals overnight, leaving them exposed and in full view for me to find. If first light checks are conducted properly, this should not happen. As a result, the hides were compromised; this is embarrassing to say the least. In a hostile environment, this could be the difference between life and death!

Technical cable probably dug up by animals overnight

Helpful tips when operating from a hide

- The floor of the hide needs to be covered with a heavy duty ground sheet, followed by the team's roll matts, either foam or inflatable. Ensure that the observer is not sitting on a cold floor and place one of the roll mats there.
- Sleeping bags - operate a hot bag system. This means using only 2 bags for the team and rotate them. This way you will never get into a cold bag.
- When in your sleeping bag, you should not remove footwear, all operators must be ready immediately for any eventuality or compromise.
- Try not to use bivi-bags, they are difficult to get in and out of in the confined space of a sub-surface hide.
- Ensure that all operational equipment not in use is kept in the grab bags. Any other equipment that may be needed whilst in the hide must be packed in day sacks close to hand.
- Have a packed grab bag with all night optics and equipment located in the observer's position. That way, when the hide goes into night routine all the day equipment can be rotated and placed in the same bag.
- Have a second day sack which has all spare batteries required for all your equipment.
- Make sure the radio and observation log books, dictaphone, pens, pencils, all mapping codes, orders and torch are in the observer's location and waterproofed.
- Set up all monitors and recording equipment, ensuring that all cables are stowed away. Double check radio communications.

Occupying the hide

When all team members have their warm kit on, this could be a purpose made hide suit or similar. The team leader will be the last to occupy the hide, he will undertake a final sweep of the area to ensure that no kit or equipment has been left on view, and all cables leaving the hide are concealed.

If operating from a sub-surface hide, rear sentry will then place the rear door or bung into position, whilst the team leader checks the light from outside to ensure that no light is escaping. This is done with a small torch. If no light is escaping, the team leader will occupy the hide replacing the door.

At this stage, the hide is fully occupied. So from this point on, nobody exits the hide apart from the commander when first and last light checks are conducted.

All team members will be silent. There should be no moving inside the hide as the team will now have a listening break to ensure all is well. When satisfied, the routine can begin.

Routine inside the hide

Throughout your time in the hide, you will rotate between different roles

- Observer and radio operator
- Rear protection
- Rest / admin

It may be that you are working on a 1-hour rotation by night and a 2-hour rotation by day. You may also double up and have two operators on at night if man power is available.

1 hr Rotation example

- Observer/radio operator (0300-0400)
- Rest (0400-0500)
- Admin (0500-0600)
- Rear protection (0600-0700)
- Observer/radio operator (0700-0800)
- Rest (0800-0900) and so on until extraction

Never allow your rotation to go from rest, into observer. The operator may not be fully awake and could fall back to sleep if the hide has been operational for a number of days.

OPERATOR'S ROLES

Rear protection

The job of rear protection is very important. The operator is to over watch the rear arcs of the hide observing for any movement by third parties. If technical devices have been deployed at the rear of the hide, it may be the responsibility of the operator to monitor them. These devices could be covering anything from dead ground to the Bergen hide.

The rear protection will have a small aperture in which his arcs can be observed. There should be a day sack located in this position containing day and night optics and any batteries that are required for the technical equipment. If operating in a hostile environment a belt feed weapon system and claymore clacker will also be located here.

Also, if operating in a hostile environment, the rear protection has an even more important role to play. If the hide is compromised, it will be the job of rear protection to break clean from the hide. They should position themselves where maximum suppressing fire can be directed into the enemy's direction, allowing the rest of the team to extract and close the hide down.

Radio operator

All incoming and outgoing communications from the hide have to be written down in the radio log books. This is the operator's responsibility as is the maintenance of the radio, changing the batteries and radio frequencies as required.

Without good clear communications there is no point being there. You may be working with non-secure communications where everything has to be sent in code.

Your job may be to trigger a number of teams waiting on the ground, you'll need to check your communications with each of the teams at set periods. A good way of doing this is at the beginning, middle and end of your shift. It may be that your hide is on a set time schedule where you have to send situation reports (SIT-REPS) at set times of the day. The tactical situation will dictate the frequency of reporting.

The hide may be operating on more than one radio network. If this is the case, a log book for each network is needed. If the operations room was operating on a frequency that was different to a static ground call sign for example, we would say that both are on different networks.

Observer

The observer's role is to log all sightings and movements in the surveillance log book. Everything must be written down. It doesn't matter how small you think it is, write it down.

Always think about the bigger picture, reconnaissance soldiers have this instilled into them from the very beginning. If there is too much activity going on at any one time, and you cannot write it down quick enough, then stop. Use a Dictaphone to record the activity, but remember to add all activity later in your surveillance log book.

There will be a number of different optics in this location, some will require batteries others may not. Ensure that optics are working correctly and are clean, dry and packed away if not in use. Ensure that day and night equipment is changed over at first and last light.

If using the Dictaphone, never delete and record over the information. Keep it and add to the final target pack. Make sure they are marked with the date, time and job number.

It is good practise to sketch the target location, producing a sketch map of the area around your position showing all dead ground, technical devices, routes in / out and the ERV. This is covered in greater detail in Chapter 11 - Sketching.

If operating in hostile areas, positions of claymore mines and their arcs must be pre-recorded. By making these sketches, it will help with hand-over briefs as a picture paints a thousand words. Most, if not all hand overs will be conducted at night. This will help to ensure that the operator taking over knows where to look and what he is supposed to be looking at.

Rest and admin

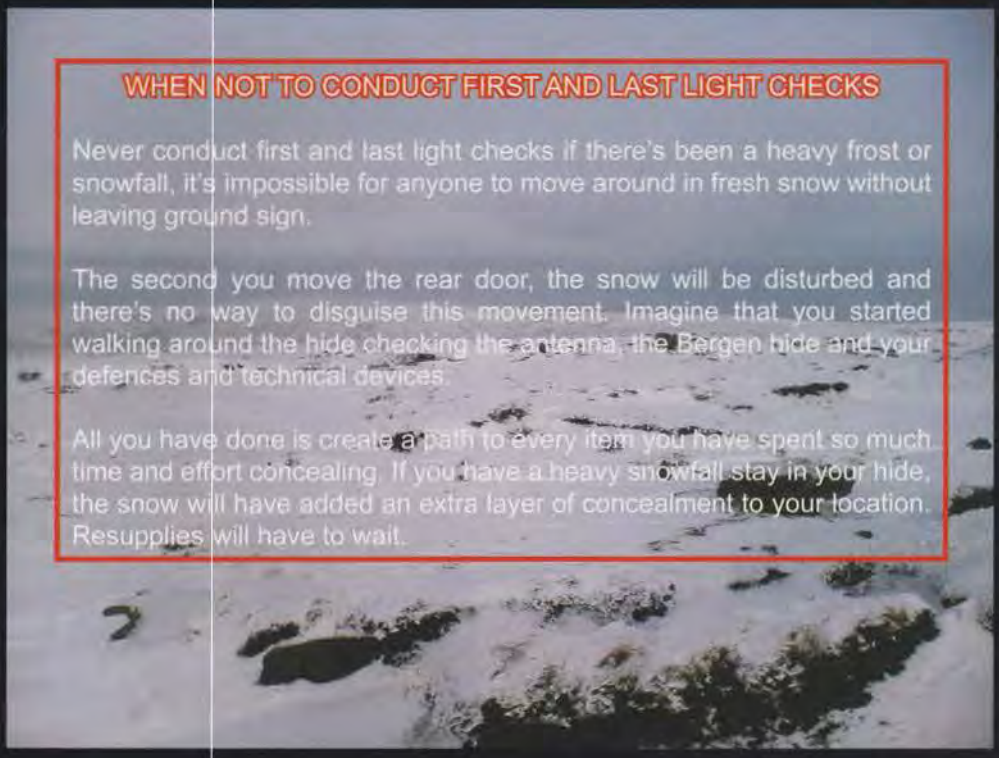
This is not an excuse to make noise and start distracting the other team members. You may be on your 4th or 5th rotation so just get your administration done. Getting some sleep is the main priority. Below is a list of do's and don'ts.

- Always hot bag, nothing is better than getting into a warm sleeping bag
- Never zip the sleeping bag up. If you need to get out in a hurry, the zip will hinder you, just wrap the sleeping bag around you
- Never remove your boots unless you have wet socks, you need to be ready at all times. If you have wet socks, change one boot at a time. Boots must be replaced before getting into the sleeping bag
- NO SMOKING!
- The nature of the tactical situation will dictate if cooking is permitted. It may be that you are on hard routine where all rations need to be eaten cold. The smell of hot rations will carry in the wind for hundreds of metres. At best, the boiling of water may be permitted. If so, this is for hot drinks only. If boiling some water, make a team flask which is kept in the admin area, this way the operative who has just come off duty, has a hot drink waiting. As this operator is sorting himself out, he can be re-boiling the water to make a fresh flask.
- IF USING A STOVE, IT MUST BE DUG INTO THE GROUND. REMEMBER THE RISK OF FIRE, I NEVER ALLOW LIQUID FUELS INSIDE MY HIDES
- Finished rations must be double bagged and sealed, animals will be attracted by the smell of food
- This is the time for any toilet needs. Liquid waste will go into your bottles; solid waste will either be wrapped in cling film, sealable plastic bags or bin liners. A tip is to double bag waste before placing it in your kit.

FIRST AND LAST LIGHT CHECKS

This is the sole responsibility of the team leader. Before the team leader conducts these checks, he must ensure that all team members are awake and in their positions. If operating in a hostile environment, the team must be in full kit ready for anything.

- Ensure all team members are awake and ready
- Give the hide team a briefing of what's going to happen. Ensure that they understand and are satisfied with the ERV location and compromised drills
- The team leader will then inform all call signs and the operations room over the radio, that they are about to leave the hide
- This will involve using a pre-arranged code word
- All technical devices are checked before exiting
- Check personal communications between team leader and hide
- Then, slowly remove the rear door a little at a time allowing your eyes to adjust to the light, then wait and listen before exiting
- Slowly exit and move away from the hide to gain your direction. This is particularly important at night
- Check the camouflage on the hide, if it needs replacing, do it
- Check all cables and coax leaving the hide, ensuring they are still concealed underground
- Check the condition of the antenna
- Check that all technical devices are still concealed and clean lenses if necessary
- Check the Bergen hide to ensure the camouflage is fine. Again, if it needs replacing do so
- Once the team leader is satisfied with the checks, the hide is informed that the team leader is on the way back in. Conduct a listening watch before reoccupying the hide
- Close the rear door and conduct a second listening watch. When satisfied, the team leader needs to advise all call signs that the task has been completed and all is well. Again this should have a code word
- The hide will then go back into routine as before



WHEN NOT TO CONDUCT FIRST AND LAST LIGHT CHECKS

Never conduct first and last light checks if there's been a heavy frost or snowfall, it's impossible for anyone to move around in fresh snow without leaving ground sign.

The second you move the rear door, the snow will be disturbed and there's no way to disguise this movement. Imagine that you started walking around the hide checking the antenna, the Bergen hide and your defences and technical devices.

All you have done is create a path to every item you have spent so much time and effort concealing. If you have a heavy snowfall stay in your hide, the snow will have added an extra layer of concealment to your location. Resupplies will have to wait.

EXTRACTION FROM THE HIDE

There are only three occasions where you will have to extract from your hide. Firstly, when the task is complete, secondly if you have been compromised, and lastly when you need to conduct a resupply.

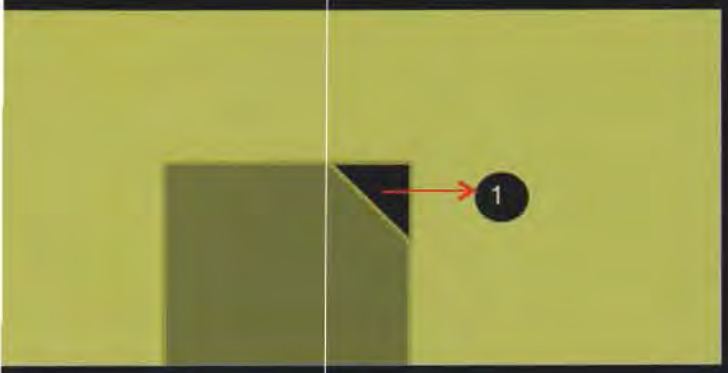
End of task

You may be working to a time frame or waiting for the extraction code word to be called over the radio network. Either way, when it is time to go you must stay alert and not allow yourself to be distracted, this is when compromises happen. Do not become complacent, the extraction needs to be carried out in controlled phases.

- Pack away all non-essential kit and equipment first. This includes sleeping bags, roll mats, ground sheet and finally the operational kit, with the exception of the optics located at the aperture and the radio, these will be the last items to be packed.

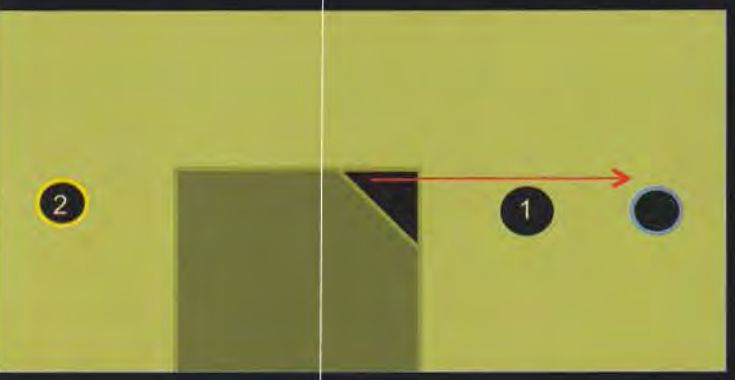
- Team members exit the hide one at a time, starting with the rear sentry and finally the team leader.

EXTRACTION

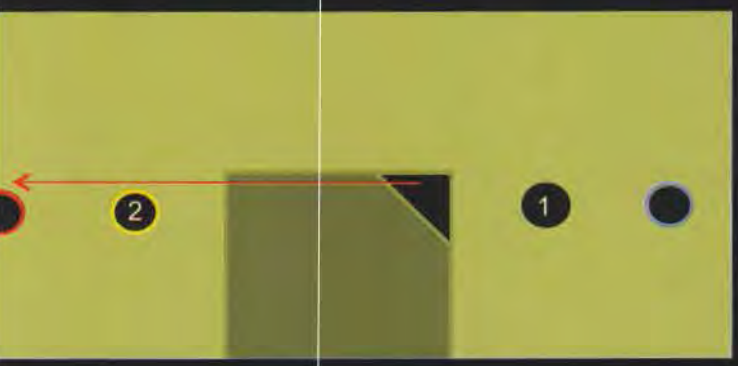


1. The rear sentry (no.1) crawls out of the hide, and pushes to the right side observing to his front and staying low so as not to sky line

2. The second member exits and pushes to the left side observing to the rear



3. The next member to exit will push past no.1 facing forward and will be in charge of the optics, but continuing to observe the target area



4. Finally, the team leader will conduct a full sweep of the hide to ensure all kit and equipment has been taken out. Once satisfied, the team leader will exit and will get into a position next to no.2. At this point, the team will take a listening halt before stripping the roof down.

Now that the team have extracted from the hide, they can start to dismantle the roof. This involves removing any top foliage and rolling back the turf. When the turf has been removed unpeg the camouflage nets remove and pack away.

Next the ponchos and wire roof sections need to be packed away. You should now be left with the roof supports and sand bags around the edge. Push the roof supports into the hide and empty the sand bags into the hole. Do not get rid of the sandbags as they can be used again. Lastly, roll the turf back into place.

Bring in the antenna and dig up the coax cable. Any defences or technical devices will stay out as they will be the last items to be closed down. This will be coordinated by the team leader in the same way as they were deployed.

When all the equipment has been packed, conduct a final sweep of the area. Check your extraction route on the map and inform the operations room that you have fully collapsed the hide. The team leader will then position the team into "all round defence" while the technical devices are collected. Confirm with the operations room and move off towards your pick-up point.

COMPROMISED

Once the team leader has confirmed a compromise, he will send a contact report over the radio. As this is happening, team members will gather their kit and the observer at the time will gather all operational equipment and paperwork and pack it into the grab bags.

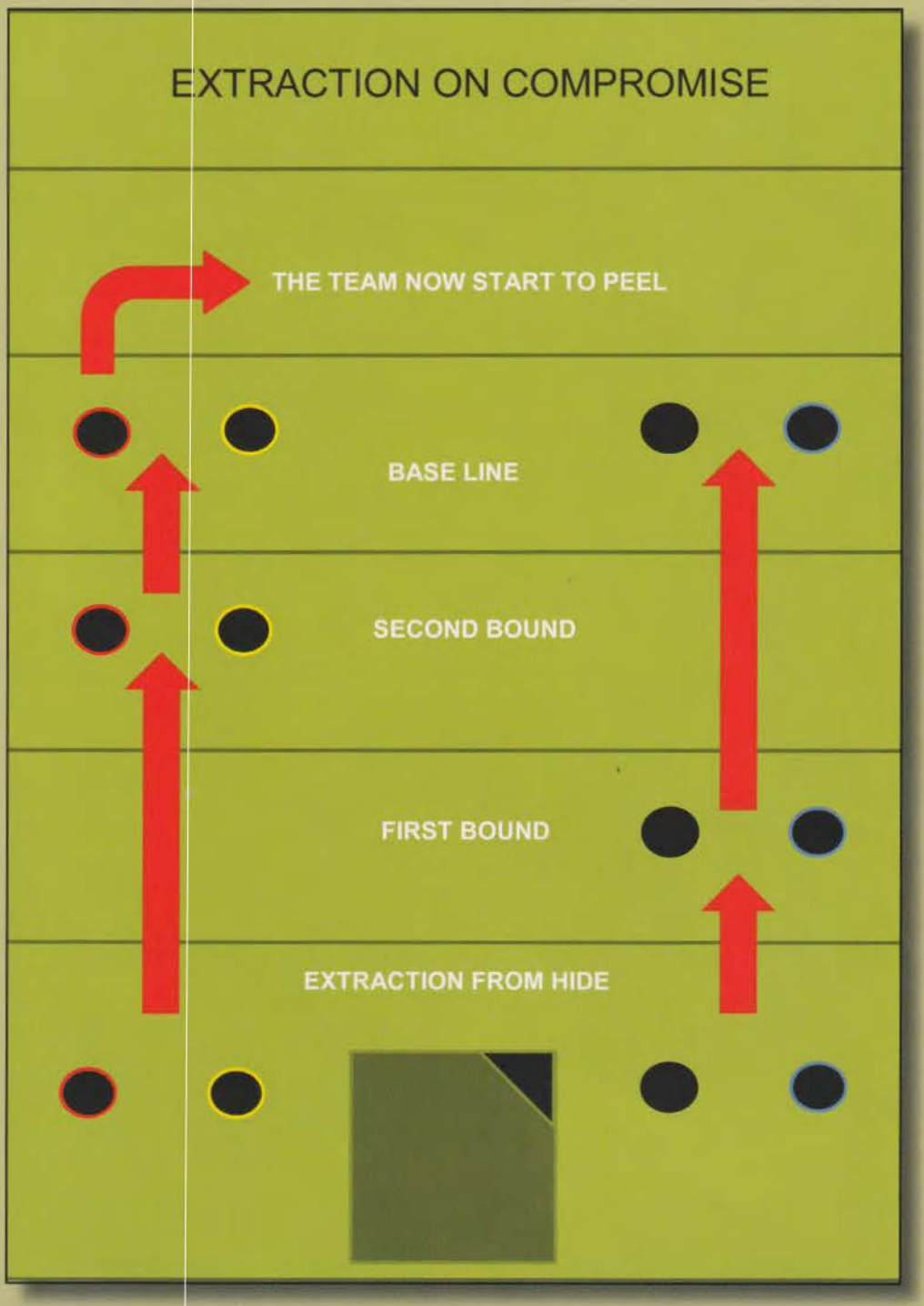
Exit the hide in the same order as explained in the "end of task extraction" and take up the same positions, two team members on each side. The first man out will push to the side and face in the direction of the threat. This will provide the rest of the team with visual cover to extract from the hide and get into their positions and face the direction of the threat.

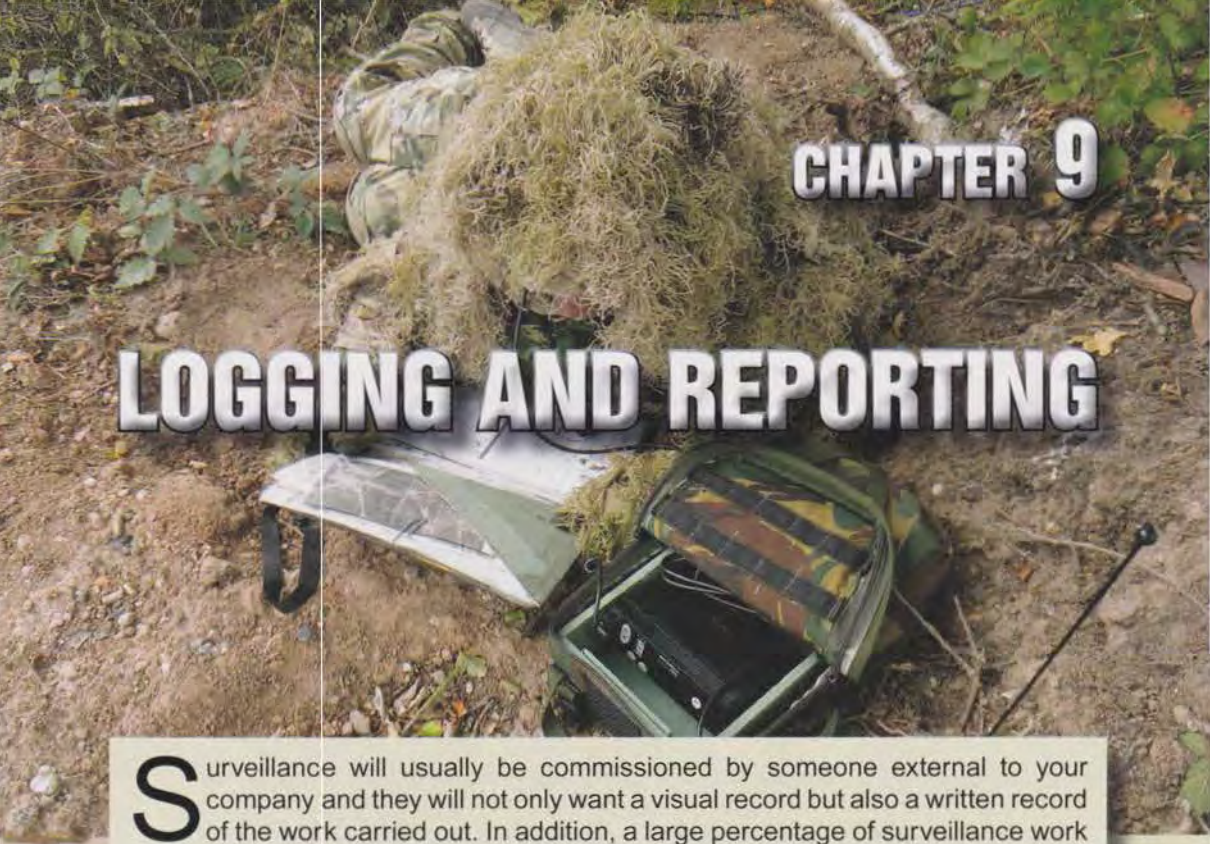
Once out, the team leader will signal to start the extraction, either peeling off left or right or even withdrawing backwards out of the area, moving in pairs.

You may have been in position for a number of days and when you suddenly start moving after being still for so long, your body may not perform quite the way you expect! Take small bounds, this is not the time to get injured.

Once out of the compromised area, go silent and break clean to a rally point. This can be chosen by any member of the team. Do a quick check of each other, including kit and be ready to move off. Now head for the designated pick up point.

Peeling & withdrawing





CHAPTER 9

LOGGING AND REPORTING

Surveillance will usually be commissioned by someone external to your company and they will not only want a visual record but also a written record of the work carried out. In addition, a large percentage of surveillance work ends up in court, so you may need to have a written record of your work to present to the courts.

Topics covered

- **Log book rules**
- **Types of log book**
- **Coding and decoding messages**
- **Types of reports**

LOGGING & REPORTING

Surveillance will usually be commissioned by someone external to the company and they will not only want a visual record but also a written record of the work carried out. In addition, a large percentage of surveillance work ends up in court so you need to have a record of your work to present to the courts. This is also important so they can see that you have operated within the law. You must remember that all log books will be taken as evidence if your case goes to court.

Below are a set of rules which will help you when filling in your logs.

Log book rules

- Keeping logs ensures that events are always accurately recorded
- They are a diary of events which can be used to back brief operators and clients
- If operating in a long term hide, they are excellent for hand over briefs
- Only make copies as required, never make extra unnecessary copies
- Write legibly and check spellings / grammar
- Be accurate and to the point
- Never write comments or suppositions
- Log all hand over / take over's of personnel
- If you make a mistake draw a single line through it and initial both ends
- When logging radio messages in code, write on every third line, this allows you to write the decoded message below
- Write all messages in full
- Log all radio traffic between call signs
- Conform to any counter surveillance measures at the time
- Always write in chronological order

Night time rules

- Write all entries in a text book first then copy into log books in daylight hours
- Never use white light, if you need light ensure it is filtered
- Write larger than normal
- Use a dictaphone but ensure all transcribes are logged as soon as possible (first light)

Bad weather

- Ensure all log books are kept in dry bags or similar
- Always write in pencil as it will not run in the rain
- If it is not possible to log because of the weather, use a dictaphone then transcribe all entries as soon as possible.

A pneumonic I was taught years ago, and one I always remember when filling out surveillance logs, is no "ELBOWS"

Erasures, if you make a mistake do not rub it out; put a line through it signing each end of the line. This way the mistake can be read and the reader can see you have nothing to hide.

Loose leafs, all sheets of the log book must be glued and bound with page numbers, this way there's no question that pages could be added or removed.

Blank spaces, never leave a blank line because you think it looks neater, it could be supposed that you intended to fill in the blank at a later date.

Overwriting, if you make a mistake draw a line through it.

Writing between the lines, if once you have written your log you remember that you have missed something out, do not try and fit it in between the lines. Leave it till the end and add it in then.

Separate pieces of paper, if you are using separate log sheets ensure they are numbered 1 of 3, 2 of 3, 3 of 3 and so on, if information was written on a piece of scrap paper, make an entry in the log book stating this and attach the paper.

Types of log book

There are a number of different types of log book that you may come across while conducting surveillance operations. The 3 main types of log book used in surveillance

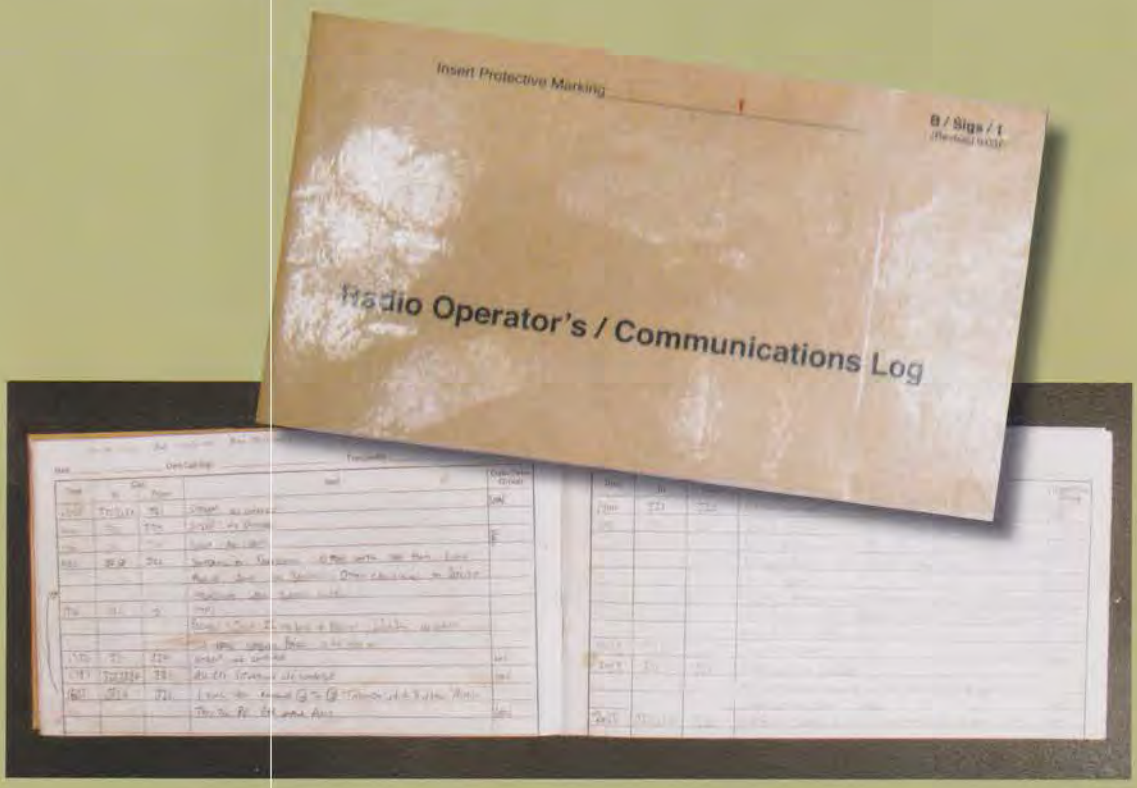
- Radio log books
- Surveillance observer log books
- Photography log books

At the end of a surveillance task, these log books, must be collected together with any photographic or video evidence, which was gained during the operation. Any other paperwork relating to the task must also be added, this will be used when creating the client's target pack.

Radio log

The radio log book is used to record all communications traffic between hides, mobile call signs and operations room. The radio log book is standard in its design with a number of different columns. Most come in A4 size which I sometimes find to be too big and cumbersome, especially if I have to use it in the rain, so I like to cut mine in half to A5 size.

Pictured below is a cut down log book.



SERIAL	FROM	TO	MESSAGE	D.T.G	INISH

Looking at the log book page above, note the different columns. When filling out the serial column always begin with 001, followed by 002, 003 and so on. This will give you a total of 999 entries before having to change books.

The FROM and TO speak for themselves. You must remember that you could have a number of different call-signs operating on the ground. If this is the case ensure you enter the correct call-sign.

You must fill out the complete message to and from call signs. When all the log books are brought together, if a call-sign has been misheard or sometimes not heard at all, the full message can be cross referenced.

The date, time and group (D.T.G) this column must be filled in every time as should the initials column. There is no requirement to sign it.

Unfinished lines

Looking at the example log book, you can see that serial 003's message has filled one and a half lines. You will note that a line has been drawn across the rest of the box. This shows that this was the only message at that time and that there is no requirement to fill out the D.T.G or INISH columns.

Also, this ensures that text cannot be added at a later date by a third party.

Row 004 is filled out with E22's reply. This then continues throughout the log book until the end of the operation or until the end of that particular log book. If you have to start a new log book, the serial number will always start at 001. However on the front of this log book you must show it as being the second book. As such, your first entry 001 should say that this is radio log book 2 of (number) and giving the operation's title.

SERIAL	FROM	TO	MESSAGE	D.T.G	INISH
001	E21	0	HELLO 0 THIS IS E21 RADIO CHECK OVER	24/0230	BW
002	0	E21	E21 THIS 0 OK TO ME OUT	24/0231	BW
003	E21	E22	HELLO E22 THIS IS E21 STAND-BY STAND-BY	24/0500	BW
			THAT'S BRAVO 1 TOWARDS YOU OVER		
004	E22	E21	ROGER TOWARDS ME OUT	24/0501	BW

Coding and decoding messages

Before secure radio networks were available, the British military used a method called BATCO. Whilst his method is very old, it nonetheless works very well and I myself have created my own style of BATCO that my teams use on surveillance tasks.

If using some kind of coded message system you need to fill out your log books in a very different way, for example

BATCO was a message sent using individual letters that were then decoded into numbers. These numbers related to a set of pre-written text messages that were written in an ordered fashion. The first letter would denote which line was to be used. The next letters would give you your first page of pre-written text instructions. By divulging any more information would be unprofessional and possibly compromise the system. However by using my own form of BATCO, the message would look something like this.

SERIAL	FROM	TO	MESSAGE	DTG	INISH
CODED MESSAGE			D AAG ER TY UU DA HF DF	24/0855	BW
DECODED MESSAGE			2 003 67 91 44 20 58 28	24/0855	BW
ACTUAL MESSAGE			REPLEN AT GRID 9144 2028	24/0855	BW
			APPROACH FROM THE NORTH		
002	E21	E22	E HHF RU OP WE GG IR TT	24/0900	BW

Looking at the example log book above, when receiving coded messages you need to write on every third line. This allows you to write the decoded message underneath followed by the actual message beneath that. Make sure that each of the three lines has the same serial number, DTG and INISH.

Surveillance observer's log book

Observer's logs are filled out in much the same format as the radio logs, the only difference is that you are describing a subject's movements or activity around the target area, rather than what you hear and say over the radio network.

All the rules of log writing still apply and as time passes, your method, use of words and style of writing will improve. When I write my logs, I always ensure that they do not read like a story book. Rather, that each entry is a factual statement of events, written as short as possible and with all the information required. For example, "Subject exits property via front door." or "Subject, lone occupant of vehicle, vehicle's registration, and mobile surveillance commenced."

Remember that the entry that finishes mid line must have a line drawn through it. This is done to ensure no other entry can be made at a later date.

Photography logs

Many surveillance tasks will require still photography, which may be taken with a 35mm film camera or a modern digital camera. Any of these photographs could be used as evidence in court or for intelligence gathering reasons.

If tasked with a quick one day job, there may be no need to log every photo taken as they are all on one roll of film or memory card. However you may be tasked with a long-term job where you will use a large number of films or memory cards. If using electronic memory cards, never use a single card that has a large capacity. If this memory card became corrupt, you could lose all your evidence. So split the images between smaller memory cards.

This is where logs detailing information of your images come into play. Each roll of film or memory card should be numbered, with the serial number of the product or your own numbering system. Either way, your photography logs should contain the following information

- Number of exposures per roll
- Weather conditions: good, moderate, bad
- What the light condition was when the frame was taken
- Lens used
- Description of image and ID number as recorded by the camera.

OBSERVERS LOG SHEET

SUBJECT ..... FILE NO'.....

ADDRESS.....

.....

TIME	OBSERVATION	INISH

SIGNATURE..... DATE.....

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ID / SERIAL..... EXPO 12 24 36 BW / COL / IR CARD SIZE.....

PHOTOGRAPHERS NAME..... DATE.....

FRAME	D.T.G	DISCRIPTION & WEATHER CONDITION	LIGHT	INISH

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Reports

Accurate reporting forms the basis of the information gathered, combined with the rest of the material gathered during the surveillance to create a complete visual and written information pack on the subject. This pack is then passed to your client or is filed away so that it can be referred to at any time in the future.

Within the field of surveillance, you will discover that jobs which have been conducted months or even years ago will be raised by clients who want 'up to date' intelligence on a subject, so a surveillance team is tasked. You could find that past surveillance was conducted by another team or even by a different company. Being able to read and see old reports / photographs on the subject or target area is fantastic, and will aid your task significantly.

True Accounts

I have conducted surveillance on a subject who had been observed on two previsions occasions. The first instruction was when the subject was a young child, then again as a teenager, and finally as a young adult in his twenties. Each time, the work had been carried out by different teams who had come up with two different addresses for the subject.

This 'double watch' (static surveillance on both addresses) made the task more difficult, however, because both still and video images had been recorded on both previous operations, we were able to obtain a good idea of what the subject would look like. On day two of four days, the subject was observed at one of the addresses, so surveillance then concentrated on that property with an excellent end result.

Types of reports

- GLAD (already covered in rural hides)
- Patrol
- Close target reconnaissance CTR
- Special instructions / file notes

Patrol reports

The patrol report is a document that provides information concerning your insertion and extraction from a used or possible hide location. The report would normally start from your safe area and would include the vehicle insertion. Alternatively, the report could start from your drop-off point. Ideally, the report should be divided up into phases according to the phases of the job itself, this aids readability and clarity of the report for the reader.

Patrol report contents

The patrol report should consist of the following sections

- The front page - include details of the subject / target area, weather, team composition, task and timings.
- Route card
- Map corrections
- Miscellaneous information
- Conclusions and recommendations for debriefing
- The final pages are used for sketches, such as area sketch in general, ground covered on the insertion and area in detail - target area only.

Area in general

When filling out the area in general on the route card it must resemble the ordinance survey map (OS) of the ground that has been covered. A good idea is to write the OS map number on the front page of the report. It must be drawn free hand and in colour, as this is best for the conventional signs making them more proportionate. The map must contain the following

- All main roads and tracks
- Wooded areas noting if they are mixed, deciduous, coniferous
- Natural or man made plantations
- Any water features
- High ground
- Train lines
- Power lines and pipe lines
- Buildings (used / disused)
- Any map corrections that have been recorded should be shown on the map, to highlight them to other teams that may be tasked at a later date
- Scale and distances
- Mark the RV's, FRV and at least two ERV's on the map
- Any Resupply positions found (LLB / DLB)
- If operating in a hostile environment any suitable HLS sites for medical EVAC
- North pointer

All information drawn on the map must be recorded in the key for quick reference.

Area in detail

This is the direct area where actions are to be conducted. Concentrate on the shape of the land (ground) where you are going to place your FRV and ERV, this way they are pre-plotted and can be recorded for later action. Your patrol report should finish at your FRV location, with only a bearing and distance to your hide location. A description can be given but not essential.

PATROL REPORT

FILE NO'..... TARGET REF.....

..... DATE.....

MAP CO-ORDS:

WEATHER:

MOON STATE.....

FIRST LIGHT.....

LAST LIGHT.....

PATROL COMPOSITION:

NAME	TASK	EQUIPMENT

TASK:

TIME OUT..... TIME IN.....

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ROUTE CARD (INSERTION & EXTRACTION)

LEG	FROM	TO	BEARING	DISTANCE	REMARKS

DESCRIPTION OF GROUND:

- Condition under foot, is it easy going or difficult
- Uphill, downhill or both
- Undergrowth short grass, long grass, baby heads, marsh, dead fall covering the ground making for trip hazards
- Woodlands, thick plantations which are unable to be passed through without hazards
- Water features, are they crossable by foot or are there bridges
- Obstacles such as gates, fences and walls. Height must be recorded as well as construction of the obstacle, wooden fence posts with single barbed wire strand, stone wall 4ft high etc
- Areas of ground which are over looked, or in dead ground and may be defended

LEG	FROM	TO	BEARING	DISTANCE	REMARKS

DESCRIPTION OF GROUND:

THIS PAGE IS DUPLICATED A NUMBER OF TIMES.

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MAP CORRECTIONS:

If your map shows a wood block but on the ground it has been felled then this must be recorded, a team may plan their operation around that wood block.

If buildings have been erected since the map was printed, record them with a GPS grid reference.

CORRECTIONS MUST BE RECORDED FOR EACH LEG.

OBSTACLES & DEFENCES:

All major obstacles need to be recorded in detail and sketched if possible, if the obstacle can be crossed with the use of specialist equipment then record it.

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PROMINENT FEATURES & OBJECTS

CIVILAN ACTIVITY:

Areas where compromise by third party may arise.

ANIMAL ACTIVITY:

Areas which are occupied by wild life and more importantly farm animals. Remember that sheep will run away from you but cows will come closer and take a look, where there are farms remember dogs.

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COMMUNICATIONS INFORMATION: (BLACK SPOTS)

Record the quality of all communications on every leg, check for black spots.

CONDITION OF PATROL ON RETURN:

This is very important, if you and your team have suffered fatigue on this patrol due to the ground, weather or any other factors which may affect other teams, record it.

CONCLUSIONS & RECOMMENDATIONS:

You have been on the ground not the person reading your report, so ensure your conclusions and recommendations are full and detailed.

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ADDITIONAL REMARKS FOR DEBRIEF:

DEBRIEFER:

SIGNATURE:
NAME:
TEAM / CALL SIGN:

ANNEXES:

A. **AREA IN GENERAL**
B. **AREA IN DETAIL**

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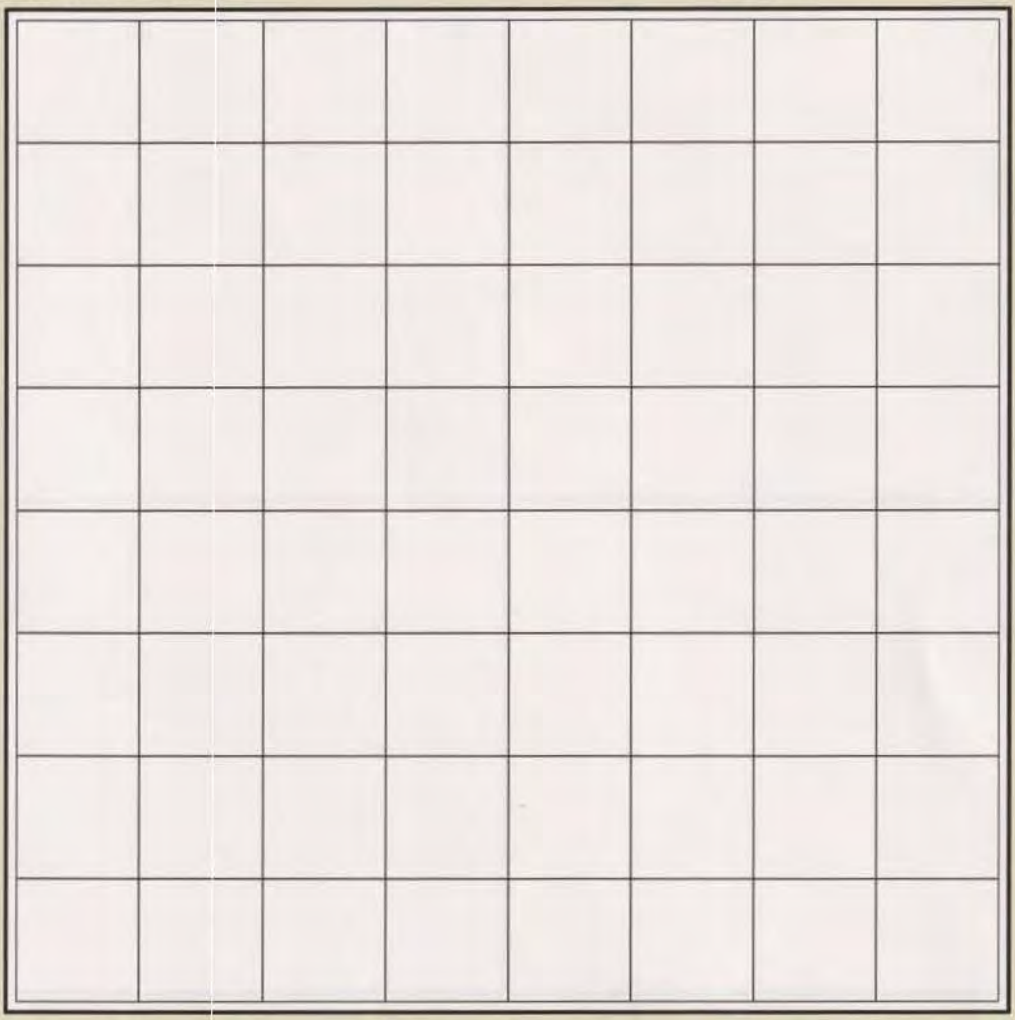
SKETCH (GENERAL AREA) ANNEXE A



KEY:

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SKETCH (DETAILED AREA) ANNEXE B

KEY:

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Close target reconnaissance report (CTR)

The CTR report is probably the most important report of all. The contents will make or break any future operations so it must be as detailed as possible. The more micro detail there is, the better the report will be but remember that only relevant information must be recorded. If you provide information which may be either incomplete or of questionable provenance, then it must be labelled or attached as a file note stating that it is not factual or incomplete.

Features that should be included in the report

Woodlands

- What type of wood is it? For example mixed, which will offer some cover all year round, deciduous which will offer cover only in the summer months or coniferous offering good cover all year round
- Will it be easy to move through or is it too thick and may cause injury to eyes if moving through at night? Pine trees grow branches down to the ground level. Also, is there deadfall on the ground making it noisy under foot?
- Is it a natural or man made plantation? Man made are easier to move through as the trees are planted in straight lines with good spacing between rows.
- Think about cover from the air if operating in a hostile environment

Fences

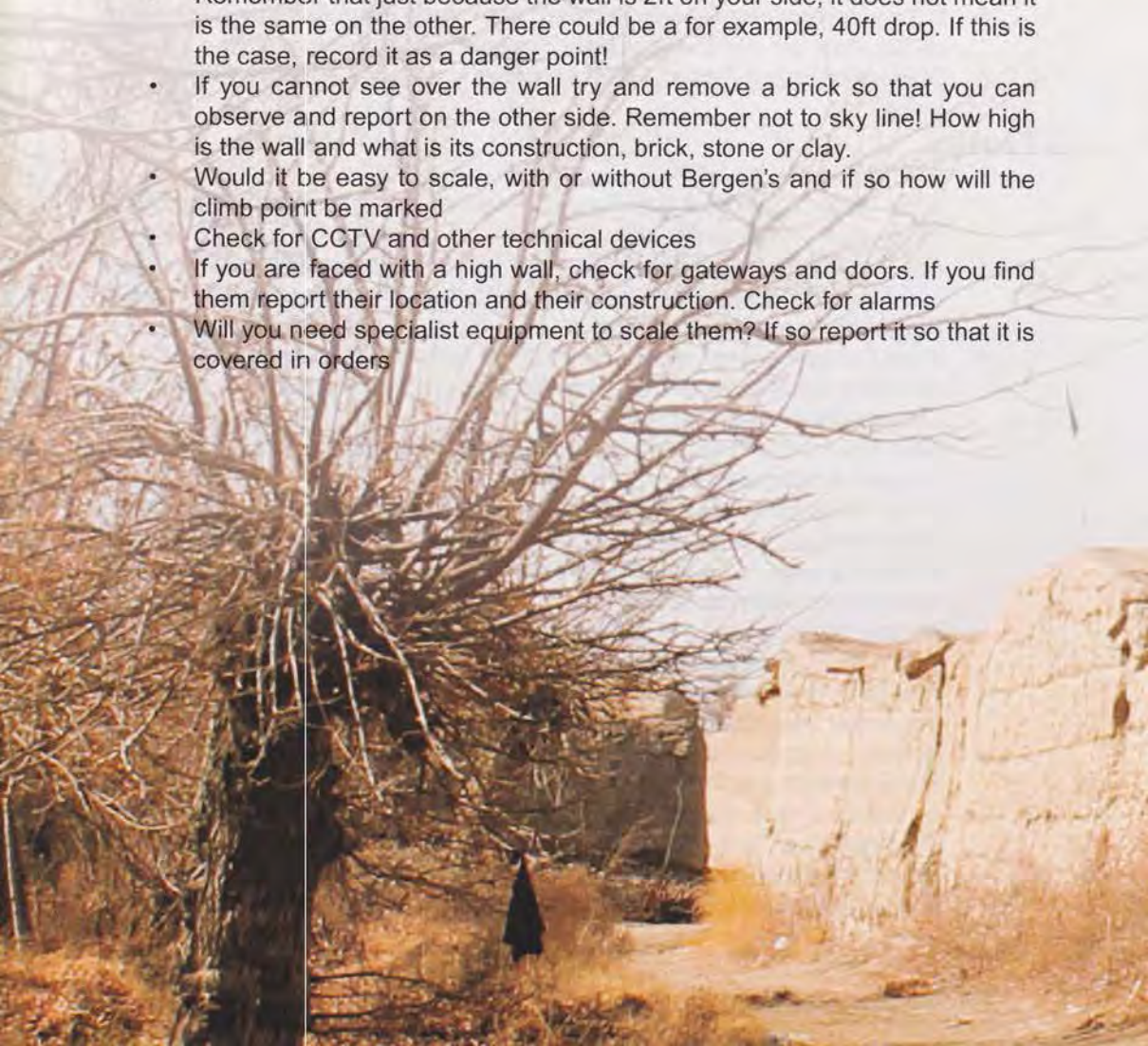
- What types of fences are in the area of your target's location? What about the route in and possible hide position?
- Are the fences low and easy to cross by just stepping over them or high and will need care when navigating? Will team members have to remove Bergens? If so allow extra time
- What material are the fences constructed from? Metal, wood or both
- Are there security fences that may be over watched by CCTV or fitted with motion sensors and alarms?
- Steel mesh which will need to be cut. Report it so that cutting equipment is covered in your orders
- Is the fence made of lap wood panels? They're not strong enough to climb
- Is the fence made from wooden posts driven into the ground and then joined by barbed wire? If so, how many strands of wire are there and what is the distance between the posts?
- Do you have to cross the fence or is there a purpose built crossing point or gate a short distance away?
- Always consider the noise that will be made when crossing over fences, remember that sound carries over longer distances at night
- Is there more than one fence? Farmers separate their fields by erecting a fence on each side of a hedge, an obstacle of fence – hedge – fence.
- Be aware of razor wire. Whilst at first glance it may not look like a deterrent, it's called razor wire for a reason. I got my smock caught on it once and it ripped the back in half! If you do have to cross razor wire, use a sand bag and wrap it around the wire at the point of crossing

Hedges

- As with walls, how tall are they and can they be passed through?
- How thick are they?
- Will a path have to be cut through it? Report it and cover in the orders phase.
- What kind of hedge is it, natural or man made? If man made, it will be very difficult to cut through
- Does it have thorns, which could damage equipment?

Walls

- These are generally built to protect something acting as a barrier between you and the other side
- Never take a running jump to try and scale walls, many people run a bead of concrete along the top and then stick shards of broken glass into the mix. They may have painted it with anti-theft paint or something similar.
- Remember that just because the wall is 2ft on your side, it does not mean it is the same on the other. There could be a for example, 40ft drop. If this is the case, record it as a danger point!
- If you cannot see over the wall try and remove a brick so that you can observe and report on the other side. Remember not to sky line! How high is the wall and what is its construction, brick, stone or clay.
- Would it be easy to scale, with or without Bergen's and if so how will the climb point be marked
- Check for CCTV and other technical devices
- If you are faced with a high wall, check for gateways and doors. If you find them report their location and their construction. Check for alarms
- Will you need specialist equipment to scale them? If so report it so that it is covered in orders



Roads

- Is it a main road with high volumes of fast moving traffic?
- How many lanes are there?
- Is the road one way? Record from which direction the traffic approaches
- Does the road have a central reservation and what is it made of? Is it a grassed area, a wooden fence or speed barriers
- Is the road illuminated at night which may make crossing risky
- Can the road be crossed without necessarily going across it? For example, is there a stream running through it or a tunnel underneath it?
- Thinking about resupply, are there any lay-by or other parking areas identified? Is the road in a built-up area or leading to one? Check your map
- Is it a private road leading to a single property? The road may belong to the subject
- Would the road be suitable for covert drop-off and pick-up, both in the day time and night time?

Tracks

- How wide is the track? Would you get a vehicle down it such as a van, or is it only good on foot?
- Where does the track lead to? Check on the map
- Does the track have high banks on either side making it more difficult to cross with heavy kit?
- Is the track well used or overgrown such as an old green lane or byway?
- Look for signs of life such as horse and dog droppings to indicate it is used
- Is the track a public right of way? If so, record it as this may mean third parties will be using the track And more so in the summer months
- You should always stay off tracks and if possible use a method known as hand railing, this is where you follow the direction of the track but stay in cover using the natural surroundings to conceal your movement. Although the track can be used for a casualty evacuation

Rivers and streams

All water features must be treated with great care as they are one of the most dangerous obstacles you will encounter in the rural environment. There is a complete section on river crossing in the patrols chapter. Whilst this subject is covered in the manual, no water feature should be crossed unless there is a fully trained person(s) on the scene. People can and have drowned in only a few inches of water.

When conducting your CTR of the river you need to look for

- Direction and speed of the flowing water at the time, the speed of flow will change due to rainfall and time of the year
- Identify good entry and exit points, these should be the lowest part of the banks where climbing in and out of the water is easier. These points need to be marked and recorded so that they are covered in detail in the orders
- Check the depth of the water at the entry point
- How wide is the river?
- Check up and down the river for other crossing points, if you don't have to get wet then don't
- If ropes and other specialist equipment are going to be needed
- Check up river for any waste outlet pipes or dead wildlife. If all clear, you could use this for drinking water. Again think resupply
- If on your CTR you feel that the river is cannot be crossed for any reason, you must record it on the report and in the special instructions file note
- Give a time estimation as to which would be quickest, crossing the feature or navigating around it to a man made crossing point. Of course, if you are operating in a hostile environment, this might not be an option as a man made point will compromise the patrol or worst lead to a contact

Grounds

This section is very similar to the patrol report in the way it needs to be filled out. The only difference is that the patrol report covers the ground on the insertion and extraction. The CTR report covers the actual ground the target is located on.

- Size of the grounds; are they small, medium, large or very large. If so, will it take more than one team to cover?
- How are they maintained? very well, well, or poorly
- Describe the type of planting within the grounds, remembering the time of year and that ground cover changes with the seasons
- Are the grounds on different levels? if so, describe and sketch
- Are there any water features such as ponds? If so, give locations so they can be avoided
- Are there security devices such as CCTV, or floodlights on sensors and alarms?
- Other exits and entrances?
- Are the grounds overlooked by other properties? This would make movement more difficult. Check that movement in the grounds will not set off devices (PIR motion sensors) in a neighbouring garden

Buildings

These will always come into the equation when conducting surveillance. Buildings may include the subject's home, works address, the property of family and friends or even a building you intend to use as your hide from which to mount your operations. Whatever it is, it needs describing. Try and bracket the properties age such as Victorian, 1930, 1950, 1970 and modern to new build.

Exterior

- Are the walls bare brick, painted brick, stone, concrete, pebble dash, rendered, wood or a mixture of the above? If wood is used, is the wood fixed to the outer wall or are they solid logs, which are interlocked?
- What is the roof made of, slate, thatched, felt, lead, concrete or tiled? Is the roof flat or pitched?
- Identify the positioning of any waste pipes. This will show where the bathrooms, kitchens and utility rooms are
- Location of air ventilation bricks.
- Garages; are they integral or separate to the property; single, double or more; do they have accommodation above?
- Is there a conservatory or other built-on rooms?
- Is the property likely to be privately owned or local government?
- Is the property a bungalow, 2 storey, 3 storey, a flat, maisonette, converted barn, factory, shop or shed?
- Are there likely to be security measures such as CCTV, lights on motion sensors, internal lights on timers? What about dogs?

Windows

- Sizes are given as estimated measurements, it's not sufficient to note as small, medium or large
- How do they open (inwards or outwards) to the left or right? You can identify this by which side the hinges are on
- Shape and style of the window; are they round, bay, square or sky light?
- Single or double glazed, some properties in noisy locations have triple glazing
- Window frame construction; are they made of wood, UPVC or metal?
- Describe the window dressing. Do they have net curtains as well as normal curtains? If they have blinds, are these vertical or horizontal? Are there any plants in the window, which might obscure the subject's view?
- Is the glass frosted or patterned? At night you can see through it
- Is there any wooden trellis fixed to the property walls?
- Does the subject have gravel at the base of the windows? If so, be careful as this will make a noise when stepped on
- Look for bars and security sensors that will alarm if the window is broken
- Look at the window locking mechanism
- I have noticed that a lot of properties are fixing black blinds to the inside of their windows. This is very off putting as at first glance, you are unsure if the glass is mirrored

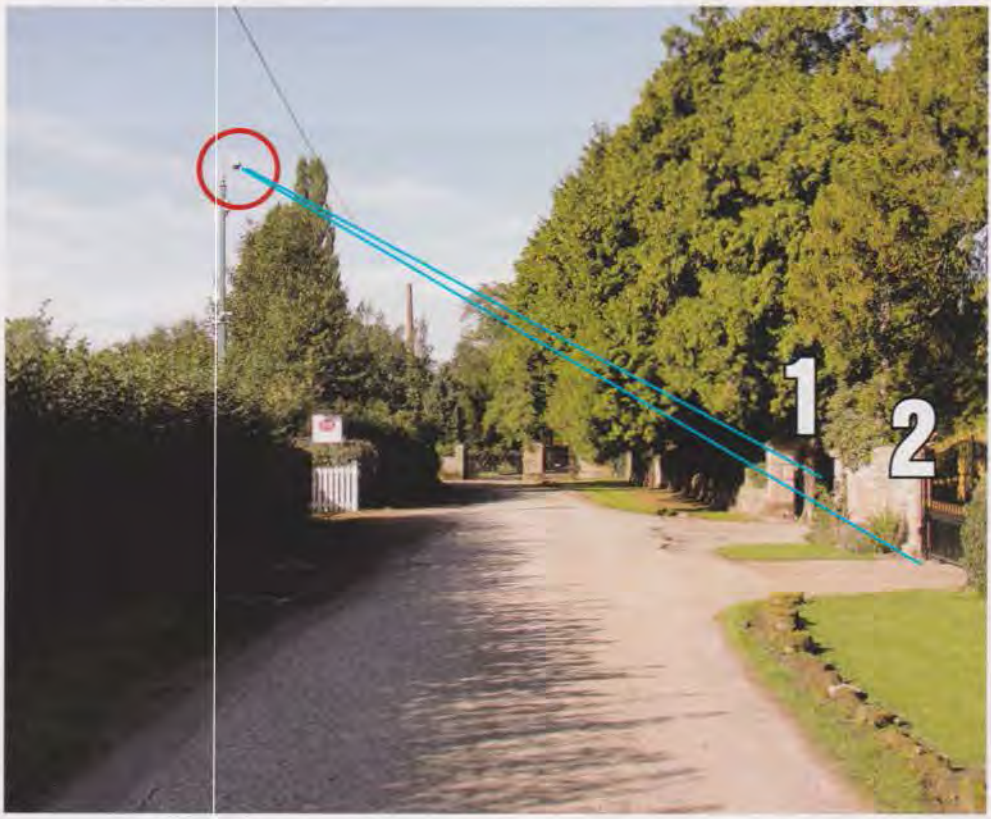
Doors

- A door is around 2 metres so you can use this as a marker
- Are there twin doors that open left and right, inwards or outwards?
- Is the door a stable door that can be opened in two halves?
- Is the door construction wooden, UPVC, metal or a mixture?
- Does the door have glass (frosted), spy holes at more than one height? If so, think children in the property!
- What is the position of the letter box?
- Does the property have a doorbell or knocker?
- What kind of lock does the door have and how many?
- Is there a porch or does the front door lead straight into the living room or kitchen?
- This amount of detail needs to be documented on every door
- Check for CCTV (hidden mini covert cameras above doors) as many subjects are targets for others not just for surveillance teams

The camera's aperture is the size of a pin prick, if this camera was concealed correctly, it would be almost impossible to identify the pin hole lens.

Driveways

- Measure the size of the driveway in cars. How many cars will fit on it at any one time?
- Can the driveway be seen from the road or is it in covered from view?
- What is the driveway's construction, concrete, tarmac, grass, stones or gravel? Again be aware that gravel and stone driveways are a security measure, not only do they make noise but they also leave foot prints and ground sign
- Is the driveway flat, declined or inclined?
- Is the driveway gated? If so does it open manually or remotely?
- Check for gate alarms and CCTV. If your subject is wealthy, they may have installed pressure pads, laser equipment and the like as switching devices. CCTV will rarely be on view at the main gates of a country home, so look in the trees and on the corners of close buildings to find them. They may be opposite the main gates. In built up areas, occupants of properties are likely to want them more on show as a deterrent, so you will find them located in full view



Here there is an elevated camera system over watching entrances 1 and 2 into the property. An inexperienced operator could miss it completely in the dark. If a team were trying to gain access to the property via these entrances, they could become compromised.

Interior

- It is very unlikely that you will be gaining entry to the subject's home address but their works address is always possible. If you have been tasked to enter a building it will be for a specific reason
- If possible, try to learn about the layout of the building from the inside. In this case, a body worn covert camera should be considered
- If a client has tasked you with confirming an item of equipment, a covert camera is used for this purpose. Nothing of this nature should be recorded on a special instruction file note

Other reasons why you might find yourself conducting a CTR inside a building is covered in the chapter titled Operating from buildings. This chapter will cover all actions to be taken inside a building.

Special instructions file note

This is a document that I use when there is important information about a subject or target area that must be highlighted. With all the other pages included in reports, important notes can easily be missed. The special instructions file note is fixed to the front of the file, that way it cannot be missed. There is also a second copy fixed to the front of the CTR report.

CLOSE TARGET RECONNAISSANCE REPORT

SUBJECT..... DATE..... TIME..... TARGET ADDRESS / LOCATION.....

.....

..... OPERATOR.....

PROPERTY:

- PRIVATE HOME
- COMMERCIAL
- INDUSTRIAL
- WORKING FARM

- DETACHED
- SEMI-DETACHED
- BUNGALOW
- FLAT
- BARN CONVERSION
- CARAVAN OR OTHER

DESCRIPTION OF GROUNDS AND THEIR CONDITION:

DESCRIPTION OF PROPERTY:

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VEHICLES SEEN:

S	S
C	C
R	R
I	I
M	M
TRANSMISSION MAN / AUTO	TRANSMISSION MAN / AUTO

GROUND IN DETAIL:

GROUND IN GENERAL:

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OPERATIONAL CONSIDERATIONS AND RECOMMENDATIONS:

PRETEXT (TYPE) AND ANY INFORMATION GAINED:

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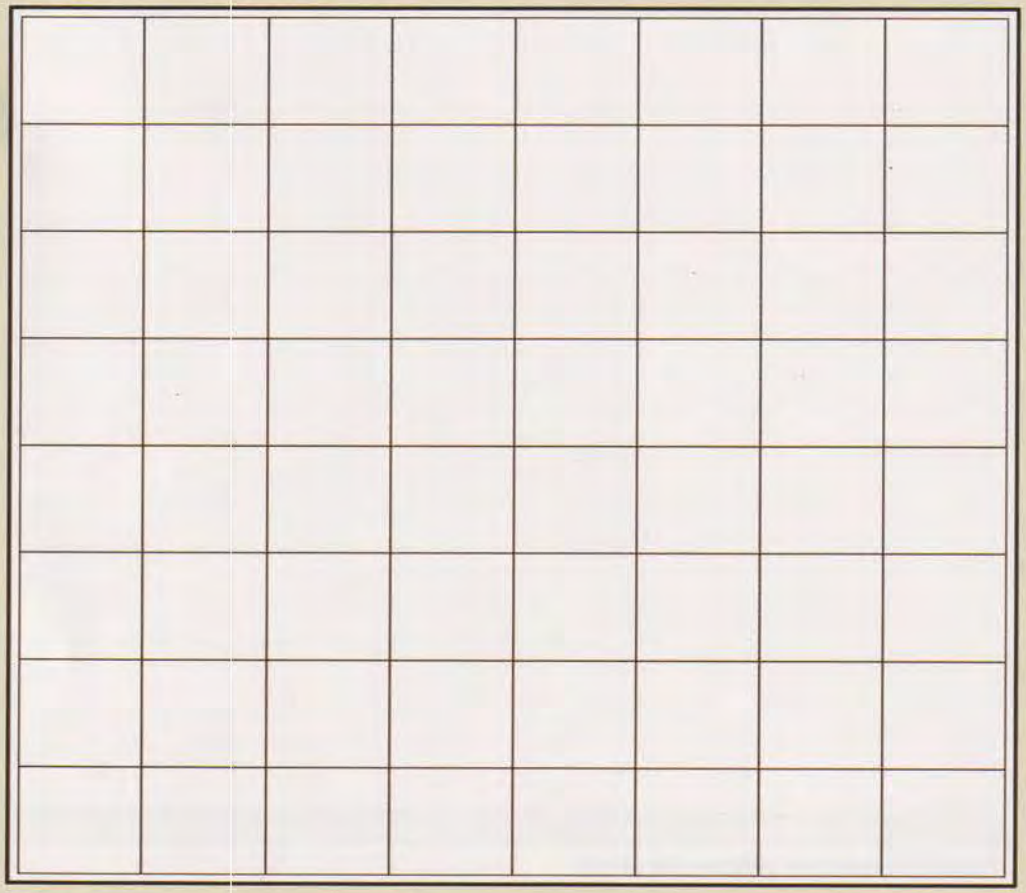
SKETCH OF TARGET AREA / LOCATION:



DRAWN BY..... DATE.....TIME.....

KEY:

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Special Instructions File Note

Subject..... File Number.....

Address.....

.....

Special Instructions

Operator's name..... date completed.....

Operator's Signature.....

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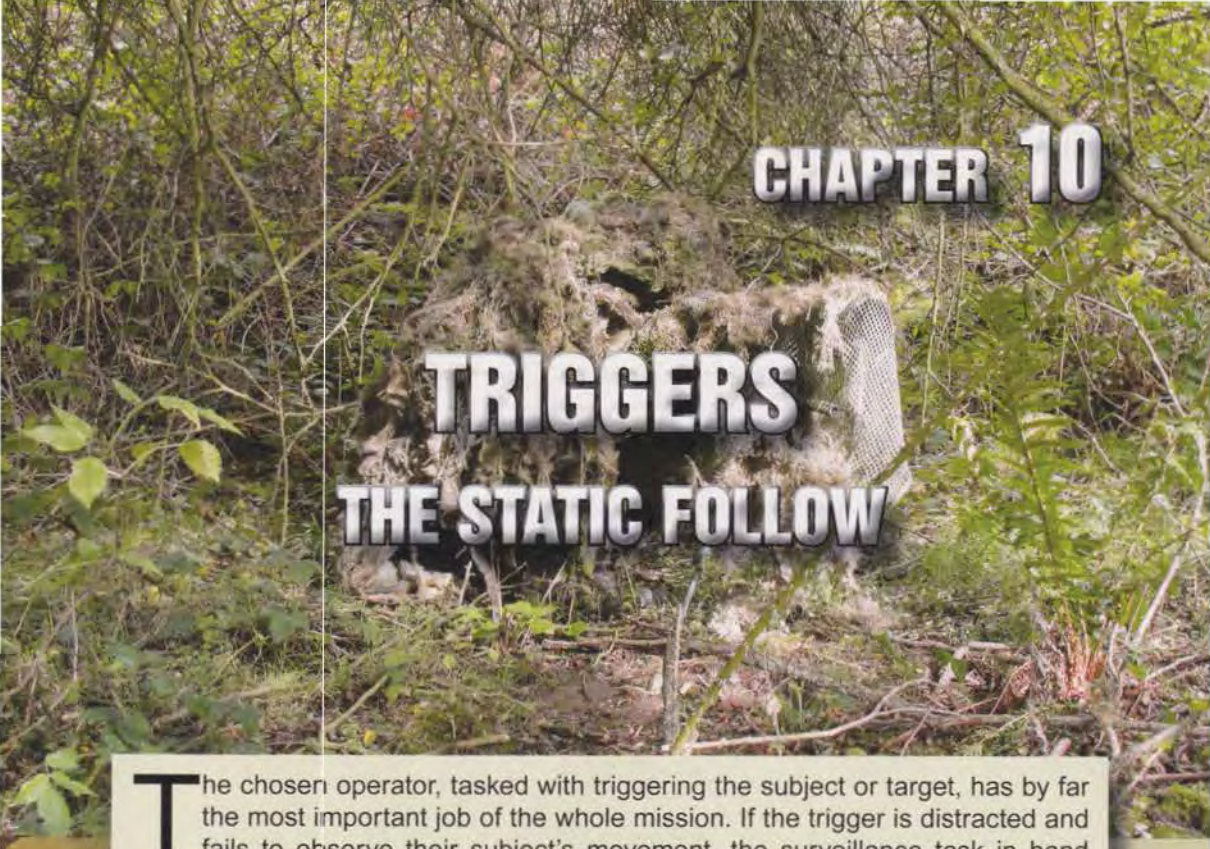


CHAPTER 10

TRIGGERS

THE STATIC FOLLOW

The chosen operator, tasked with triggering the subject or target, has by far the most important job of the whole mission. If the trigger is distracted and fails to observe their subject's movement, the surveillance task in hand could be over before it has even begun.

Topics covered

- **Types of surveillance**
- **Static follow**
- **Basic mobile triggers**
- **Recce screen**
- **Codewords**
- **Triggering movement in a building**

STATIC TRIGGERS

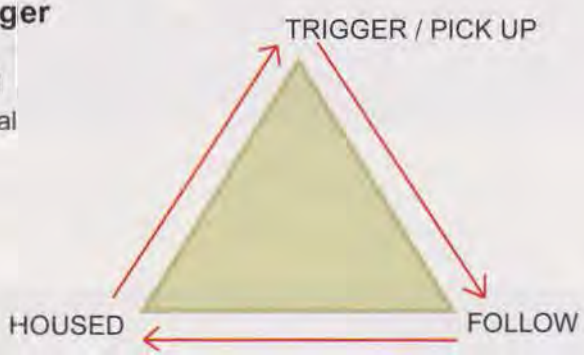
What is a trigger?

Triggering is often considered as a long, boring and thankless job and if it goes wrong, the trigger can be blamed. The reality is that it's not boring, it just takes a dedicated professional operator to fulfil this role and carry it out well. I have seen this happen time and time again, where private companies use their newest, least experienced operatives in the trigger position.

The chosen operator, tasked with triggering the subject or target, has by far the most important job of the whole mission. It's his job to inform the mobile units or other static hides that the subject has been sighted and to provide commentary on his movements. If the trigger is distracted and fails to observe their subject's movement, the surveillance task in hand could be over before it has even begun.

Types of trigger

- Manned
- Technical



Surveillance works in a continuous moving pattern, from stage to stage as shown in the diagram and finally "housed" at their dwelling or place of work.

Manned

The role of the trigger is to inform the rest of the team

1. When the subject is in sight
2. Which direction the subject is travelling and
3. By what means

Once the subject is out of the trigger's arc of observation, the rest of the team must pick up and follow the subject. At this point, the operator "trigger" may have to stay in position, as moving would compromise not only their concealed location but the entire operation. Alternatively, a second option might be to move and pick up the mobile follow as the tail end Charlie.

In the case of rural surveillance, nine times out of ten, the actual act of the trigger will have come from a concealed hide location and the operator will stay in position. They can then continue observing the target area for any other movement or for intelligence gathering. When the subject is en route back to their original start point, the pursuing call signs can pre-warn the static operator who can then set up any recording equipment in advance of the subject's arrival.

Technical

If the target subject is surveillance aware thus increasing the risk that the operator will be compromised. Or the location required from which to trigger the subject is too confined to conceal an operator. In these circumstances, the use of a technical trigger is necessary. This may take the form of a wireless covert camera system concealed in the undergrowth and monitored within a vehicle standing by, or from a rural hide located at a safer distance.

Deploying a covert camera

Another form of technical trigger could be an audio microphone that has been set up to record any noise caused by movement, such as doors opening and closing.

Wireless listening device

Whichever triggering method you use, make sure that it will work and that the complete team understands what their job is when it commences.

Triggering from a static hide to a mobile call sign

If using a team member as the trigger, they must be in radio communications with the whole team at all times. When the subject is in view of the trigger, the signal given over the radio is

"STAND BY – STAND BY"

At this point only the pickup call-sign will answer over the radio with

"ROGER PICK-UP STANDING BY"

All other traffic on the radio now stops. This ensures that both the trigger and pick-up have a free network. The trigger should now be giving a running commentary of the subject's movements.

For example...

"THAT'S ALPHA 1, MOBILE IN BRAVO 1 HEADING RIGHT TOWARDS YOUR LOCATION WEARING BLUE JEANS AND A WHITE T-SHIRT"

"WILL BE IN SIGHT TO YOU IN 5 – 4 – 3 – 2 – 1, PICK UP DO YOU HAVE"

Then over the radio the pick-up call sign will return with

"PICK UP HAS THE EYE BALL"

At each stage of the surveillance, the subject's movements and intentions must be triggered between call signs so as not to lose the subject. If the team with the "eye ball" wants to or needs to handover the follow to a different call sign to reduce the risk of compromise, they need to come up over the radio and say.

"BACK-UP CAN YOU TAKE?"

The "back-up" vehicle should reply with

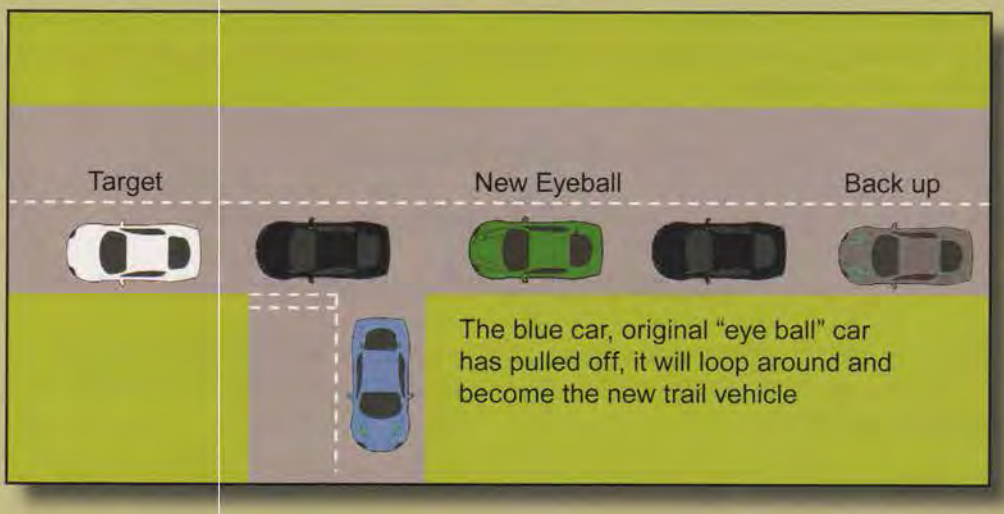
"YES YES"

At this point, the vehicle which currently has the "eye ball" knows that the "back-up" vehicle is ready to take over the follow at the next convenient place. Once the "eye ball" vehicle has pulled off, the back-up vehicle takes the lead and becomes known as the "eye ball".

When the new vehicle in the role of the "eye ball" is settled behind the subject, they will say over the radio.

"CALL SIGN HAS THE EYE BALL"

The second vehicle in the follow will then take up a position a few cars back from the "eye ball" ready for the next hand over.



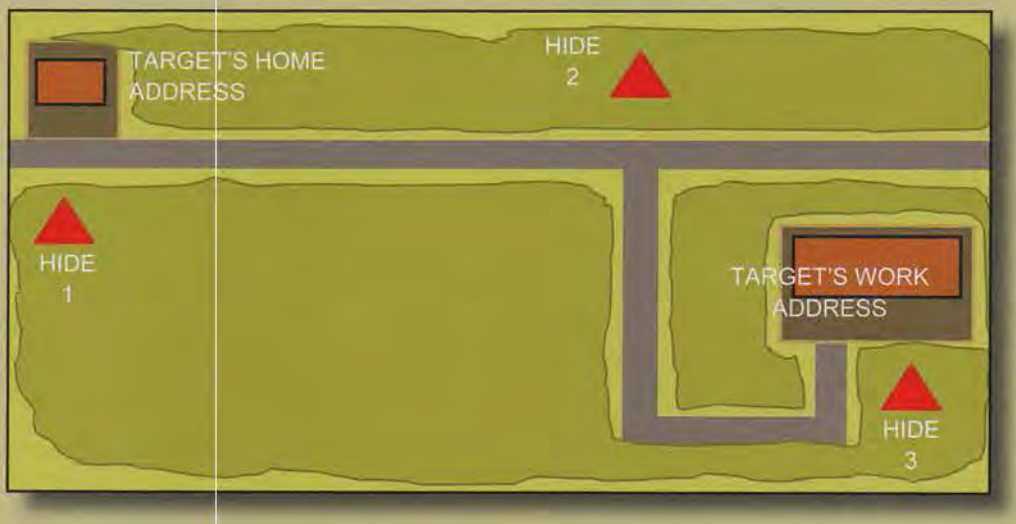
If you were operating the follow with more than two cars, the car that has just handed over the "eye ball" would wait until all the other cars attached to the follow have passed, then take up the rear position know as "trail vehicle".

Triggering from a static hide to a static hide - recce screen

If tasked with observing the movements of a subject or target position covering a large area of land where the use of vehicles is not needed, you can create what's known as a Recce screen. This is a number of manned positions over watching a predetermined route that the subject takes on a regular basis, for example to his place of work. This screen can be spaced out over many kilometres; the more teams you have on the ground, the greater the distance that can be covered.

The hide covering the target's home address will still give a "STAND BY STAND BY" when the target is sighted, this will alert all other hides that the target is on the move and the radio network is to be kept free of unnecessary traffic.

For example, when observing a subject who lives in one place and travels to work each day there's no requirement to conduct a mobile follow. Instead you can have a second team located somewhere en route, and a third team concealed in a hide waiting for the subject to arrive at the work location.



As before the trigger team will give the

"STAND-BY STAND-BY"

This will alert the other teams that the subject is in view and will possibly be moving at any time. At this point, all other hide locations will switch on their recording equipment in readiness. Hide 2 will acknowledge the information sent from the trigger by replying with

"ROGER STANDING-BY"

In the example drawing, hide two is two kilometres from hide 1 and one kilometre from hide 3 which is located at the work address.

Example

Hide 1:	**"THAT'S ALPHA 1 MOBILE IN BRAVO 1 TOWARDS YOUR LOCATION OVER"**
Hide 2:	**"ROGER, THAT'S ALPHA 1 EN ROUTE, OUT"**
Hide 2:	**"HELLO HIDE 3, THIS IS HIDE 2, ALPHA 1 PASSING MY LOCATION EN ROUTE TO YOU OVER"**
Hide 3:	**"ROGER THAT, EN ROUTE TO MY LOCATION, OUT"**
Hide 3:	**"HELLO ALL CALL SIGNS, THAT'S ALPHA 1, ARRIVED AT CHARLIE 2, OBSERVING NOW, OVER"**
Hides 1 & 2:	**"ROGER, OUT"**

Code words

ALPHA 1
Always refers to the subject. Any other persons associated with the subject that the surveillance team are aware of, will be given a different number, such as ALPHA 2, ALPHA 3 and so on.

BRAVO 1
Always refers to the subject's own vehicle. Any other vehicle is given a different number such as BRAVO 2, BRAVO 3.

CHARLIE 1
Always refers to the subject's home. Any other property that the subject visits or is associated with will be known as CHARLIE 2, CHARLIE 3 and so on.

ECHO
A female is always referred to as an ECHO and numbered accordingly.

UK
Any persons observed with the subject who are unknown to the surveillance team are called UK - unknown.

Technical triggers - trackers

If your subject is very surveillance aware, then a tracking device can be used. By locating the device on the subject's vehicle, the surveillance team can watch the subject's movements via a laptop from a considerable and safe distance.

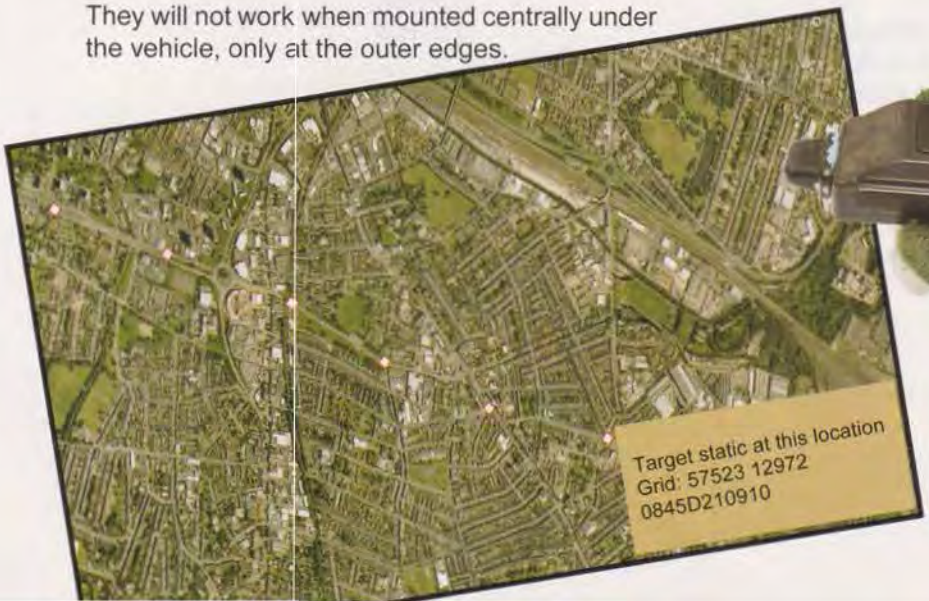
Whilst these real-time trackers are very expensive and some can only be obtained by government bodies, they are a very useful item to have.

Other devices will allow you to gain a pattern of the subject's life over a period of time. Although reasonably cheap, they are a safe and reliable way of gaining high quality intelligence.

This style of tracker can be purchased on the internet for as little as £200. The size of a disposable cigarette lighter with a battery life of up to two weeks, once attached to the subject's vehicle, they can be left to gather the intelligence required. When you are happy that the device has done its job, all you need to do is covertly remove it from the vehicle, plug it into the USB socket on your laptop and download all the information gathered.

These devices use Google Earth and Google Maps to give you times, distances, addresses and all routes taken. I have used these cheaper trackers in the past and have had excellent results. Just be aware that they need to be positioned on the vehicle where they can see sky.

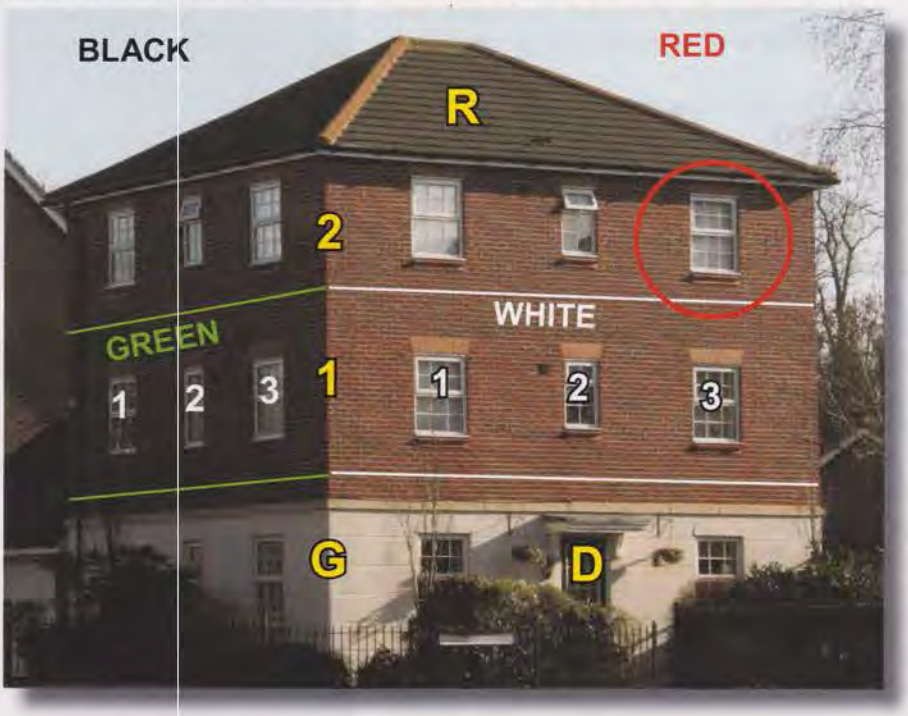
They will not work when mounted centrally under the vehicle, only at the outer edges.



Triggering buildings

When observing a target building, there's a procedure to identify each part of the building. Allocate a colour to each face, an ordinal number for each storey and the windows on each side from left to right.

This is a military convention that was designed for fighting in built-up areas, so that attacking troops could identify key areas in relation to each other. This method works very well when operating with a well-trained team.



The building

Identify and divide the building into component parts..

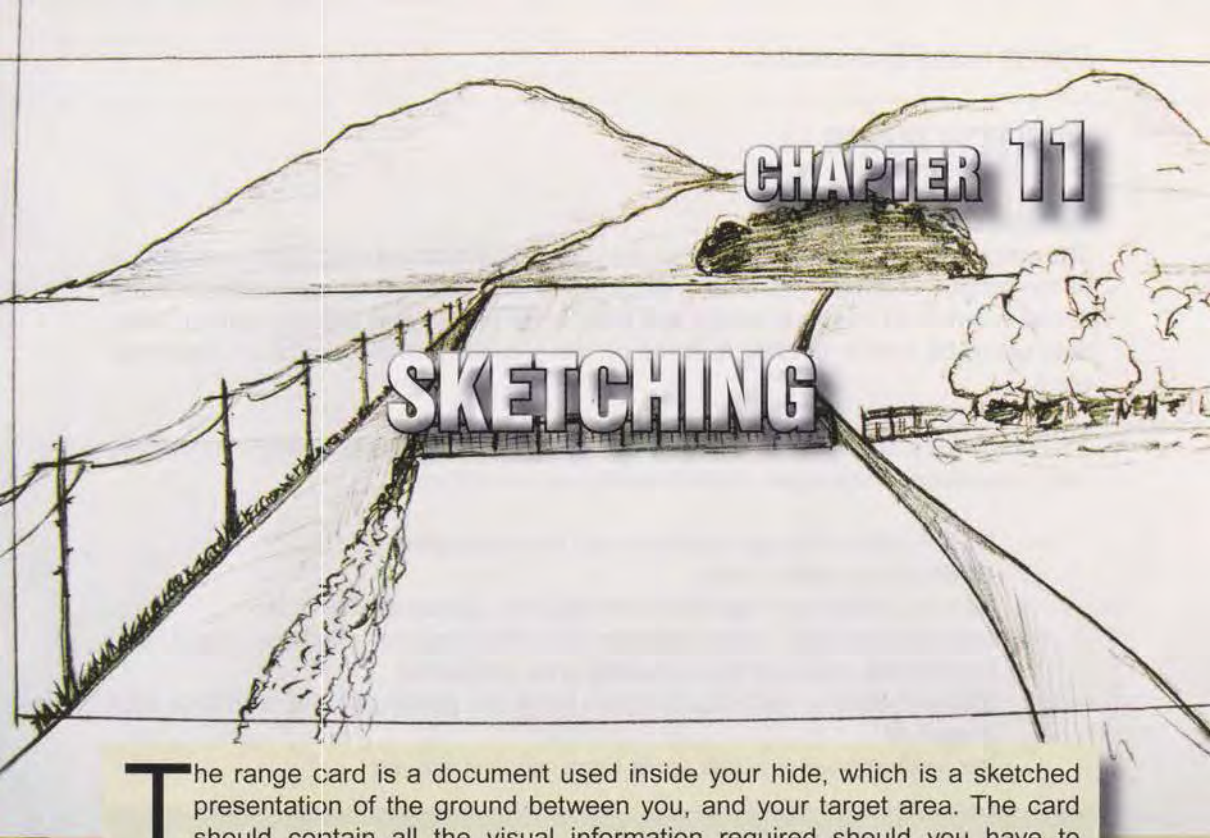
- G = ground floor
- 1 = first floor
- 2 = second floor
- D = door
- R = roof

Each side of the building has been allocated a colour, the front is WHITE, the rear is BLACK, the left side is GREEN and right side (not seen in this image) is RED.

The subject comes into view in the upper right window, the trigger would say

"SUBJECT SIGHTED WHITE 2 – 3"

This clearly identifies to all call signs, exactly where the subject has been spotted.



CHAPTER 11

SKETCHING

The range card is a document used inside your hide, which is a sketched presentation of the ground between you, and your target area. The card should contain all the visual information required should you have to handover your hide to another team, they would be able to identify features on the ground from the sketch on the range card.

Topics covered

- **Range cards**
- **Panoramic sketches**
- **Key references**

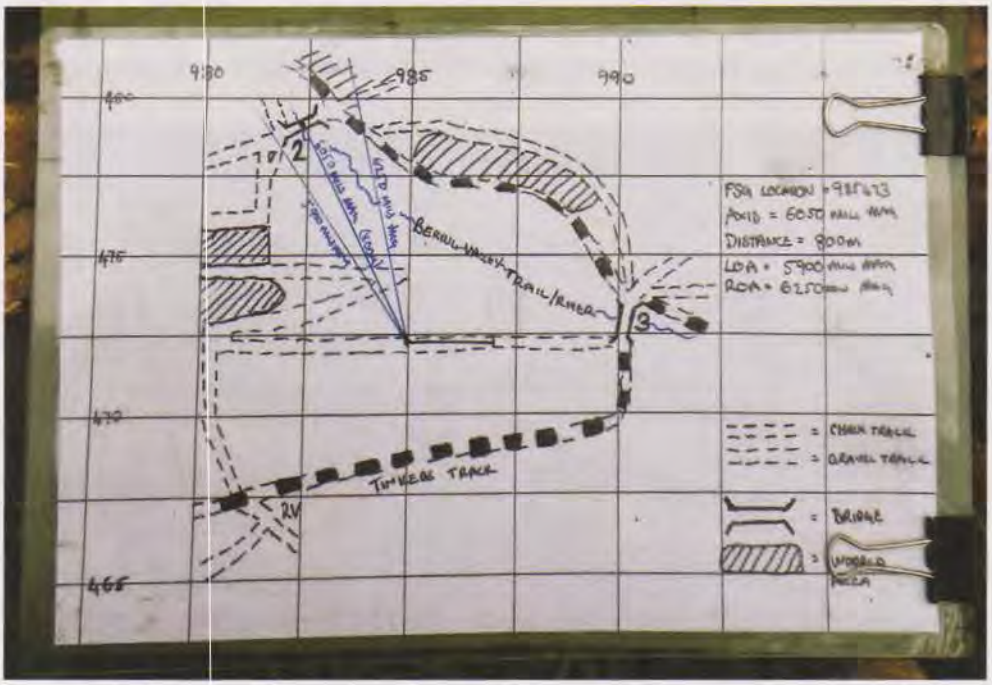
SKETCH MAPS

Range cards

The range card is a document used inside your hide, which is a sketched presentation of the ground between you, and your target area. The card should contain all the visual information required should you have to handover your hide to another team, they would be able to identify features on the ground from the sketch on the range card.

The range card should be a sketch map on a grid giving the following information, use conventional map signs when drawing your sketch map.

- Your location, friendly locations and target location
- All distances with a scale
- All arcs written as magnetic bearings (left, right and axis)
- Locations of other hides and their arcs, this way you can ensure you have interlocking arcs and the complete area is covered
- Any defences or technical devices you have positioned out, and their arcs if needed
- Areas of interest or weak spots such as dead ground



Above is a range card drawn on a grid and used on a short term task. The tracks, river and bridges have been drawn with a key at the bottom right corner explaining all the information. The three blue lines represent the visual arcs from which the hide can observe with their bearings written as 'magnetic' next to them. This was a single hide. If there were more than one hide location, the visual arcs of these hides would again be drawn. Each hide would complete a similar range card.

Drawing your range card

Draw a grid pattern on a sheet of plain paper and then laminate it to protect it against the elements. Take a number of clear acetate sheets, available in all stationary shops and lay them over the top of your gridded base layer. Hold them together with bulldog clips as you can see in this picture below.

Each sheet of acetate is used to draw a set of details to your range card. By using coloured permanent pens, you can achieve a very detailed range card that can be simplified by removing or adding sheets when conducting your handover brief.

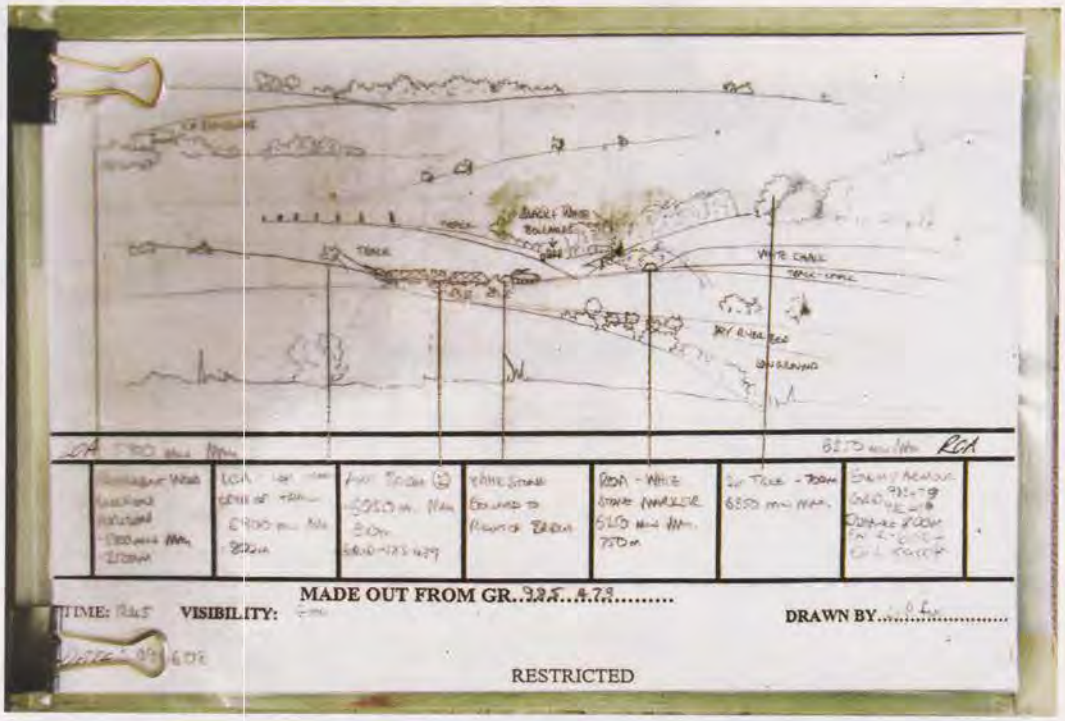
Sheet one:	The sketch map with all features including target area
Sheet two:	The arcs from all hide locations
Sheet three:	Any defences or technical devices you have laid with arcs
Sheet four:	Any weak spots and dead ground

When using this method, you must draw your grid lines in the top left and bottom right corners of each over-lay sheet, this ensures that the sheets are all lined up and positioned correctly.

Panoramic sketches

From your hide, you will have to complete a sketch of what you can see through your aperture. Again, this is for briefing purposes and self recognition of the ground. It may be that the ground to your front has many nick names or code numbers. These can be copied onto the sketch as a means of quick reference.

The sketch must contain your arcs, the limits of your visibility through the aperture/ optics as magnetic bearings and your central axis, the direction you are facing.



The sketch shows the near, middle and far ground and the lay of the land. All wood blocks are marked, as are the field boundaries with a written reference.

Left and right arc bearings are shown in the relevant boxes where all critical information is logged. You will also notice that the information boxes have a line to clearly identify each particular point of reference on the sketch.

Other information required

- Time the range card was completed
- Visibility
- Grid from which it was drawn
- Date
- Name of artist

If you have a lot of information, which needs to be added but by doing so would make the sketch look untidy, you can use additional acetate sheets to record it.

A good surveillance and reconnaissance operator must have an understanding of sketching and some artistic knowledge. You do not have to be a fine artist, but you must know how to hold a pencil and accurately draw the landscape.

Some people pick up sketching very easily and are very good at it, whilst others may be slower and not so proficient. The sketch must be drawn to a standard that enables other people to easily understand what they are looking at when relating it to the ground - drawing large cartoon houses and trees will not do!

There should be a dedicated sketcher within each team.

Whilst sketches are two dimensional, you must add depth and shape to your sketch. Using colour is a good way of adding depth and shape, as is using light and dark shading, or shading a section using a different pencil direction to give shape. For example, when drawing a hill, the base of the hill would have very dark shading and as the hill rises, the shading becomes lighter.

The sketch uses colour, giving shape to hills and uses lines for both direction and height. Think about the scale of each feature. The closer things are, the bigger they will appear. For example; telegraph poles seem to get smaller as they recede into the distance.

When presented with an area of ground you need to sketch, break it down into near, middle and far distance. If possible aim to have you target area central in your middle distance.

It may be that you have to draw two sketches, one of the area in general and a second showing the target area in detail.

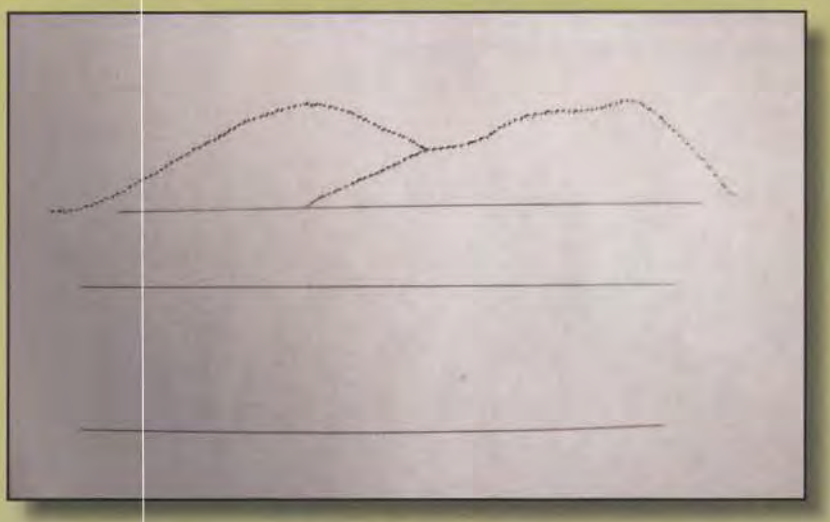
PANORAMIC SKETCHES

The panoramic sketch is built up on a frame. This starts by splitting the ground into near, middle and far distance, then plotting prominent points and features in the landscape. Then sketch them in their relative locations using for example, hill tops, junctions where two features meet, buildings, bends in the roads or rivers, blocks of woodland and so on.

Sketching is an art and it requires lots of practice to become skilled.

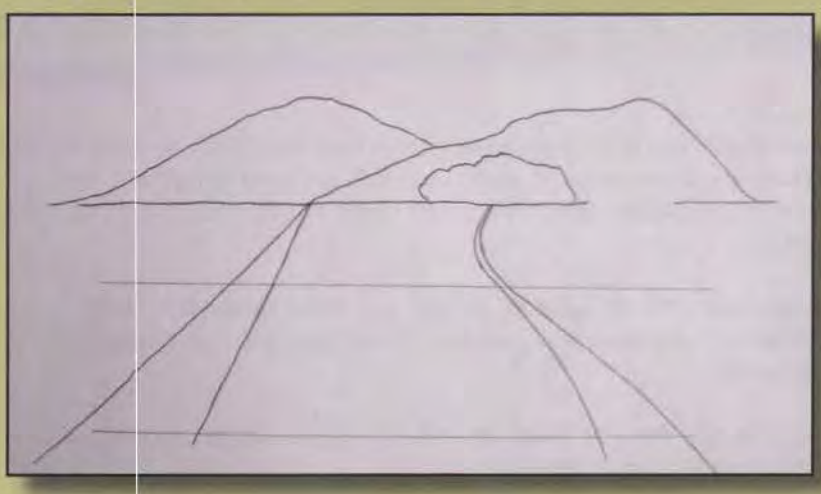
Step one

The sketch below shows the ground broken down into near, middle and far distance and the main features added.



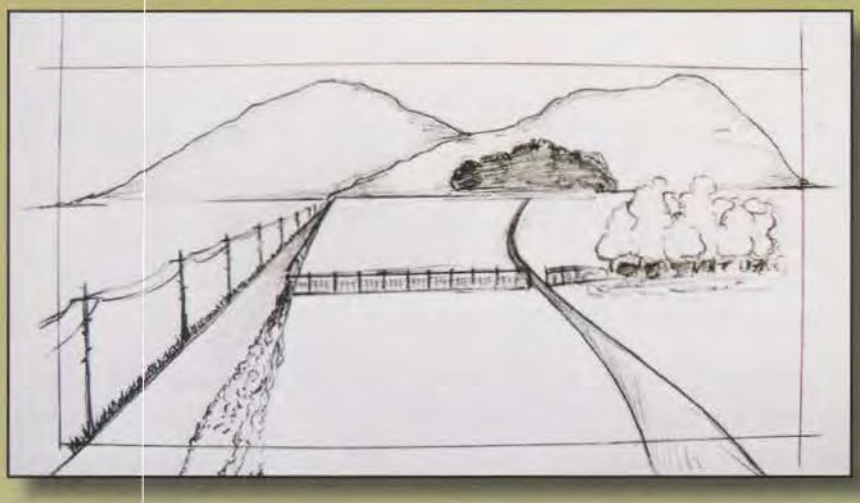
Step two

Smaller features at different distances have been added such as the track to the right and the road to the left.



Step three

Telegraph poles along the main road really start to give the sketch a bit of depth, as the poles reduce in size, the further into the background they go. Shading is added to create depth and shape to the line drawing.



Step four

Now that colour has been added, the sketch starts to come to life. Add colour lightly at first, you will need to add darker shaded areas later to give shape and depth.

Other features such as reference points can be drawn on acetate over-lays with a written description as to what they are. Putting them on the sketch at this point would over complicate it.

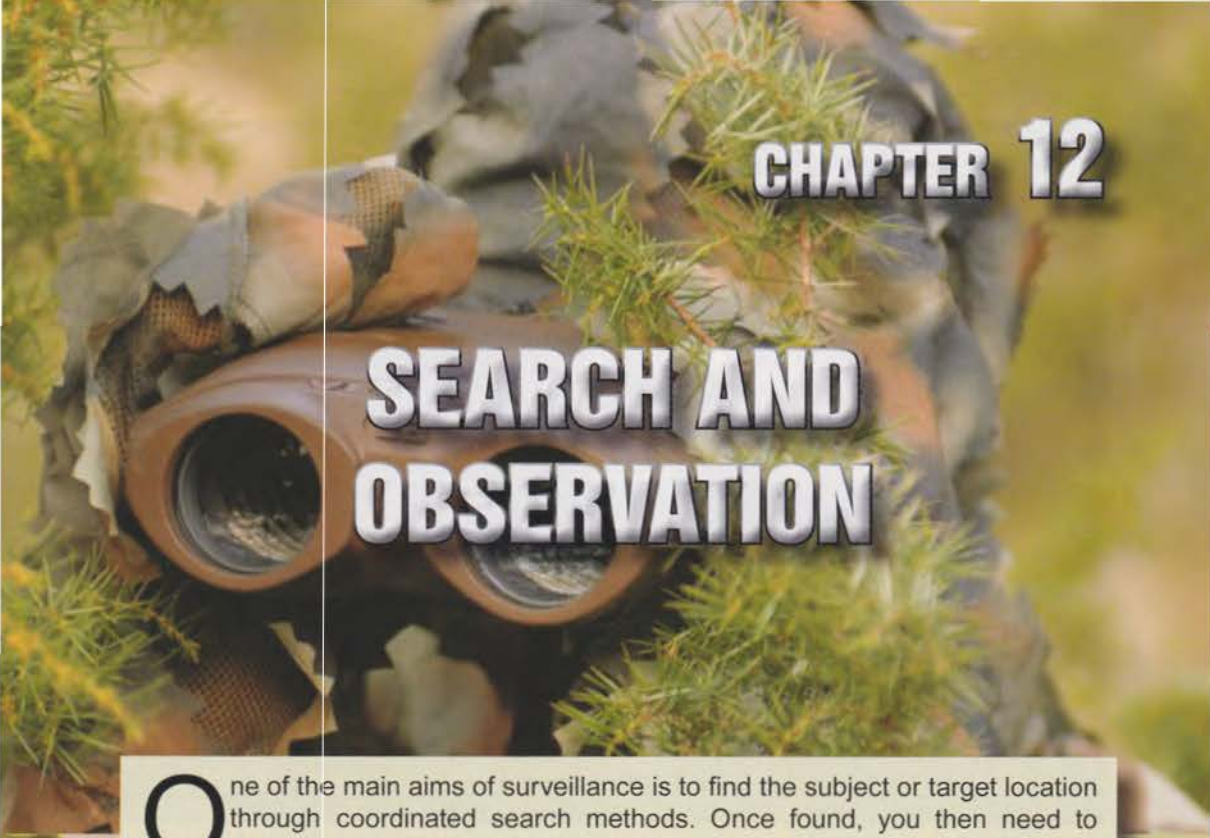
I have used this technique in the past for rivers. By drawing the shape of the river on your over-lay as two lines and then between them I added an arrow showing the direction of the current flow. Information on crossing points, river speed and depth was also added. As this information was not critical, the over-lay could be removed and replaced as and when required.

Panoramic sketch sheet

You are required to add information relating to the sketch in the boxes located at the bottom of the sketch. This information is used to help other operators identify the features and important information on your sketch.

For example

- Left and right of arcs, these must be magnetic bearings taken for the spot in which the sketch was drawn. Also the axis that is to be taken needs to be noted in the same way.
- Date, time, group, along with the visibility and a 6 figure grid reference of your location.
- The operator who drew the sketch must print their name.
- The six empty boxes along the bottom of the sketch sheet are for the sketcher to add words to important areas of the sketch, such as a description or distances between your location and that of the target.



CHAPTER 12

SEARCH AND OBSERVATION

One of the main aims of surveillance is to find the subject or target location through coordinated search methods. Once found, you then need to 'fix' (observe) and send detailed real time reports (triggers) of observed activities back to other team members and the operations room.

Topics covered

- **Overwriting maps**
- **Building search**
- **Searching different terrain**
- **Boxing**
- **Observation skills**
- **Judging distance**
- **Mil-dot system**

Search & observation

One of the main aims of surveillance is to find the subject or target location through coordinated search methods. Once found, you then need to 'fix' (observe) and send detailed real time reports (triggers) of observed activities back to other team members and the operations room.

Before deploying onto the ground or near the suspected target area, a detailed map study using a 1:25,000 map must be conducted. This entails looking for likely positions such as dominating high ground, thick wooded areas that offer cover, buildings that offer both protection from the elements and allow storage of items and finally, likely transiting routes that may be being used by the subject; for example dead ground, water ways and disused tracks or byways.

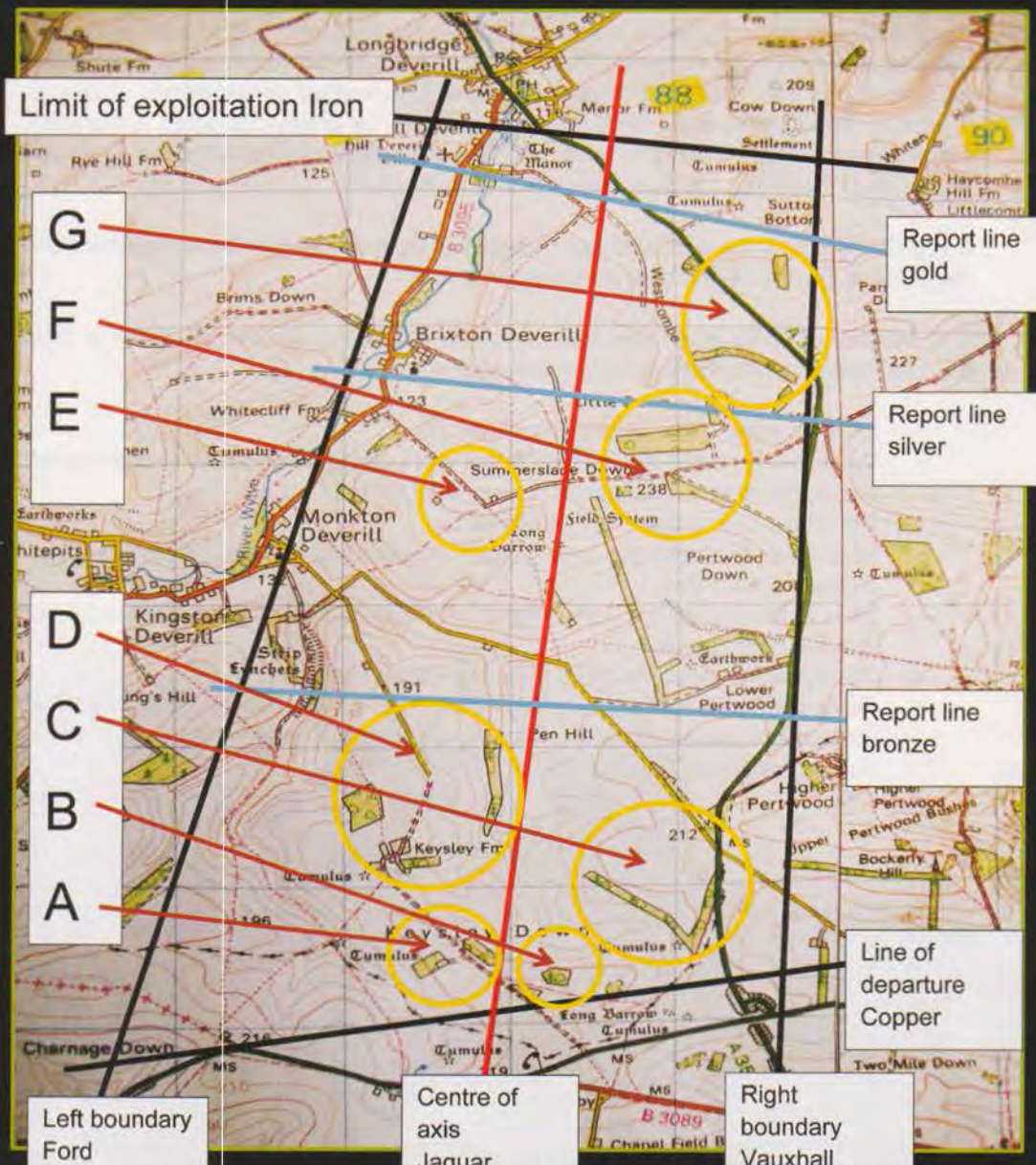
Once these areas have been identified, record their grid references and plot them on your map. Give each of the features/locations a nick name. This can be anything, as long as it has no bearing on the actual feature.

Remember that most communications in the civilian sector will not be secure. If you have been given a very large area to observe and search, break the ground down into smaller, report lines. By having a number of teams spread over a wide area, you can be monitored and guided through these report lines. For example, these lines can be used as limits of exploitation. This means that a single team are forbidden to cross until authority is given. In this way, when a team that has had a much easier section of ground to cover, (resulting in them getting to the report line first) they will have to go to ground and wait. From this location, the team should be over watching the ground ahead until all other teams are level.

Left and right boundaries must also be used. These are known as avenues of advance. They limit the chances of teams encroaching into each other's area. In close environments such as the jungle, encroachment could result in a 'blue on blue' (friendly call signs exchanging fire between themselves). All report lines and boundaries need to be given nick names or numbers.

Here is an example of a map that has been studied and then marked with likely areas to search. Report lines and team boundaries (avenues of advance) can be marked on the map if operating in a non-hostile environment. But in hostile environments, ensure you write the information on a sheet of acetate, which can be used as an overlay.

Looking at the diagram of the over written map section, you can see how confusing it can become, remember that you may have to navigate with this same map.



Buildings

Buildings can slow the advance down. Sometimes, it may be sensible to bring the advance to a halt for a number of hours until the buildings have been completely searched.

There are fewer buildings in the rural environment, so if you are close to the expected target area you must consider them a threat. Buildings are used for a number of different reasons and you never know what you will find inside. Therefore, static observations need to be conducted for a period of time before you even think about going closer and looking inside.

By rushing in, you may never come out, buildings could be rigged with technical devices or even booby trapped. Criminal gangs will use old buildings, warehouses and the like in the rural environment to house high valued stolen goods. If this is the case, the buildings are likely to be monitored, so always conduct a standoff reconnaissance first. Once you have been watching the buildings for some time and are satisfied that they are unoccupied, move in closer.

If you do have to enter the buildings to search, leave one or two team members on the outside as your over watch and early warning.

The method of entry is a huge topic and one that I am not able to cover in this manual. However, here are some basic pointers.

- If it's too easy, think twice before using it.
- Once inside, leave a link man at the entry point, he must have both visual and radio communications to your cover team.
- Don't take any longer than you need to.
- Stay clear from danger areas, such as standing in front of closed inner doors and windows.
- Look at which side the door hinges are located; this will let you know which way the door opens.
- Gently try the doors to see if they are indeed locked.
- Once you have extracted, stay in a position of over watch for a period of time before moving off. You are waiting to see if anyone approaches the building after you have left.

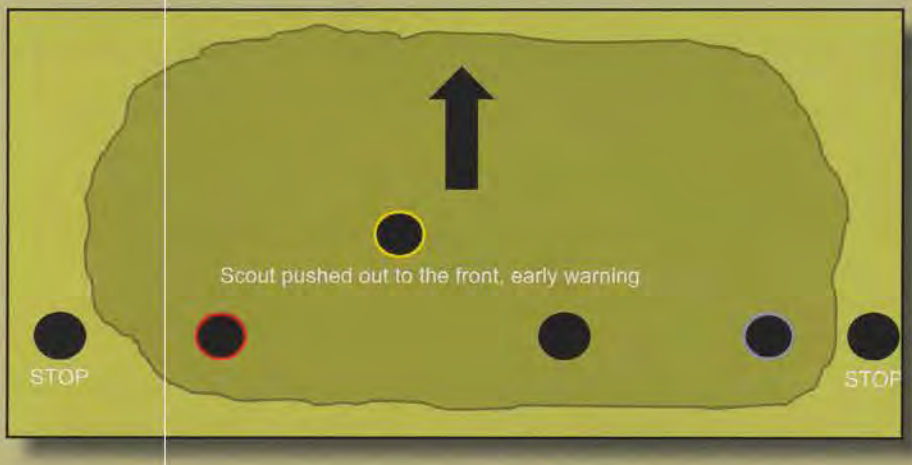
SEARCHING DIFFERENT TERRAIN

Large wooded areas

These can be very tricky and time consuming for any team to search and may reflect a number of different ways in which to search, depending on your overall aim. If your objective is to flush out an enemy force, use an extended line formation using 'stops' (team members on both outer edges of the wood) to identify any fleeing enemy. But if trying to find your target, you will need to move slowly as a team boxing through the wood, shown overleaf.

Extended line

From the diagram, you can see that the stops are located right on the outer flanks of the wood block. If there were enemy soldiers fleeing from the woods, they would be identified as soon as they broke cover. The scout is always positioned out to the front acting as early warning, with the command structure in the middle controlling the team's movement.



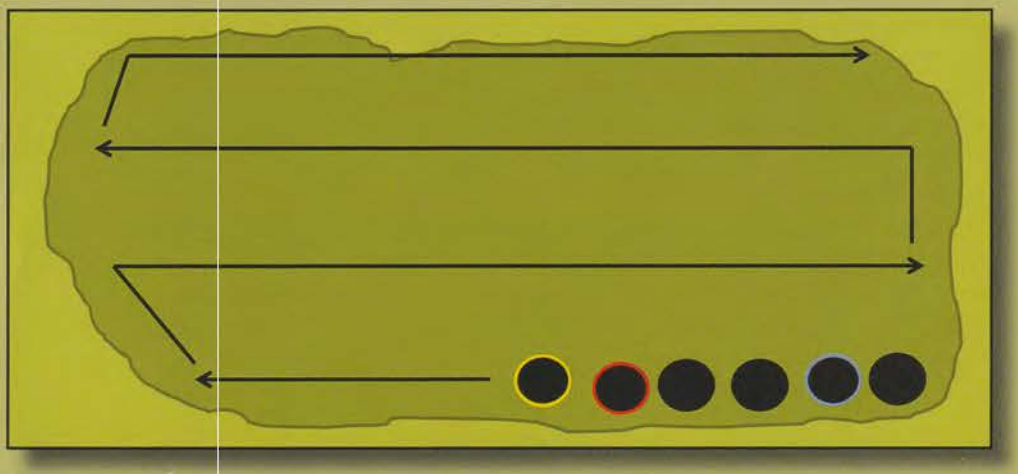
Jungle drills

If operating in a jungle environment where the sheer density of the undergrowth is a sea of green, you may require more than one team to fulfil the search. If this is the case, you must consider the threat of a 'blue on blue'.

There is a method that is used by UK special forces to help prevent this happening. A strip of brightly-coloured ribbon is sewn around the inside of the jungle hats. When teams are conducting the search, they will turn their hats inside out revealing the ribbon to clearly identify each other.

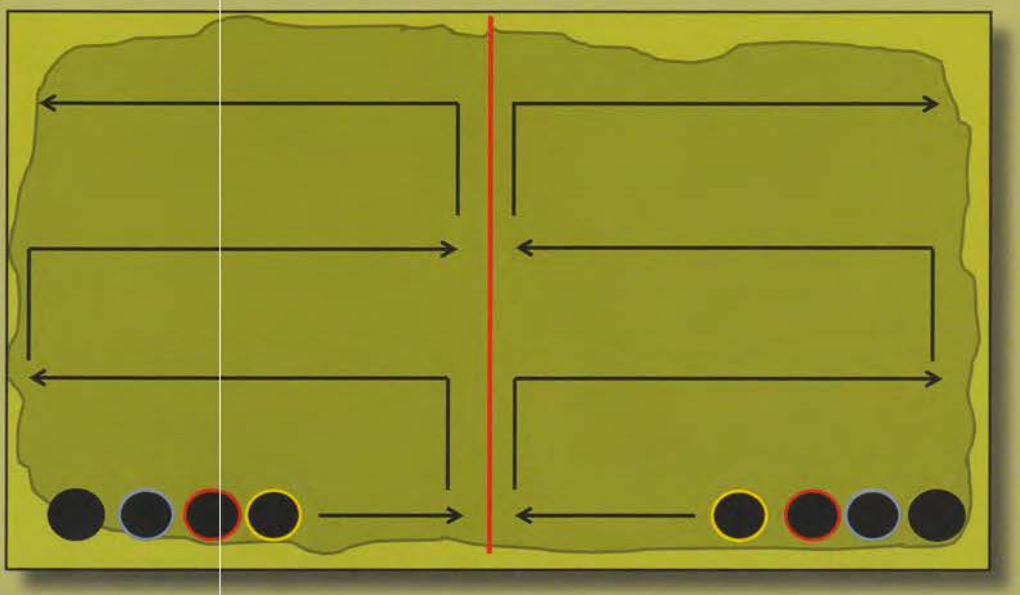
Boxing

Diagram showing the boxing method used as a single file formation. Here the team will zigzag back and forth throughout the entire wood block.



Boxing with more than one team

In this diagram you can clearly see that the two teams will meet a number of times on their boundary line. This is where the ribbon method is used by the UK special forces to help prevent a blue-on-blue situation.



Observation skills - open area search

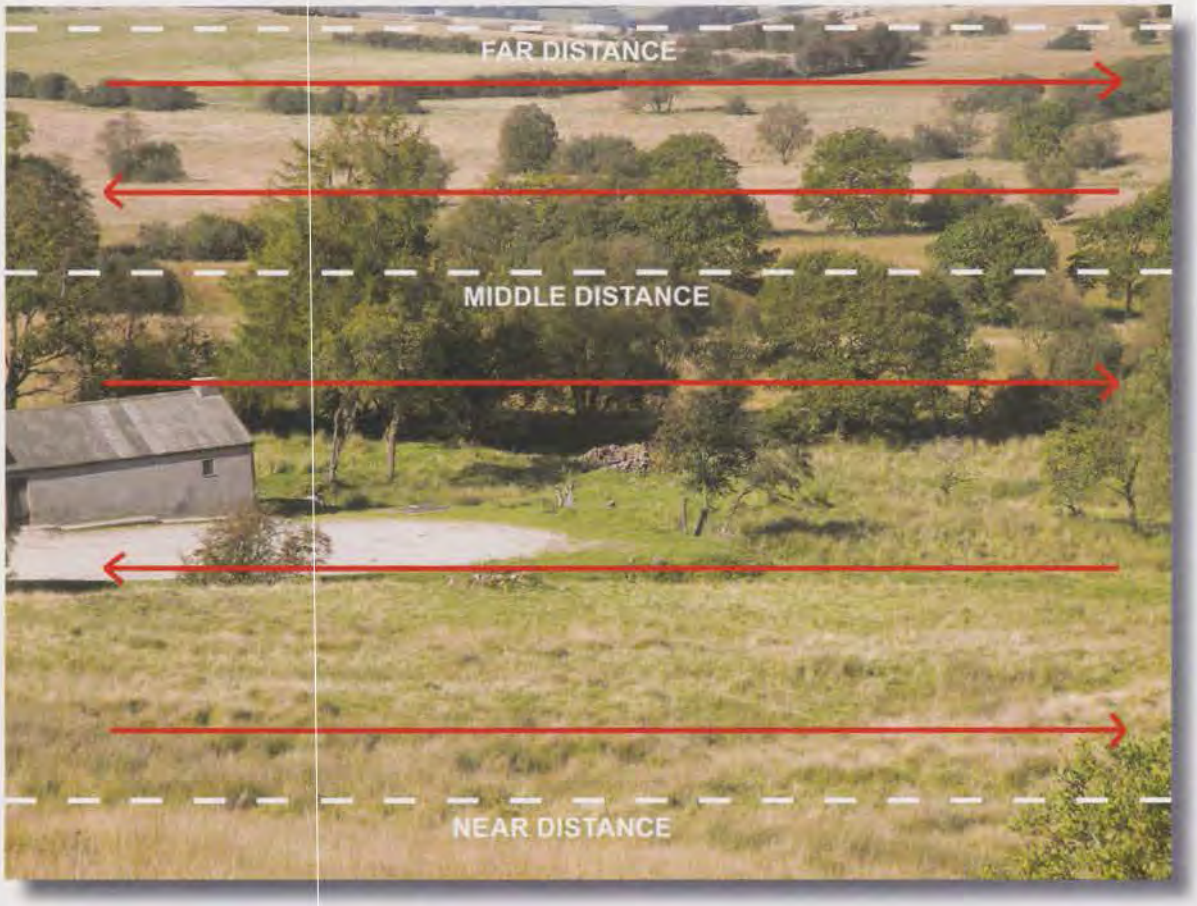
Normally conducted from an area of dominating ground, which overlooks the operational area.

Here a group of reconnaissance snipers are conducting an area search exercise. This is run by the directing staff who place out items of equipment at different distances to see how many of the items the snipers can accurately identify. The snipers first have to draw a free hand panoramic sketch of the area they are observing. This must be broken down into distances as covered in the last chapter. From here, all items identified will be located on the sketch and logged in the information boxes.

Scanning the ground

Thinking back to how things are viewed, you can use this method to aid you in the search. Break the ground down into near, middle and far distances, then scan each of the sections from left to right, starting at the far distance. The reason for starting at the far distance is that after a while your eyes will become tired and things are easier to spot at a closer distance with tired eyes.

Scanning the area to your front must be done in this systematic way. Once you have completely scanned your far distance and remembering to overlap your trail of vision slightly so that you don't leave gaps, move into your middle distance and start this process again.



If you are unable to observe from the most dominating position, you must scan the dominating positions first. You may be under observation yourself!

SKILLS TIP

If at any time you think you have seen something which looks out of place or reflects a sudden movement, push into cover and go to ground. Use your spotting scope or binoculars to examine it closely. If you do not have any binoculars or spotting scopes but do have an SLR camera, fitted with a powerful telephoto lens such as a 300 or 400mm, this will work very well.

On a recent deployment in the hostile environment of Marjah, located within the lawless Helmand Province of Afghanistan, I worked alongside the US marines. They were conducting their defensive actions to force the Taliban to retreat from this area and lay down arms. On one particular day, the camp came under attack, firstly there was a large explosion on the outer compound wall followed by sustained small arms fire. As the marines took to their "stand to" positions, I noticed a marine sniper heading towards sentry post 3, I followed.

From his over watch position, the sniper could search and scan approximately 300 meters to his front, before the start of a line of buildings. We started taking small arms fire with rounds smashing into the sand-bagged wall of the compound. The marine sniper was calmly scanning to his front in an attempt to locate the firing position. I asked if he had any possible eyes on, to which he replied "no but I think he's somewhere in those 3 areas of shadow".

I looked through my sight and could not see anything either, then I remembered seeing a marine photographer taking pictures with a large 400mm telephoto lens. Over the radio I asked him to come to my location. The sniper said "this isn't the time for photographs man", to which I replied "I know, but he can help you".

The photographer appeared with his camera and the much needed 400mm lens. I told the photographer to take photographs of the three area of dark shadow, setting the camera's exposure to highlight shadow detail. The sniper looked at me and said "what the fuck are you doing"! The photographer zoomed in with his powerful lens and started taking frames.

When finished, he checked the pictures on the LCD screen and gave the sniper a "seen" or "not seen". The first picture came back "not seen", the second picture came back "unsure, then yes, yes he's there, bottom right corner look." I took a look at the picture. It was definitely the shooter. I informed the sniper who did his job and that was the end of the shooter. Afterwards the sniper looked at me and said "Good job man, wait till I tell the guys". With that I went away happy knowing that someone had learned something that day.

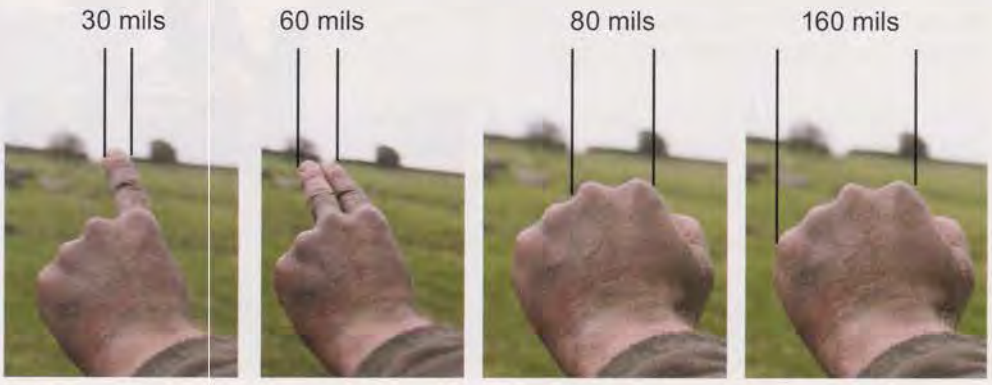
There are a number of different methods that can be deployed to aid you when bringing other team members into a suspicious area or position.

Direct method

This method would only be used when indicating an obvious target. However, you must still give the range, location and description of the target.

Hand angles

Experienced operators can use this method on difficult targets at long ranges, again used with a reference point. By extending your arm out to the front, in the direction of the target, close one eye. Use a combination of fingers, knuckles and fist to record your target. In order to ensure this method is accurate, you must record your own hand angles with a prismatic compass first.

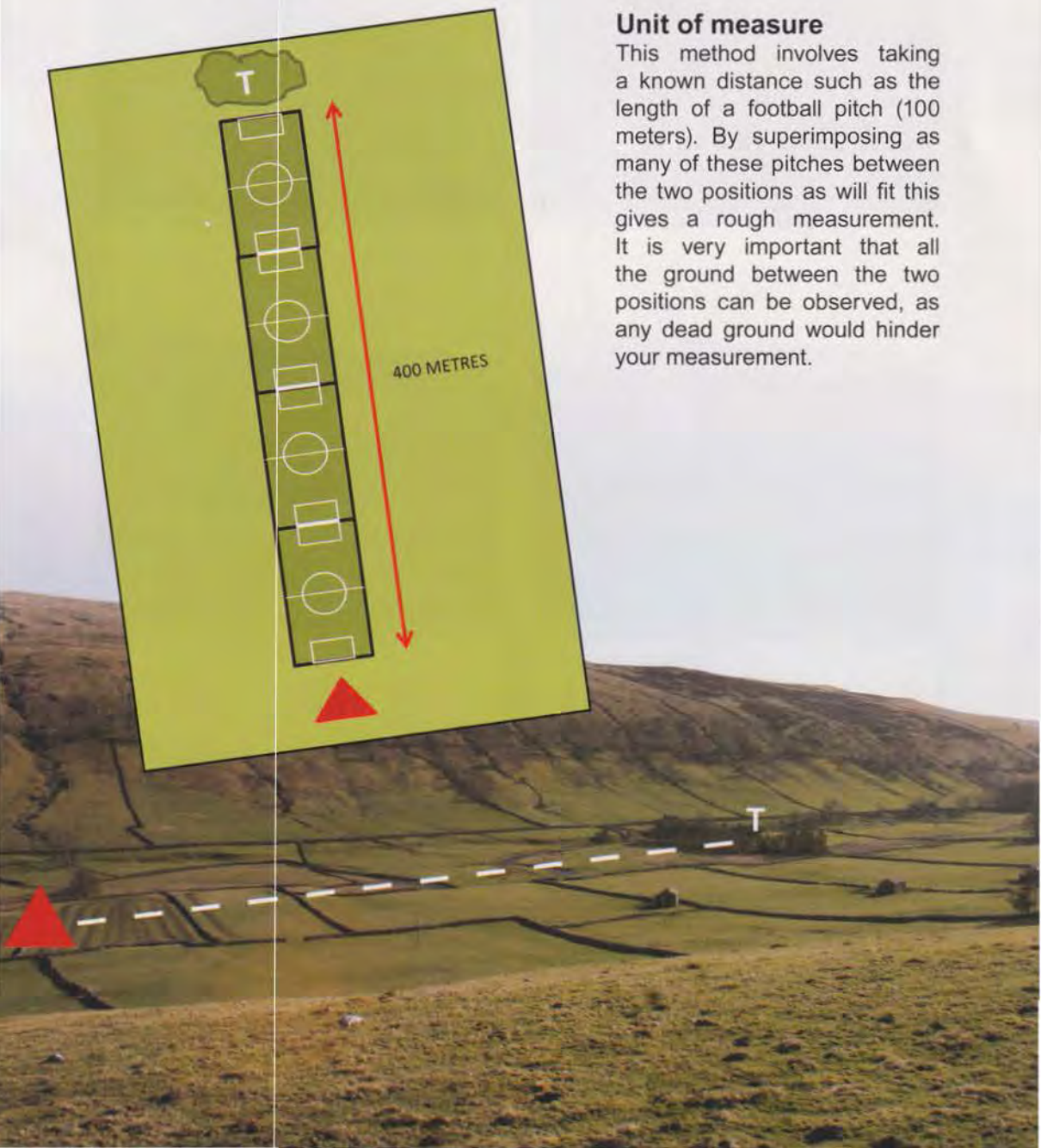


Scanning the ground in front

When looking through your optics, you see your subject is located for example, in the middle ground indicated by the yellow triangle. Your next move is to judge the distance between your location and that of the subject, this can be done in a number of ways.

METHODS USED TO JUDGE DISTANCE

- Unit of measure
- Appearance method



Unit of measure

This method involves taking a known distance such as the length of a football pitch (100 meters). By superimposing as many of these pitches between the two positions as will fit this gives a rough measurement. It is very important that all the ground between the two positions can be observed, as any dead ground would hinder your measurement.

Appearance method

Distances are judged by what an object looks like at different distances. The military are trained to use how soldiers on the battle field appear at different distances. It's a method that works very well.

METHODS AND AIDS TO JUDGING DISTANCE

- **Patrol average**
- **Halving**
- **Bracketing**
- **Laser range finder**
- **Mil-dot**
- **Plotted via a map**

Patrol average

This is where each member of the patrol makes a calculated estimate as to what they think the distance is, with these estimates the average distance is worked out. This is very unreliable and in truth should not be used.

Halving

This is best used when having to judge very long distances. The distance to a feature which is located half way to the target is estimated, this distance is then doubled giving a rough distance.

Bracketing

An estimation is made regarding what is considered to be the maximum distance between positions. Then the minimum distance between the same two positions is estimated. The accepted distance is set mid way between the two.

Laser range finder

The laser range finder works by flight time and distance. By firing a narrow laser beam on to an object, which is then reflected back, the equipment calculates how long the beam takes to return and provides the distance.

There are a number of natural conditions that will interfere with this equipment, such as smoke, fog and heavy rain. Initially the beam is narrow, but over larger distances the beam will widen and can become less accurate, more so if your object is in the cover of trees.

Military models can be coded to prevent them from being jammed.

Mil-dot

The mil-dot is a sight graticual picture which was designed to aid snipers when judging distance. There is a simple mathematical equation to follow in order to arrive at the target distance. Take the average known height of an object, multiplying it by 1000 and then dividing it by the number of dots that fill the sight picture. This will give you an accurate distance to the target.

The centre of the cross hairs equals 1 dot, it is missing to allow for better aiming.

In this diagram the silhouetted target has filled a total of three mil-dots.

Doing the maths

From the known average heights chart, shown opposite, the average height of a man is 1.85 metres.

1.850 X 1000 divided by 3 = 617 meters

Average known height chart

Average Known Heights Chart - Metres		
Object	Height	Width
Mans Full	1.850	0.350
Man Waist Up	1.300	0.350
Mans Head	0.250	0.200
Telegraph Pole	7.000	0.200
Road Sign	0.600	0.600
5 Bar Gate	1.300	3.400
Door	2.000	0.850
House Brick	0.600	0.200
Lamp Post	5.500	-------
Car	1.300	3.000

Factors affecting judgement of distance

There are some circumstances and environmental conditions that will affect the way in which you see your subject or target area. These conditions can make things look further away or even closer than you think they are.

Why things seem further away

- If you are laying down when observing
- Observing down a re-entrant or valley
- If the subject is smaller than the objects around him
- When the light conditions are bad
- If you are looking into the sun

Why things seem closer

- If you are looking up at your subject
- When there is dead ground between you and the subject
- If the subject is bigger than objects around him
- When the sun is bright and behind you

CHAPTER 13

CLOSE TARGET RECONNAISSANCE

Close target reconnaissance is conducted against known or suspected locations prior to any operation taking place, this could be in the form of a quick drive by to a prolonged complex infiltration. Either way, there are a number of phases which must be followed if your CTR is to be productive.

Topics covered

- **Planning and preparation**
- **Reconnaissance action**
- **Methods of CTR**
- **Infiltration**
- **Recording information**
- **Equipment**
- **Special requirements**

CLOSE TARGET RECONNAISSANCE

Close target reconnaissance is conducted against known or suspected locations prior to any operation taking place, this could be in the form of a quick drive by to a prolonged complex infiltration. Either way, there are a number of phases which must be followed if your CTR is to be productive, these are as follows.

- **Planning and preparation**
- **Reconnaissance action**
- **After reporting**

Phase 1

Planning and preparation

CTR needs extremely thorough planning - your safety is paramount, this is the closest you will come to the target, who may be a hostile enemy.

There is a saying that time spent on reconnaissance is time seldom wasted, this means take as much time as is possible. Never rush a CTR, take your time and get it right. I have conducted CTR's that have lasted many nights, as I wanted to make sure I had the right information when giving my back brief and options to higher chains of command. There is nothing worse than being asked a question and not knowing the answer because you didn't spend the time getting it.

- Most likely you will be conducting your CTR at night, so remember that nights are shorter in the summer and there's less natural cover in winter.

- Always get up to date information on the weather situation, not only for that day and night but for the whole week. There is nothing more frustrating than conducting your CTR at night as the fog and mist rolls in, this may give you extra cover to freely move around, but means you have to move closer to your target location and greatly increases the risk of compromise. Rain has its pros and cons also; it's good as generally people don't like to go out in the rain which means we can again move around more freely, as the noise of the rain will mask your movement. The down side is that the ground becomes soft and sloppy, this could cause you to leave ground sign such as foot prints and slip marks.

- The moon state is a very important piece of information to know, as a full moon in a clear night's sky will make movement across open ground very risky. Your body shape and movement will be illuminated against the dark backdrop, you may even find that the moon is so bright that it creates a shadow, if the shadow is large enough it could give your position away.

- Local areas must be examined through detailed map reconnaissance before deploying anywhere close to the ground, look for any possible air photography and previous patrol reports on the local area. These will give you detailed information on known routes, buildings, danger areas and so on.

- Are you going to need specialist equipment for the task, and if so do you know how to use it or will you need to take attached personal. If taking attached personal, make sure they have a working knowledge of the team's standard operating procedures (SOP) and all "actions on".

- Intelligence updates must be obtained before heading out on task.

- Full orders must be given to all members of the task, both reconnaissance group and protection group.

- Rehearsals, the team members must take time to rehearse for the task in hand.

Phase 2

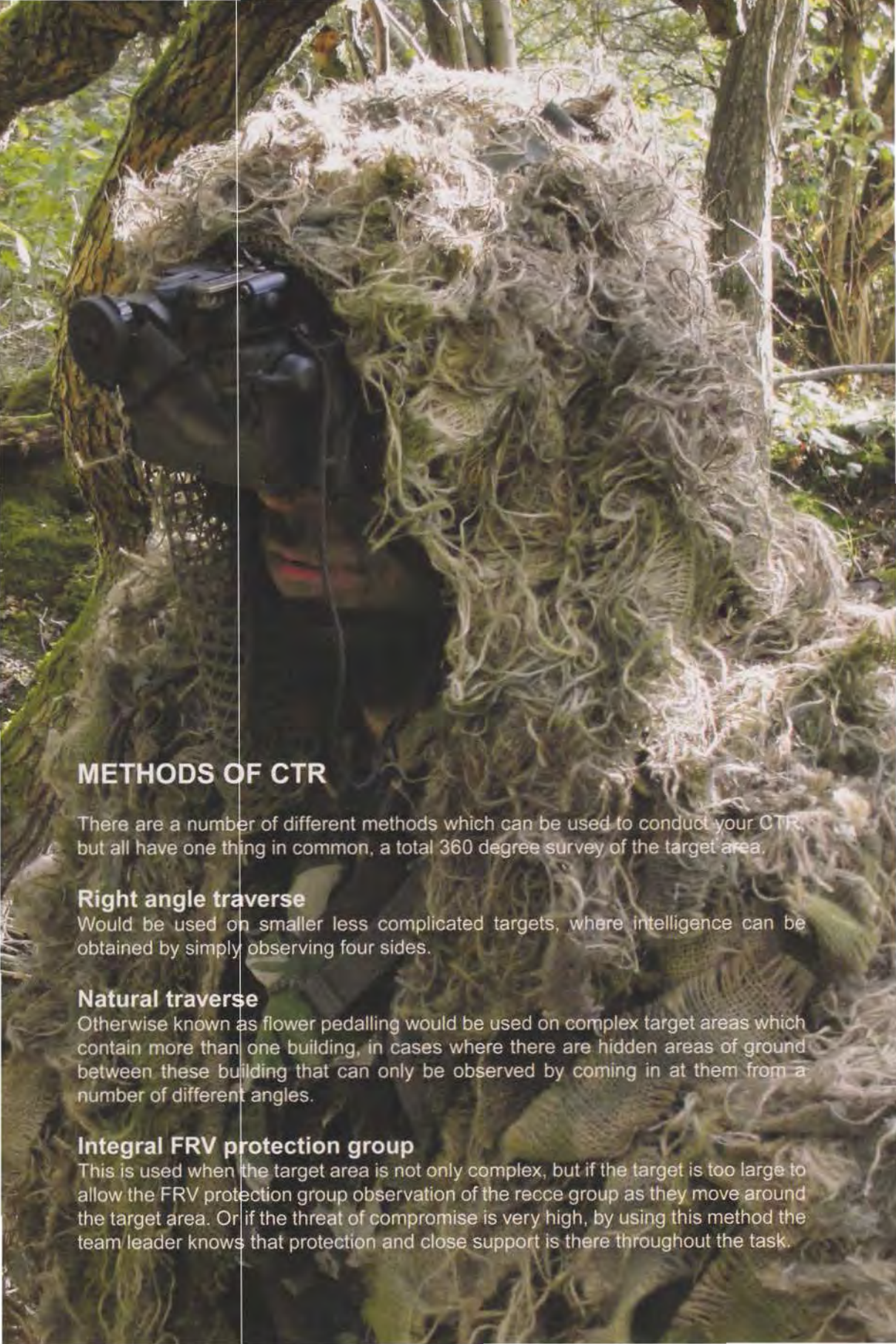
Reconnaissance action and methods of CTR

- Once the team is in their FRV location, the team leader will split them into a recce group and protection group, which the 2ic will be in charge of as the CTR is been conducted. The FRV must be positioned in a location which affords observation of the target area but is reasonably distant to not be compromised. The protection group will get their warm kit on if needed whilst the recce group observe their arcs, once the protection group are ready to take over, the recce group will remove any items of kit and equipment that will not be needed, leaving it in the FRV.

- Before the recce group moves off, the team leader and 2ic will have a face to face covering the actions on, such as timings, directions, bearings to ERV, communications check and "actions on" the recce group being compromised and no return.

- It may be that a hide location has already been found or even constructed on an earlier CTR, if this is the case the FRV group can go straight into a routine. If the CTR is to take place from an operational hide, the team will already be in routine.

Recce group team leader gives brief to FRV protection group



METHODS OF CTR

There are a number of different methods which can be used to conduct your CTR, but all have one thing in common, a total 360 degree survey of the target area.

Right angle traverse

Would be used on smaller less complicated targets, where intelligence can be obtained by simply observing four sides.

Natural traverse

Otherwise known as flower pedalling would be used on complex target areas which contain more than one building, in cases where there are hidden areas of ground between these building that can only be observed by coming in at them from a number of different angles.

Integral FRV protection group

This is used when the target area is not only complex, but if the target is too large to allow the FRV protection group observation of the recce group as they move around the target area. Or if the threat of compromise is very high, by using this method the team leader knows that protection and close support is there throughout the task.

Right angle traverse

The recce group leaves the FRV and moves towards the target area, once the group is level with the target they will start to close in very slowly, stopping a number of times to watch and listen.

They will move as close as is tactically possible without risk of compromise. Once the team is as close as they can get, they will go to ground and observe to the front, making mental notes of what can be seen. It is a good idea to give individual tasks to team members, this way things are less likely to be missed.

When conducting a CTR it is always a good idea to carry a Dictaphone to quietly record information. When the team is confident that all information required from that location has been recorded, they will extract back away from the target area, back into cover and out of view of the target. The information can then be collected from all team members.

The team must extract back in bounds, always with a set of eyes watching the target area, never walk backwards as you risk injury or compromise.

When all the information has been collected, and the team have conducted a listening stop, to ensure there has been no follow up, they will inform the FRV group via the radio that they are moving to the next point in the traverse.

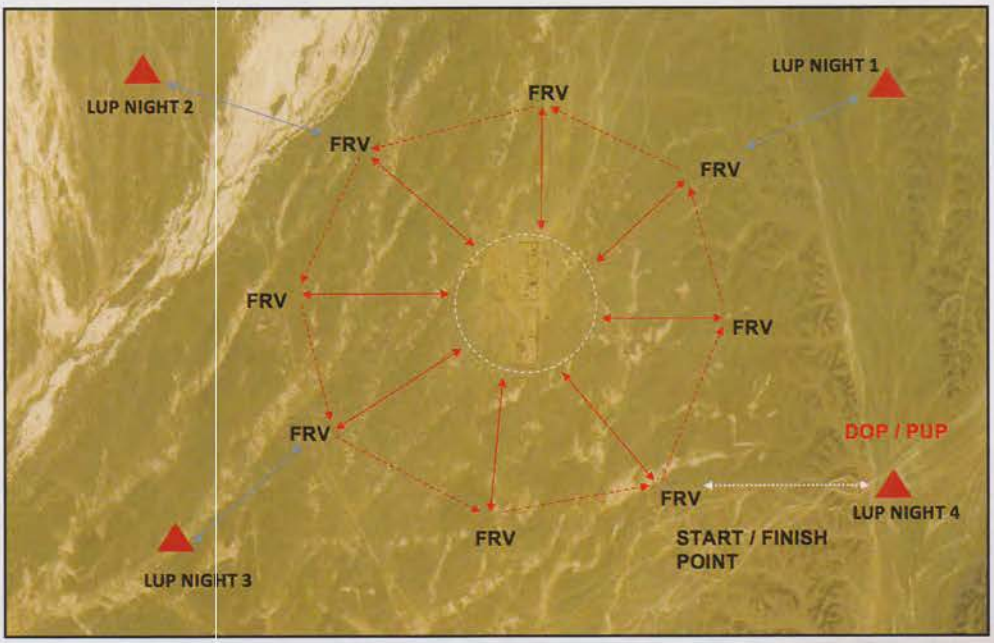
Set a bearing if needed, and conduct a map study before the team moves off, starting the process all over again, this continues until the full 360 degrees has been conducted of the target area. When complete, the recce group will head back to the FRV protection group, here all information will be shared with the rest of the team before moving out of the area. At no point should information on the target area be discussed over the radio.

Natural (flower petal) traverse

This diagram shows the Recce group traversing around the target area, closing in to the target at relevant points, giving the team the best position to observe the buildings. As with the right angle traverse, the recce group will collect all information in the same way and collate all information every time they extract back from their point of observation.

The more complex the target area is will result in the recce group needing to close in and observe from more angles. This will of course, have a knock-on effect with the time frame, for this reason you must always allow extra time for this eventuality.

Natural traverse with integral FRV protection group



If your target area is very large, or the threat is very high, it may be necessary to conduct a CTR with an integrated FRV protection group.

The integral FRV protection group works by staying off to a flank, giving the recce group space to manoeuvre, but still within distance to react if needed. The recce group will move off from the FRV location each time and insert onto the target area to conduct the CTR, once the team are happy that all the information required has been collected, the recce team will move back to the FRV group.

Then as one patrol, they will move to the next FRV location and start the process again, the FRV protection group getting themselves ready and the recce group moving off and inserting into the target area as before. This method will continue throughout the night until all information is recorded, if the target area is so big that it is going to take more than one night to complete, the recce group will extract back to the FRV protection group before first light, now a layup position can be found and occupied through the daylight hours.

This type of layup position would be some form of surface hide, which would be located as far away from the target area as time allows.

INFILTRATION OF THE TARGET AREA

Your instruction may be to gain information on items or persons located within a target building. If this is the case you will have to go closer still and penetrate your target, known as an Advanced Target Recce (ATR) it can be carried out in two ways.

Overtly

In the daytime under a pretext, this will allow you to gain access to the compound, using a mini-covert camera worn on the body to obtain your film evidence and even to record audio conversations for intelligence gathering. This can be classed as your daytime rehearsal. You have now gained an idea of the compound's layout, study your covert footage as many times as is necessary, making it easier to navigate around at night in the dark should you need to.

Covertly

Mostly carried out at night with the use of night vision goggles, zero light video cameras and Infrared cameras.

This is a very skilled area of surveillance and should only be conducted by operators who have been trained to do this type of work, the faint hearted should stay clear.

An operator gains entry on an advanced target recce

Compound in Afghanistan observed through night vision optics from a static hide location

Movement inside

Once inside the target area, your movement must be slow, as your field and depth of vision will be narrowed due to the goggles. The last thing you need is to walk into something, knocking it over and compromising the operation.

It is always good to work in pairs, this way you can cover each other's movements, should it go wrong you have support at hand.

Two people will always be able to fight their way out of a situation better than one, when you have found what you are looking for, you need to make sure you get all the information required, going back at a later date may be impossible.

RECORDING INFORMATION

- All information must be accurate, the use of a small microphone connected to a dictaphone is ideal for recording information, this also leaves your hands free.
- The whole operation needs to be conducted and recorded in a systematic fashion.
- When conducting any CTR on buildings and their grounds you must remember the following headings.

Buildings

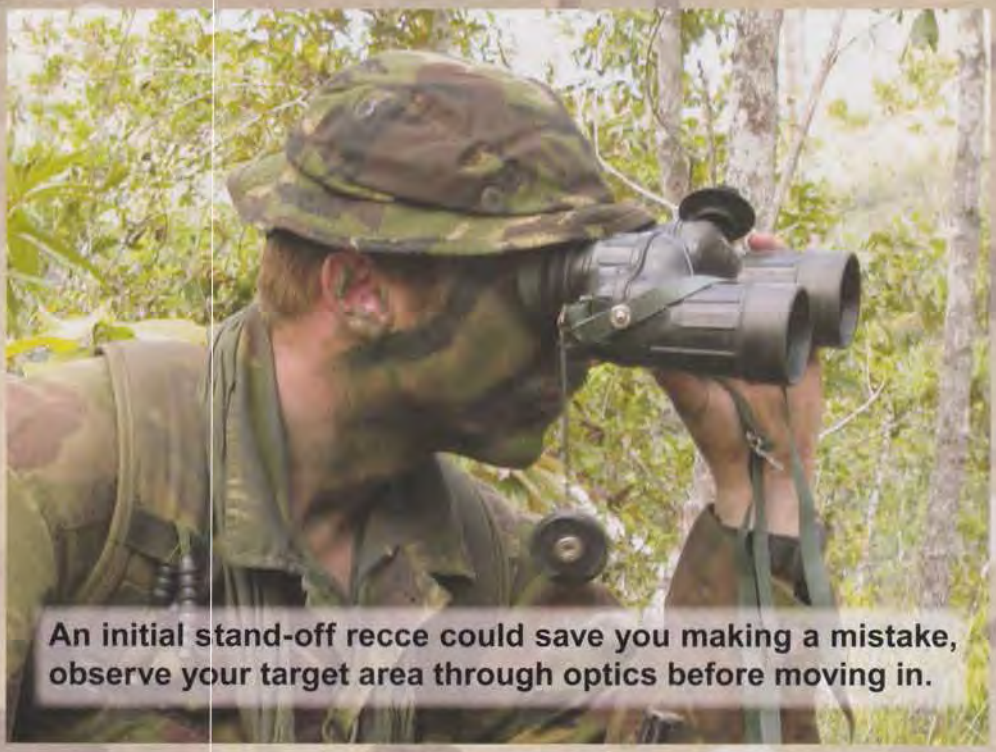
- Building number or name
- Type and style of building
- Windows and doors - which way they open, in or out
- Lighting - timed or motion sensor
- Boundary walls, fences, height and construction
- Gates height and construction
- Other security measures
- Roof condition

Grounds

- Construction of driveway, brick, gravel, grass and so on
- Grassed areas in size - small, medium, large
- Planting are they young or mature all year round or summer flowering
- Water features
- Are the grounds on different levels
- Sheds and out buildings
- Paths
- Illuminated areas
- Covered approach routes
- Escape routes
- Main supply routes to building
- Dead ground in and around area
- High ground in and around area
- Wooded areas
- Surrounding areas and locations
- Public areas - shops, pubs, post office
- Local transport services - bus, trains

You may wonder why you need to know where the shops are in the rural environment, simply because it is a means of indicating the subject's intentions.

If the subject leaves their property and turns left at the end of their driveway, as the hide team you can trigger to the mobile team that the subject is turning left towards the shops. This will allow time for the mobile team to get into a position to pick up.



An initial stand-off recce could save you making a mistake, observe your target area through optics before moving in.

Specialist equipment for CTR operations

There are a number of reasons why you may be tasked with conducting a CTR which requires you to penetrate the compound of your target area, as mentioned previously, this could be done in the daylight hours, if for example, the target was a warehouse and you need to locate an item.

Although overt in your appearance, your actual pretence for being there is still covert, if conducting your CTR at night, you will require specialist equipment such as night vision optics to allow you to see where you are going and what you are looking for.

Once you have found what you where looking for, you may then be required to take photographic evidence, most hand-held video cameras have what's known as 'night shot' which when switched on will allow your camera to film in the dark.

These standard cameras are fine for close up work, but anything over 5 meters away may not be clearly recorded. You can be counter this by using a more powerful portable Infrared (IR) light source.

Covert Rural Surveillance

Two different military night vision aids, used by reconnaissance operators around the world on live operations.

Both of these systems can be attached to mounting brackets on either a helmet or the operator's face mask for covert work. The single monocular on the right can be worn around the operator's neck attached to a length of cord, brought to the eye to scan the ground only when needed. Although these are military issue, you can now buy similar items in the shops, with prices from as little as £250.

Preparing to conduct a night time CTR in Afghanistan

Special requirements and needs for CTR's

After conducting your reconnaissance of the target area, it may have become clear that the only way you will be able to gather evidence or intelligence is through a covert technical device, such as cameras or listening equipment.

You may have been tasked with filming a target location at night, but you discover on your CTR that there is inadequate light within the immediate location. This will not allow you to gather evidence via film in the dark, which means failing the task.

However, if you were able to insert, and conceal covert IR light sources around the target area, this would allow you to film from a safe distance.

This would then be classed as a 'CTR with special requirements'. If this style of operation takes place, the light sources will have to be retrieved at the end of the operation.

Elevated hide location, in position of observation

Covert IR floodlights

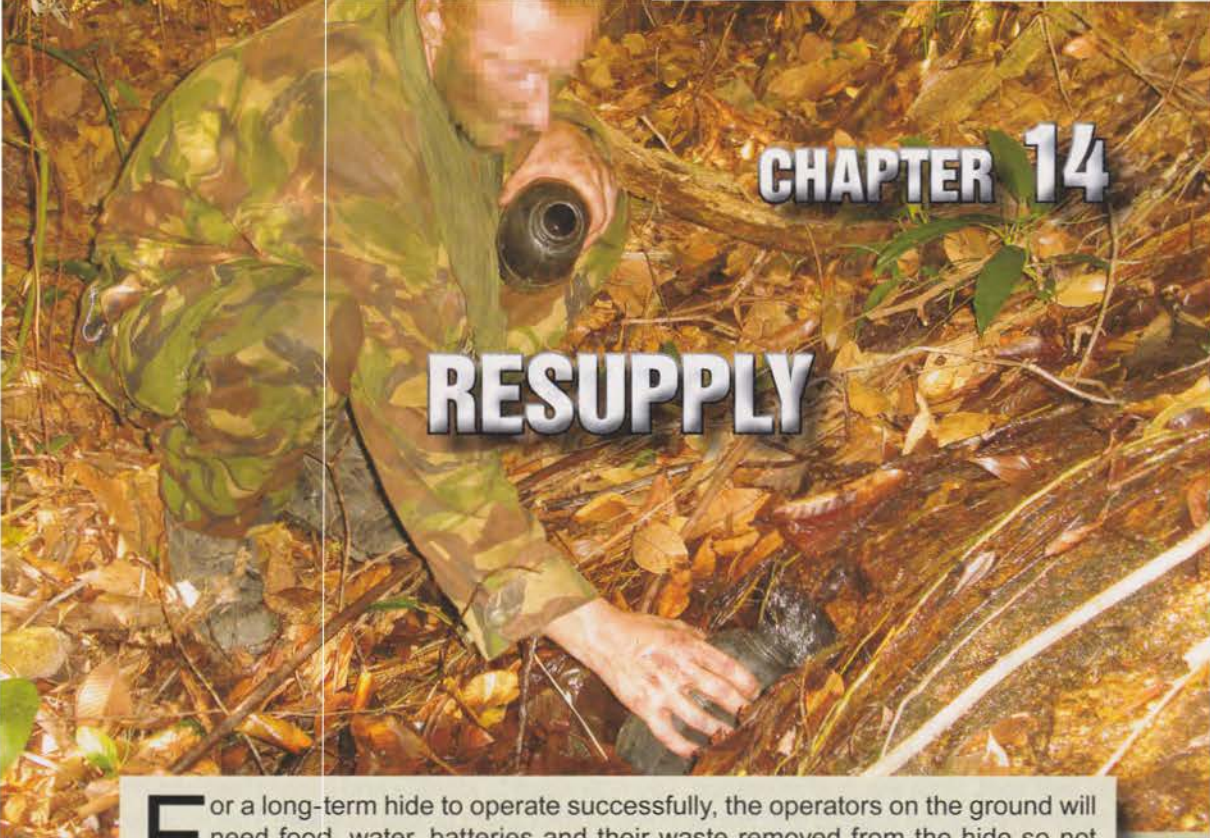
Deployment stages of the covert 'IR' floodlight

Stage 1 Find a position which affords concealment and the correct angle and height to achieve your aim, fix the flood light in place.

Stage 2 Next you need to blend and camouflage the flood light to its surroundings, start by placing a section of military scrim net over the front. This will start to break up the outline and reduce the shine.

Stage 3 Now apply natural or artificial foliage around the floodlight, adding to the overall concealment of the unit. Ensure that the same amount of care is taken when concealing the power cable.

The picture below was taken from 10 metres, this deployed floodlight has a range of 70 metres and of course, produces light which is invisible to the human eye.



CHAPTER 14

RESUPPLY

For a long-term hide to operate successfully, the operators on the ground will need food, water, batteries and their waste removed from the hide so not to attract wildlife and avoid illness. This is where the resupply becomes a critical part of any sustained covert operation.

Topics covered

- **Dead letter box**
- **Live letter box**
- **Mobile drop**
- **Multiple team resupplies**
- **Cache**

RESUPPLY

In order for any hide location to continuously watch a target area for long periods of time, there must be a planned method of resupply put in place. This is normally covered in the service and support phase of your pre-deployment orders. For a long-term hide to operate successfully, the operators on the ground will need food, water, batteries and their waste removed from the hide so not to attract wildlife and avoid illness. This is where the resupply becomes a critical part of any sustained covert operation.

Resupplies are conducted in all manner of ways using various modes of transport

- **Car / van**
- **Helicopter**
- **Parachute**
- **Boat**
- **On foot**

When inserting into your hide position, it is always good practice to keep your eyes open for a good resupply location. Once you have located it, take a GPS grid reading of that spot. With this grid reference, you now need to identify and record features or landmarks on the ground that will help you guide others to that location. This is done by identifying primary and secondary object markers. The markers used must be objects that are a permanent feature of the environment and not features that could be moved or displaced during your time in the hide.

There are three methods of resupply, each one very different

- **Dead letter box (DLB)**
- **Live letter box (LLB)**
- **Cache**

Dead letter box DLB

This is a position that is not marked or manned, but can be over watched by the team from a distance. The dead letter box (DLB) will normally be used where there is a high risk of compromise to the team. It will also be located closest to the hide's position and no more than 600 metres away, limiting movement on the ground.

The position will be found by natural features/landmarks, primary and secondary markers that have been pre-recorded on your insertion and sent back to the operations room. For example, a 10 figure grid reference will be given for the actual dead letter box drop site, followed by an approach direction or bearing to be walked. This will guide the resupplying team onto the first primary marker.

From here they will follow the directions...

From the 5 bar steel gate, walk 100 metres east along the stone wall until you reach a large tree stump. From there, follow the wire fence north counting the posts. At the base of the 8th, remove the turf around the base and find the DLB.

Your dead letter box must be large enough to conceal the items required. If a natural hide cannot be found, then one may have to be made. If this is the case, time must be spent getting the concealment / camouflage right and if possible, waterproofed.

A good place to have your dead letter box location is a road-side lay by; all lay bys now have rubbish bins. A lay by in the rural environment will, most likely, be surrounded by fields and woodlands making the approach easy. The rubbish bins will not get emptied in the middle of the night, so use these as your DLB drop site. Individuals pulling over late in the evening to empty rubbish from their car into a bin will not look suspicious.

The team on the ground needs to lay-up in a position of over watch, waiting until it is dark enough to retrieve the fresh items and switching with the old used items.

All those involved in the resupply should, if possible, be in communication with each other. This way, once the switch has taken place, the resupply team can pull back into lay by and remove the old items from the bin. In general, only homeless people would go rooting through bins and in the countryside there are very few homeless people. I would never use this method in an inner-city location, by the time you come to retrieve your items there's a good chance they would be gone.

If you intend to use a lay by to conduct your resupply, if possible do not use the same one as your drop off or pick up point. Also, ensure that all items are fully waterproofed.

Before you approach your DLB, go to ground, watch and listen. Once you are satisfied that you are all clear, leave a team member in over watch whilst the team moves forward, slowly covering each other. Ensure that you have one empty day sack ready for the fresh items and another for the old items. Make the exchange quickly and then extract back to your team member in over watch. Once there, move off and do not hang around in that location.

However, you do need to conduct a listening stop before you reach your hide's position to confirm that you have not been followed.

Above is a dead letter box that I once used on a live job. This was made from an old tree root that had grown in a spiral and had previously been used by an animal as a shelter. Once a piece of turf was laid over the top, it would have been impossible to find without knowing the primary and/or secondary markers.

Live letter box - LLB

A live letter box is a location, pre-arranged in order to meet another team to exchange larger items, or even evidence. The LLB location must a reasonable distance away from your hide's position. Remember to consider time and distance. Pick a location with natural features and landmarks that can be used as markers and an 8 figure GPS grid reference. Once again, identify more than one location.

Timings are very important when it comes to a live letter box. If your exchange is to be conducted by foot patrol at 0200hrs, you need to be there at least 45 minutes beforehand. This will give you time to set up the resupply location, over watch it and place out team members to act as catchers should the incoming resupply team over step the location. It may even be necessary to change the location to your secondary if your primary location is compromised by third party activity.

If the live letter box is to be conducted by members of a single hide team, then a simple meet and greet can take place. This must be done in a controlled manner with operators providing over watch and if needed, protection as the resupply, face to face takes place.

Time is very important, so the exchange of items/evidence must be carried out as quickly as possible. If evidence is to be handed over, the receiving team must be made aware of what they are being given and its importance.

Once the resupply is complete, the hide team must conduct a listening stop before reoccupying their hide.

Mobile live letter box

If the resupply is to take place by vehicle, you need to use a similar method as the pickup drill. This involves using countdown markers and commentary. As soon as you can see the vehicle headlights, you will need to guide the driver/commander onto your markers, be it 'CATS EYES' or another marking method.

A mobile live letter box can be marked in a number of ways, for example with a torch, cyalume, people, cats eyes etc, it's up to you. Whichever method you use, ensure all team members and more importantly the resupplying call sign, know what they are looking for. I have been on courses where the directing staff wanted the resupply site marked with every coloured cyalume possible. In my opinion, this makes it confusing and if nothing else, compromises the area.

Your resupply will come from the stores personnel. You must remember that you are the guys on the ground, so you need to dictate how it's going to work and not them. Once the resupply vehicle has stopped, time is very important and the hand over should be done as quickly as possible. Approach the vehicle commander's window and clearly identify yourself.

The quickest way to conduct the resupply is for your fresh items to be ready packed in the back of the vehicle; ready to reach in and swap new for old. If using a van, the vehicle commander could have the sliding side door opened with a covering grip as would happen with the covert drop off. Should a car be used to conduct the resupply, the boot should be opened simply by operating the catch inside the vehicle. Also, ensure that the vehicle's lights are off as this will help mask any movement.

Once the resupply is complete, move back into the undergrowth allowing the vehicle to move off and if possible, use the vehicle's engine noise to mask your own movements.

Remember that the hide team must conduct a listening stop before reoccupying the hide

Multiple hides

If operating a number of different hides on the same task, each hide must have its own dead letter box locations. This way there can be no confusion as to whose kit is whose. In the worst case this may lead to another team compromising or even engaging with (blue on blue) a friendly call sign. In the case of live letter boxes, it is best to conduct the resupply as one complete call sign. This means that all individual hide members chosen for the resupply team will meet at a pre-arranged RV point and from there will patrol together into the resupply location.

You must take time and distance into consideration, as some hide members will have greater distances to travel. The first team to arrive at the RV location will be responsible for its protection until the other call signs have arrived. When all teams are there, the next stage is to patrol as one body to the resupply location.

At the resupply location, team members will be tasked with protection, whilst others tasked as catchers in case the resupplying team over shoots. All individual hide resupply commanders will stay together with their items. Multiple resupplies can be confusing at the best of times, so use only one hide resupply commander to take charge of the entire "replen" once it is set up, this will eliminate any confusion.

Each team must have its kit placed into sand bags marked as T1, T2, T3, T4 and so on. This way when the resupply takes place, there's no confusion as to who is taking what. Water on the other hand always slows the resupply down, especially if numerous water bottles have to be used. In my view, it is simpler to use 1lt bottles of water, which can be bought in the shops. Once empty, the plastic bottles can be easily crushed taking up less space.

The military way would be to drop a 20lt jerry can and make the soldiers fill each water bottle one at a time! Not only does this take a long time but increases your chances of being compromised.

True Accounts

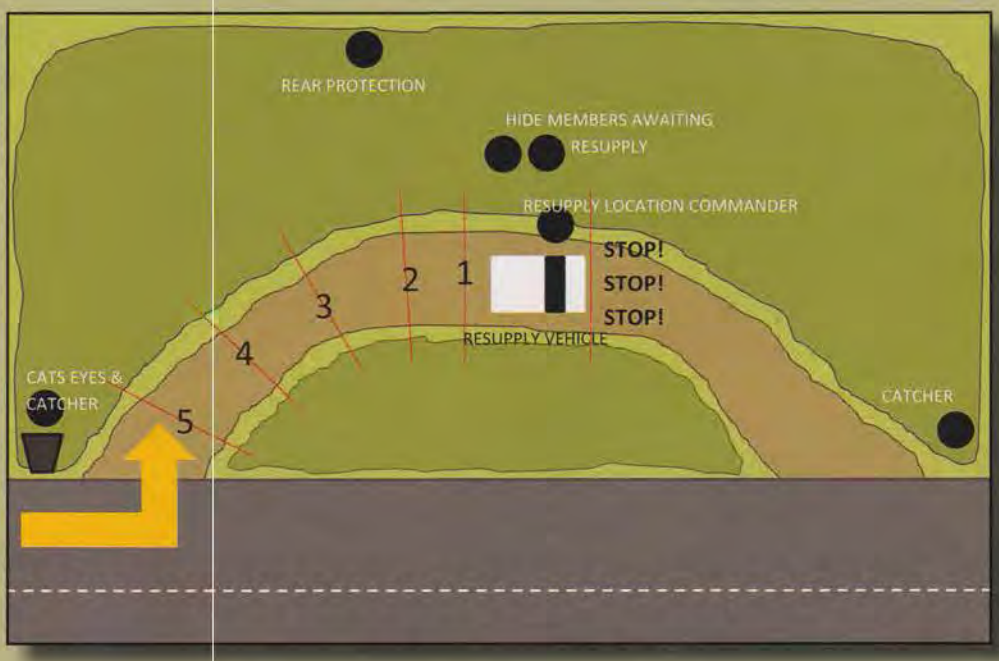
I remember one time in the jungle where there was no opportunity of a resupply for 72hrs. So it was decided that we would have to carry enough water to last us. The problem was that we didn't have enough water bottles between us. So one of my team members said "I'll carry the jerry can in my kit" which he did, problem solved.

If operating in a high threat area, you may not want the re-supplying team to leave their vehicle. If this is the case, brief the vehicle commander on the radio when they are en route that nobody exits the vehicle. When static, the ground team leader will inform them of the intended actions on being compromised. Once the resupply has taken place, indicate to the vehicle commander that they are free to go.

From the diagram, the resupply vehicle travels down the road until the cat's eyes are identified. At this point, the vehicle will pull on to the track, passing the first patrol member giving protection.

Now the resupply commander on the ground is communicating over the radio to the vehicle commander guiding him in, until giving the stop, stop, stop!

At this point, the ground commander will approach the vehicle commander's side window to give the brief. When both parties are satisfied, the resupply can continue. If at any point the area becomes compromised, the vehicle can drive straight out back onto the road and away.



REPLEN ORDERS CARD

REPLEN ORDER CARD

WHERE (GRIDS)

GRID LOCATION OF TEAM RV:

GRID LOCATION OF REPLEN:

IF COMPROMISED NEW GRID OF REPLEN:

WHEN (TIMINGS)

TIMINGS AT TEAM RV: WAIT NO LONGER THAN:

TIMINGS AT REPLEN:

ARRIVEL OF REPLEN: METHOD OF REPLEN: VEH / AIR / WAT / FOOT

HOW (METHOD)

DEAD LETTER BOX LIVE LETTER BOX CACHE

METHOD OF MARKING:

DIRECTION OF ENTER: CALL SIGN OF REPLEN:

WHAT (ITEMS NEEDED)

-
-
-
-
-
-
-

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CACHE

A cache is a pre-located position in which operational equipment is stored; this equipment could be concealed in this location for several years until required. Normally a cache would be used by Special Forces groups when operating in an oversea's country, they would be carrying all the information required to find this cache and what's actually in it.

The use of a cache avoids compromise and can increase the duration of the operation without the need to resupply. It also allows operators to enter other countries without carrying restricted equipment as it's already in place. On extended jobs, a cache can act as intermediate resupply stock for the operators on the ground. This gives freedom of movement throughout the missions.

True Accounts

I have had to use a cache on a private job overseas. Because of the country we were operating in, there would have been no way of getting the necessary equipment, a wireless transmitter and receiver, through airport security. It was deemed best for me and one other to fly over and source the equipment locally then cache it until the operation was to take place. On the week of the operation, the four man team left the UK knowing the equipment was waiting for them on the other side.

Types of cache

- Long term, 2-5 years, conditions permitting
- Short term, laid for duration of the mission

There are a number of phases to consider when using a cache in the rural environment, these are as follows

- Pinpointing the site
- Selection of safe or secure site
- Construction of the cache
- Acquiring and storing the materials
- Recording and reporting the position

Factors affecting site selection

- Density of population within the immediate area
- Dry/wet seasons
- Enemy activity if in a hostile environment
- Access to the area by day and night
- Quantity of stores to be moved. Consider whether it makes more sense to hire an overt storage container for your covert activities?
- Duration of cache; weeks, months or even years
- How close to the operational area must it be
- Nature of work/operation, consider sensitive equipment
- Wildlife, do you run the risk of your cache been discovered by animals and looted?
- Landmarks, prominent points

Required stores

- Sealable bags
- Canoe sacks
- Plastic sealable Tupperware containers
- Rubber latex solution
- Moisture absorbent desiccant
- Masking tape or similar
- Insect repellent

Colour coding method

Once your operational equipment is sealed in appropriate weather proof containers, they need to be colour coded and labelled as to what's inside. If you were to open the wrong container, you could risk contaminating the contents and rendering it unless.

Red	**Technical kit, Batteries, Lenses etc**
Green	**Food, Medical**
Blue	**Water**

Cache construction

You must conduct initial reconnaissance to ensure that the location is suitable and that the proposed location can be secured by man power or technical devices. Once the location is confirmed, construction can begin.

A detailed cache site reconnaissance report must be conducted, including primary and secondary reference points. Team members are then split into working groups and sentries identified to cover all approaches.

When constructing a cache, the same preparation is required as if constructing a sub-surface hide. Sandbags should be positioned on the ground to mark the area that is to be dug. Then ponchos are laid down to collect the soil which is to be moved and concealed away from the cache location. Use the cover in woods or rough ground and avoid grassy areas if possible.

If man power is short or if the cache is a large capacity, then a relief of the work party is required. Here, the sentries would change roles becoming the work party.

Once the equipment is placed in the cache, great care must be taken to ensure the area is clear of all ground sign.

Finally, extract from the area, this location is now out of bounds until required.

SKILL TIP

Remember, when caching food and water items they will have a shelf life, which may be shortened by the effects of the rural environment. The stores and equipment must be concealed as well as possible, and its location must be reported back to the operations room in case another team is tasked with retrieval.

CACHE CARD

CACHE REPORT:

Map Series:

Sheet:

Edition:

10 fig Grid refererıce of Cache:

Date Laid:

Bearings to Cache:

Ref Point	Bearing (Mils)	Distance (m)	Description
(a)			
(b)			
(c)			
(d)			
(e)			
(f)			

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CACHE CONTENTS CARD

List of Contents:

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Expected Life of Contents:

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CONTAINER AND CONTENTS CARD

Container Number and Contents including Weight:

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

11.

12.

13.

14.

15.

16.

Depth of Cache:

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DEPLOYED DEVICES

Anti-tamper devices- all relevant details if used:

Any additional information:

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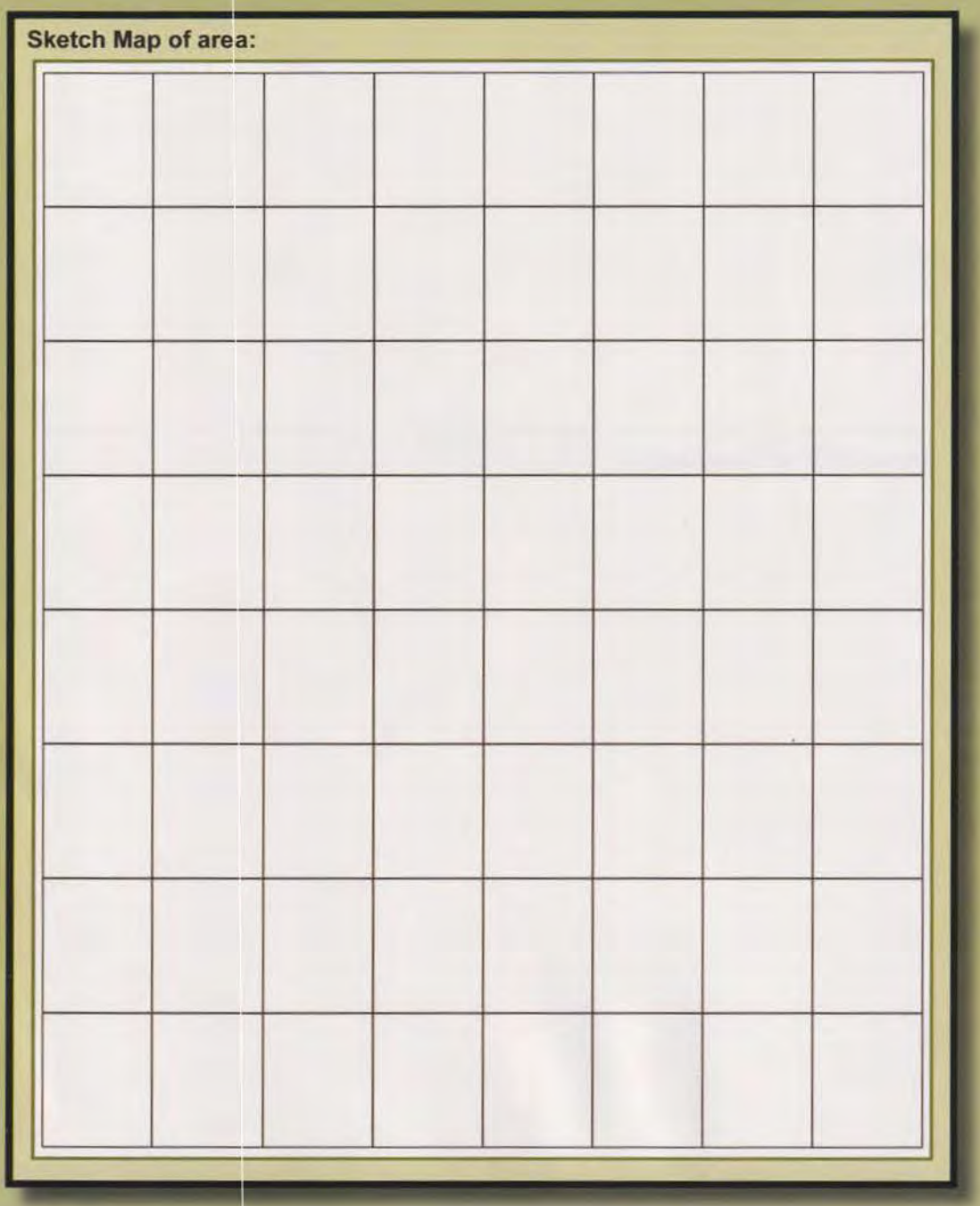
SKETCH MAP CARD

Sketch Map of area:



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REFERENCE POINT SKETCH CARD

Reference point drawings: **x5 of these pages**

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ANTI-TAMPER DEVICE SKETCH CARD

Sketch of anti-tamper device:

DATE MADE OUT:

NAME:

SIGNATURE:

CALL SIGN:

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CHAPTER 15

STILL IMAGERY

Practise your photography skills at every opportunity, re-read the camera's technical manuals to ensure you are proficient with every function. There is nothing more unprofessional than sitting in a hide for days collecting evidence, only to find when you get back, that all your images are blurred or underexposed and can't be presented to your client.

Topics covered

- **35mm film and digital**
- **SLR cameras**
- **Daily camera settings**
- **Position and hold**
- **Accessories and equipment**
- **Deployment tactics**
- **Remote operations**
- **Lenses**
- **Aperture and shutter settings**
- **Panoramic shots**
- **Infrared photography**

STILL IMAGERY

You need to do more than read this chapter to become a skilled photographer, it takes lots of practise and of course, time spent on real tasks where you will learn skills under pressure. Practise your photography at every opportunity, re-read the camera's technical manuals to ensure you are proficient with every function. There's nothing more disheartening than sitting in a hide for days collecting evidence, only to find that your images are blurred or badly exposed and can't be presented to the client.

Today's surveillance operators are increasingly adopting digital still cameras for their work. We will begin by covering 35mm wet film cameras, many of the techniques described are aimed at both film and the modern digital SLR camera. There is still a place in rural surveillance for the 35mm film camera, and at times I still use one.

Digital or 35mm film

Both types of camera have their pros and cons...

- Digital cameras are not as robust as the older wet film cameras. Although there are no moving parts, the circuitry in digital cameras is vulnerable to adverse weather conditions such as damp, heavy rain, snow and cold temperatures.

- Digital cameras store the images on data cards, easily damaged and if damp, files can be corrupted prevented from downloading. On the plus side, using a data card means you can save many more images than a roll of 36 film.

- Digital cameras rely on batteries; this will mean carrying extra batteries with you or having to be resupplied.

- Digital images are made of individual pixels, the more pixels the better quality the picture. More pixels also means the higher the cost of the camera, if you spend £2000 on a top of the range camera, will you happily dig it into the ground and risk the elements damaging it?

- Some digital cameras require warm up time before, during and after frames. This could be the difference between getting the picture and not. Again the more you pay the lesser the problem.

- With a digital camera, each frame can be viewed as it is taken, this is very good as it means you do not have to cross your fingers that your image will be right when the film is developed.

- Digital photographs can be downloaded and printed immediately after returning to the safe location, cutting the time between starting the target report and it arriving on the client's desk. Unless you have your own dark room, your film will have to be sent off to be processed. Some of your photos may be of a sensitive nature; consider using one studio to develop all your films, explain who you are and the nature of the films you will be bringing them. Design a form for the lab to sign and date, stating that they have not made extra copies or altered the images in any way. This may be necessary if the photographs are used in court.

- Digital photographs can be manipulated to incredible lengths, in some cases your images may be questioned in court. Using Photoshop, pictures can easily be manipulated and items added or removed with the click of a button. You may be questioned about where the photographs were printed and if any changes have been made; if so, what has been changed and can you show the originals.

- Unlike the digital camera that can store hundreds of images on a single data card if using film, you will have to carry several rolls; keeping it dry, away from the elements and extreme temperatures.

- Film cannot be changed in the rain, if water gets inside the camera it will damage the film and the camera, it's also good practise to change film in the dark.

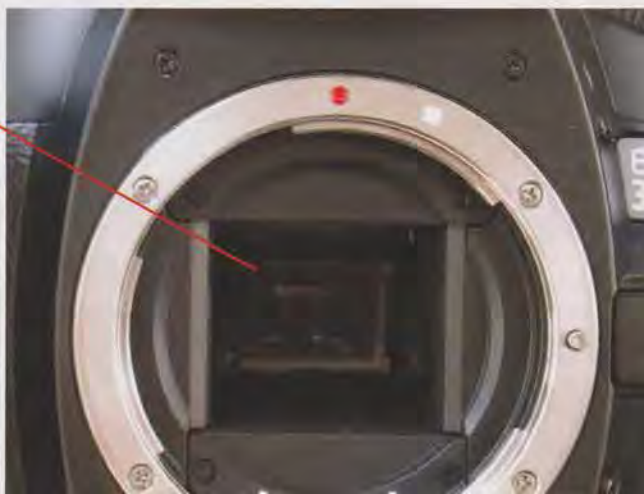
- Film cameras have much longer battery life and when the batteries have run out it's still possible to take basic photographs.

- Although the film camera has moving parts I consider them much more reliable and they can withstand more punishment.

SINGLE LENS REFLEX (SLR) CAMERA

The SLR camera is valued because it shows the photographer the exact framed image that will be recorded to the memory card or film when the shutter release is pressed. This is achieved with an internal prism and mirror. The image passes through the camera lens and is reflected from the mirror, up into the view finder. When the shutter release is pressed, the mirror flips up allowing the image to pass through to the rear of the camera and the light sensor in the digital camera or to expose the film in the 35mm camera.

Prism and mirror



Data backs

Unlike the digital camera, which is designed to captures a date and time stamp with exposure information, the older 35mm film SLR camera does not. However, later models have what's known as a data back, this allows you to set the date and time on the camera, which will be electronically stamped onto the image.

REMEMBER to synchronise all equipment!!

What is 35mm wet film

It's called wet film because it is soaked in chemicals during processing to develop the images stored on the film. There are many different wet films on the market, so understanding film speeds and its limitations is very important.

- SPEED, this is known as the ISO (formerly ASA) 100, 200, 400, 800, 1000, 1600
- MONOCHROME is the name given to black & white film
- COLOUR FILM
- EXPOSURES - rolls come in set frame quantities such as 12, 24 or 36 frames
- PRINT (negative) or SLIDE (transparency) are available
- INFRARED, this is used in total darkness in conjunction with a covert light source
- EXPIRY DATE, wet films go out of date, ensure this is correct as the film quality starts to break down
- Always pick a good quality film such as ILFORD, KODAK or FUJI

Film speeds & their use

Slow film (ISO 100 – 200) will give you a very sharp and grain free image, slow films are ideal for use on static subjects and static target areas such as landscapes and buildings. It requires a longer exposure time (slower shutter speed) so would not be ideal for moving objects, the use of a tripod is recommended.

Medium film (ISO 200 – 400) is a general purpose film which gives a good compromise between grain and speed, if you are to use it in low light conditions then a 'fast lens' should be considered.

Fast film (ISO 400 – 1600) are better films for surveillance, in low light they allow you to use faster shutter speeds and reduce camera shake when used with large telephoto lenses. The disadvantage is that the image is likely to be grainy and of poorer quality.

Loading 35mrn wet film

Always load wet film in a darkened location, this will safeguard the film from light. Ensure your film is in date and that you are loading the appropriate speed of film (ISO) for the required task.

Open the back of the camera body and place the film cassette into the cylindrical chamber on the left hand side, ensure the leading film (A) is positioned so that it is lying across the film gate.

The film gate (shutter) is the part of the camera which flips up when the shutter release is operated, thus exposing the film to the image which is passing through the lens at the time.

Ensure the leading length of film is lying across the film gate and is engaged in the sprocket.

Pull the leading film across the back of the camera and ensure it is located into the motorised sprocket (B); this is activated each time the shutter release is pressed. It pulls the film across the gate positioning a fresh frame of unexposed film behind the shutter ready for the next shot.

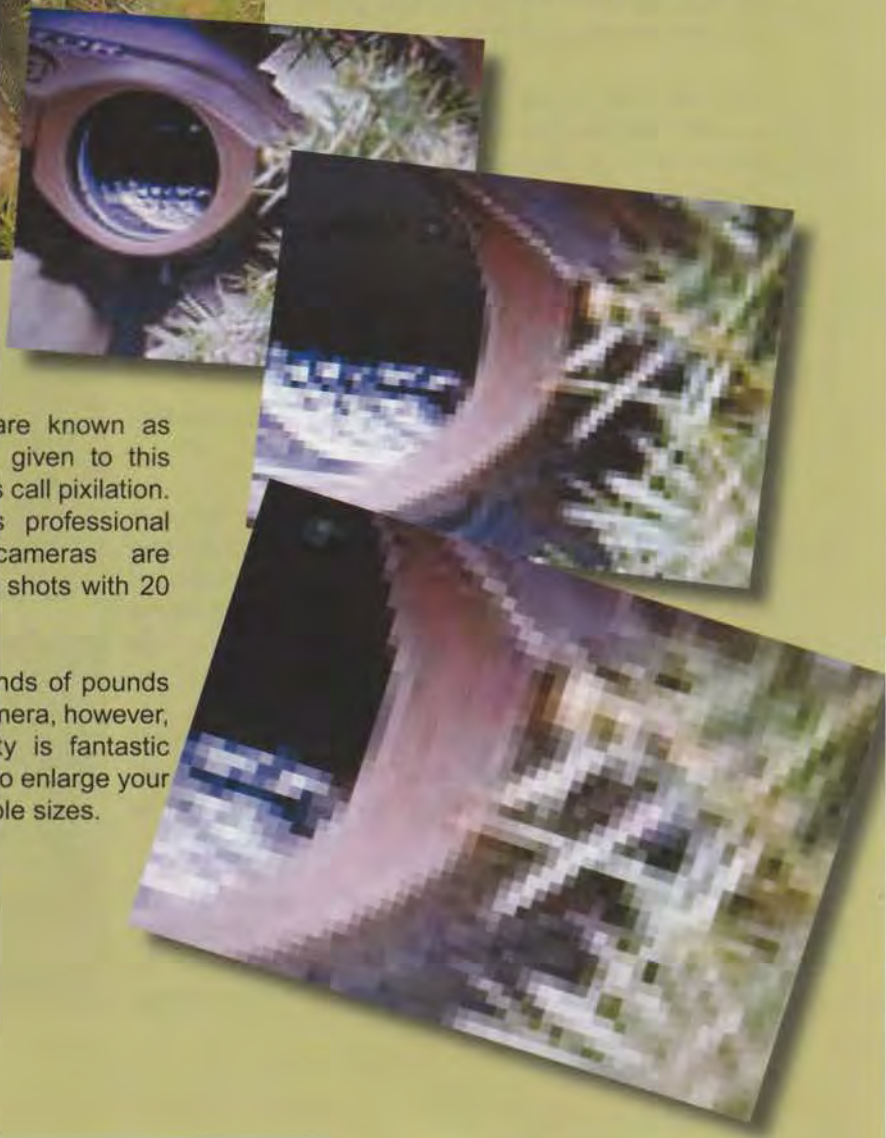
Finally close the back of the camera, the motorized sprocket wheel will automatically feed the film around the sprocket, holding it in position ready for you to operate the camera.

With 35mm film your image quality relies on you choosing the best film speed (ISO) for the job. If using a digital camera, your image quality now relies on the number of 'MEGA PIXELS' your camera can capture.

What are pixels?

When choosing your digital camera it is very important to check the number of mega pixels the processor can capture. For example, a camera with an 8 MEGA PIXEL (million pixels) will take a reasonable high quality picture until you enlarge the image.

The more the image is enlarged, the more you will notice that the image becomes blurred. Looking closely at the picture, you'll see that the image is composed of individual coloured squares or pixels. The more the picture is enlarged, the larger these squares become, eventually making your picture unrecognizable.



These squares are known as 'pixels', the term given to this image distortion is call pixilation. Some of today's professional grade digital cameras are capable of taking shots with 20 million pixels.

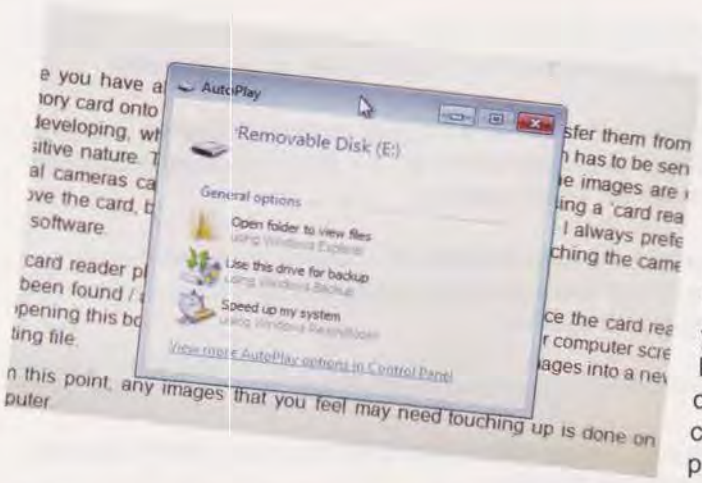
You'll pay thousands of pounds for this type of camera, however, the picture quality is fantastic and it allows you to enlarge your images to incredible sizes.

Difference between film and memory cards

As described, when working with 35mm film you are limited to roll exposure quantity, such as 12, 24 or 36 frames per film. With a digital camera the number of images (frames) that can be stored will be dictated by the storage capacity of the memory card that you are using and the image quality (mega pixels) the camera is set to.

Larger images (more mega pixels) require more memory space for each image on your memory card. A basic rule would be if more pixels are required, the larger the memory card should be.

Most cameras will allow you to change the size of the image (number of mega pixels) via the settings menu on the camera. If set lower, this will allow you to take more pictures on the same card but with lower image quality and less mega pixels.



Once you have all the required images, you will need to transfer them from the memory card onto your computer.

I recommend using a 'card reader' to transfer your digital images. Digital cameras can be connected directly to your computer but I always prefer to remove the card.

The card reader plugs into a USB socket on your computer, once the card reader has been found and acknowledged, a pop up menu will appear on your computer screen. Complete the details to copy or import your images into a new or an existing folder.

From this point on, images that may need retouching to brighten or sharpen them can be processed on the computer.

DIGITAL CAMERA BODY

This is based on a Canon D-SLR body as this is the brand of all my camera equipment. All other makes and models are very similar and you will quickly become familiar with the equipment after reading the operating manual.

FRONT

1. Lens Alignment: Each lens you use has a small red or white dot to align the lens and body before twisting the lens into a locked position with an audible click.

2. Flash Pop Up Button: Press this to activate the pop-up flash, found on all makes of camera. During surveillance avoid this button as the flash will compromise your position, it may be disabled via the menu settings.

3. Lens Release: Used to unlock the lens, twist the lens to remove it from the camera body. Try to change lenses in dust free areas and ensure the camera is switched off to help prevent dust getting onto the sensor.

4. Depth of Field preview: Visual display of how much of the image is in focus.

5. Lens contacts: Marry up with the corresponding contacts on the lens to allow the auto focus and exposure functions to work.

6. Mirror: Reflects the image up to the viewfinder and shows the user exactly what will be photographed. The mirror flips up when you press the shutter release and returns once the picture has been taken. Never touch the mirror with your fingers and only use special cleaning cloths and solutions. Dust on the mirror will not appear in your photographs, so if in doubt, leave it alone.

7. Grip: Usually rubberised for more effective handling.

8. Shutter Release: Operates the internal mirror allowing the light onto the film or sensor when the picture is taken. Half pressing the shutter release will start the auto focus system and the exposure settings are calculated.

9. Focus Assist Beam: Most modern Digital SLR cameras have this system. It illuminates the subject in poor light to assist with auto focus. It will sometimes be used as an indicator for the self-timer function. To be avoided during surveillance by either switching this system off or covering with tape.

10. Pop-Up Flash: Semi-professional camera bodies have a built in flash, when set on full auto, the flash will pop up when required. Ensure that your camera's flash will not pop up and operate, if need be, tape it down to prevent this from happening. During manual operation you will have to activate it via a button.

BACK

1. Viewfinder: Looking through the viewfinder, you see around 95% of what will be captured. Half press the button to see the focussing ring at the centre of the image, red lights will flash to indicate the spot metering setting as well as other information such as shutter speeds and aperture settings.

2. Dioptre Adjustment: Allows you to adjust the viewfinder to match your eyesight.
3. Rubber Eyecup: This can be removed but also helps to prevent light from entering the camera via the eyepiece.

4. Joystick Dial: On the Canon this allows you to navigate the camera's menu or scan over the image on the LCD screen, when zoomed in on the display mode.

5. Exposure Lock/Zoom Button
On the Canon this button serves 2 purposes, firstly it is the Exposure Lock button. If you aim your camera at your subject and press, it will retain that exposure setting whilst you re-compose and shoot again. This is good when you want control over the exposure; however it will not work in the manual setting. Secondly, when using the image preview LCD screen to examine your image, this button enables you to zoom in.

6. Focus Point Selector/Zoom Button
Again on the Canon, this has 2 functions. Firstly, it is the Auto focus point selector which allows you to choose from a number of preset points to focus. If you select all, the camera will pick the best point for individual circumstances automatically. Secondly when reviewing your images on the screen, this allows you to zoom out.

7. Write Indication Light
This will vary in its position depending on the camera you are using. When it is lit, it is transferring the image data from the buffer to the memory card.

8. Jog Dial and Set button:
The jog dial will allow you to scroll through images or different settings in the camera's menu. Pressing the set button will select an image or the required setting in the menu.

9. On/Off Button
Switches the camera power on and off. On the Canon models it also activates and deactivates the jog dial.

10. Erase Button
Use to erase selected images. You will prompted, 'are you sure' as a safeguard before actually deleting.

11. Play Button: When the camera is switched on, this will display the last image shot on the small LCD screen.

12. Jump Button: Used to jump 2 or 3 images or menu items at a time.

13. Info: Pressing this button will display the information of any image that you select and view on the LCD screen. Exposure settings, white balance, date/time, image size, flash details will all be displayed.

14. Menu Button: This will activate all the camera's internal menu functions on the LCD screen, to scroll through them use the jog dial and select buttons.

15. LCD Screen
Displays the camera's menus and all images saved on the SD card. Many D-SLR cameras will not display your intended image in 'real time', on the LCD screen (unlike the smaller digital compact point and shoot models) you have to look through the viewfinder. However, newer D-SLR cameras now have what's known as 'live view', which will allow you to see your image before you take it.

TOP

1. Light for LCD Display: Used to illuminate the LCD panel in low light, this needs to be turned off when conducting surveillance.

2. AF/WB: Auto Focus / White Balance setting. Pressing this brings up a number of options for white balance settings (daylight / sun / shadow) and auto focus (One shot or Servo). One shot means that the camera will focus once and take the image regardless of how much you or the subject moves. Servo means the camera's focussing system will automatically keep tracking and re-focussing on the subject until you press the shutter release button. This is ideal for surveillance work where the camera may be dug in, concealed and operated remotely.

3. Drive/ISO: Drive means auto drive or frame rate. You can take a single shot or set the camera to continuous mode, this means it will keep shooting at 3, 5 or 8 frames per second depending on the camera model, until you remove your finger from the release or the memory is full. ISO is the sensor sensitivity. 100 ISO is standard sensitivity and will produce fine grain clear images, 1600 or 3200 ISO on the sensor is highly sensitive meaning you can shoot in low light conditions without a flash, making it ideal for surveillance operations. It is good practise to set to 'Auto'.

4. Shutter Release Button: Half pressing the button (first pressure) will start the auto focus process of the lens and exposure calculations, once happy that the image is in focus, fully press the button and take the picture.

5. Top Dial: This is also used to change / alter various settings in the menu by scrolling up or down, normally used to change shutter speeds or aperture settings.

6. Metering / Flash Compensation: The camera's metering system can be seen through the viewfinder when composing a shot. It measures the light conditions and sets the camera's shutter / aperture accordingly. You can change from full to partial or spot metering, this means the camera will expose to the whole scene, a part of the scene (normally central) or a single spot point. The flash compensation button will allow you to fool the camera into thinking that it needs more light from your flash in order to expose the image correctly. This must not be used in a surveillance role.

7. LCD Screen: This will display the exposure, shutter speed, ISO and camera settings that you currently have selected. As you adjust or alter them it will be displayed on this screen, it also tells you how many photos you can take before the memory card is full and the state of battery power.

8. Hot-Shoe: Normally used to attach an external flashgun to the camera body. However in a surveillance role this should not be the case unless the flash gun has been converted for Infrared images. As well as an external flash gun you could also fit an infrared shutter remote control unit.

9. Exposure Control Dial: This enables you to change the working functions of the camera, from full automatic mode, point and shoot, where everything is done for you, to manual mode. It also includes automatic settings for various other modes such as sports, close up, landscape, night and portraits.

- AV: Aperture Priority which allows you to manually set the aperture of the lens, for example f2.8 or f12, the camera will then automatically select the correct shutter speed to suit. This is good if you want control over the depth of field.
- TV: Shutter Priority is the opposite, when you manually set the shutter speed, the camera will automatically select the correct aperture. Most digital SLR cameras have a range from 30 second exposure to about 8000th of a second.
- Manual: You are in full control, the camera's metering system will guide you but you will have to set the shutter speed and aperture manually.

10. POP-UP FLASH: If need be tape it down. By preventing the flash from activating you may find that the camera will not take the picture when the shutter release is pressed on certain settings.

BOTTOM

1. Battery compartment: This is where the re-chargeable batteries are located; most new Digital SLR's will have the option to attach a battery grip, giving you longer operational time. This attachable battery grip also gives the camera a much bulkier feel and is easier to grip. You may find that the SD card is also housed here.

2. Tripod Socket: This allows you to attach your camera body to a tripod giving a much more stable platform. The socket is normally positioned in the exact centre for effective balance and weight distribution.

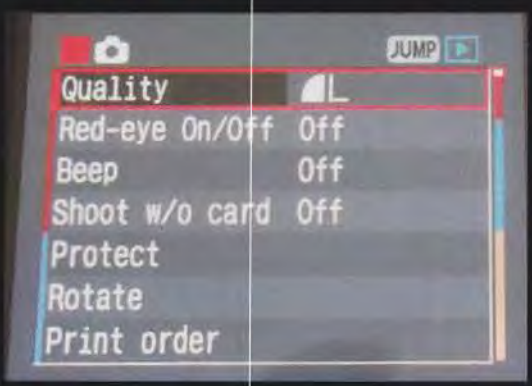
Daily setting up

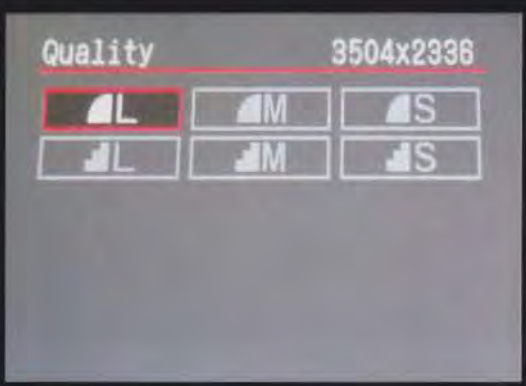
Before you can take any pictures you must first check that the settings and functions on the camera's operating system are set to your requirements. This routine must be conducted each time you take the camera out or before any live operation. If more than one camera is to be used on a task, you must ensure that dates and times of each camera are synchronised. There is nothing more confusing than two or more operators with different dates and timings for the same job.

Set up stages

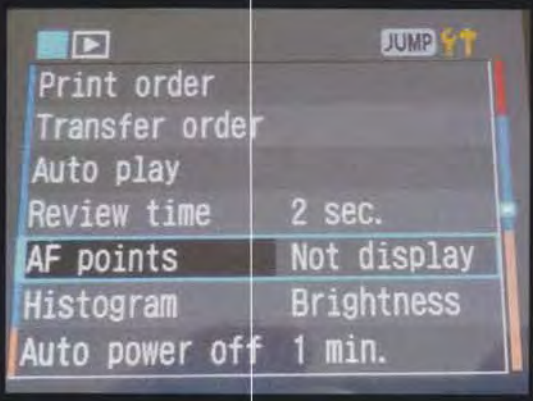
Format - click select and then select 'OK'

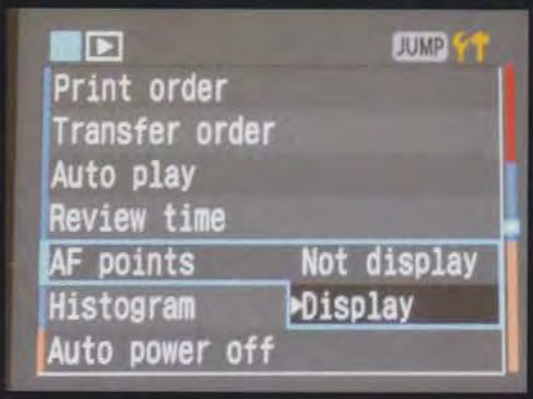
Image quality - main screen, click select and adjust





Auto focus (AF) points

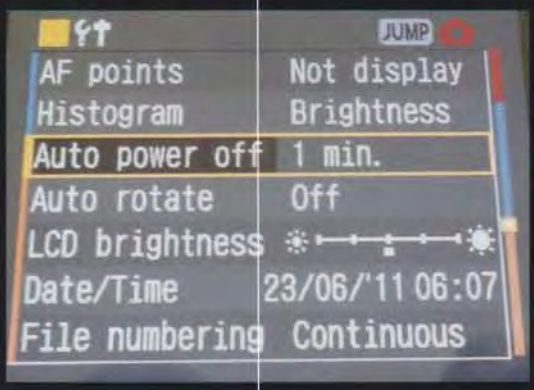


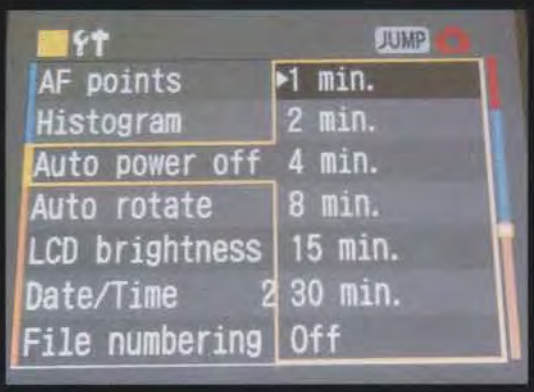


LCD brightness - click select and adjust

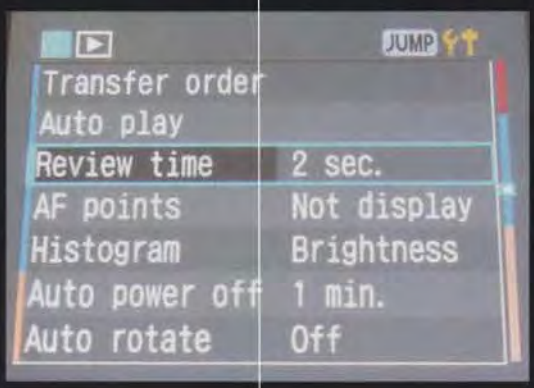
Date & Time - click select and adjust

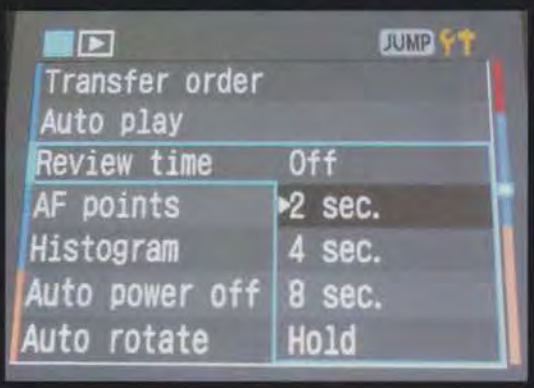
Auto power off - click select and select new setting



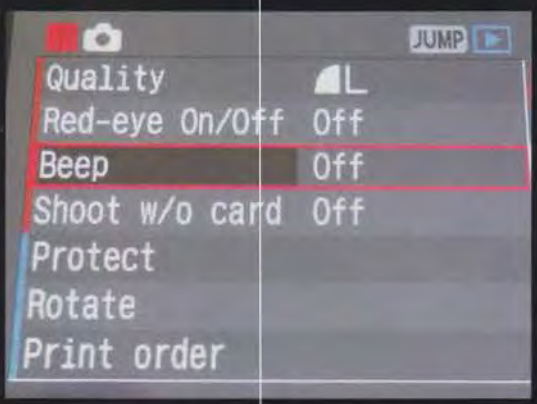


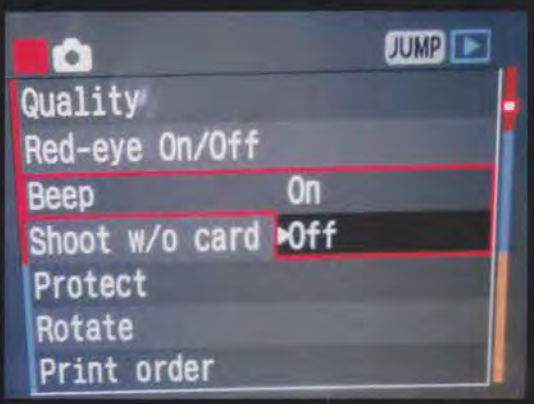
Review time - click select and select new setting



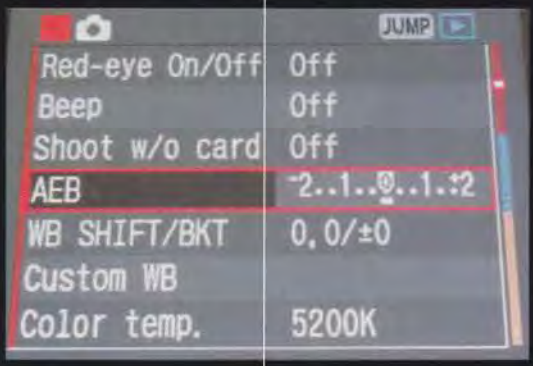


Beep option - off



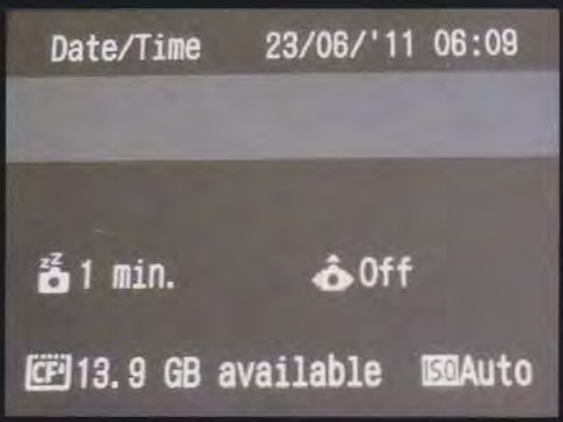


ABE check - ensure it is set to central



Check main settings screen

- Date & time
- Power off (1 min)
- Beep off
- Memory available (13.9 GB)
- ISO (speed) Auto



HOLDING THE CAMERA

There are a number of ways in which the camera can be held, this may be dictated by the position you find yourself in, such as lying flat or standing behind cover. All camera bodies are shaped differently in some way, so always take time to practice your holding positions. This may sound funny but a major cause of poor photographs is bad grip and hand positioning. Here are some basic tips on holding the camera steady, which can be adapted to suit you and the situation.

Horizontal grip

Use the right hand and three lower fingers to grip the camera, the forefinger over the shutter release.

Supporting the camera body on the heel of your left hand cupped, leaving the thumb and forefinger free to operate the lens control.

Vertical grip

Two ways of holding the camera, with the viewfinder to the left or right, in both cases grip the camera in your right hand with wrists bent to form a platform, leaving the left hand free to operate the lens.

Over head position

If operating from behind cover and you are unable to look through the viewfinder. Hold the camera above your head locking your arms, then guess the composition. This works well with digital cameras as you are able to check each frame taken immediately.

Standing position

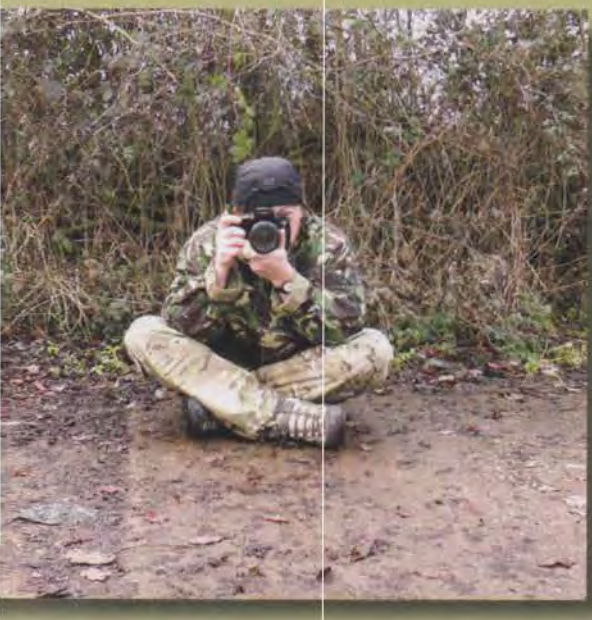
With your feet slightly apart, one foot in front with your weight balanced equally, hold both elbows and arms into the body to give extra support.

Kneeling position

This is a much more stable position if time and view allow. Kneel so that your left elbow is rested on the left knee providing a solid platform.

Prone position

Laying on your front, keeping the left leg straight and out to the rear, the right leg bent as shown. This will raise the chest off the ground making breathing easier, place elbows on the ground keeping them close for extra height or wide apart to lower your profile, this will form a stable platform. Raise and hold camera in the same way as for the horizontal / vertical grip.



Seated position

Sit cross legged, locking in the ankles, press your elbows into the knee joints to create a stable platform. Lean forward to help with balance, hold the camera in the same way as the horizontal / vertical grip.

Across body

Used with auto focus lens

This method is best used when having to stand up to get the shot. Bring your left arm across the body and hold or wedge the hand in / on to an object. Rest the lens's mounting bracket on the arm, this will allow for auto focus.

Tripod & remote

If using powerful telephoto lenses, always try to use a tripod and remote shutter release to prevent camera shake. Position the tripod in between your legs, this brings the camera closer to you, with the left hand, keep a hold of the panning handle as shown. In the right hand hold the remote shutter release.

CAMERA ACCESSORIES & EQUIPMENT

Camera supports

Tripods may differ in design but they all have the same function, to act as a secure platform supporting the camera and eliminating unwanted movement or shake. During rural surveillance using powerful telephoto lenses, this platform is a necessity.

If your aim is to film movement in and around a location, the tripod provides a platform to move or pan the camera in all directions and under control. Using a tripod when panning the ground will give you a smoother end result, removing any sharp movements you may get if holding by hand.

Tripods are available in different heights and weights and care must be taken to ensure you have the right tripod for the job. Attaching a heavy telephoto lens to a lightweight tripod will only create problems, the heavier the tripod, the more sturdy it will be. If using very powerful lenses with a lightweight tripod, the pressure used to activate the shutter release could cause vibrations and visible camera shake.

Tripod designs

Lightweight, easy to carry table-top tripod, although light weight due to its height limitations, this makes a very sturdy platform. I always carry one of these in my rural day sack and if operating from a concealed hide, it allows you to position your optics or camera neatly up to the aperture, without taking up to much room in the hide.

Medium tripods are good in most situations as they give you the ability to elevate and support your equipment at a number of different levels.

Heavier styles are of course best, but in a rural role, we carry enough heavy equipment without making our lives even more difficult. The tripod shown to the right weighs approx 6 kilograms and is very sturdy, even in the high winds.

DOUBLE TRIPOD SET-UP

On some occasions it may be necessary to use a double tripod system, one tripod attached to the camera body and the other to the heavy telephoto lens. Most lenses come with only one mounting ring.

Here you can see a (telescopic) telephoto lens and camera body supported by two separate tripods. This lens is very powerful so the smallest movement will blur the final image.

Features

- Camera quick release mounting plate
- Levelling bubble
- Quick-release lever
- Telescopic leg sections for height adjustment
- Height adjustable central columns which will give you more elevation without disturbing the complete tripod
- Inner leg supports which can be fixed into position for extra rigidity
- Rubber nonslip feet
- Centre Column locking screw
- Panning locking screw
- Camera mounting plate quick release
- Tilt locking handle

IMPROVISED TRIPODS

There is a very simple way to make your own improvised tripod; all you need is three of your hide poles, an elastic band and a bean bag.



Hold the poles together and place the elastic about a third of the way down.

Next spread the poles apart so that they are wide enough to support your camera body or lens. If using heavy lenses, support these by positioning your bean bag in the middle of the three poles forming a cradle. To adjust the height of the tripod you can ether push the required poles into the ground or move the elastic band up and down the poles.

This method can be used alongside a normal tripod. The improvised tripod must hold the lens and the camera supported by the tripod to reduce camera shake.

Improvised concealment

When deploying any equipment into a rural environment, ensure its camouflage and concealment is of the highest standard, your tripod and camera will be the closest thing to your target.

When choosing your tripod, look for one that is painted black, although people will say there is nothing black in nature it's a good base colour to use. Failing that use green cloth tape which can be found in most good army surplus or outdoor shops.

Tape up any shiny parts of the tripod, remembering not to tape up any moving parts as they can be sprayed with paint.

Using naturally coloured spray paints from model making shops, spray a disrupted pattern over the tripod, breaking up the base colour and the shape of the tripod itself.

Cut up an army scrim scarf, camouflage netting or sniper Ghillie that has been left out in the elements and well aged, attach this to the tripod or make a cover which can be draped over it.

Don't forget about the camera! This also needs to be concealed in the same way. Next is the lens aperture, using the same netting as shown in the pictures, cut out a section which is positioned over the front of the camera lens. Fix this netting in place to eliminate lens flare and shine from the sun.

Concealment sleeves from specialist manufacturers

Sigma 800mm lens with a weatherproof lens sleeve from the sports hunting wear manufacturer Realtree. This sleeve is reversible with plain DPM pattern on one side and ghillie leaf style on the other side, as shown above. It also features an elasticated mesh lens cover to reduce reflection from the sun.

The end result with camouflaged lens and tripod.

The tripod legs have been concealed with a DPM cloth sleeve.

REMOTE SHUTTER RELEASE

One of the main causes of camera shake is when the shutter release is pressed by the operator's finger; the movement creates vibration through the camera. This can be eliminated by using a number of simple devices that can be attached to the camera body.

Cable release

This works in a similar way to a bicycle's break cable. At the camera, a small bracket is attached above the shutter release button and at the other end is a hand grip with a push-button plunger. When the operator presses the plunger it pushes against the shutter release button which takes the shot. I am not a fan of these as they can still create movement when using very powerful lenses, like the one above.

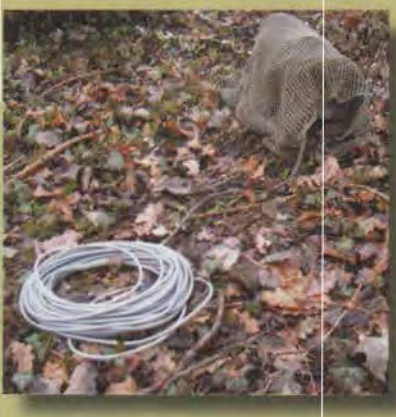
Remote control

A plug-in device which can be connected to the side of most camera bodies. At the other end of the cable (normally 1 metre long) is a hand held paddle fitted with a push button switch.

The switch takes its power from the camera's own battery and when pressed, it operates the shutter release electronically.

20 metre extension

I use a remote cable which has been extended to 20 metres in length. This is used if the camera is concealed on the forward edge of a tree line. Here I can dig the cable into the ground and move further back into the cover of the wood and operate the shutter remotely.



Wireless IR remote

Most digital SLR cameras can use a wireless device to operate the shutter. Like a TV remote control, when the button on the hand held control is pressed, an Infrared (IR) beam is fired towards the receiving unit connected to the camera body, which activates the shutter release. The range can be short and foliage can block the beam and prevent the shutter from activating.

There is a new remote unit on the market that allows you to view your image wirelessly from 60 metres away through 'liveview' if your camera body supports this feature. The hand held 3.5" monitor / transmitter can operate up to 4 cameras, allowing you to view each one at the push of a button.

CAMERA LENSES

Lenses must be treated with great care at all times as a scratched lens will be rendered useless. Every time a photograph is taken through that lens, the damage will appear on the final image. Because of the environment and nature of rural surveillance, our lenses take more punishment than most however, there are a few simple things you can do to safeguard your lenses.

- Always keep lenses as dry as possible when in the field, after the operation ensure lenses are cleaned and dried before being put back on the shelf.
- Once the lenses are clean and dry, check them over for any damage, you are looking for scratches, misting or moisture behind the glass lens and shadowing.
- Ensure both end caps are replaced.
- Pack the lenses with silica gel packs which draw out moisture still inside.
- Finally pack them away in their protective covers and cases.
- After a day or two get them out and check them over again, you may have missed something or something new has appeared in the lens.
- When in the field, ensure each lens has its own protective case, this must be a different one to which it is normally stored in.
- I have made protective covers for all my lenses by cutting up a foam roll matt and using green tape.
- Never pack lenses at the bottom of your Bergen as they will get damaged. Pack them as shown in the equipment chapter, using this method means they are close to hand and less likely to be damaged.
- I have camouflaged a number of my lenses using green tape and spray paint, this is a good idea but you must remember that the tape is prone to mould over time, so keep a eye on it and change the tape regularly.

TYPES OF LENSES

There are many different types of lens, each with its own quality, but there is one function that all lenses have in common, to focus the light onto the light sensor or 35mm film giving you the final image. Your responsibility is to ensure that you use the right lens for the job and that the image is in sharp focus, if you don't, all your pictures will be of poor quality.

Lenses come in different focal lengths, speed ratings and aperture sizes, Examining each one in turn, this section will give you a good understanding of each lens and its capabilities.

Fixed lenses

This type of lens will only operate at its given focal length. If the subject you are intending to photograph is outside the lenses focal range, you will have to remove it and fit one of a larger focal length. This is time consuming and means that you have to carry several different-sized lenses around with you.

Zoom lenses

A zoom lens gives you the option use a number of focal lengths all in one lens. For example, instead of carrying 28mm, 50mm and 100mm lenses you could just use a 28-105mm zoom lens. Not only is this a cheaper option but it means you are carrying less equipment. A 28--80mm and 75–300mm lens will cover most surveillance situations. A zoom lens also covers settings between the fixed focal lengths of the lenses they replace.

Wide angle lenses

These have small focal lengths but a wide angle of view, so if you wanted to photograph landscapes, target areas with wide expanses, these lenses are best. The wide angle lens will work well indoors as it allows great depth of field in a small space. Focal lengths start anywhere from 10mm. A useful wide angle lens for surveillance would be between 18mm and 35mm which is a similar angle to the human eye.

Mirror lenses

Telephoto mirror lenses normally have focal lengths of 500mm, 800mm and even 1000mm. By using internal mirrors which reflect the light it allows these lenses to be much shorter in length. The down side is that they normally have a fixed aperture of around f8. This can make photographing in low light conditions difficult but are very useful when used in a concealed hide throughout daylight hours as you have a powerful lens, which is small in size and lightweight.

X2 tele-converters

These are a cheap way to convert a 200mm lens into a powerful 400mm lens. Attaching the X2 converter between camera body and lens doubles the focal length. The disadvantage is that converters halve your aperture rating, so an f2 lens now becomes an f4 lens.

Long focal lenses (Telephoto)
Unlike the wide angle lens, which gives a wide field of view, the long focal lens is designed to isolate and detach the subject or target area from its surroundings due to its magnification.

This lens is a valuable tool in surveillance, where the need to obtain close images of the target from a distance is required. Available in focal lengths of 300, 400 and 500mm.

Long focal lenses need more light because of their magnification, so look at using an aperture size of around f2 – f2.8 if possible.

Extreme long focal lenses (600, 800 & 1000mm upwards)
These lenses have a very shallow depth of field, which give you a special advantage in rural surveillance. If the aperture is kept wide open it allows you to photograph through cover such as foliage or wire fences, the lens is so powerful that the obstruction will virtually disappear.

Although the lens is great for photographing at distances they are vulnerable to camera shake. The smallest movement will be magnified blurring the image. Therefore fast shutter speeds and fast film (or high ISO setting) should always be used. These lenses are also very heavy and bulky to handle.

Using old lenses

Modern digital camera bodies will not always work with older style lenses. Some lenses have different bayonet mounts to your current camera's body; some lenses have a threaded end. These threaded lenses are known as 'M42' or 'T2' types, which refers to the style of lens adapter needed in order to fix the lens to your camera body; this lens will always have to be manually focused.

The older types of lens can be easily adapted to fit the modern camera by using the appropriate adapter ring. These adapter rings come as a standard fit or with power connectors which allow the auto focus mechanism to work when available.

For example; the lens below is a Russian 1000mm mirror lens which has the old Canon 'FD' lens attachment. I always use canon equipment so when I came across this lens for sale, I wanted to make sure it would work alongside my Canon D-SLR body which now has the EOS 'FE' lens housing. I needed to buy an FD to FE adapter ring, which allows the lens to be used on the camera body.

A. Rear view of the old FD canon lens, when this lens is married up to the new Digital EOS canon body it is as if two female attachments are brought together.

B. Here you can see the FD side of the adapter ring; this is pushed over the old lens configuration and locked into position by rotating the ring until you hear a click.

C. This is the FE side of the adapter ring; this will now allow you to connect the old lens to the new camera body in the same way as any modern FE lens. Again rotate until you hear a click, this particular lens will only operate in manual focus.

Adapter rings like the one pictured can be found for many makes of camera not just Canon.

M42 / T2 adapters

The other style of adapter ring is known as the 'M42' or 'T2', this allows camera lenses which have been produced with a screw style threaded end to be fitted to modern camera bodies. This type of lens is usually at the cheaper end of the market however, it does not mean they are not up to the job. I have a couple of lenses with this style of attachment and they work very well but with manual focus only.

Looking at the ring, you will be able to identify the normal locking lugs seen on modern camera lenses (A).

You will also be able to identify the internally threaded area on the far side of the ring; this is of course where the lens is attached to the adapter (B).

CAMERA SETTINGS

When using adapter rings on digital SLR camera bodies you will need to change the settings of your camera's operating functions. This is mainly due to the loss of auto focus capability. If using a lens such as the powerful Russian 1000mm mirror lens further action needs to be taken as follows.

OPERATING FUNCTIONS

Camera settings for low light surveillance imagery on static objects. When using powerful lenses in a manual focus mode always use a remote shutter release system, either cable or infrared.

- Turn on the mirror 'lock up' which should be found in custom settings
- Change metering to spot [•]
- Set camera body to AV (Aperture Priority) with the widest aperture
- Set auto timer for 2 sec or cable remote for 4 sec (static target areas, landscapes)
- Faster shutter speeds may be required in daylight, the camera will work this out for you automatically when set in AV mode
- Focus manually until image is sharp in the view finder
- If shooting in low light, and the image area is surrounded by bright light, dial down the exposure levels manually. This will counter act your image being over exposed. Consider turning on the AEB (auto exposure bracketing) if taking still images such as landscapes / target areas.

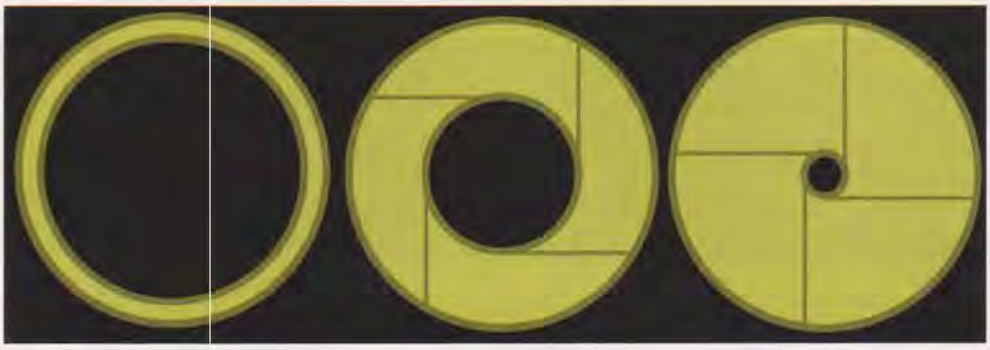
Lens aperture

The aperture is the size of the hole inside the lens through which the light travels to the light sensor or film. Some lenses have a fixed aperture such as the mirror lens (f8) whereas zoorn lenses can be adjusted between fixed aperture settings.

This will be printed on the lens and represented by two numbers such as f4 – f5.6. The value of the aperture is represented by an 'f' stop.

f1.4 f2 f2.8 f4 f5.6 f8 f11 f16 f22

With f1.4 being the widest aperture and f22 the smallest, in surveillance when choosing your lenses look at the aperture size. As we take photographs in the early mornings and late evenings when the light is low, where possible we need to be using the larger apertures indicated here in red.



Shutter speed

The shutter is the camera mechanism that allows the light to reach the light sensor. This shutter can be adjusted to open and close at different speeds. Slower speeds give light more time to reach the sensor as the shutter is open for longer. A fast shutter will limit the amount of light getting through. Faster speeds should always be used with powerful telephoto lenses to help prevent camera shake.

Shutter speed is measured in fractions of a second.

1/15 1/30 1/60 1/125 1/250 1/500

1/1000 1/2000 1/2500 1/3200 1/4000

The more expensive cameras can have even faster shutter speeds.

If you have a fast moving subject and you use a slow shutter speed the picture will be blurred as the subject travels through the frame.

Shutter speed crib card (military)

LENS	MINIMUM SHUTTER SPEED
35mm	1/30 sec
50mm	1/60 sec
100mm	1/125 sec
200mm	1/250 sec
300mm	1/250 sec or faster
500mm	1/500 sec
800mm	1/500 sec to 1/1000 sec
1000mm	1/1000 sec or faster

EXPOSURE MODES

- **AUTOMATIC**
- **PROGRAMME**
- **APERTURE PRIORITY**
- **SHUTTER PRIORITY**
- **MANUAL**

AUTOMATIC

This is the novice mode and not the best for surveillance. In this mode the camera will automatically set its aperture size and shutter speed, this means all you need to do is point and press. If, on the other hand, the camera is to be set up on a remote system and possibly left in a concealed hide, I would use this mode in conjunction with an auto focus lens, ensuring that the pop up flash is disabled.

PROGRAMME - P

In this mode the camera takes an exposure reading then offers a suggested best setting. You can then turn the control dial and manually alter the shutter speed. The camera will then select the correct aperture to match the selected shutter speed.

APERTURE PRIORITY - AV

In rural surveillance this mode should only be used when depth of field is important; for example when shooting the subject and its surroundings, buildings, landscapes or from the air. Press the shutter release half way so that the camera can take a light reading, then adjust the shutter speed that best suits the 'f' number, this is set manually.

SHUTTER PRIORITY - TV

Manually set the shutter speed by half pressing the shutter release and the camera will automatically set the aperture size which best suits the shutter speed for a perfect exposure, always use fast shutter speeds when using telephoto lenses.

MANUAL - M

This should only be used by the very experienced surveillance operator, as this allows the operator full control of the camera's aperture and shutter speed.

Depth of field

The decreasing size of the aperture, lengthens the depth of field bringing more of the foreground and background into focus, the depth of field will vary according to three factors.

- Distance to subject
- Aperture setting
- Focal length of the lens used

If you are required to photograph a subject in their surroundings and want both in focus, use a medium aperture setting. If you do not want the foreground or background in focus but just need the subject up close, use a larger aperture. If you only require the distance in focus then use a small aperture setting. You can check the effect by pressing the depth of field button on the camera before you shoot the frame.

Spot metering

Through the lens (TTL) metering systems automatically compensate for the different light sources within the frame, the simplest metering system will measure the average brightness of the whole frame.

The more advanced systems will identify a small bright area off centre against a dark background. Middle systems take their readings from the centre of the frame, which is where most photographers position their main point of interest. In surveillance this is one of the most important features when taking covert pictures.

Bright surroundings

If your target is in front of a bright feature such as a white wall, the camera would take its reading from the large white area and cause the picture to be under exposed and dark. By using the spot metering system on the camera, it would take its reading from the centre of the frame, (the subject, not the white wall). Be aware if operating in a snow-covered environment or through brightly lit windows when the sun is behind you as the picture may appear dark.

Dark surroundings

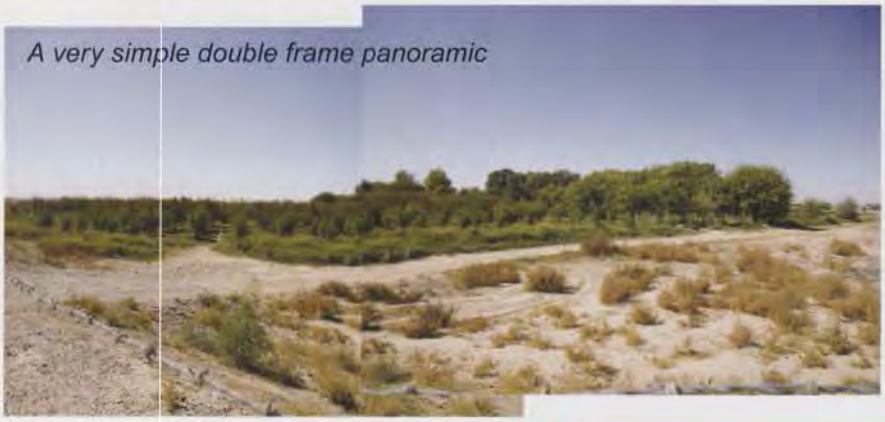
When shooting through doorways into dark areas such as barns and outbuildings, the camera will operate in the opposite way as described above. Ensure your aperture is open as wide as it will go. This allows maximum light into the camera making the target seem over exposed, by using the spot metering system this will ensure a quality exposed picture is taken.

Panoramics

In rural surveillance you're often tasked to photograph large areas of ground, landscapes, buildings or entire farm complexes. This may also be needed from a 360 degree angle using the same tactics as if conducting a CTR. To achieve this, a tripod must be used to give a solid platform to work from.

Once the camera and tripod are set up, the target area can be observed through the camera's view finder. Pan the tripod from side to side to check that you can get everything in frame, when satisfied take your first picture. Before panning the camera, identify a marker through the viewfinder onto the image you have just taken such as a telegraph pole. Pan the camera so that the pole is still in shot but everything else is not, this giving you an overlap of the previous picture.

Continue to do this until all the area has been photographed.



A very simple double frame panoramic

I have a small Sony cyber-shot 14.1 mega pixel camera that has a panoramic feature built in; this is a fantastic idea from Sony. By attaching the small but powerful point and shoot camera to a more powerful spotting scope, I can take large panoramic images in safety from hundreds of metres away if needed.

Panning

If photographing a target that is moving away from your location or from left to right, use an auto focusing lens and maximum depth of field. Ensure your camera is set to 'Sports Mode' and on 'auto repeat shutter', so that you can press and hold the shutter release, allowing the camera to take as many frames as possible. The lens will auto focus continually and a fast shutter speed will be required.

Composition

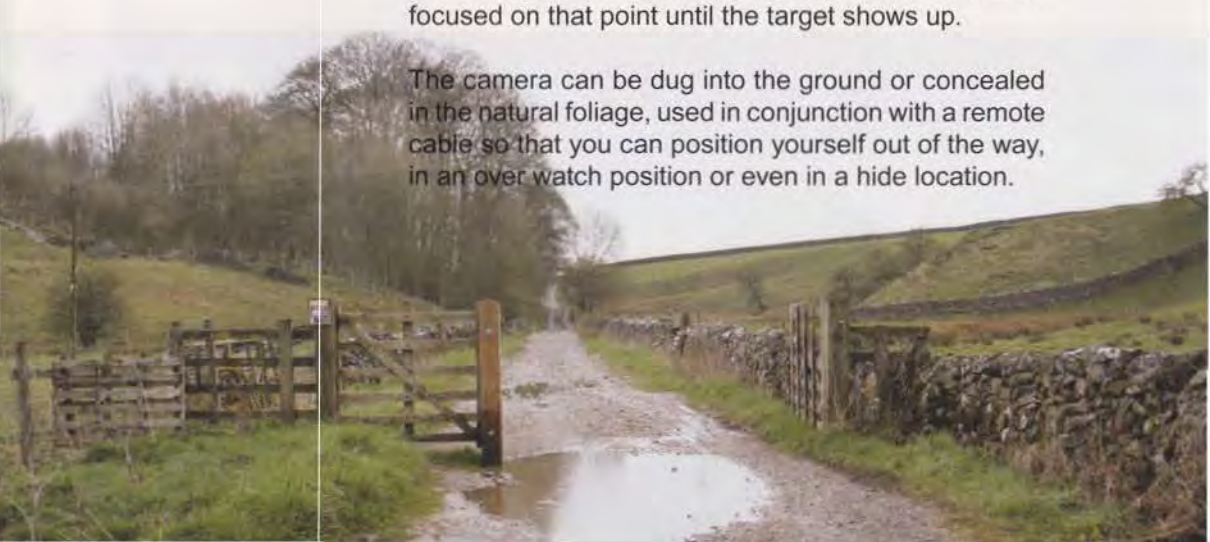
Mentally, divide your viewfinder into nine equal boxes, then superimpose this over the image in frame, ensure that the most important section of that frame is in the centre box.

When taking creative photographs, experts position the main feature in one of the corners of the centre frame to give a better visual effect. Surveillance imagery is not about being creative it's about getting evidence!

Predictive focusing

If tasked to photograph a target who will be at a known position, you can set up your camera in advance, focused on that point until the target shows up.

The camera can be dug into the ground or concealed in the natural foliage, used in conjunction with a remote cable so that you can position yourself out of the way, in an over watch position or even in a hide location.



INFRARED (IR) PHOTOGRAPHY WITH 35MM FILM

There may be times when you are instructed to gather photographic evidence or intelligence under the cover of darkness. In normal night situations, you would use your camera with a white flash unit fitted, this however is not covert and no good for surveillance methods. With infrared film and a converted flash unit, you can capture the required pictures whilst allowing you to stay totally covert.

Infrared cannot be seen by the human eye, which is what makes this equipment so important in covert surveillance. You must be aware that if you are being unknowingly over watched by a third party with night vision equipment, they will see the camera flash every time you take a picture.

Infrared (IR) film

When using IR film, ensure you buy the monochrome format as this works best, it can be purchased in most good photography shops. Always handle the film with great care. Certain IR-sensitive films like Kodak HIE must only be loaded and unloaded in total darkness, you must take the same care when removing the film.

Once the film is loaded, set the camera to manual mode and film speed to around 100 ISO, your shutter speed to 1/60 – 1/90 sec, with an aperture of around f8 – f11, giving better depth of field. Although IR film is not speed rated, these settings are tried and tested by the military over many years of covert operations.

Focusing

Most manual focus 35mm SLR cameras and medium format SLR lenses have a red dot, line or diamond, often with a red 'R' called the infrared index mark. This can be used to achieve a proper infrared focus but many auto focus lenses no longer show this mark. Set your distance to this dot, if there is no dot focus, a wide angle lens is best. Use an 18mm to 28mm lens, as this will allow you to shoot at close range.

Infrared lens filters

Filters are used in black-and-white infrared photography to block blue light and allow only infrared to pass through. Without filters, infrared negative films look much like conventional negatives, because the blue sensitivity lowers the contrast, and effectively counteracts the infrared look of the film.

Very dark-red (29) filters block out almost all blue and visually opaque (70, 89b, 87c, 72) filters block out all blue and also visible-red wavelengths, resulting in a more pure infrared image with a more pronounced contrast.

Infrared (IR) light sources

There are a number of ways to obtain infrared light. Purpose made IR flash guns cost around £300 however, a standard flash gun can be converted into an IR flash gun quite easily.

Cover the flash lens with IR gel filter film, which can be found at most good stage and theatre suppliers or specialist security outlets.

Cut the IR filter to size and position it in front of the glass on the flash unit, holding it in place with black electrical tape. The tape will also prevent any white light from escaping.

You can buy small infrared light emitting diodes (LED's) shown above, which can be hand held or attached to your camera to give IR light where it's needed.

Another option is to buy an IR torch filter, which can be pushed over the end of your standard white light torch. The one pictured below, can be flipped open and closed depending on the situation. If you use this type of filter, ensure it is taped closed to prevent the lid flipping open and accidently compromising your task.

DIGITAL INFRARED PHOTOGRAPHY

This is a lot simpler than the wet film methods, have the camera's internal infrared filter removed so that it 'sees' infrared light and you will be able to take covert images in total darkness. This can be carried out for approximately £300 by specialist companies. However, once the camera body has been converted it can only be used for IR photography unless an external IR filter is used on the lens.

DIGITAL INFRARED IMAGERY

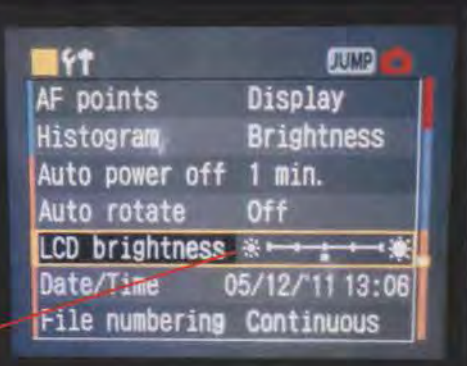
As mentioned at the end of the previous section, your digital camera has to be modified so that its internal sensor will identify an Infrared signal, this is achieved by having the internal Infrared filter removed.

When used in conjunction with one of the Infrared light source methods described, you will be able to take covert images in total darkness.

Setting the camera

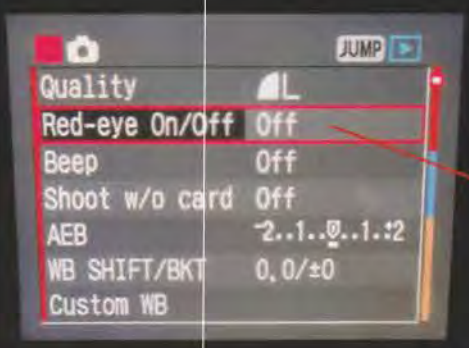
Working through the camera's menu, you need to make the following adjustments.

Switch off the image Review, from now on each time you take a picture it will not be displayed on the LCD screen.



Set the LCD Brightness to low, if you need to check your images at any time during the operation, the LCD screen will produce only a minimal amount of light.

Film speed (ISO) should be set to 200 or 400. Always test your equipment before deploying on a live operation.



Ensure you turn off the red eye mode, this will prevent the camera from emitting any light before the shutter release is fully pressed.

Focusing

Auto focus can be used if the level of threat is low. You must be aware that by using the camera in auto focus mode a small beam of light will be emitted in order for the camera to correct its focus.

Manual Focus should always be used in high risk situations, with the camera set to manual focus elirninates the beam of light. Doing this makes focusing difficult and will take more time, you may even have to preview your images.

Manual mode

With the camera set to manual mode you will have to adjust the shutter speed and aperture to achieve your image. Use a lens with a large aperture, as this will allow maximum light into the camera.

If you need to obtain close up images, use a medium aperture to achieve a good depth of field. Consider your shutter speed; a camera set with a large aperture should have a shutter speed of around 1/125 of a second.

If the image is too bright and over exposed then try a faster shutter speed. At the other end of the scale, if the image is too dark, then slow the shutter speed down. Review the image each time and make a note of the settings by keeping a log of your aperture sizes and shutter speeds, this way, you can create your own crib card for future tasking. You can also view the camera's settings from the information stored within the image.

Image blurring may occur through camera shake if the shutter speed is less than 1/60 of a second, consider increasing your ISO speed to 800 or even 1600.

For a true quality infrared picture, use IR filters as mentioned, for example the R72.

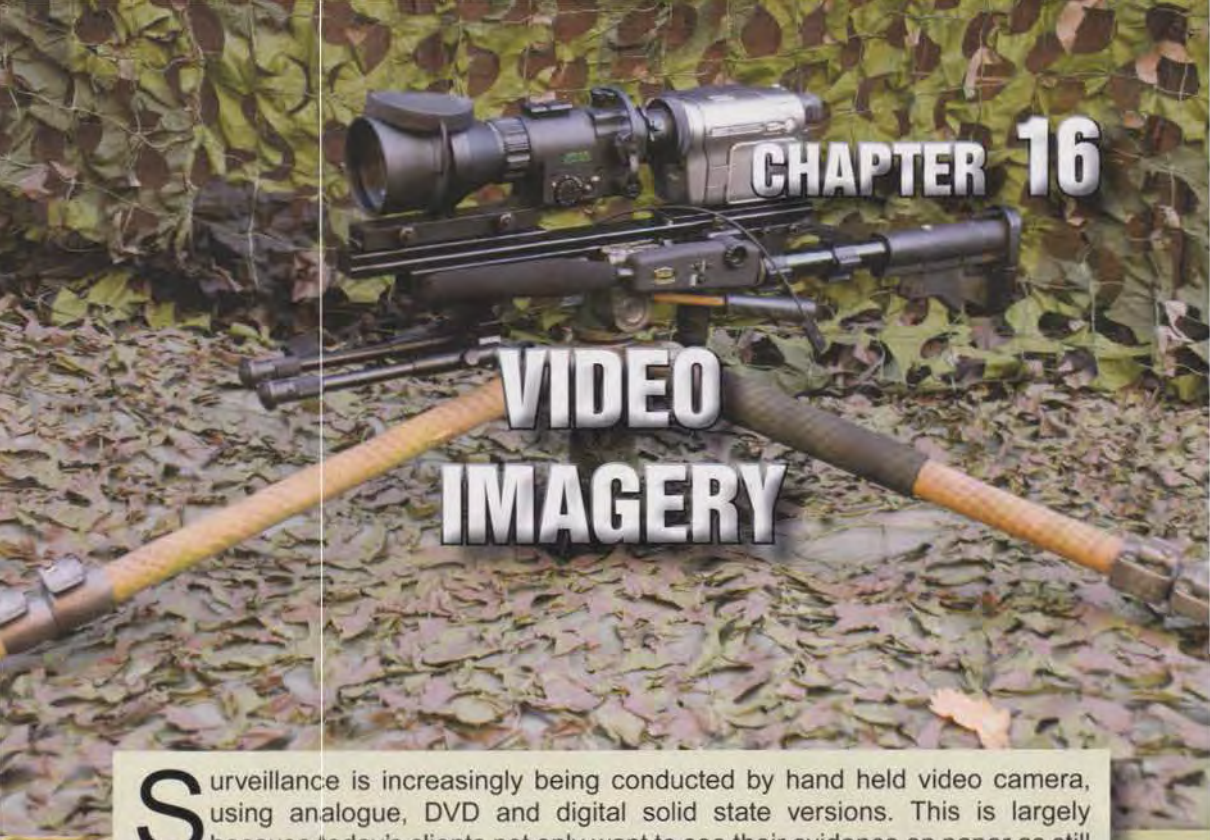
NIGHT VISION CAMERA LENS ATTACHMENTS

These night vision attachments are excellent but can be very expensive for what they are. It is possible to create your own camera system with night capability if you are technically minded.

How it works

An image intensifier is mounted between the camera body and a standard lens (or telephoto auto focus lens) using the standard bayonet system. The image intensifier optic is designed to deliver high-resolution images in dark scenes below 0Lux.

Although this system draws minimal power directly from the camera's own battery, I would use an external clip-on battery. The image intensifier is only powered up when the shutter release button is pressed, thus protecting the unit from damaging bright light. Expect to pay in the region of £4,500 for this type of attachment.



CHAPTER 16

VIDEO IMAGERY

Surveillance is increasingly being conducted by hand held video camera, using analogue, DVD and digital solid state versions. This is largely because today's clients not only want to see their evidence on paper as still photography, they also want to watch their target on the big screen.

Topics Covered

- **Types of camera**
- **Camera functions**
- **Low-light filming**
- **Field preparation**
- **Improvised CCTV**
- **Editing**

Surveillance is increasingly being conducted by hand held video camera, using analogue, DVD and digital solid state versions. This is largely because today's clients not only want to see their evidence on paper such as still photography, they also want to watch their target on the big screen.

For example, if you were tasked with conducting surveillance against a subject in a personal injury investigation who claims to have mobility problems, what better way to deliver evidence than a video recording showing the subject doing exactly what they claim they can't.

As already covered, it takes a lot of time and practise to master the skills of the SLR stills camera, mastering the hand held video camera takes no time at all and function control is picked up very quickly. Most people will be able to read the operating manual no more than twice, shoot a few frames and be pretty much ready to go.

However, if you're a professional surveillance operator, your film may end up in court as evidence. Do not think that you can get away with buying a cheap video camera and producing amateur home-movie style footage. You will be using this piece of equipment every day and cheap equipment will not withstand the punishment of the rural environment. It will not be long before the cheap video camera breaks down and is rendered useless. Your reputation is only as good as your last film!

This section will cover the extra operational techniques not covered in the camera's instruction manual. Teaching you how to obtain film through covert surveillance methods, illustrating how your equipment should be used and cared for. What to look for when buying a video camera and how best to use it in a surveillance role.

TYPES OF VIDEO CAMERA

Recorded to tape

These have digital components such as zoom and focus, time and date stamping etc but all your recorded footage will be stored on cassette tape. These video cameras incorporate many moving parts to record what you see through the view finder on to the final tape. There as small motors, record and delete heads, tape feed mechanism and the tape eject function. Understandably, with all these mechanical parts, they are larger than the equivalent solid state digital video camera.

Recorded to DVD

Here your footage is recorded digitally by laser on to a removable digital video disc (DVD), this functions via a number of moving parts similar to that of the cassette tape video camera.

I am not a fan of this style of video camera, they are not reliable and recorded images are easily corrupted by a bit of dirt or moisture on the disk.

Recorded to SD card

There are no moving parts in these digital video cameras, less to go wrong and all recorded footage is stored on a removable memory card. They are smaller and easier to conceal whilst being packed with built-in features. When buying a digital video camera, you need to go with a field proven brand such as SONY. I always buy Sony video equipment simply because it comes with a very handy feature called i-Link, which makes digital editing so much easier.

CAMERA FEATURES TO LOOK FOR

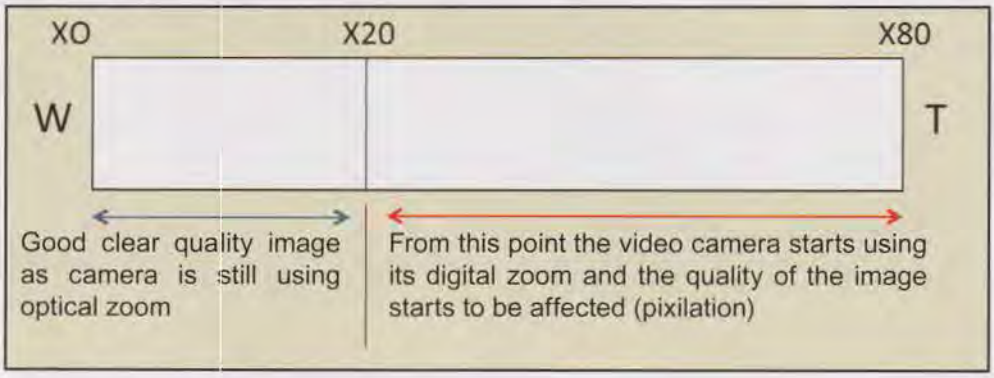
Zoom - optical and digital

The higher optical zoom rating your camera has, the better quality of recorded footage it will be achieve when filming your subject or target area at partial or full optical zoom.

If your camera has a low optical zoom rating, your recorded footage will lose its quality becoming more blurred as you continue to zoom in. When using the video cameras optical zoom, the actual lens inside the camera moves bring the image closer, cameras with digital zoom work by electronically enhancing the image so that it appears closer.

The digital zoom works on enlarging the pixels creating the image, the more you digitally zoom in, the more pixelated your image becomes. In turn you will lose total picture quality and end up with film that cannot be used.

When looking at the LCD screen on your video camera you will see the zoom has been displayed as shown below.



Lens magnifiers

With most good quality video cameras, you can buy lens magnifiers which attach to the front of the camera's lens, increasing magnification by X2 to X5.

As rural surveillance can be conducted from large distances, these attachments are a very valuable asset. Simply by attaching the smallest X2 magnifier it will make your standard video camera much more powerful.

Focal length

Unlike SLR cameras which give focal lengths in millimetres, video cameras use a 'times ratio X'. A 28mm SLR camera lens is approximately equivalent to a 'X18' video camera lens.

Here's a copy of the crib card that I was given in training.

TIMES	FOCAL LENGTH	APPROX LENS SIZE CONVERSION
X1	32mm	50mm
X2	64mm	50mm
X4	128mm	130mm
X6	192mm	200mm
X12	384mm	400mm
X18	576mm	600mm
X24	768mm	800mm
X40	1280mm	1200mm
X62.5	2000mm	2000mm

Auto / manual focus

This gives you the ability to switch between auto and manual focus. Occasionally you may be filming through cover such as foliage, if the video camera was set to auto focus, you will find it tends to focus on the nearest object, in this case the foliage preventing you from filming. With manual focus you can set the focal length, cutting out the closer foliage and achieve a crisp, focused image of your intended target.

Anti-shake

A very good feature and should always be considered when buying a video camera. In rural surveillance, you often need to use maximum zoom in order to record your subject or target area and the smallest hand movement can make the film look very shaky and poorly produced. Anti-shake solves this problem and also means can produce steady, crisp footage at maximum zoom without a tripod.

Playback / edit

This feature allows you to view your recorded film over and over, an excellent feature when facial recognition is required or you need to capture a vehicle registration, road or shop names, the reasons are endless. It will also allow a second member of the team to review the footage and interrogate it in slow motion.

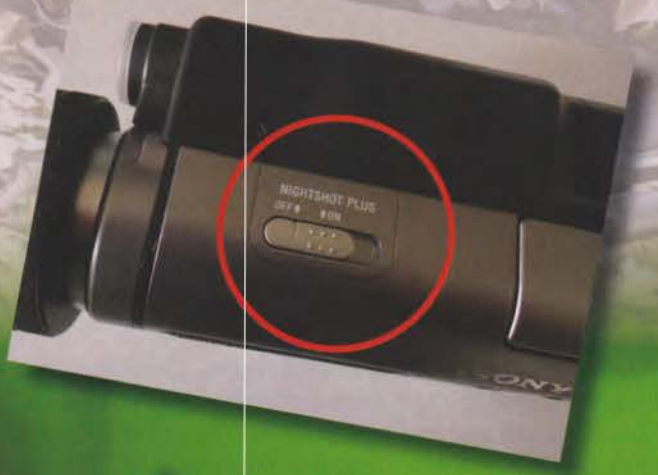
Time and date

If your film is to be used in court then it must contain the time and date digitally encoded into the recorded footage, this will also help when writing surveillance logs and producing your client's evidence packs.

REMEMBER - synchronise all equipment before use!

Back light

If filming your subject in front of a bright background the camera will automatically close its aperture making your footage very dark and underexposed. Turn on the back light to brighten the footage to give the correct exposure.



LOW LIGHT FILMING TECHNIQUES

Standard camera 'night shoot'

This allows the video camera to be used in low light conditions, by switching on the 'night shoot' feature, you activate the camera's built-in infrared (IR) light and enable you to film.

The night shoot feature is only good for close up work from a few metres, if greater distance is required a more powerful infrared light source is needed. Good for close target reconnaissance work, you must be aware that this feature will make your recorded footage green due to the way the image is filtered.

Long range covert audio / visual equipment

A lot of rural surveillance work is carried out from long distances and at night, this is where your standard video camera's night shoot feature becomes useless. Even with the most powerful lens magnifier, your camera will be less than effective. The only way to achieve good quality video film recordings in low light throughout the night is by using an image intensifying system.

This system must be used with a compatible video camera, pictured here is a covert system that I have developed over the years that not only records visual images but also captures audio via its powerful directional microphone. The system can be used in a static role attached to a tripod, from any concealed hide or as a portable system when conducting close target reconnaissance operations.

The powerful X5 night vision scope is attached to this Sony video camera, along with a powerful infrared torch to aid the image intensifier. The operator's headset and an external digital audio recording device can be connected into the directional microphone, allowing visual and audio evidence to be recorded separately.

Video skills - achieving the perfect film

- When recording, do not zoom in and out continually, this becomes very irritating and looks unprofessional when the client views your footage on a big screen.

- When the need to zoom arises, do it slowly. This allows the viewer's eyes time to adjust and take in what they are watching. Fast zooms look very unprofessional on a big screen.

- When recording, have the video camera set to manual focus so that you are in control. If the camera is in auto-focus mode, and something moves in front of your position the camera will automatically focus on that, causing your actual target to blur and go out of focus. If however, there's no danger of interruption use auto-focus.

- As we covered in the SLR stills camera section, different methods of holding the camera were shown, you must also get used to holding the video camera securely. Hold the camera with the right hand in a good grip; place your thumb alongside the record button and your forefinger over the zoom controller. Place your left hand under or around the front of the camera to act as a platform.

- Don't forget about using a tripod. If you have one, use it. Alternatively use any item that will allow you to achieve a solid platform to film from, this could be a tree branch, your Bergen or a well-positioned rock on the ground.

- As soon as you press the record button, the camera will automatically start recording audio, think about who might be reviewing your film at a later date. A good tip is to plug in a dummy jack plug into the external microphone socket, this disables the video camera's built-in microphone.

- There is always a time delay when using an analogue video camera; between pressing the record button and the image being recorded onto tape can take a few seconds, this time lapse is caused by the starting up of the motors.

Synchronise all equipment at the start of each day!!!

- Invest in the largest battery that will fit your camera and take a spare. It's extremely frustrating and shows lack of planning when the battery goes flat halfway through a day's surveillance.

VIDEO CAMERA FIELD PREPARATION

When operating from any hide location you need to ensure your video equipment is fully prepared for the ever changing environment and the weather conditions. There are a number of steps which can be taken to guarantee your equipment stays clean, dry and functional throughout operations.

Step 1: Disguise & conceal the video camera's aperture

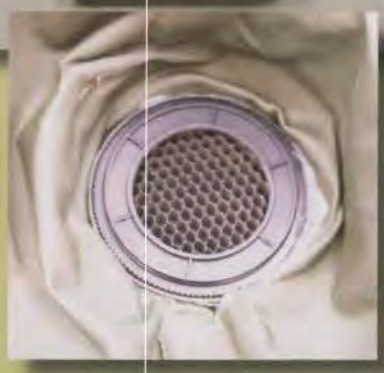
Step 2: Weather proofing the equipment

Step 3: Overall camouflage & concealment of the equipment

Weather proofing materials similar to this one can be brought from many outlets however, like most of the equipment I use, I prefer to build it myself.

Required items

- Waterproof covering - Gore-tex sleeve from an old jacket
- Step up/down camera ring, should be issued with the camera
- Relevant sized "Kill Flash" - available on the internet
- Ghillie garnish & hot melt glue gun
- Spray paints & cloth tape



In the picture above, you can see how the Gore-Tex sleeve has been glued to the step up/down ring, this also has the 'Kill Flash' fixed in position.

To attach the Ghillie cover, simply screw the step up/down ring to the front of the camera.

AV signal input for improvised CCTV

One of the reasons I choose to use SONY digital video cameras, is for their ability to accept a video in signal. This feature allows you to connect a smaller covert camera to the larger video camera, this can then be used as your visual monitor and when needed your recording unit.

For sustained observations, such as within a building where you may have struck lucky and have the use of mains electricity, this system can be used continuously around the clock. However, if using batteries, use will be limited.

When conducting rural surveillance, you usually don't have the luxury or the capacity to use large visual monitors and high capacity recording equipment. If you have conducted previous reconnaissance on the task in hand you may get away with using larger equipment, particularly if the client is allowing you to use their property as a base to operate from.

Below is a much smaller camera which would be covertly hidden and monitored from the hand-held video recorder. This hand-held camera features an "AV SIGNAL IN" socket so it can be used with different external cameras to record footage.

This particular system can be hard-wired or be used wirelessly to great effect.

EDITING FILMED EVIDENCE

Digital tape cameras

Footage recorded on to Hi8 tapes need to be transferred to VHS or DVD, these are known as 'SILVER' copies.

The silver copy will be sent to your client who can view the evidence in their own time. The original tapes known as the 'GOLD' copy, are kept in a secure store along with all other documentation pertinent to the job.

Straightforward tape edit - one tape

This is a simple job of connecting the video camera's editing cable, which should be provided with the camera, into the VIDEO OUT socket on the video camera. The other end of this cable is then connected into your VHS video or DVD recorder.

The editing cable at the recorder end will have a number of PHONO jack plugs, these are different colours; red, white and yellow are standard.

The coloured plugs you are interested in are the white (AUDIO) and yellow (VIDEO), these plugs are connected to the matching coloured sockets on your recording equipment. If you do not require the audio sound track to accompany your final product, leave the white (AUDIO) PHONO plug disconnected leaving only the yellow (VIDEO) plug in place.

Once connected, switch on the video camera and select the EDIT SCREEN, turn on your recording equipment. If your recording unit is connected to a separate TV or monitor, you will need to set this to AV1 or AV2. You should see the blue screen matching that of the video camera's LCD screen, you are now ready to edit.

Test run the video camera to ensure it is working, do this by loading up your film and press play, if it shows on the larger screen you are good to go. Load your VHS tape or DVD into your recorder, if using a VHS tape ensure it's rewound. There are now only three buttons you need to be concerned about, Record / Play, Pause and Stop.

This editing station is set up for a VHS transfer.

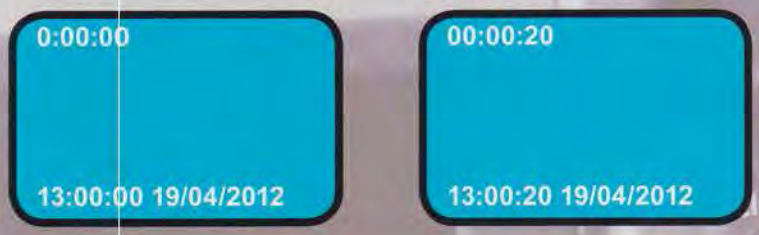
Complex edits of film from more than one camera

If working in a larger team where there are several cameras being used on the same task, each camera must have a new tape each day. A much lengthier edit will be needed and entails viewing all the footage and noting the actual timings of each event from the data code or the time and date display shown on each recording.

I find the best way is to assign a different colour to each operator's footage.

For example **(T1)** Operator One in red and **(T2)** Operator Two in blue, this way it is much easier to keep track of the timings.

For example, at **13:00** hrs operator T1 takes an opening pan of subject's house and obtains 20 seconds of film, this is how it might appear on the LCD display.



T1 0:00:01 – 0:00:20
20 second opening pan of subject's house

T2 0:00:01 – 0:01:20
Subject in view of operator T2 for 1 minute and 20 seconds, getting into his car and leaving for work.

T1 0:00:20 – 0:30:10
Operator T1, takes up the mobile follow of the subject and gets 29 minutes and 50 seconds of the subject driving to work

T2 0:01:20 – 0:03:24
Operator T2, now films the subject entering place of work

T1 0:30:10 – 0:30:30
Takes final closing pan with 20 seconds of footage of the workplace

In the example you now have all the timings and the sequence of events. The next step is to copy this onto the editing sheet, which should be kept with all original tapes and paperwork.

Data code - time and date display

This function displays the actual date and time of day the recording was made plus the running time of the footage recorded. In the example screens above, you can see the running time from zero to 20 seconds of footage. This function can be switched off from the camera's menu settings.

Breaking the days

If your job has been conducted over a number of days, it is usual to have a break in the tape indicating each day.

Example of a 2-day surveillance task

DAY 1

T1 0:00:01 – 0:00:20

T2 0:00:01 – 0:01:20

T1 0:00:20 – 0:30:10

T2 0:01:20 – 0:03:24

T1 0:30:10 – 0:30:30

BREAK

DAY 2

T1 0:00:01 – 0:00:10

T2 0:00:01 – 0:35:22

T1 0:00:10 – 0:18:00

Digital editing

Digital editing is done in a similar way, if using a Sony video camera you can plug the i-link cable into your camera, the other end of the cable either into a DVD recorder or a computer.

Other models of video camera can be plugged into a computer, download the information and save it to the computer's hard drive, from here the film can be edited via Microsoft movie maker.

You can buy professional film editing software with a host of features. I would spend time practicing with Microsoft movie marker first, you may find it has all the features you need.

Camera to camera editing

By connecting two hand-held video cameras together via an i-link cable, which comes as standard on all of Sony's higher range of video cameras, it is possible to record from one to the other. This is also very handy when collecting still images from your GOLD tapes onto a separate tape containing only still images, these are then added to the final target pack.

With the recorded GOLD tape in camera one, and a blank tape in camera two. Set camera one so that you can view your recorded images of that day, camera two should be set to record the images. When the image you want to use as a still is viewed, press PAUSE on camera one, then RECORD on camera two for around 10 seconds.

Extracting covert film

In surveillance, the majority of filmed evidence is captured on smaller digital covert camera systems. It's a simple process to transfer your covert footage from the digital recorder through a computer and save to a disc in digital format. The problem comes when you need to transfer the covert digital evidence to VHS format, to do this you need a computer that has an i-link port such as the one pictured.

i-link port

I always use Sony equipment as it has all the features necessary for surveillance, and all pieces of equipment are compatible with each other.

Connect your covert camera to your computer via the lead supplied and download the footage to your media player or movie editor. Once it is across and saved on your computer, you can connect the i-link cable from your computer to the hand held camera. Transfer the footage back into an analogue format, with the edited covert footage now on an 8mm tape you can include it in your edit.

If your computer does not have an i-link port, PC specialists such as PC World can change one of your USB ports into an i-link port.

There is equipment on the market, which allows you to plug your computer and camera into a device which changes the format from analogue to digital and vice-versa, as it transfers the information across. They are an excellent piece of equipment to save time. 20 minutes of film from your covert camera will take around 40 minutes to convert to analogue using the i-link system.

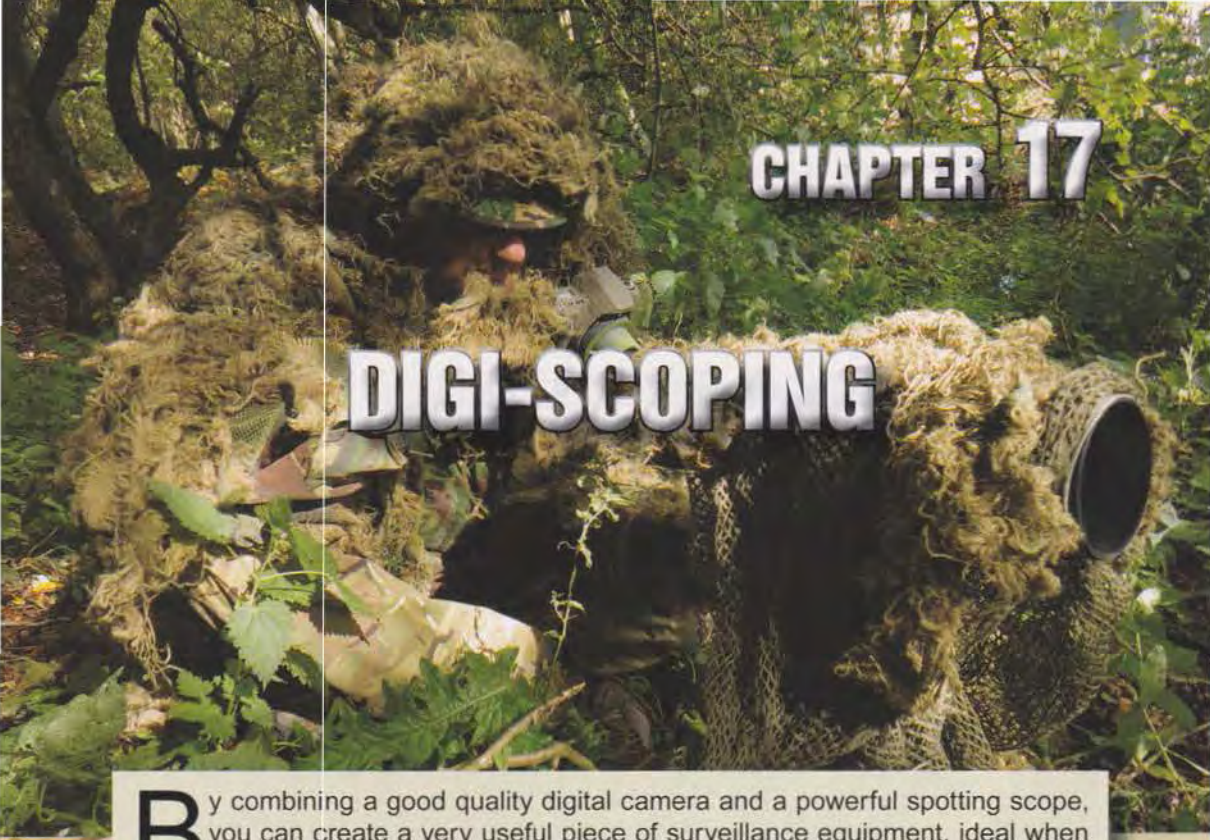
EDITING SHEET

Subject's name:..... case no'.....

Dates from.....to..... no' of tapes.....

Tape no'	start	stop	length	Tape no'	start	stop	length

Copy this form to create your own reporting documents



CHAPTER 17

DIGI-SCOPING

By combining a good quality digital camera and a powerful spotting scope, you can create a very useful piece of surveillance equipment, ideal when you are tasked to obtain images from long distances.

Topics Covered

- **Technical details**
- **Magnification**
- **Brackets and attachments**
- **Deployment methods**

This skilled technique is relatively new, I have used it a number of times in the past with great results. By combining a good quality digital camera and a powerful spotting scope, you can create a very useful piece of surveillance equipment, ideal for the rural environment when you are tasked to obtain images from long distances. I personally have two different set-ups; one is a small compact system carried in my rural grab bag and the other, a much larger and powerful scope which is used when the hide location is at an extreme distances from the target.

SPOTTING SCOPES AND TECHNICAL DETAILS

Spotting scopes are available with a variety of different aperture sizes, body lengths, magnification and eye piece styles, such as straight, angled or interchangeable. They range from cheap starter scopes to very expensive professional models giving high clarity even at very long distances. All spotting scopes can be attached to a tripod in the same way as cameras.

Aperture - The larger the objective lens aperture, the more light will be allowed to enter the scope giving a better, clearer sight picture at greater distances. This is a high priority as a lot of surveillance is conducted in low light conditions.

Length - The overall length of the scope does not dictate how powerful it is and the quality of the image. When choosing your scope, think about how you will carry it and the locations it will be used in. For example, you do not want to be setting up a very large spotting scope in the confined space of a sub-surface hide, in this situation opting for an equally powerful yet smaller compact scope would be better.

I own two types of spotting scope. One is small and compact yet powerful, this can be carried in the top flap of my day sack with a table top tripod. The other is a very large and more powerful spotting scope that when carried with its tripod takes up an entire side pouch on my Bergen. I would never opt to take the larger scope into a sub-surface hide as it really is too big however, for surface work, where you need much more distance between you and the subject, it is perfect. I have used the smaller scope a number of times and can't fault it, always producing the goods; it can also be fitted with a small point and shoot digital camera or the larger SLR camera body.

Magnification - The more powerful the spotting scopes, the smaller your field of view will be, preventing you from observing wide areas of land from the static position. To achieve full observation of your arcs, you may need to scan the ground to your front by moving the scope from side to side. Again this is where choosing the right scope for the task is so important, if your spotting scope's lowest magnification is too powerful, you may find that the majority of the ground between you and target cannot be observed creating dead ground and more complications to deal with.

HOW MAGNIFICATION IS WRITTEN

X20 X75 X90 – 100mm

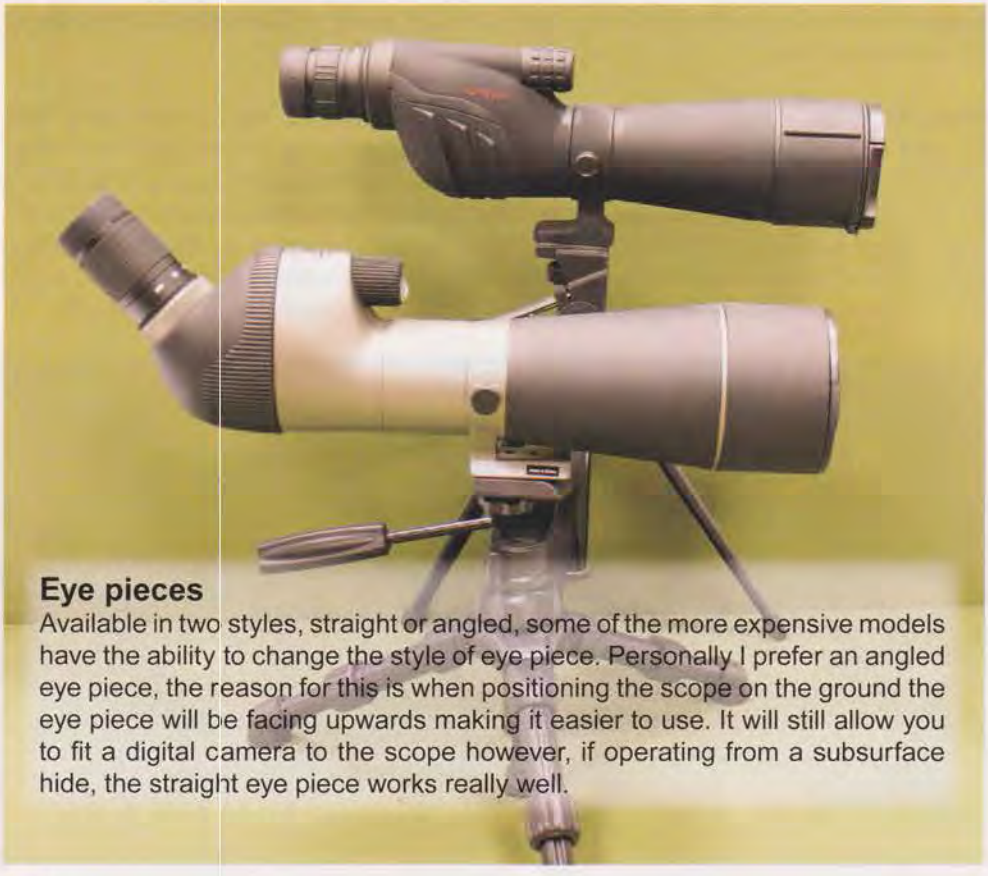
Above is how you would see the individual magnification of a spotting scope printed, shown below is a breakdown of this description, this will help you understand what it means and what to look for when buying a spotting scope.

X20 = lowest (minimum) magnification

X75 = mid-range magnification

X90 = maximum magnification

100 = objective lens aperture size in millimetres



Eye pieces

Available in two styles, straight or angled, some of the more expensive models have the ability to change the style of eye piece. Personally I prefer an angled eye piece, the reason for this is when positioning the scope on the ground the eye piece will be facing upwards making it easier to use. It will still allow you to fit a digital camera to the scope however, if operating from a subsurface hide, the straight eye piece works really well.

BRACKETS AND ATTACHMENTS

Swing away

The swing-away attachment is a very simple but effective way of mounting your equipment. As the name suggests, the mount allows the camera to be moved away from the scope's eye piece, it can then be used as a conventional spotting scope. This is very useful, most of the time during surveillance, you are watching and waiting for something to happen.

Below: x50 scope used in conjunction with a compact camera.

Permanent platform

This bracket is much stronger and will hold the weight of a video camera as well as a still camera clamped around the spotting scope's eye piece and once in position it cannot be moved. The camera is attached to the platform and adjusted by turning threaded rods, these allow the platform to be moved in all directions ensuring a correct position. This will take more time to adjust the system compared with the swing-away bracket.

SLR sleeve

This is one of the better designs I have seen, here the mounting bracket attaches to the camera body by an M40 mount in the same way as a standard camera lens would. Once connected to the camera body, slide the lens-like tube over the eye piece of the spotting scope. Next screw the sleeve onto the thread located around the eye piece, adjust the zoom and focus of the scope through the cut-out section shown here (A) on the sleeve. The image is passed through the scope onto the internal mirror and can then be viewed through the view finder.

Setting up

This can take some time to master but like most things, with practice comes speed. You may find that you struggle to get both pieces of equipment to focus correctly on your target; follow the steps below to solve this problem.

When using a very powerful spotting scope, begin with it set on the maximum zoom, this way you can ensure that the target area will be in the sight picture. Once this has been achieved, slowly zoom out so you have a wider angle of view, this will then allow you to observe the ground between you and the target area. Now as soon as your subject comes into view, you can zoom in knowing that the subject will still be in the sight picture.

- Attach your scope to a tripod, look through the eye piece to ensure that you have the target in view, focus the scope until the target is crisp and you have a clear sign picture
- Attach your camera mounting bracket to the scope, there are a number of different brackets, each designed to attach in different places. Ensure your mounting bracket will work with the scope before deploying on to the ground.

- Once the digital camera is fixed to the bracket, position the camera lens aperture over the scope's eye piece. Switch the camera on, moving the camera as close to the eye piece as it needs to go. You may see a dark ring like shadow around the sight picture; if this is the case slowly zoom the camera in until the shadow disappears.
- Now that the camera and scope are in line, start to adjust the scope accordingly. Zoom and focus until the target is as you require, then half press the shutter release to allow the camera's auto focus to correct the image.
- If at any time the scope needs to be re-focused or zoomed in or out, always half press the shutter release before taking the shot.

DEPLOYMENT METHODS

The down side to Digi-scoping is operating with two individual components, the risk of camera shake is enhanced. There are ways to limit this problem, such as using a double tripod or ground mounting wherever possible.

Double tripod

In bad weather and especially high winds, it may be necessary to use the double tripod method; this will add stability to your equipment.

Ground mounting

Always consider ground mounting your equipment, this can be done by positioning sand bags on either side of the spotting scope, stopping the scope from rolling over. Next place one or two sand bags over the top to hold the scope in position; you can then move to the rear and operate the camera as required, staying low to the ground and out of view of the target. Below are step-by-step pictures of the ground mounting method.

I find this works very well if you are located in a tree line or on a hill top and required to stay as low as possible.

Taking the shot

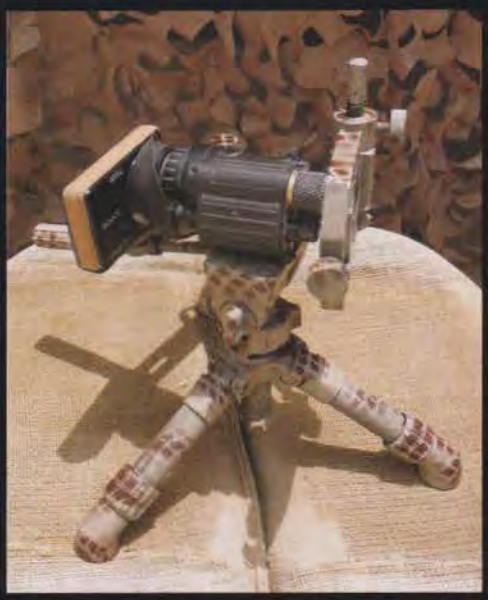
As the spotting scope is acting as a very powerful telephoto lens, camera shake and distortion of the picture is a definite problem. Always use a remote cable attached to your camera in this situation, if using a small compact camera, ensure it has an infrared (IR) remote capability.

Larger SLR camera bodies will allow you to plug in your remote cable as seen in Chapter 15 on still imagery. Using a remote shutter release will eliminate the problem and help you take better pictures.

Night deployment

Digi-scoping is not limited to day time use, with a night image intensifier the digi-scope technique can still be deployed. This can be achieved in two ways, firstly by positioning the image intensifier between camera and spotting scope, which requires a much larger mounting plate in order to hold all three components in line and together. The second and preferred method is to use the image intensifier as the scope and simply attach a camera using a much smaller mount, for example the swing-away style.

Pictured here is a military issue image intensifier, it has X4 magnification which isn't much but when used with a good quality camera will produce great results. At night you can get much closer to your target, eliminating the need for powerful magnification.



CHAPTER 18

COVERT CAMERAS

As technology advances at an ever faster rate, covert cameras are becoming more sophisticated and of course smaller, making it easier to obtain covert film footage by concealing hidden cameras in a number of objects that don't look out of place in their surroundings.

Topics Covered

- **Technical information**
- **Types of camera systems**
- **Antennas**
- **Re-broadcasting**
- **Night-time operations**
- **Recording units**
- **Stages to deployment**
- **Retrieval**
- **Environmental factors**
- **Bespoke hides**

Covert Rural Surveillance

As technology advances at an ever faster rate, covert cameras are becoming more sophisticated and of course smaller, making it easier to obtain covert film footage by concealing hidden cameras in a number of objects that don't look out of place in their surroundings.

Although this manual is focused on surveillance in the rural environment, there are times when your task may commence or more often end up in a built-up area. This isn't a problem as long as you have a number of different camera hides already built and ready to conceal your larger equipment.

When operating in an urban environment, for close-up work I have two very covert systems which are used. The first is a small pin-hole camera, which has a threaded housing around the lens to attach different styles of button to match my clothing. It can also be used with a number of different size false screw heads, which means the camera can be concealed in all types of objects.

The other system is identical to a mobile phone, except that it is fitted with a high definition colour camera and powerful microphone. Both are digital solid state recorders that will store the footage onto a memory card, this is then transferred to a computer after recovery.

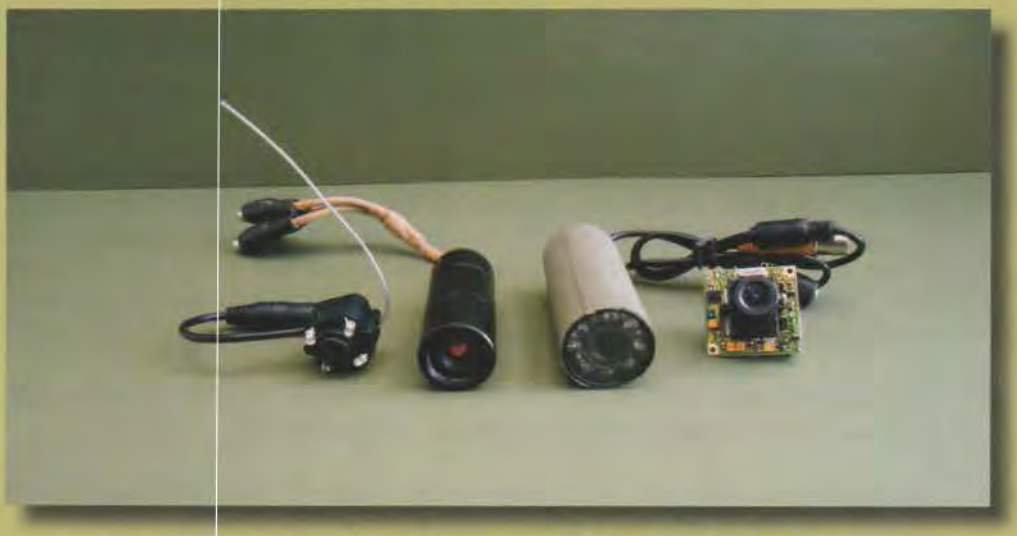
There are hundreds of different systems on the market which can be used, some fully built and ready to deploy, others can be custom built to your requirements. If you have the technical know how, you can build your own systems as most components can be bought on the internet. I like to build a lot of my equipment from scratch, this way I know what I have, how best to use it and I can conceal the equipment as it's being built. In the past I have concealed cameras in logs, bricks, stones, traffic cones, road works, fence posts, hedges, vehicles, tin cans, buildings and up trees and lighting posts to give better elevation. You can conceal a camera in almost anything; it's all down to your imagination.

TECHNICAL INFORMATION

Covert cameras

Thanks to advancing technology, today's covert cameras offer the same features as their full-sized counterparts. When choosing your camera you need to know what it is capable of, so that it will achieve your objective. Following are some of the more important features to look out for on modern cameras.

- Full bodied cameras or Printed Circuit Board (PCB) cameras ready to be fitted into a hide. Full bodied cameras have already been housed and weather proofed however, this will not stop you from concealing them in a hide which you have made, the only drawback is they may be slightly larger than a board camera. A board camera is mounted solely on a printed circuit board with no other housing, this allows you to conceal it in a much smaller hide.



- Lenses come in many different forms such as pinhole, flat faced or coned.

- Wide angle or telephoto lenses are available starting from 3mm, 3.6mm, 6mm, 8mm, 12mm, 16mm, 25mm, 35mm etc.

- Cameras with a fixed iris will result in a wide angle view around 3mm – 8mm.

- Some cameras come with vari-focal lenses such as 4 to 9mm, others can be fitted with lens adapters to increase the focal length, shown below.

- Image quality is graded in TVL - TV lines; any camera below 320TVL is not going to do the job. The base minimum is between 380 – 480 – 580TVL. You can get high resolution cameras of 650TVL and above but these are expensive.

- Black and white or colour models, a monochrome camera will operate better in the dark than its colour counterpart. The light rating on a camera is known as LUX RATING, a camera with 3LUX will only operate in daylight conditions, whereas a camera with 0LUX will see in total darkness when used with an Infrared (IR) light. There are more specialist cameras designed to operate during day and night with an automatic light sensitive iris or IR switch. This allows the camera to film in colour during the day and when the light starts to fade, the camera will automatically switch to monochrome, operating with its own IR illuminator, a very good piece of kit.

- Night vision covert cameras can now be obtained operating with 3rd generation night vision military grade tubes and a LUX rating of .00001

- Other features, automatic white balance, electronic shutters with speeds from 1/60sec – 1/120,000sec. Auto gain control and back light compensation.

TYPES OF CAMERA SYSTEMS

This section will only cover the basic camera systems. More advanced equipment is being used daily on live surveillance operations which we cannot cover in this manual for security reasons and risk of compromise to the operators on the ground.

The covert camera systems that are covered

- **Hard wired**
- **Wireless**
- **Remote**
- **3G and IP**

HARD WIRED SYSTEMS

Using a hard wired system comes with pro's and con's!

Pro's

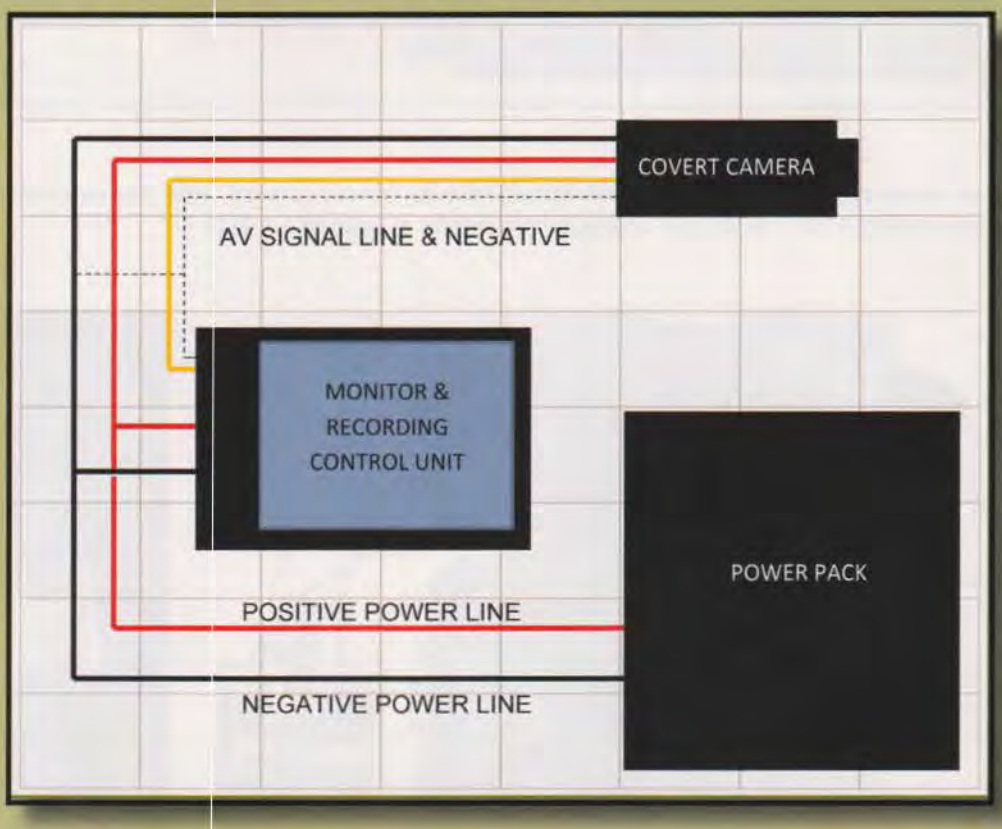
Using this type of system means there are no physical breaks in the connection between recording unit and camera, the signal is carried down a wire as opposed to through the air with the wireless systems covered later. The picture quality with hard wired systems is very good and stable throughout its use.

Con's

Time must be taken to conceal the cable; if found by the subject or a third party it can be followed back to your hide location, ending in a possible compromise.

Cables can occasionally be damaged so care must be taken to ensure there are no breaks or cuts, always test the system before laying and concealing. Ensure that all cables are buried deep into the ground; the last thing you want is an animal digging it up and chewing through it!

Below is a wiring diagram for a hard wired system



If running cables over long distances between camera and recorder unit, consider using a separate isolated AV signal cable, this will eliminate the possibility of interference or distortion to the on-screen image.

Standard three-core cable

Cable with a separated AV Signal coax gives even more insulation

On some covert systems the camera will take its power straight from the recorder unit, such as the one shown below, which retails at around £4,000.

WIRELESS SYSTEMS

With wireless camera systems you really do get what you pay for, the more you are willing to pay, the better signal range (distance) and of course better picture quality over that range you get. These systems can start from as little as £200 for a very basic setup, with a signal range of between 100 - 150 meters line of sight only, this being a flat open space where both transmitter and receiver have a clear path.

The range is greatly reduced when large objects such as buildings and large wooded areas are located between these two points however, in a rural environment 100 metres can be all you need. At the top end of the market, expect to pay well into the thousands for a state of the art camera system, these operate on GSM mobile phone networks, internet bands and other satellite systems.

Above, low powered 2.4 GHz transmitter, this operates at 200mWatts. The range of this would be no more than 80 metres, line of sight.

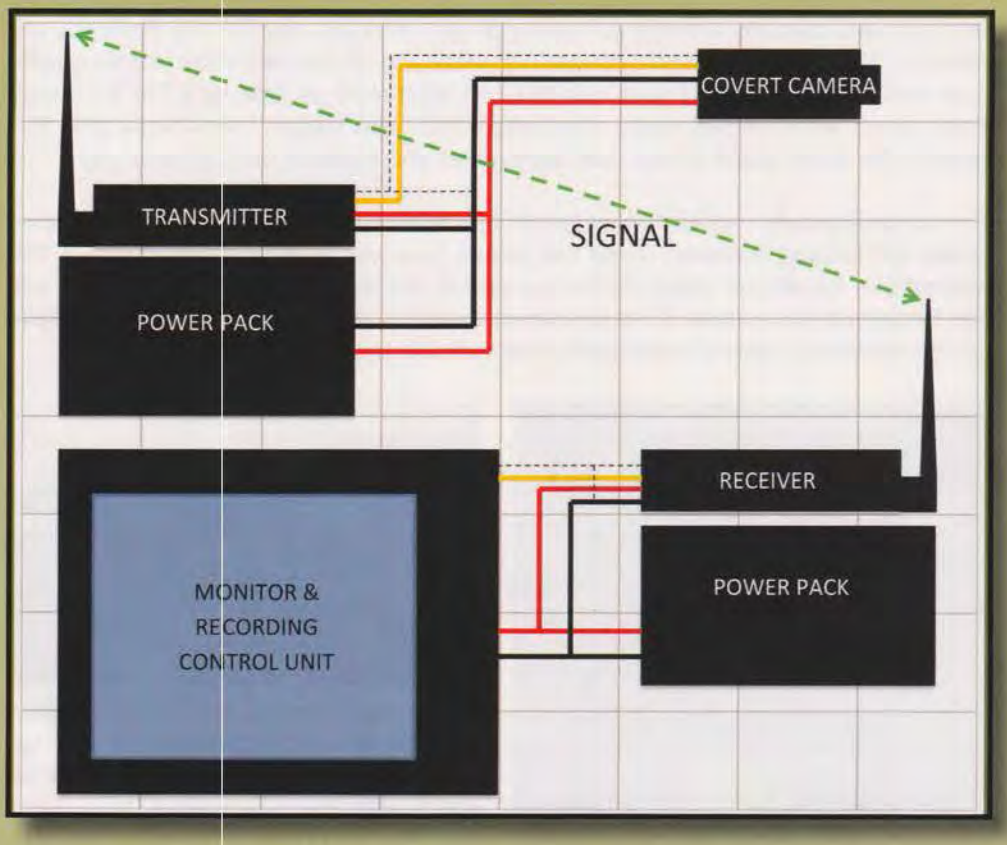
Left, a 1.2 GHz commercial transmitter, this particular one is used in my rural technical pouch.

Most wireless camera systems obtained over the counter operate on a frequency between 1.2GHz to 2.4GHz, which requires no user licence in the UK.

When operating in the rural environment there will be little interference to your system between these frequencies.

One of my custom built, medium range wireless technical pouches; this system operates on a 1.2GHz (2 Watt) transmitter receiver unit and cost around £400.

Wiring diagram for a covert wireless camera system



An entry level wireless pin-hole camera systems, these have a limited range of 80 – 100 metres. The cameras have a built in micro transmitter that operates from a 9-volt power supply, the receiver on the other hand is powered by 12 volts. These small cameras are excellent for close proximity operations.

Velcro has been attached around this camera lens for more deployment options

The closer you move towards any built-up area, the weaker your signal will become due to the signal being deflected by buildings. Greater interference to your system will come from the mixing of frequencies as they conflict with each other.

For example, you might pick up Sky TV or CCTV systems on other properties operating on the same frequency. Cheap home CCTV packages that everyone can afford are widely available and commonly seen on local authority estates.

If you are operating with a high grade wireless camera system interference will not be a problem. They work on different frequencies and have an encrypted signal making them secure.

True Accounts

I once did a job where our 2.4GHz receiver was picking up the subject's wireless CCTV camera positioned at the rear of the property. This was great for us as it meant a double watch turned into a much simpler single watch using the subject's own camera to trigger their movements to the rear.

UPGRADING LOW POWERED WIRELESS SYSTEMS

Upping the wattage

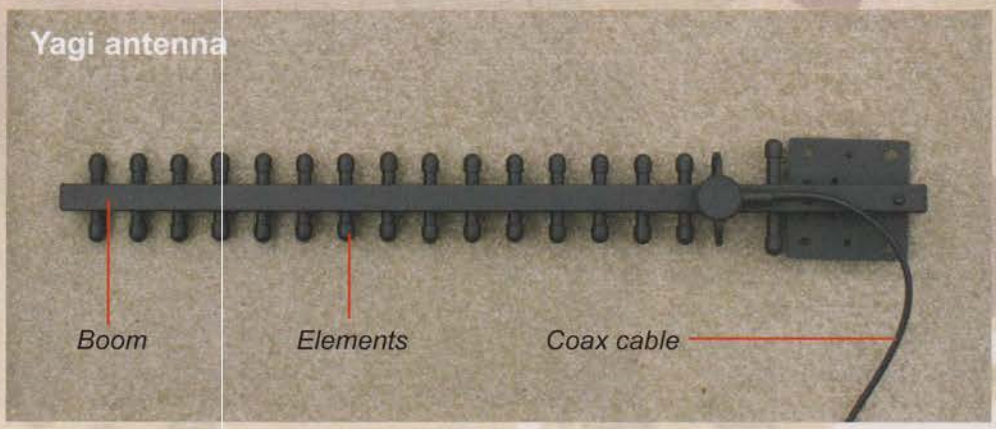
There are a number of ways to upgrade your low-powered wireless system. The standard over-the-counter transmitter will have a power output of around 200mW giving you a range of 100 – 150 metres, line of sight. A commercial transmitter will have a much larger wattage output, this extra wattage creates a stronger signal, which in turn means it will travel further.

A commercial system operating on a 1500mW output will give you a signal range of around 2 miles line of sight, with a 3000mW (RF) output you will achieve distances of 5 - 6 miles line of sight. This distance will be greatly reduced by buildings, hills and dense woodland.

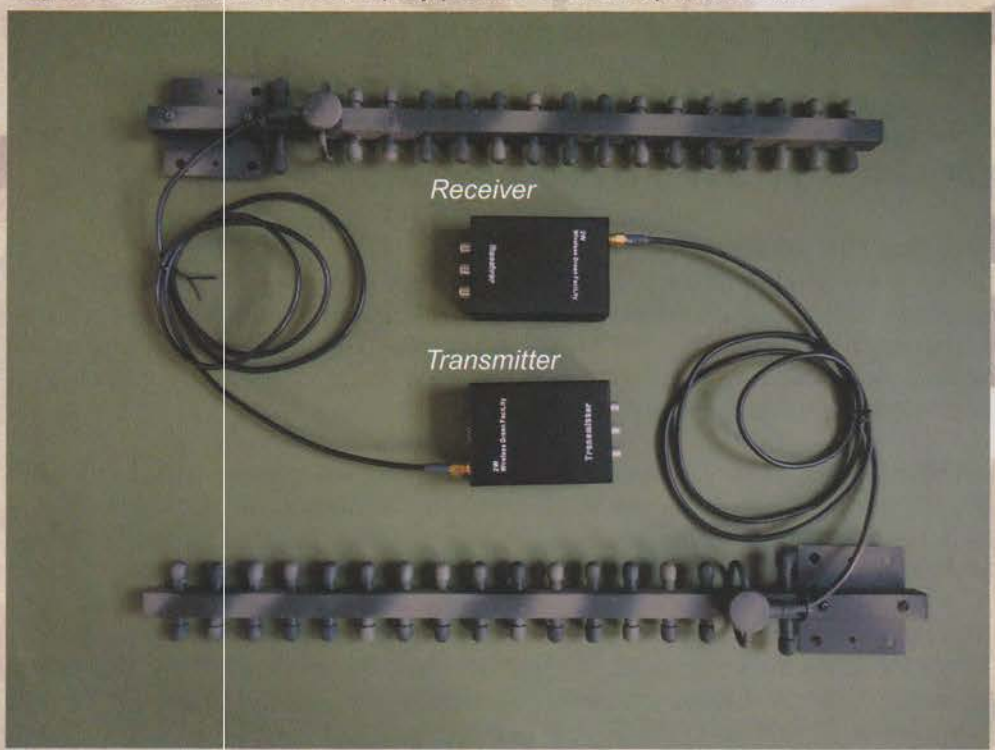
You can obtain transmitter / receivers which offer many different channels but still within the same frequency band. This allows you to operate more than one camera at any one time or, if you are experiencing interference within a single channel you can change to another.

Yagi antennas & re-bro's

If you cannot obtain a commercial system, there are other ways you can boost your signal with a YAGI antenna or a re-broadcasting unit (Re-bro). The YAGI antenna is very similar to a TV aerial in its appearance, by fitting the YAGI to the transmitter and another to the receiver, which are then directed at each other you will extend your signal range by up to a mile. When buying a YAGI antenna always check to see how many elements are attached to the boom, as this will give you an idea of its operating length and quality.



Yagi antennas that have been spray painted to break up their outline



Re-broadcasting station

A re-broadcasting (re-bro) station is a standalone unit which contains both a receiver and transmitter operating on the same frequency as the camera system in place. I have used these stations before and find them very good if operating in hilly countryside, they allow you to lift the signal over the top of the hills. Tactically this gives you a natural barrier between you and the target area. Re-bro stations can be positioned in lines known as daisy chaining, or positioned to bounce the signal around solid objects such as buildings. Be aware of interference between each station, and remember that each unit will need a battery needing resupply on sustained operations.

Remote camera systems - hard wired

A lot of today's camera systems have a motion detection mode, using this option is great on sustained operations where battery resupply is tricky at best. When set to motion detection mode, the system remains in stand-by mode until triggered. Once triggered by movement, it will instantly start recording, it may be activated by high winds or vibration so ensure suitable support.

Trigger systems vary according to the quality and the grade of device. Some systems allow you to 'draw a box' around the point of interest, for example the subject's front door, on other systems you can draw a number of boxes each with their own priority.

If using a standard camera without a motion detector, it can easily be adapted by adding a passive Infrared motion detector commonly found on domestic alarm systems. When the subject passes in front of the invisible beam emitted by the unit, it will automatically switch on the power and the system will start recording.

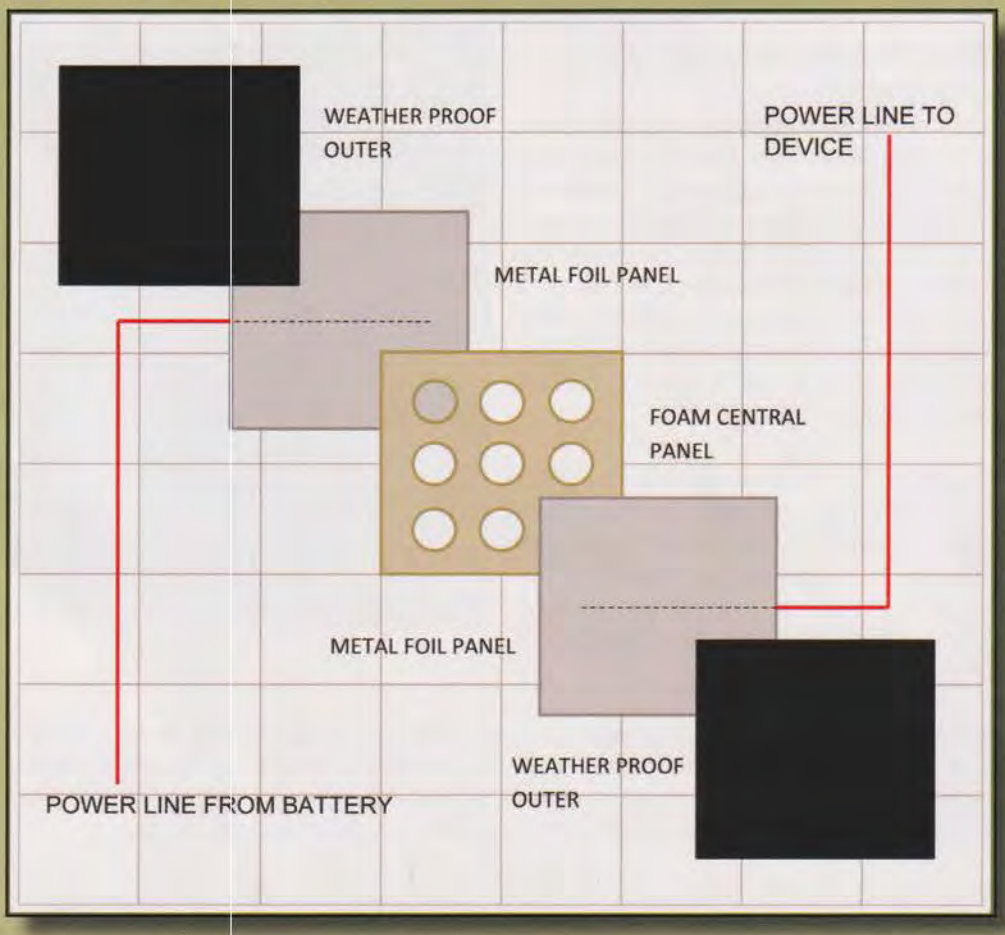
They operate on 12 volt supply so ensure your camera system is compatible, I wouldn't use anything in the rural environment operating on less than 12 volts.

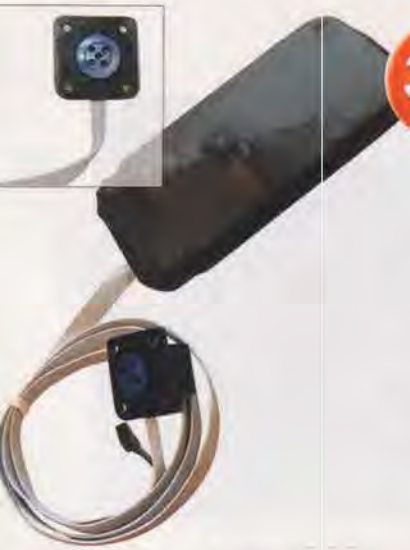
Other remote methods

- **Timers**
- **Tilt switches**
- **Pressure pads**
- **Making a phone call or texting the system**

If your camera has audio capabilities, you can use a voice activated system similar to the ones found on most good dictaphones. Each of the methods will act as switches between the camera and recording units.

Building a pressure pad





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Cellular 3G, stand alone system

A simple wireless system operating on the UK's standard frequency and wattage output may not give you the required distance. A solution may be to use a covert cellular system operating on the 3G network giving you infinitive range.

The cellular system works just like a mobile phone, once the system is in position covering the target, simply call the system by dialling the SIM card as if it were a mobile phone. Using the 3G video call mode allows you to view the camera's image in real time and if connected to a computer, the live feed can be recorded directly to the hard drive.

The down side is purely financial, constant viewing is expensive. Alternatively, set your system to alert you via email or text message when movement is detected.

Internet protocol (IP) camera systems

These camera systems are used in conjunction with internet bandwidths, which of course means they work only as well as your connection. If your internet connection is capable of carrying the content all is well however, when the network becomes overloaded transmission will slow down or may even stop altogether.

IP cameras can offer secure data transmission through encrypted methods, used in conjunction with wireless networks after configuring your router to receive live video footage via portable units such as smart phones / i-pads and laptops.

I have used this style of camera before but only on very prolonged jobs with the cameras wired into a mains electricity supply and with a backup power pack. They were used because of the threat on the ground, which meant they had to be monitored from a safe location.

Although the cameras were gathering the intelligence, we still had to deploy and service them, clean the dust from the lenses and ensure wildlife hadn't disturbed the hides.

Covert IP camera systems are an excellent item of equipment to own, they have all the high end features such as motion detection, email / text alert, day and night operating lenses, but a good set up can cost thousands of pounds with operating costs on top. Government agencies don't have an issue with running costs and widely deploy these systems.

Night time camera operations

When operating at night, your camera's effective focal range will be drastically reduced. As previously mentioned, a camera with 0 Lux will produce an image when used in conjunction with an infrared (IR) illuminator. There are many cameras with built-in infrared (IR) LED's, generally positioned around the lens as seen in the picture to the right. The LED's will only emit light to around 6 – 8 metres, sometimes at night in the rural environment this is all you need.

Not only does this camera have IR LED's but also a light sensor seen here, as the light fades this sensor will automatically switch the IR LED's on, allowing the camera to film at night.

POINT TO NOTE - It's widely accepted that infrared light cannot be seen by the human eye, this is both true and false. Totally covert infrared light transmits at a wavelength of 950nm but is very expensive, cheaper equipment will transmit at 850nm which will create a slight red glow. When buying cameras that are advertised with infrared illuminators, check them before deploying on a live operation.

If you require more light than the standard LED's offer, you need to use a separate larger illuminator. These are widely available and come in many different sizes and lighting range, operational distance. As already covered in the CTR chapter, you may need to deploy these before the operation is to take place. Before you buy ensure it has a day / night sensor and operates on a minimum of 12 volts.


Camera and infrared light source mounted and ready to be concealed before deployment

If you are keen to spend money, you could buy a military grade .0000 LUX 3rd generation covert night camera on the civilian market for around £3000. Not cheap but you can't buy better!

Recording units

Whichever method you use to record your evidence, you must ensure that the unit has a time & date stamping feature. Without an electronic date stamp, any recorded footage could be questioned in a legal case and could lead to your hard work being thrown out of court.

Recording units come in two types, analogue and digital. Analogue will record your images onto tape much like a household VHS recorder, except the tapes are much smaller such as Hi8 and mini DVs. Tapes come in 30min and 60min run times, if the recorders are set on long play, this time will double for each tape.

Digital will record all images onto a hard drive or removable memory SD card, with various memory sizes, such as 6 – 32 – 64 – 128 – 256 – 1024 mb. Some digital recorders can be operated by wireless remote as they have the receiver built in.

Sony hi-8 digital analogue recorder

The obsolete but still very reliable Sony Hi-8 recorder, a great portable editing unit.

DVD-recorders

This is the Sony VRD-MC 10 portable recording system, which works in conjunction with most modern digital camcorders and cameras, capable of recording in standard or HD quality. The VRD-MC10 incorporates a slot for popular camera memory cards and will directly record images from the card to DVD.

Display

Preview video and digital photos on the built-in 2.7" colour LCD screen

Recording modes

5 recording quality modes allow up to 6 hours of video (using LP mode) per disc

DVD playback

Create standard definition DVDs that play on most home DVD players, or High Definition AVCHD DVDs

This recording unit will allow you to edit and re-record covert footage whilst still out on the ground. This could be done from your hide location or even in a layup area awaiting pickup.

Various SD card readers

Various audio/visual sockets, Sony i-link and USB

12V DC in, SD card slot, power and motion detector LEDs

MOBI 12 VOLT solid state recorder, this small but powerful unit is packed with features, tried and tested by the military. With motion detection mode and the ability to time and date stamp the recorded footage.

Function controls

It can accommodate up to a 16mb SD memory card, which will give you varying recording lengths depending on the image quality setting you select.

It has Audio Visual in and out, which means it can be connected to a number of different monitors. This particular recorder is a single channel unit but you can also buy a twin channel unit which will require two SD cards, one for each camera.

BNC-style audio visual connections

Hard drives

Very similar to the solid SD recorders but with a built-in hard drive rather than a removable memory card. Hard drives will give you very good, clear image quality and can be left in place for many days recording footage, as long as you have enough battery power for the time frame. You can dig them into the ground and forget about them, left to do their job until they need retrieving. Hard drives used in conjunction with a multiple processor can operate a number of different cameras located in different positions, date and time stamping all the footage.

Multiple image processors

Used to connect a number of cameras to one monitor with each of the cameras wired into the processor. At this point the processor can be set to split the large screen on the monitor into separate smaller screens allowing them to be viewed simultaneously with each of the smaller screens time & date stamped. Most processors will have features which enable you to rotate the full screen image through each camera or to select a particular camera to view, switching the others off.

A 12 volt portable quad processor system that I myself made. It's lightweight and allows me to monitor 4 cameras at any one time. It can be zipped to the side of my Bergen when inserting onto the target area, then set up once in position.

DEPLOYMENT CONSIDERATION & RECONNAISSANCE PHASE

You will come across many situations where it may be necessary to deploy a covert camera system to act as a trigger or indeed to gather your evidence. It could be that the location you are working on would not allow you to conceal the operators or perhaps getting so close would risk compromise; your only option is to deploy some form of covert camera system. Before any camera system is deployed there are a number of stages that must first be conducted...

Stages to the deployment

Conduct in depth Close Target Reconnaissance of the proposed position, study aerial photography if available, look at the ground condition and type of ground you intend to use, for example:

- Muddy locations where you must consider disturbance and ground sign
- Long grass, in high winds this may interfere with viewing, you may have to elevate the camera on a tripod or mono-pole
- Hedges & bushes are good locations, with the camera placed at the bottom
- Tree lines, another good location, but remember to approach the tree line from the rear, if you have a ditch alongside, use it for your covered approach
- If located near a water source, consider heavy rainfall and the effect this may have, your camera could be washed away or flooded damaging the electrics
- Buildings are great, remember they must be treated as an isolated position so the deployment and extraction must be conducted with an over watch team
- Vehicles, another great way to deploy any covert system, just think about the location of the camera within the vehicle and of course, the positioning of the static vehicle, this can compromise the system. Ensure the camera hide you intend to use doesn't look out of place in the vehicle and all wires are concealed.

Consider the time of year

- In winter, your system will require a lot more admin and looking after if it's intended to be used on a sustained operation. Concealment of the system may be made difficult due to the lack of greenery and soil will be a lot harder to dig due to extremely low temperatures. In some cases you may have deployed your camera one day and the next it's covered over with snow, if this happens leave the camera well alone, retrieving it will only leave ground sign and could lead to a compromise. Ensure your system is waterproof!
- The concealment of a covert camera system is much easier in the summer months, although you still need to consider weather proofing the system and administration of batteries.

- First and last light checks, in effect your camera is acting as your forward hide, so a first and last light check must be conducted as with a normal hide. This will include touching up or re-applying fresh foliage to camouflage the camera, cleaning the lens of any dirt, condensation or misting. If cables have been dug into the ground, check that they have not been dug up by an animal overnight, and if necessary, resupply the battery.

- Can you observe the target area from a distance, this would include the deployed camera system. The camera is acting as a forward hide so, if the task requires a team to stay in place, they should position themselves out of view of the target but if possible have the camera in view, acting as over watch for the system. The camera system could have cost thousands of pounds! If the intent was to deploy the camera and leave it in place, then keep your fingers crossed it's still there when you come to retrieve it.

- How many cameras do you need to deploy, never use any more than is necessary. If an area of ground has no tactical value, don't waste time and effort concealing a camera. For every camera you deploy the same amount of care must be taken, including first and last light checks.

- How best to conceal your camera
  - Dug into the ground, if this is the case lay a ground sheet down to collect the soil as it's removed, limiting ground sign
  - Surface laid and concealed
  - Purpose made hide
  - Elevated above eye level

- Hard wired or wireless, choose which system will work best. Factor in the admin of keeping the camera working, resupply, break down. Look at what is between you and the target, for example if there's a road or water feature, the system will have to be wireless. If this is the case, you need to check the signal range to confirm your equipment is up to the task.

- How and when is it best to deploy your system, what you see in the day time differs from what can be seen at night. Consider using an IR pointer when deploying a camera at night, this will ensure you have the correct position, height and direction by simply resting it on top of the camera. If your camera is to be used at night, will it need a separate infrared light source? Where will it be positioned and will that be a task in itself? Perhaps the light source will have to be deployed 48 hours in advance? All this must be considered on your CTR.

- What sort of covert camera system are you going to need
  - Hard wired - ensure there is as much distance between camera and recorder/power supply, which will have to be revisited for resupply.
  - Wireless
  - Remote
  - Combination of the above
  - 3G or IP

- Is the camera to be used as a trigger only or to record evidence or perhaps both, if this is the case ensure your recording unit has a date & time stamp function

- How long will the system be in place, consider resupply and man hours

RETRIEVAL OF THE SYSTEM

The same amount of time and care must be given to the retrieval of any equipment deployed on to the ground. Where possible, ensure you have a cover team in an over-watch position, their role will be to act as early warning and to guide you to the target. You may have no option but to retrieve the system with third parties in the vicinity, if this is the case, your over watch team should give a running commentary of when you can and can't move. If working as a pair, move as individuals covering each other's movements, if alone, trust your over-watch team. Once you are in possession of the systems, extract back in the same way, pairs covering each other's movements and if alone, listen and trust your cover team.

Deployment - points to remember

Hard wired

Remember to conceal the cables deep in the ground, consider using animal repellent pellets to prevent your equipment being dug up by wild life.

Always put a minimum of one dog leg in a cable run, this will help to conceal it.

If you have concealed cables dug in over a long distance, without putting in a dog leg, stand back and take a look. You will clearly identify the path taken by the ground sign with a dark line left on the ground.

Wireless

Wireless cameras are fantastic as long as the signal is good, the signal will carry over obstacles such as roads and rivers between you and the target area.

They also remove that trail back to your location, if a hard wired system is found, the cables can easily be followed resulting in compromise. If using a wireless system, both the camera and transmitter will have its own power source and will need resupplying. If your signal is being carried across a main road, you may experience interference of the image; this may not be avoided but it's a factor that should be considered when locating the hide where you will view the monitors.

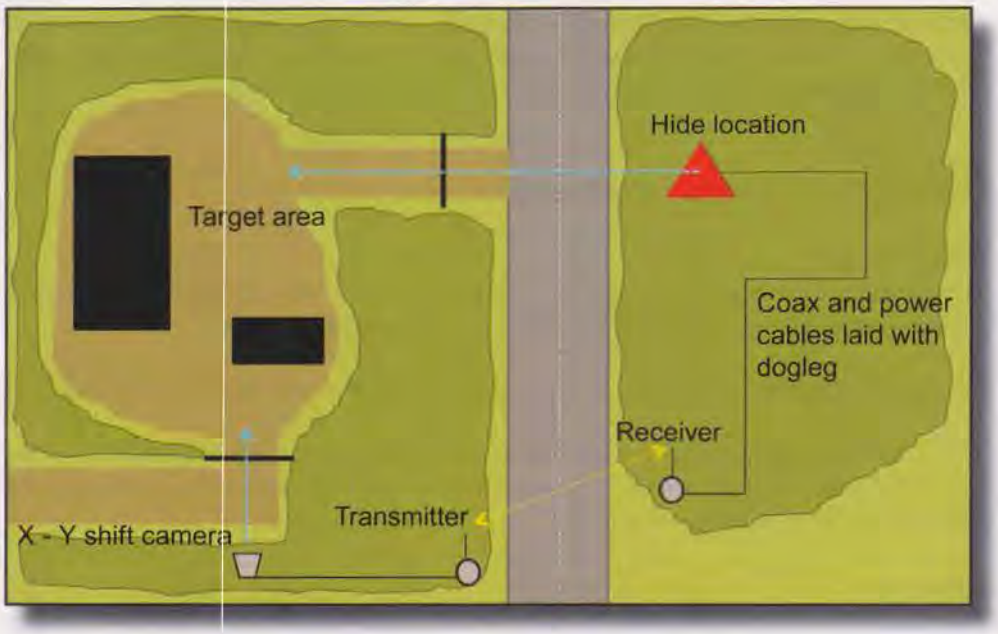
Combination

There will be occasions when a combination of both hard wired, and wireless methods need to be used; for example, if you find yourself with a target that requires a double watch, but from your main hide covering the front gateway you cannot observe the rear gateway as the distance is too great. You may also have the hindrance of a main road between you and the target, then the use of cables and a wireless transmitter is needed to extend the range.

Deployment of a combination covert system - example

Your task is to trigger any movement of the subject's vehicle however, from the hide you cannot observe the rear gate of the target area. The hide is positioned over watching the main gate with a covert camera system deployed watching the rear, the transmitter and power supply for the camera is concealed in the hedge bottom next to the road, out of view of the target area's windows.

From this position, it's easy to resupply at night. The transmitter carries the signal over the main road to the receiver concealed in the hedge bottom opposite, a cable is then laid and concealed running towards the hide, remembering to put a dog leg in the cable run.

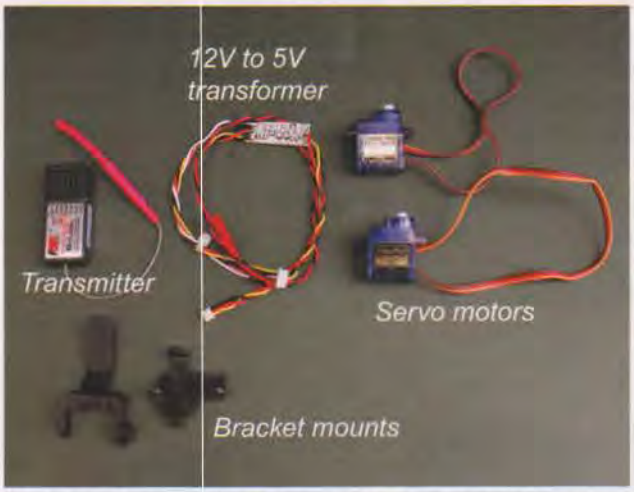


Looking further into the diagram, it's likely you would only get a quick sighting of the subject if they were to leave via the back gate, once they turn the corner past the gate there is a chance they will be out of frame. This then is the perfect opportunity to introduce the pan & tilt camera system, known in the military as the X - Y shift.

Miniature covert pan & tilt system

This system operates through the use of two servo's, these small motorised units have a dictated turning circle, in other words they do not continuously turn in one direction. The servo's are set up so that one will turn left to right and the other up and down, hard wired to an electrical wireless receiver. At the other end of this wireless receiver is a transmitter unit, this unit has joystick controls used to move the servo's in the required direction. The camera works on a wireless system already covered in this chapter, both servo and camera must work on different frequencies, such as 2.4GHz for the servo's and 1.2GHz for the camera.

In this series of pictures you can identify the two servo's positioned to pan and tilt.



Once the pan and tilt system has been assembled, it's time to house the components to make them weather proof and begin to camouflage the unit to suit its environment.

ENVIRONMENTAL FACTORS

The environment that you find yourselves working in is a very important factor when deploying any camera system. Considerations of what you can do if it is going to be hot, wet, or very dusty must be covered and thought through in detail.

Hot environments

During normal use, the camera will generate heat as it consumes power. The circuitry is designed to cope with normal operational heat however, the problems start when extra heat is added to the equation, for example operating in direct sunlight, which may rapidly overheat your system resulting in shutdown.

Where your covert camera is surface laid and concealed by a self-built hide, it should be designed to offer shade for the camera. Where possible, ensure your hide allows air to flow through it, make a number of small holes around the hide covered by wire mesh and painted to suit the environment. I have made a number of hides with wire mesh usually used to repair car panels, the mesh offers concealment, shade and air flow. I then camouflage it to suit the operating environment.

Wet environment

It would be fair to say that in the UK we unfortunately have more rainy days than sunny ones. When buying or building your camera system, keep this in mind and ensure your camera is suitable for outdoor use. Consider how rain will affect your transmitter / receiver and the connections from the power supply. In the past I have housed these components in plastic Tupperware boxes with good sealable lids.

In this picture you can see a weatherproof hide to house the 12 volt battery and transmitter, made from a plastic container with a click seal lid. The wireless antenna is the only component open to the elements, a rubber washer is glued at the base of the antenna to stop water running inside the container.

Dusty environment

Ensure all component parts are sealed to prevent dust, sand and grit from getting inside. If operating in a dusty environment, you must protect the camera lens as much as possible, cameras with larger apertures can use a fine material mesh. Take care that it is not too fine as the camera may struggle to focus through it. A better method is to use a sheet of clear plastic cut to size, this can then be attached to the front of the lens. These techniques will help to prevent the lens from getting scratched.

Self-built hides

Once you have bought or made your camera system, the next phase is to build a number of hides in which to conceal it. I have a number of pre-built hides, which cover most situations and environments I find myself operating in.

From time to time however, I do come across locations where these pre-built hides just don't look right and won't blend in. To get around this I always take a plain camera cover on the close target reconnaissance phase giving me two options.

1. If time allows, deploy and conceal the camera there and then using natural camouflage from the actual location.
2. Decide on the position I intend to use and if possible, take notes and even photographs of the ground. Then from a safe location, normally back in the workshop, create the hide ready to be deployed at a later date. This is known as a close target site reconnaissance.

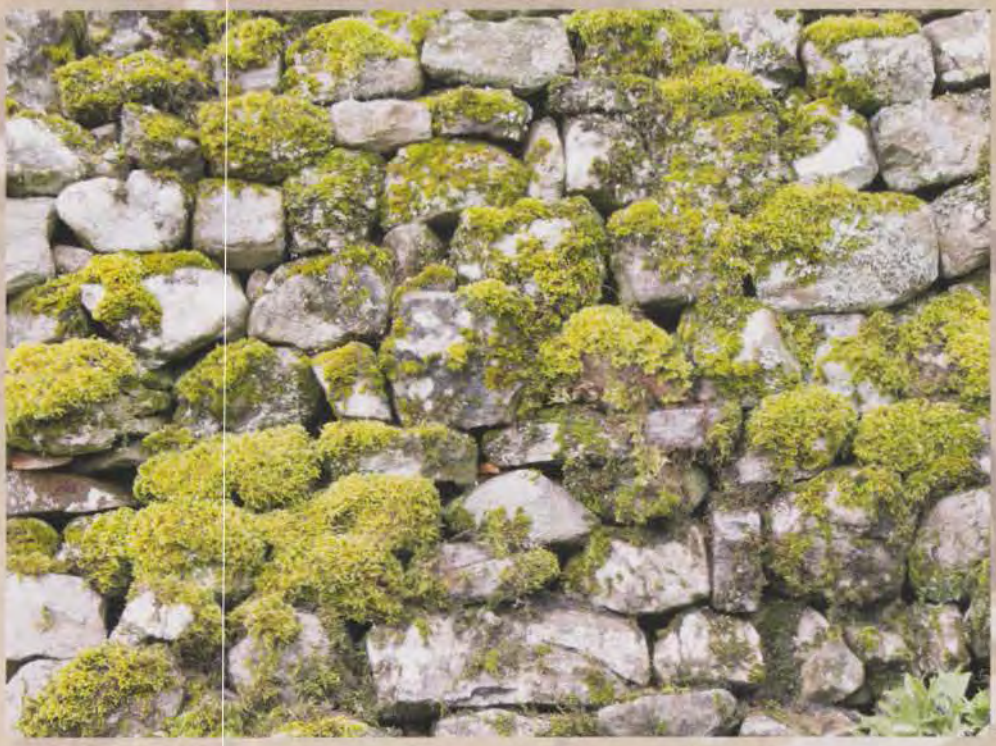
FIND THE HIDES!

On the following pages are some of my own self-built hides, see if you can spot them. All the images showing the deployed hides were taken from no more than 3 meters away. Camera locations are shown on pages 466 - 467.

FIND THE HIDE - locations shown on pages 466 - 467!

FIND THE HIDE - locations shown on pages 466 - 467!

FIND THE HIDE - locations shown on pages 466 - 467!



Pop & drop

This very compact wireless transmitting camera system is self-contained with its own 9-volt power supply. Not much bigger than a pack of cigarettes, the system has a short signal range of about 100 metres.

The deployment of this camera is very rapid, in the past it has been deployed on a walk by when conducting the CTR.

This covert camera works very well as a close target visual trigger, where that little extra distance between you and the target makes all the difference. Again many different hides can be made for this small device, I made this one to trigger a live job where it had to blend into a hedge line, heavily covered in ivy.

Rural technical pouch

As continually mentioned throughout this manual, I like to build my own technical equipment to suit my requirements. The role of rural surveillance is very specialised and finding the right equipment that's up to the job can be difficult. Therefore I am constantly building new systems that I can carry into the field attached to my Bergen.

Covert camera with IR floodlight supported on a mini tripod

Right, extreme low lux camera with infrared floodlights and powerful directional microphone, shown camouflaged with Ghillie to aid concealment

This covert bullet camera was deployed to trigger movement in a driveway. Shot from 2m.

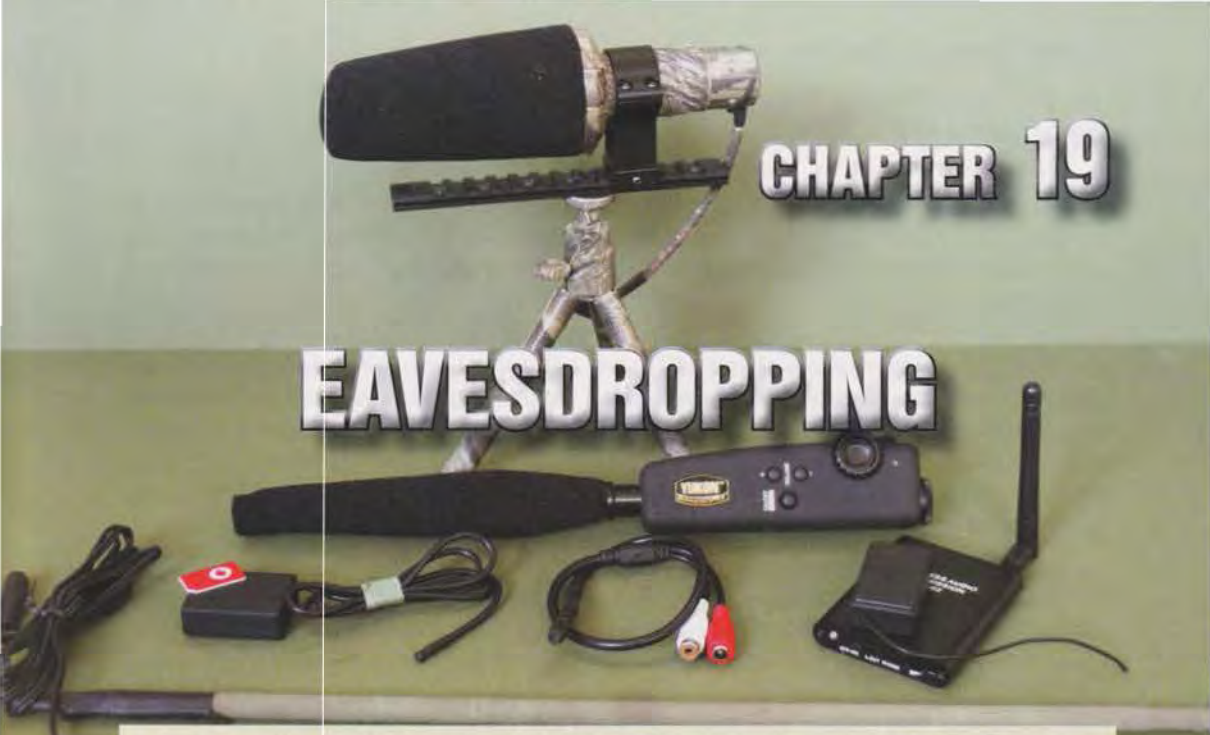
Concealed within the stone wall and shot from 2m.

Pinhole camera concealed in a log, over watching a badger set. Shot from 1m.

A powerful 22mm lens was concealed to gather evidence of illegal activity in a garage. Shot from 1m.

Pan and tilt system used to trigger target's direction of movement. Shot from 1m.

Concealed in a wall to film alleged illegal activities. Shot from 3m.



CHAPTER 19

EAVESDROPPING

Surveillance involves the planned and systematic gathering of information and intelligence about a subject or target area. Whilst such information is often based upon video footage, this is not always sufficient in providing evidence in a court of law. Therefore, surveillance often involves the covert monitoring and recording of conversations, this usually requires specialised and very sensitive equipment.

Topics Covered

- **Basic microphones**
- **Deployment methods & tactics**
- **Wireless transmitting devices**
- **Directional microphones**
- **GSM transmitters**
- **Recording units**

IMPORTANT

It is illegal to record a conversation with a person without their prior knowledge or consent. The legal implications of eavesdropping varies from country to country and we strongly advise that you research the legalities in your own particular theatre of operations.

Currently, when you make a phone call to any call centre, you will usually be informed that your call may be monitored or recorded for training purposes. What they have actually done is inform you that they will be recording everything you say. If you were to become abusive to one of their employees, they can legally use this recording in a court of law against you. If you were unhappy with the potential monitoring and recording of your call, you have no other option but to hang up.

Surveillance involves the planned and systematic gathering of information and intelligence about a subject or target area. Whilst such information is often based upon video footage, this is not always sufficient in providing evidence in a court of law. Therefore, surveillance often involves covert monitoring and recording of conversations, this usually requires specialist and sensitive equipment..

This tactic is otherwise known as eavesdropping.

BASIC MICROPHONES

This chapter will cover the basic listening devices that can be bought over the counter or via the internet. It will cover the different deployment methods and which device should be chosen for a particular task. These include

- **Hard wired**
- **Wireless transmitting**
- **Directional**
- **3G (GSM)**

DEPLOYMENT METHODS & TACTICS

Hard wired microphone

Miniature microphones, like the ones built into covert cameras, are so small that you can hide them almost anywhere, in or around your target area. If using a hard wired microphone over any long distances, ensure it has an amplifier; the further the signal has to travel to the receiver, the weaker it will become. Microphones that have a small battery capability (below 12 volt) are prone to this problem. The integral amplifier will ensure that you can deliver much better recorded sound quality.

Diagram of an in-line microphone amplifier

When deploying any equipment using cables, they must be well concealed to prevent compromise of your task. If your target has old buildings such as out houses or barns, check for any old and disused electrical power or telephone cables in the wall sockets when conducting your CTR. If the building does have old wiring still in place, you can splice and connect your device to them.

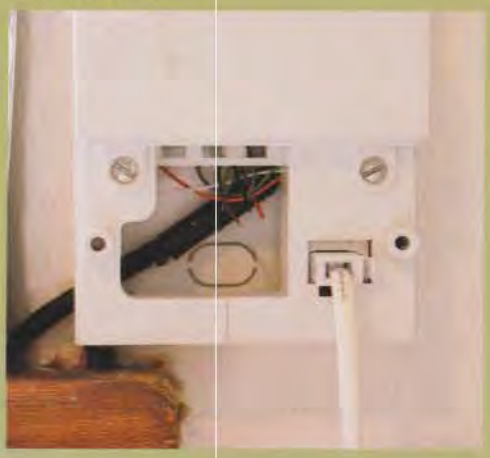
In most buildings, the power cables located behind the internal walls will travel vertically up towards the ceilings, ending up in a junction box normally located under the floor boards or attached the wooden rafters in the loft. Either location is good to conceal the recording device and power pack. This method can also be used on a wireless system to hide the transmitter and power pack.

Using domestic wiring to conceal a listening device

When operating in a building consider using the existing wiring to connect the listening device, positioned close to the subject and the recording unit, which could be concealed in another room within the building.

Using the existing wiring to run the signal between listening and recording devices is less disruptive and leaves virtually no ground sign. It also speeds up deployment reducing the risk of compromise.

Telephone cables can also be used to similar effect



Old junction boxes are a good way to connect into the building's wiring.

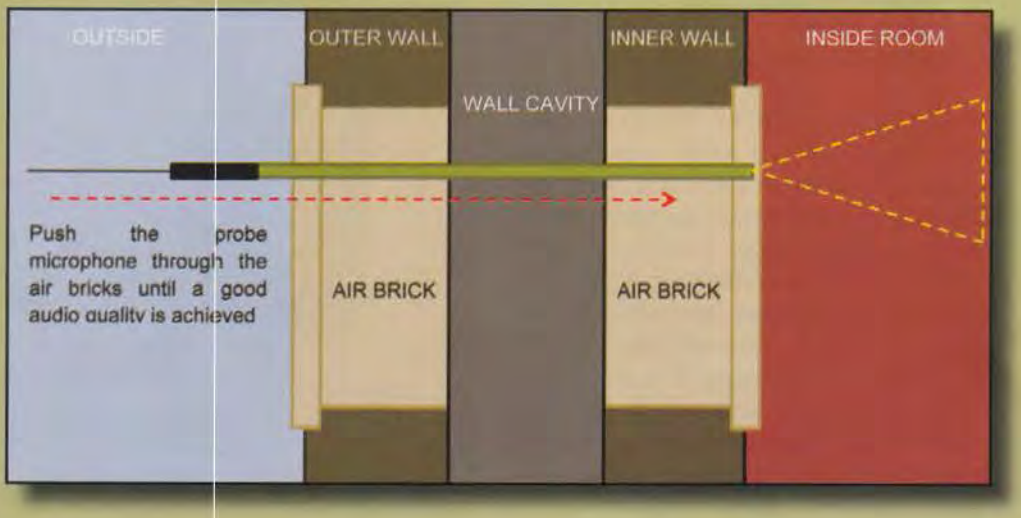
Hard wired probe microphone

If you need to record events inside a building but cannot gain entry, consider using a probe microphone. These can be bought ready made but are easy to make by inserting a small microphone down a length of straight tube, ensuring it has a tight seal around both tube and microphone. This can then be inserted through an air brick in the wall cavity or even by drilling a small hole in the wall

A second method would be to use what is known as a buried microphone.

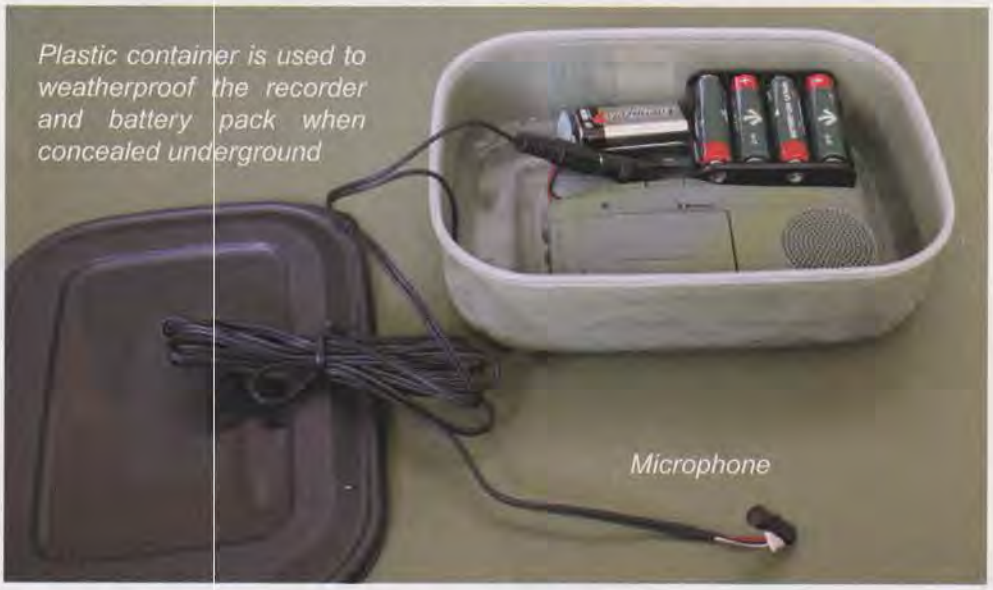
This is a device concealed within an everyday item and positioned either indoors or out. It is very easy to conceal a device when operating indoors, there's an endless number of items in which to conceal the device. If concealing a device outdoors, other considerations such as weather conditions and environmental noise must be taken into account.

These factors will significantly affect the quality of sound and recorded intelligence.



Hard wired microphone and analogue recording unit

Digging the device into the ground or concealing it in a purpose-built hide, such as the ones used with covert cameras will help. Just be careful not to dig the device in too deep, if it were to be covered over by ground movement it may stop functioning.



WIRELESS TRANSMITTING DEVICES

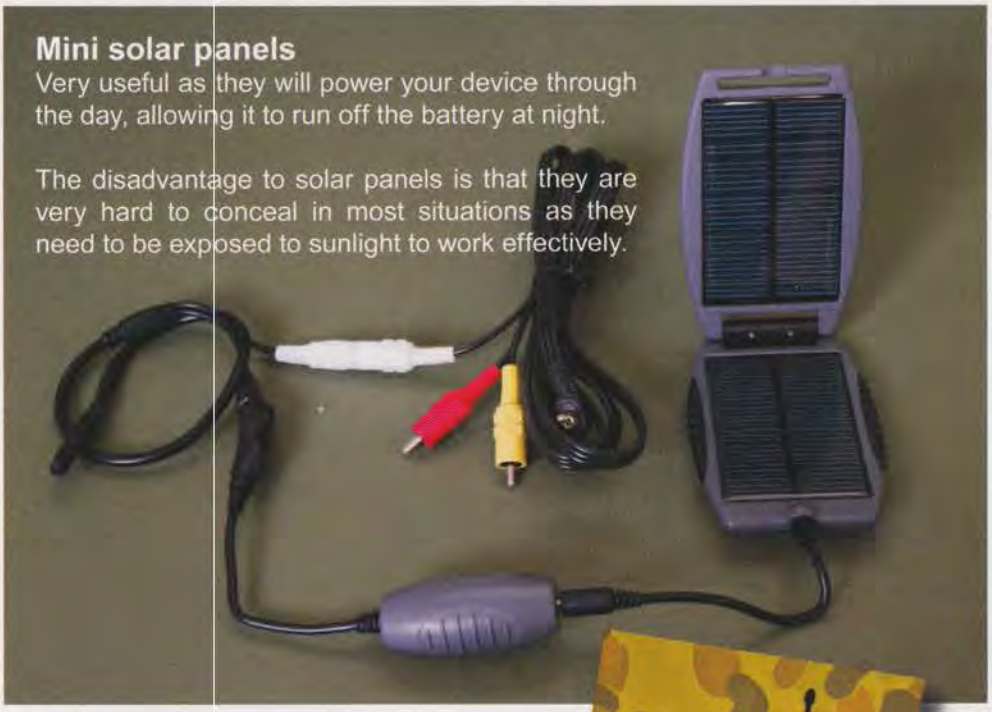
Wireless transmitting devices, otherwise known as BUGS, are very small and easily concealed. The built-in microphone will transmit any conversation via a radio frequency (RF) signal to the receiver, located with you in the hide, or to a location where you have a concealed recording unit. This must be in cover and out of view of the target and ideally positioned for a simple resupply.

These devices can be battery or solar powered. If you are lucky, you may be able to wire them to the mains electricity but in the rural environment this is unlikely. Using a large, high powered battery could keep your transmitter operational for weeks or months depending on the length of the task. You will need to think about the concealment of such a large battery pack and if it isn't possible to conceal the battery, have a realistic resupply plan for smaller batteries.

Mini solar panels

Very useful as they will power your device through the day, allowing it to run off the battery at night.

The disadvantage to solar panels is that they are very hard to conceal in most situations as they need to be exposed to sunlight to work effectively.



Radio receivers

I recommend that whenever possible you use crystal transmitters as they are far more reliable. The crystal transmitter, will normally be fitted with its own receiver that is perfectly tuned to the transmitter.

These units can be very small, making them ideal for rural surveillance use. The disadvantage is the limited battery life.

If using an oscillating transmitter, you will require a tunable receiver as the signal tends to drift and requires continual retuning of the receiver.

TRANSMITTER TYPES

- Crystal
- Oscillating

FREQUENCIES IN THE U.K.

- VHF (very high frequency)
- UHF (ultra high frequency)

CRYSTAL

- VHF 169 – 174Mhz
- UHF 318 – 490Mhz

OSCILLATING - VHF only

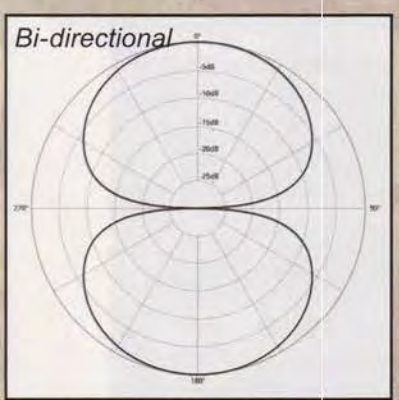
- Commercial 88 – 108Mhz
- Air band 108 – 138Mhz

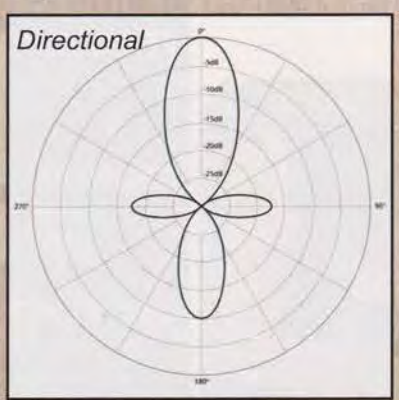
DIRECTIONAL MICROPHONES

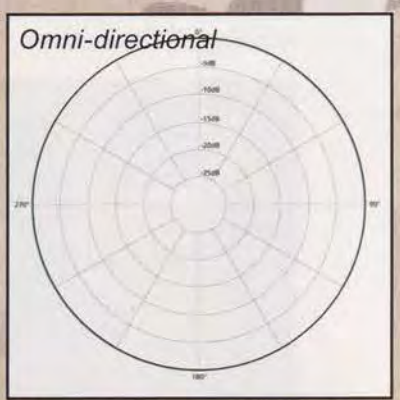
Directional microphones are designed to have very small lobes of sensitivity at the rear and along the sides. This allows the microphone to receive audio sounds from the direction in which it is pointing. As with all technical equipment, you get what you pay for.

When using a directional microphone in the field, you must always take into consideration the environment. For example, if you were using your microphone at a distance of 80 metres, you will pick up other audio interference from the wind, distant traffic, animals and birds. All this will massively reduce your listening capability. So when choosing a directional microphone you need to look for high sensitivity and high directivity in order to overcome environmental noises.

Microphone sensitivity







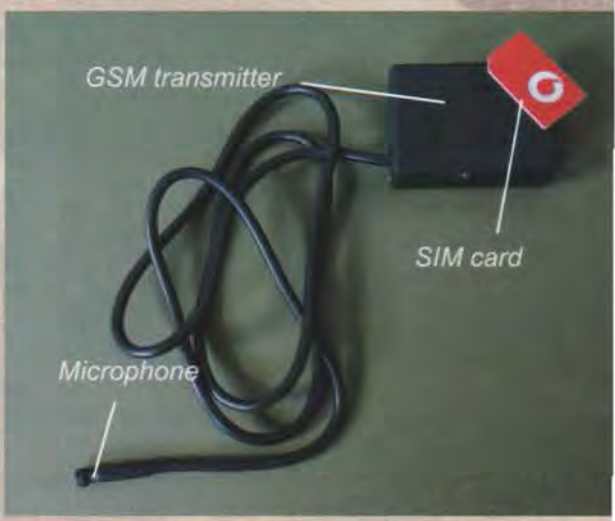
Windscreens

These can be all sizes, made either from foam which creates an area of still air around the microphone or a synthetic fur material with long soft hairs, that reduce the shock of the wind hitting the equipment.

WIRELESS GSM TRANSMITTER

These operate on the same network as a mobile phone and çmost can use either a Vodafone or O2 SIM card. With the SIM, all you need to do is ring the device as you would a mobile phone. This will activate the listening device and allow you to listen and record the audio intelligence. Batteries can last up to 3 weeks or longer in standby mode, the only disadvantage to these devices is that they are not cheap to run, I always use a pay-as-you-go top up SIM card. These are harder to trace and there is of course no contract to sign which, if you are operating in a foreign country, is very helpful.

You need to consider GSM signal quality in some rural environments. When on your reconnaissance phase, it is always good practise to check for GSM black spots and signal strength in the area of operations. Once the device is deployed, you can be located literally anywhere in the world, as long as you have a mobile GSM signal, you will be able to activate the device.



Pictured here is an entry level GSM listening device with a built-in tracking system that I use. It has an HD microphone positioned at the end of a 1 metre cable. This makes it easier to conceal and it can be operated from either a battery pack or wired into a continuous power supply.


© Jabal bob

SPECIALIST MICROPHONES

Fibre optic microphone

This converts acoustic waves into electrical signals by sensing changes in light illuminating the surface of the sensitive reflective diaphragm. When the diaphragm vibrates, the light signature changes and the signal is sent to the receiver where it is converted back into sound. Fibre optic microphones are very robust and work very well in the rural environment which is often wet. They will also operate over long distances without the use of an amplifier, making them excellent for surveillance work however, they are not cheap.

Laser microphones

A laser beam is aimed and fired at a surface such as a window, as the window vibrates due to sounds being made within the room. The returning beam will carry this information back to the recording unit where it will be converted back into sound. Again these are very expensive.

Switching methods

There are a number of different ways of turning the listening device on and off. By using a simple on/off switch, voice activated switch, passive infrared beams (motion detectors) even pressure pads, which are good for static targets. If tasked to gather intelligence within a vehicle, a tilt switch or motion sensor could be used.

Using a simple on/off switch is the quickest way of deploying the device but it is not always the best. Once the device is switched on the battery will start draining. By the time your target comes into range, the battery on your device could be flat.

This results in a failed mission and the frustration of having to retrieve the device without any recorded intelligence. One of the best ways of switching is by (VA) voice activation. This is feature on all good recording units, digital and analogue.

Once the VA mode has been selected, the recording device will automatically go into standby until it picks up any audible sounds in range and the recorder will switch from standby to record mode. Once the audible sounds have stopped or gone out of range, the recorder will return to standby mode until it is activated again.

Pressure pads

Pressure pads are an excellent switching method, when pressure is applied to the pad when it is stepped on, this will activate the device and start the recording. You can buy these ready made but they are very easy to make. I have used them several times with great results.

The outer skin should be made from a waterproof material. I use heavy duty re-sealable black photographic bags, use these to seal all the components inside and seal around the hole used for the exiting wires.

The metal contact panels can literally be made from doubled over aluminium foil. With the component wires stripped and fitted into place, press the foil flat. Add a foam pad with a number of holes cut into it, which keeps the foil sheets apart

When the pad is stepped on, the two foil sheets are pressed together making contact with each other through the holes in the foam, completing the circuit and activating your device.

RECORDING UNITS

Analogue recorders

These can be the size of a personal CD player or even as small as a Dictaphone. Each will record your intelligence onto cassette tape. The tapes are available in various recording lengths...

- C90 gives you 45 minutes each side
- C120 gives you 60 minutes each side

Some recorders come with a slow or long play option. These are the best recorders to use and double the recording time on each side of the tape, increasing a C120 tape from 60 minutes to 120 minutes each side.

Also look for a function called AUTO REVERSE. With this option, the recording unit will automatically stop recording at the end of side A, then run the tape in the opposite direction recording on side B.

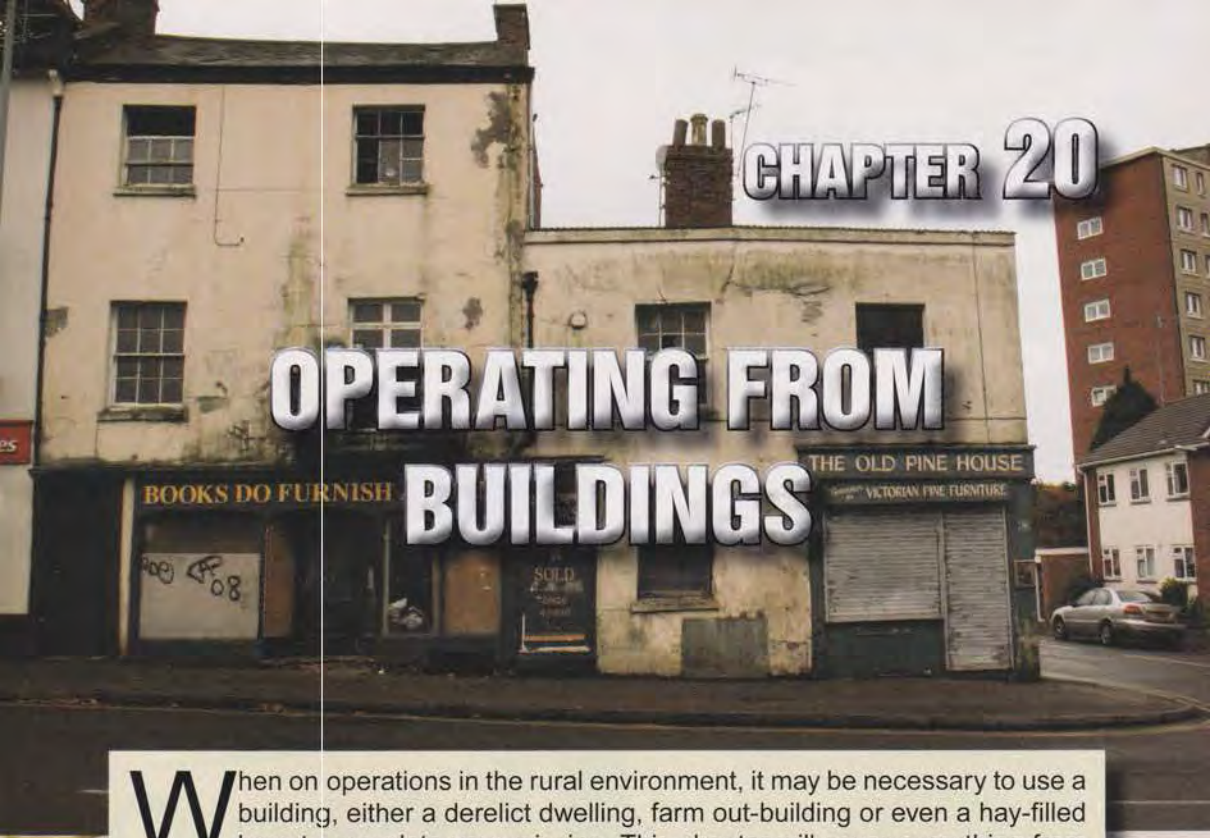
Another feature that is defiantly required is (VA) voice activation mode. Although analogue recorders are starting to age, they are still very reliable and can offer great sound quality.

Digital recorders

These are being used more and more in today's surveillance world. They are very small, which makes them easier to conceal, they have longer recording times than the older analogue units with up to 30 hours capacity, although this is dependent on the size of the memory card used.

Digital recorders will record high quality audio that can be downloaded via computer to DVD at the editing stage. Battery life in digital recorders is much longer than analogue units, again making them more desirable for rural surveillance.

With all the features found on the older analogue recorders, the only disadvantage to these smaller digital units is the size of the buttons. When your hands are freezing cold, pressing the correct function button can be difficult. Many of these recorders use a single multifunction button which needs to be pressed several times to select the required function. On a dark and cold winter's night this can be very frustrating, whereas the analogue recorder has larger, easy to use buttons.



CHAPTER 20

OPERATING FROM BUILDINGS

When on operations in the rural environment, it may be necessary to use a building, either a derelict dwelling, farm out-building or even a hay-filled barn to complete your mission. This chapter will cover everything from the tactical points to look for, occupation and movement drills once inside the building and the different types of hide which can be constructed.

Topics Covered

- **Types of building**
- **Reconnaissance phases**
- **Gaining entry**
- **Security once inside**
- **Escape routes**
- **Types of hide**
- **Technical devices**

USING BUILDINGS

The use of buildings can offer both advantages and disadvantages to the mission and to your methods of operation. Buildings can give great survivability and sustainability protecting you from the elements but they can also leave you trapped and cornered if things go wrong. Before committing to any structure, you must conduct close target reconnaissance to gather as much information about the intended structure.

TYPES OF BUILDINGS

- Farm out buildings
- Disused & used barns
- Cattle sheds
- Wooden sheds & huts
- Derelict buildings & dwellings
- New builds
- Garages
- High rise flats
- Warehouses
- Caravans
- Porta-cabins

RECONNAISSANCE PHASES

Before any occupation, a full close target reconnaissance must be conducted of the proposed site, this normally happens in two ways.

Non-deliberate

This is where you have already deployed onto the ground and have come into contact with a building. Should you decide to use this building, you now need to conduct a hasty reconnaissance of it before occupation. It is at this point that you could compromise your operation as you have no idea what you are going to find inside. The building may still be in use by humans or livestock. Once inside, you will need to identify your hide location as quickly as possible and set to work constructing it.

If possible this should be done with at least an over watch team or person. Their role is to keep a visual watch over the surrounding ground whilst the CTR team are inside.

Communications will be continuous throughout this stage. Once the CTR team are satisfied, the over watch team will move inside the building and all team members will conduct a short listening watch before hide construction begins.

Deliberate

This is conducted well in advance of the operation taking place. If you are planning a sustained operation that is to last over a long period of time, you will need to gather as much intelligence as possible on the proposed site or building. It may be possible to conduct a series of drive pasts at different times of the day and night, or at best set up a static surveillance platform, over watching the property in order to identify anyone's movements. Old derelict buildings are used as safe havens by the homeless and children may view them as a great adventure and somewhere to hang out.

Drug users will often use disused properties to carry out their habit. This is not just common in inner-city locations but also in rural communities where policing is less intensive. If the building is found to be used by drug users, you need to make a number of decisions. Firstly, think of your own safety. You will be moving around on your hands and knees in the dark, the possibility of dirty needles lying around is a high threat. Secondly, his location may be watched by police or even the drug dealers or suppliers themselves, so the last thing you need is to become involved in outside conflicts.

Once you are satisfied that the property is not being used by a third party, you now need to choose your opportunity to enter.

If your reconnaissance phase is for a sustained operation within the building, you will need to gather the following information once inside...

- Take measurements of the rooms
- Colour scheme of the walls if painted, if papered then take a sample with you, this will all come apparent later in the chapter
- Check the mains power supply
- Check the mains water supply
- Look and record what type of locks are used
- Which way the internal doors open
- Are there net curtains hanging in any of the rooms
- How many exits are there to the outdoors
- Note and record any danger points
- Make a note of the windows and condition of the glass, some buildings may have had their windows white washed to prevent people looking in. If this is the case fine. By wiping away a very small section you have just created an aperture from which to observe.
- Check for furniture in the building. You never know what you may find!
- Make a floor plan of the building either on paper or dictaphone. Include any routes to be used when moving around the building, also areas to avoid.
- Record any specialist equipment that may be required, such as ropes and ladders to gain entry to the loft space.

IMPORTANT POINT TO REMEMBER!

Which direction is the hide facing in respect of the target area?

If the hide aperture is south facing you will be in direct sunlight throughout the day, so cover all optics and lenses with netting or honey-comb lens caps, to help prevent glint from the sun.

Gaining entry

When entering a disused building, it is always a good tactic to keep an operator on the outside in an over watch position to give early warning if a third party turns up.

Never enter a property alone if possible. This is an unknown area and support is always good to have. Look around the property, you will need to identify an entry point, one that can be secured from the inside once occupied. It may be necessary for you to buy new locks and sliding bolts ready for the actual operation.

You may face charges if you are apprehended by the police with lock picking equipment, this is known as "going equipped"

Check all windows for broken glass and security. If there are windows with broken glass, is it possible to secure them from the inside? If not, you may need to consider technical devices such as CCTV to cover these weak points.

Once inside the property, all movement needs to be slow and deliberate, staying away from all windows and if necessary moving around on your hands and knees. If the property has net curtains fitted to the windows, leave them in place as they offer excellent cover for your movement. If curtains are fitted and closing them would not draw attention from third parties, then do so.

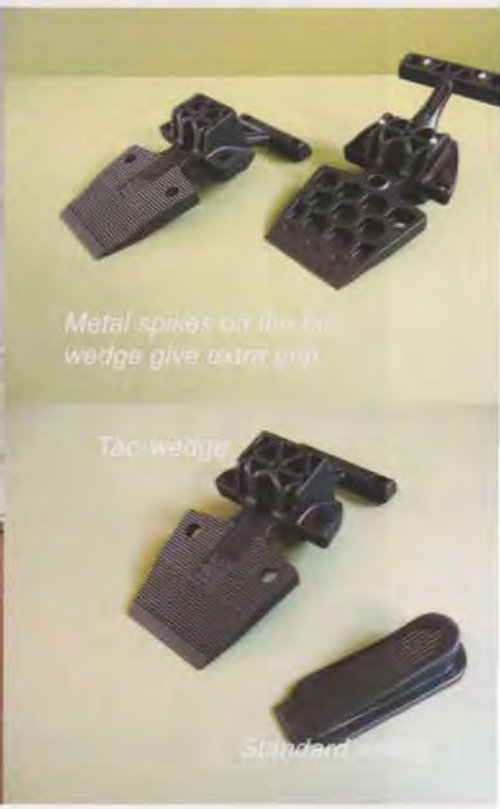
Blinds are very good as they can be angled in such a way that will give you cover but also allow you to observe your target.

If the property is very old, you need to check that all floors can support your weight, rotten floorboards may cause injury when moving around on the upper levels.

Doors & windows

Ensure all exterior doors and windows are closed and if possible locked from the inside.

You may have to take locks and sliding bolts in with you. Close and secure all interior doors using wedges and strap locks. There are a number of different door wedges on the market, ranging from very cheap plastic ones which should be avoided, to specially designed tactical door wedges.



You can even get wedges that are fitted with an audible alarm, or visual warning such as an LED, which will illuminate when triggered.

The cinch in position

Letter boxes

Letter boxes must be sealed so they cannot be opened by a third party who may just want to have a look inside or at worst, post something harmful in an attempt to flush you out.

For interior doors that cannot be wedged, there are tactical products known as Cinches. These are an opening restraint that eliminates the use of both push and pull doors. A very simple but effective item of kit, they have a loop at one end of the strap that is positioned over the door handle, and then passed through a one way locking system. At the other end of the strap there is a hook that is positioned around the door frame. When the strap is pulled tight, it is impossible for the door to be opened.

If you are unable to carry these tactical items, where possible move furniture and heavy objects in front of the doors, making entry more difficult.

Escape routes

You must always ensure that you have a different exit (escape) route planned, this could be as simple as entering through the front door and leaving via the back door. If operating in an old terrace of buildings, you may be able to enter through the back door of one building then exit via the back door of another as some old terrace houses have adjoining roof spaces with no divides between properties. This procedure allows you to move up and down the street without ever having to go outside. There are still a large number of these old terrace properties in the UK.

Using roof voids of terraced houses

The diagram above shows a row of terraced houses without dividing walls in the loft space. As you can see, the team have inserted in the property (far right) and have established their hide in the roof. The two properties in the middle are still occupied, but the team have chosen their escape route to be via the end property at the far left. If the properties were all derelict but had dividing walls in the loft space, there would be no reason why you couldn't knock through. By arranging your escape route in this way you are using a deception tactic. You would normally be expected to exit via the property on the far right.

Power supply

Now that the building is secure, take a look at the electrical supply. You may be lucky and still be connected to mains power. Search for the property's consumer unit or fuse board. Here you will find the master power switch. Do not test the power supply by turning on the lights, find the master switch and turn it off.

Next, look at the smaller individual fuses and identify which ones are for which purpose. Normally the function will be written on or above the fuse. Remove all the fuses for the lights and leave the wall sockets live, these will be useful for recharging equipment and cutting down on resupply needs.

Water supply

Water is another issue that needs to be checked. If you are fortunate enough to have running water, don't drink it from the tap as you don't know how long it's been in the pipes. If there is no fear of compromise, run the water for some time and then it can be used once boiled or purified with tablets, this too will cut down on resupply.

Also, do not flush the toilet as this will draw unwanted attention. If you are going to be in this location for a long period use the toilet with a bin liner in the bowl.

Locating your hide

Find the position you intend to locate your hide. Ensure that you have good eyes on your target area and that you have good radio communications back to your operations room and other call-signs on the ground. If communications are bad, you must move location within the building and find another room to use. For example, the roof is always a good spot as you are in the most elevated position.

Take care when moving around in the roof space, they are generally dark spaces with lots of hidden dangers. For example, if you tread between the wooden joists, your foot or even your entire body could fall through the ceiling of the room below. If this were to happen, it would be the end of your mission.

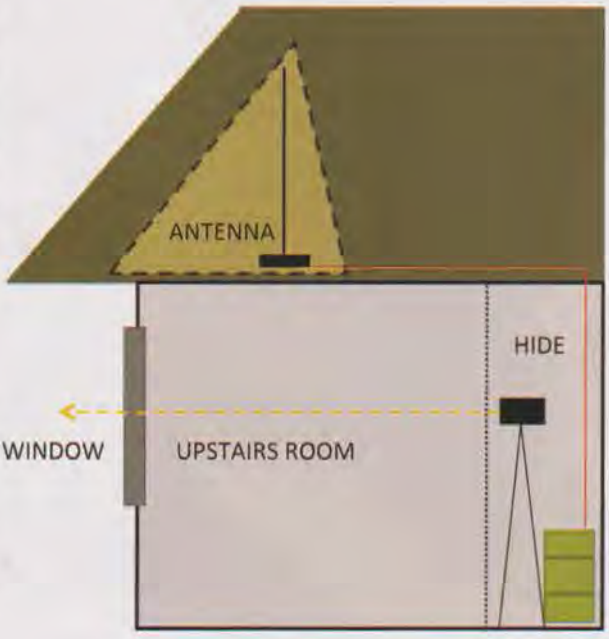
Older properties may have fibre glass insulation which will irritate your skin causing it to itch and become sore; getting it in your eyes may require a medical evacuation. Old buildings can be very dirty and have any number of unpleasant surprises lying in wait for you, drug users discarded needles, human and animal waste, chemicals, broken glass etc so wear gloves. If possible try to create a walk way making it safe to move around.

Loft space

The entrance to the loft should be treated as a doorway and must be secured once the team is in place. If you are operating in the roof of an old terraced property with no dividing walls, you also have the problem of several loft access points.

This situation is not good for your security; consider whether or not the roof is the best option for your task. If improved radio communication was the main factor for using the loft space, consider concealing your radio antenna in the loft and locating your hide in an upstairs room.

By running the coaxial cable from the antenna through a small hole made in the ceiling, this would allow you to seal the loft hatch. If all properties in the terrace are empty dwellings then this is less of a problem.



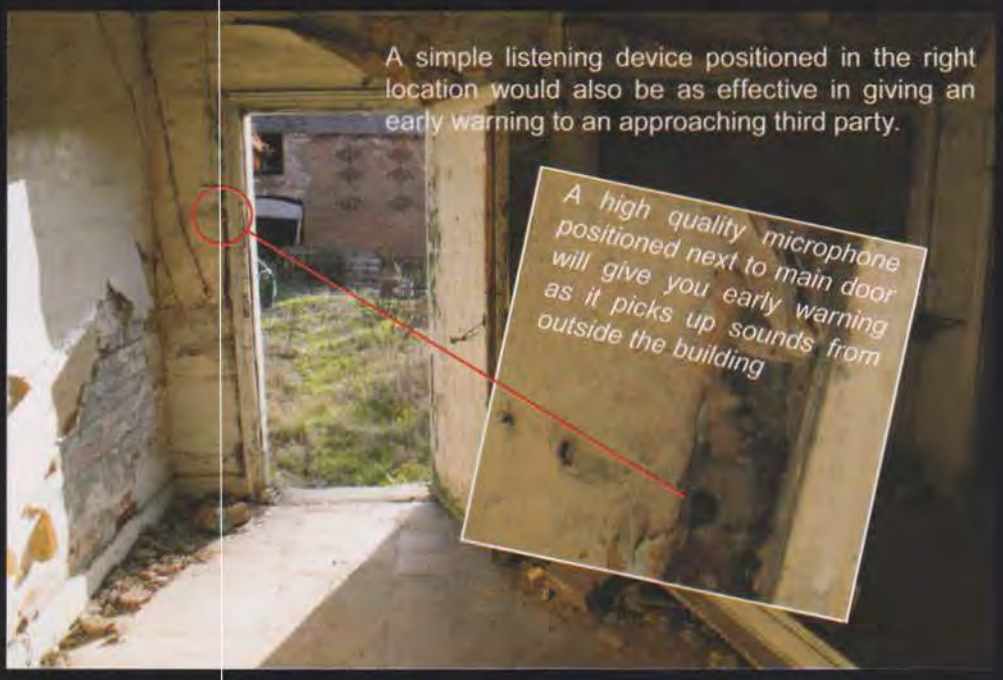
TECHNICAL DEVICES

The use of technical devices when operating in derelict buildings must always be considered, you cannot watch all exits and entrances as a team although it is possible to have another call-sign outside the property in over watch. If in a hostile environment, lying in wait to act as your covering fire support should be considered as the hide team extracts. Sometimes however, the more people there are on the ground, the more chance there is of being compromised.

I have conducted a number of surveillance tasks where the use of technical devices has been a life saver. A simple covert camera positioned above a stair well or over watching the back door is priceless.

Use wireless or hard wired devices and observe on monitors inside the hide location. Hard wired cameras are sometimes better in this situation, as you will not need to move around the building to replace dead batteries.

If located in the loft, you do not want to be running cables through the upstairs room ceiling and then having to conceal them. Use a wireless system to breach the gap.



Factors affecting the type of hide constructed

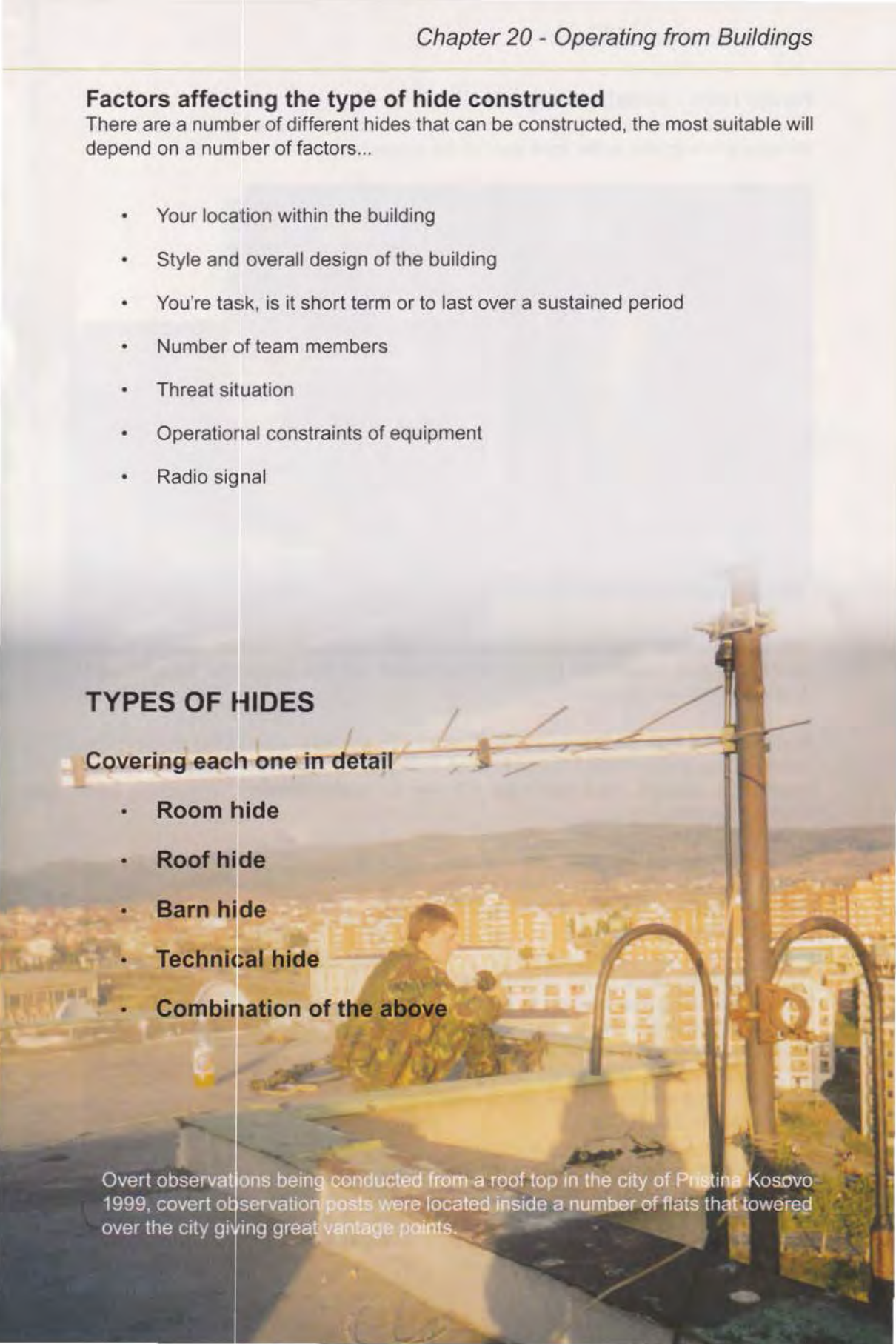
There are a number of different hides that can be constructed, the most suitable will depend on a number of factors...

- Your location within the building
- Style and overall design of the building
- You're task, is it short term or to last over a sustained period
- Number of team members
- Threat situation
- Operational constraints of equipment
- Radio signal

TYPES OF HIDES

Covering each one in detail

- **Room hide**
- **Roof hide**
- **Barn hide**
- **Technical hide**
- **Combination of the above**



Overt observations being conducted from a roof top in the city of Pristina Kosovo 1999, covert observation posts were located inside a number of flats that towered over the city giving great vantage points.

Room hide - constructing your hide

This hide was constructed behind a cupboard in the downstairs front room to allow the operatives to watch the front door of the property opposite.

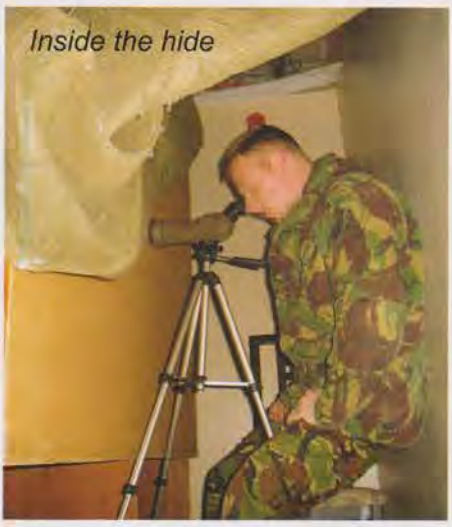
This hide was split between two rooms on two different levels, with the main hide and observer's area downstairs behind the cupboard and the rest/admin area located upstairs in the rear bedroom.

Removing the floor boards in a walk-in wardrobe upstairs and cutting through the ceiling to the ground floor created enough space for all operators to climb between floors. The upstairs fitted wardrobe still had its doors attached, preventing light entering the hide.

On a routine change over, the operator upstairs would enter the wardrobe closing the door behind him and eliminated the problem of escaping light.

He would then climb down to the ground floor and take up his position in the hide. The second operator would climb up to the first floor and into the wardrobe giving two taps on the doors. When two taps came back signalling the all clear, he would open the doors into the rest area.

The upstairs bedroom window was fitted with dirty net curtains which made an excellent screen and afforded the rear sentry good cover.


Inside the hide

Drops

When constructing a hide inside a room in a building, use whatever materials you can find to aid your concealment. This will not only help speed up the construction phase, but having furniture in a room makes it darker with the shadows it creates. However, if there is no furniture in the building you need to create a false back drop by using what are known as 'DROPS'. These are large sheets of material that can be pinned in place and hung from the ceiling to re-create the look of a wall. The drops themselves should reach from ceiling to floor and be pinned at both top and bottom. This will stop them from sagging and be positioned in such a way that you can operate from behind them.

NOTE: It is always a good idea to use drops even if furniture is present, just as the drops were used in this example where the hide was located behind the cupboard.

Here you can see the hessian screen or drops. These were used to fill the gap between the top of the cupboard and the ceiling, also acting as a screen covering movement between the upstairs and downstairs as operatives changed over.

Earlier in this chapter it was mentioned that you should note the colour of walls and take wallpaper samples during the reconnaissance phase, this is where this information comes into use. If for example the room you intend to use for your hide has no furniture and the walls are painted red you can prepare drops in advance.

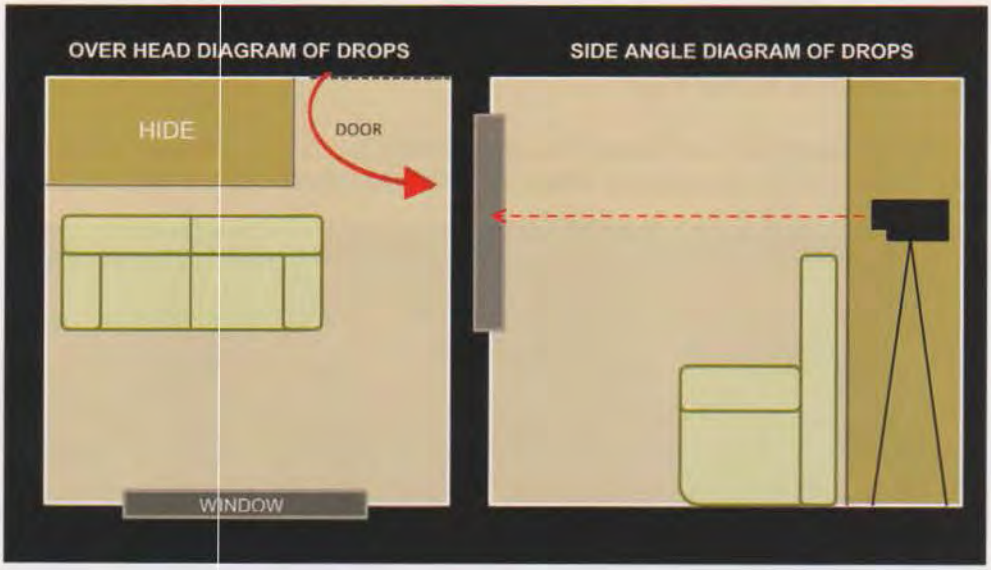
Painting drops the same colour as the walls aids your concealment. Wallpaper is also very easy to work with; if you have a sample of the design you can print it onto the material drops. Alternatively, source the same paper design and attach it to your material drops with paste or spray adhesive.

I have used this method previously and it looked really good, you just need to take care with creases when rolling up the drops for transportation.

When using material drops, position them against the back wall or in a corner, the furthest point away from the windows and the darkest part of the room. I always carry a large square drop and one long thin one as this gives me the ability to create my own boxed-off area.

Different ways to set up drops

I have conducted long term surveillance jobs where false walls had been built within a building, made from ply-wood sheets or plaster board attached to a timber frame. We lived behind these walls for weeks at a time, conducting surveillance in complete secrecy.

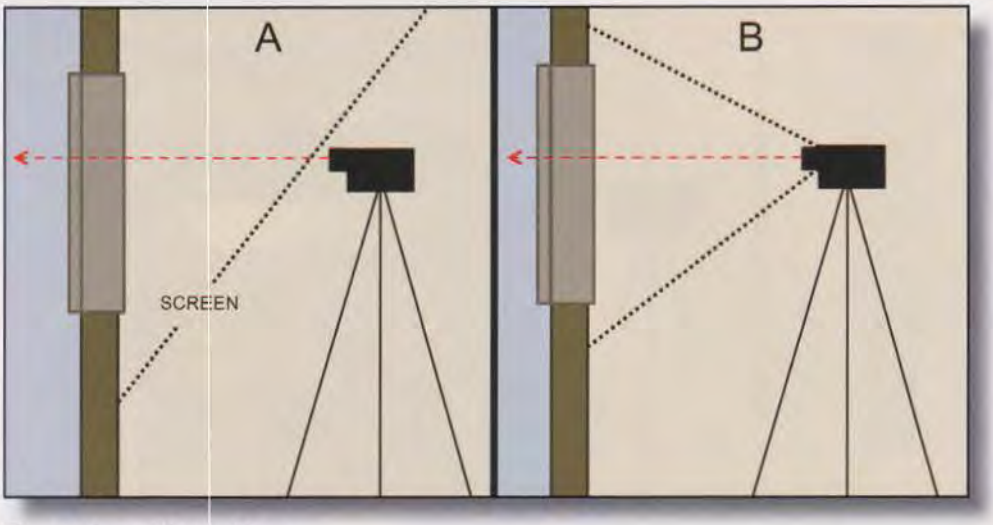


Inside a hidden room with an 800mm telephoto lens and tripod set up at the aperture of the hide.

A digital surveillance camera set up in a second hide location for the same job, in the same city.

Window screening

If the window has net curtains fitted, never remove them as this could draw attention to your presence, leave them in place as they provide excellent cover. If blinds are fitted, you can rotate them to give you the right angle to observe your target area. With straw blinds, simply remove a small section to create an aperture.

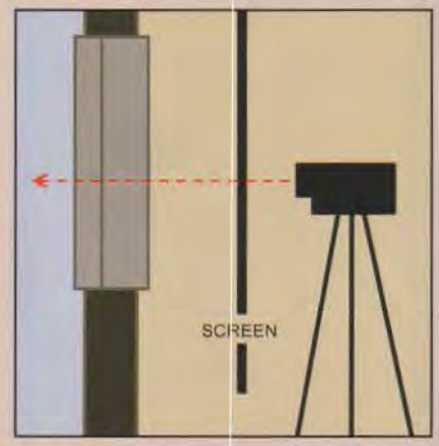


Sustained location

The next task is to pin the screen in place, this should be made of either a very fine black mesh that you can film through, or a solid black fabric with an aperture cut into it allowing your optics or camera lens to fit through. This is pinned in place around the window frame itself, forming an almost tent-like appearance as it is pulled away from the window to create the tension. Your equipment can then be set up on a tripod and positioned into the screen and you are now free to move around. Never position the screen flat against the window as it will create a mirrored effect.

Short term location

A much simpler screen can be used that is similar to the drops. This time position the screen just away from the window and no more than a couple of metres from it. Pin the screen to the ceiling, ensuring that the drop is more than the depth of the window. The material should be the same as before, fine black mesh that you can film though.



Using a simple screen to conceal the camera position to photograph the subject entering his van.

Roof hides

The roof space of most buildings offers a good working area to construct your hide. Not only are they dark and awkward to get into, but they also offer an elevated position from which you can observe your target area. In many cases, the loft space is isolated from the rest of the building with the only means of access by step ladders. If you have chosen to use a dwelling with a loft conversion, then extra precautions must be taken to secure this area, whether you use devices or simply by securing the door shut with wedges.

The type of roof will dictate how the hide is constructed and how you create your aperture. For example, your roof could be made from the following materials...

- Slate
- Tiles
- Thatch
- Wooden beams with a felt covering
- Tin / aluminium or plastic panels
- Asbestos

Thatched roofs

If possible I prefer to stay away from buildings with thatched roofs, unless it was already in bad repair and full of holes. Of course, the holes must face the right direction to observe the target area. Thatch is very thick and it's difficult to cut an aperture. In most cases, the end result will stand out and do nothing more than draw attention to your position.

Old slate roofs

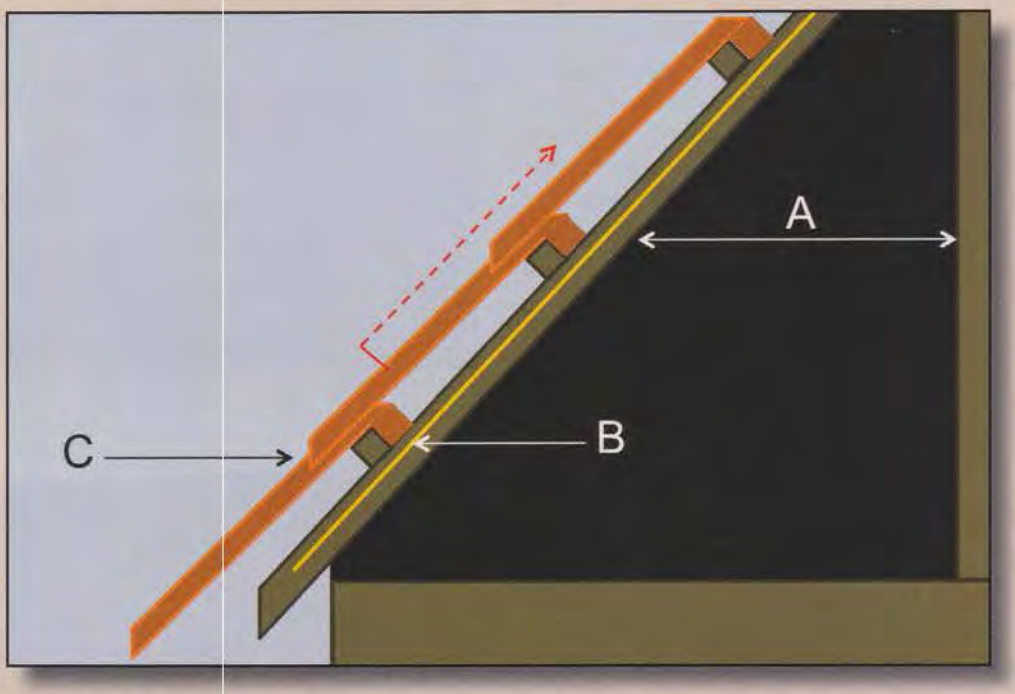
These are normally held in place with nails. Some slates can be too heavy to work with, so lifting them out of position is not an option. However you can carefully crack or tap a hole through an individual slate to create your aperture. You will often find moss growing on old slate roofs, this is useful as it breaks up the smooth surface and will help conceal your aperture.

Modern tiled roofs

These are one of the better types to work with. Once you have cut away the waterproofing membrane and insulation from the inside of the roof, you will reveal the back of the tiles. These are held in place under their own weight, resting on long horizontal wooden battens in an over lapping method. By carefully sliding a title upwards, this will create a gap through which you can observe.

Roof cross section

In this cross sectional diagram of a roof, you can see the wooden beams (A) that support the total weight, the waterproof membrane (B) and finally the roof tiles (C).

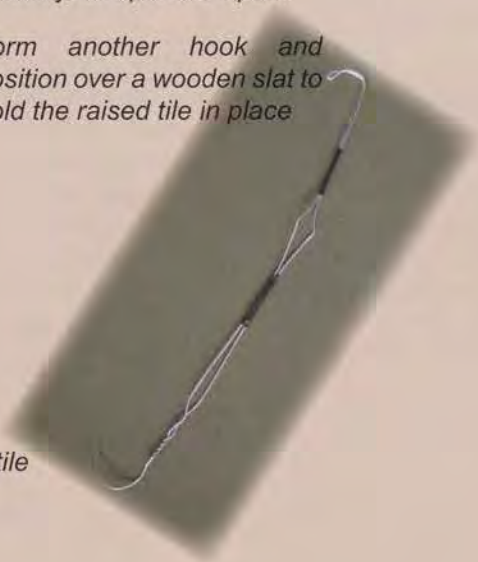


First you need to cut away a section of the waterproof membrane to reveal the back of the tiles. Next, take hold of the tile you intend to lift and slowly move it upwards until you have the required gap between tiles.

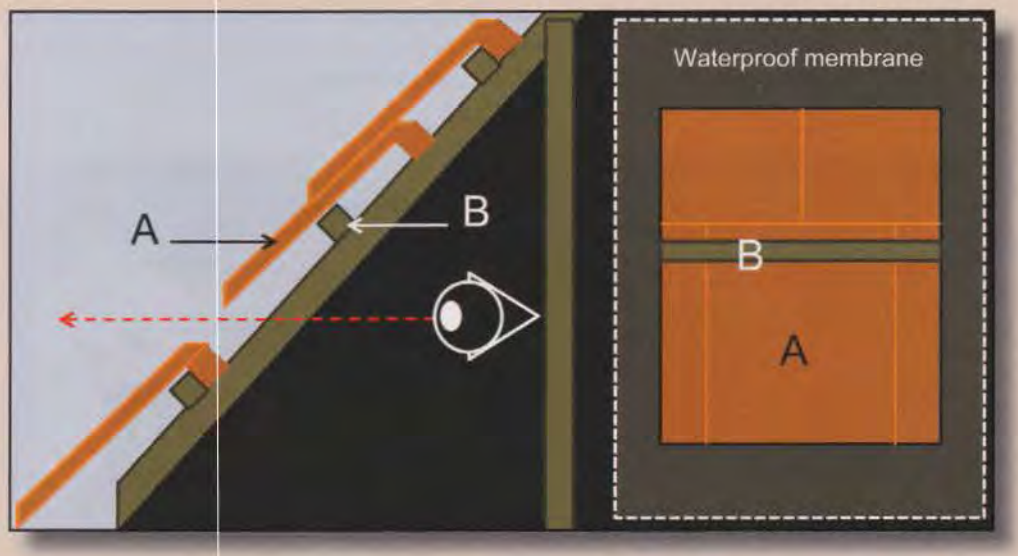
An good trick is to straighten out a wire coat hanger, place the hook under the bottom of the tile and form a hook at the other end of the hanger and attach it over a wooden slat; this will keep the tile in place and your aperture open.

Existing hook under the tile

Form another hook and position over a wooden slat to hold the raised tile in place



In this diagram you see how it should look from inside the loft space once you have cut away the waterproof membrane, revealing the back of the roof tiles.



When the aperture is not in use, simply unhook the coat hanger at the top allowing the tile to slide back down into place until the next time it is needed.

Wooden roofs

Covered only with a waterproof felt, wooden roofs are very easy to work with, it's a simple job to create an aperture by slowly cutting or drilling a hole to form your aperture. Sometimes you may find a natural 'knot' in the wood, take it out to create a hole. If you need a much larger working area for large optical lenses for example, you may have to remove a complete section of the wooden roof.

Most wooden roofs are constructed of 'Tongue & Groove' board, each plank is routed down the sides to form a groove or a tongue, they interlock by fixing the tongue of one board into the groove on the next board.

Use your folding saw to carefully cut away the interlocking tongue allowing you to remove the required section, remember that the water proof felt will be bonded to the board by some form of adhesive. Take your time to remove the wooden section without ripping the felt.

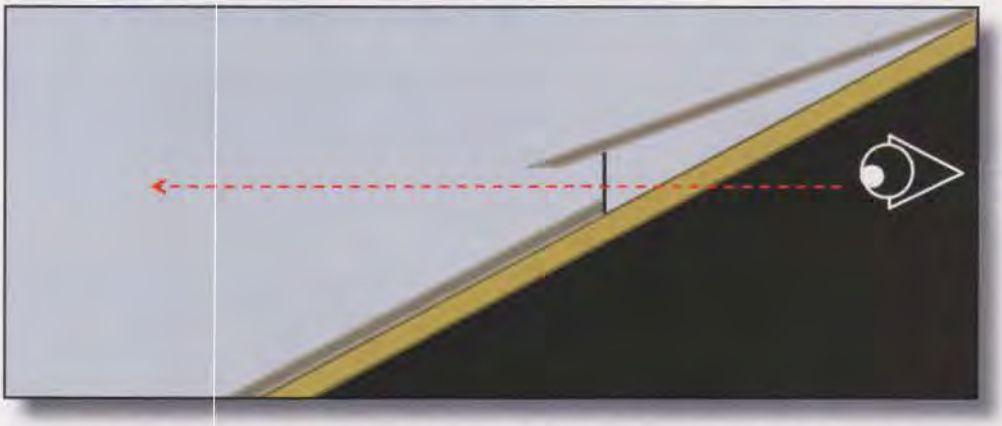
Finally cut a slit through the felt to create your aperture.

Sheet metal and plastic roof panels

These are used to cover large areas of roof on hay barns, warehouses and factories but can be difficult to cut through. Corrugated iron roofs normally found on old cattle sheds are often rusted and in very bad repair. Creating a discrete aperture in these can be every easy. In fact most will be full of holes already so you will just need to construct a stable platform inside the roof to operate from.

Aluminium does not to rust so it will retain its solid form. There are two ways you can create your aperture in aluminium; the first method is to drill a small hole to observe through. This is excellent if you intend to deploy a small camera but limited if your aim is to observe and scan the target area.

The second method is to raise a panel allowing observation between two panels. The panels are held in place either by nails or screws. Cutting through the fixings will free the panel and allow movement. Lift the panel and hold in place creating a large narrow aperture through which to observe.



Use these techniques on plastic panels, alternatively you can burn an aperture through them.

Use the same techniques on the plastic panels as with iron and aluminium sheeting, an added option with plastic is to burn an aperture through the sheet.

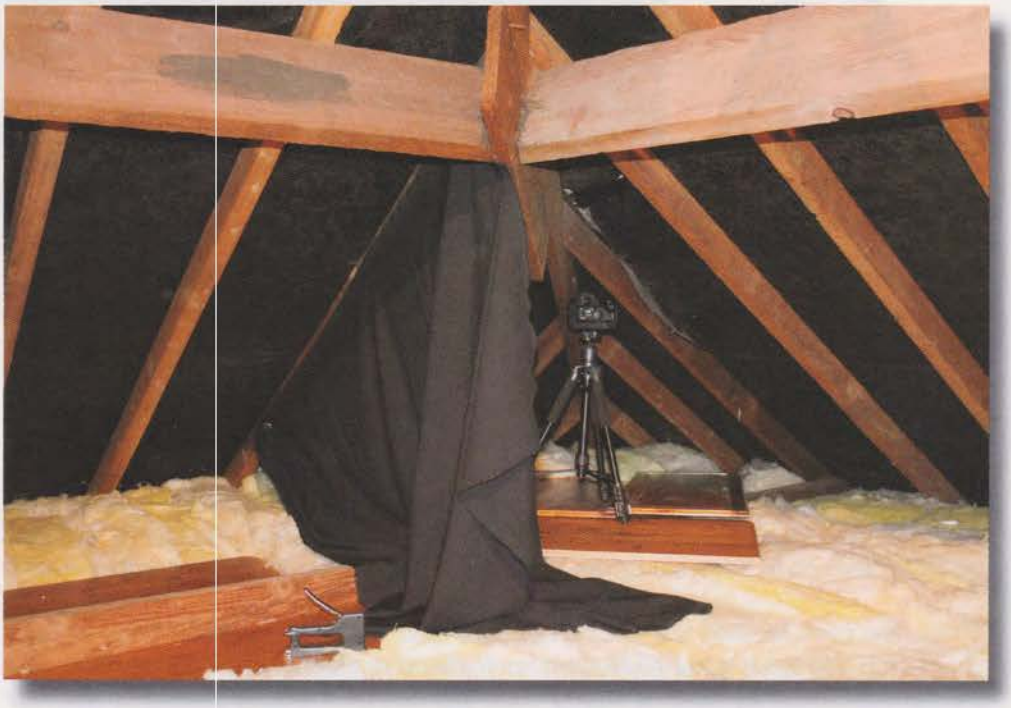
ASBESTOS!
This is a very dangerous material once used in all areas of the building and construction trade. Recently, it has been found that asbestos can cause extreme respiratory problems and contribute to lung cancer. Stay clear of areas containing asbestos. Visually, asbestos is usually grey, has a rough texture and when broken, it has a similar appearance to fibre board.

Construction phase

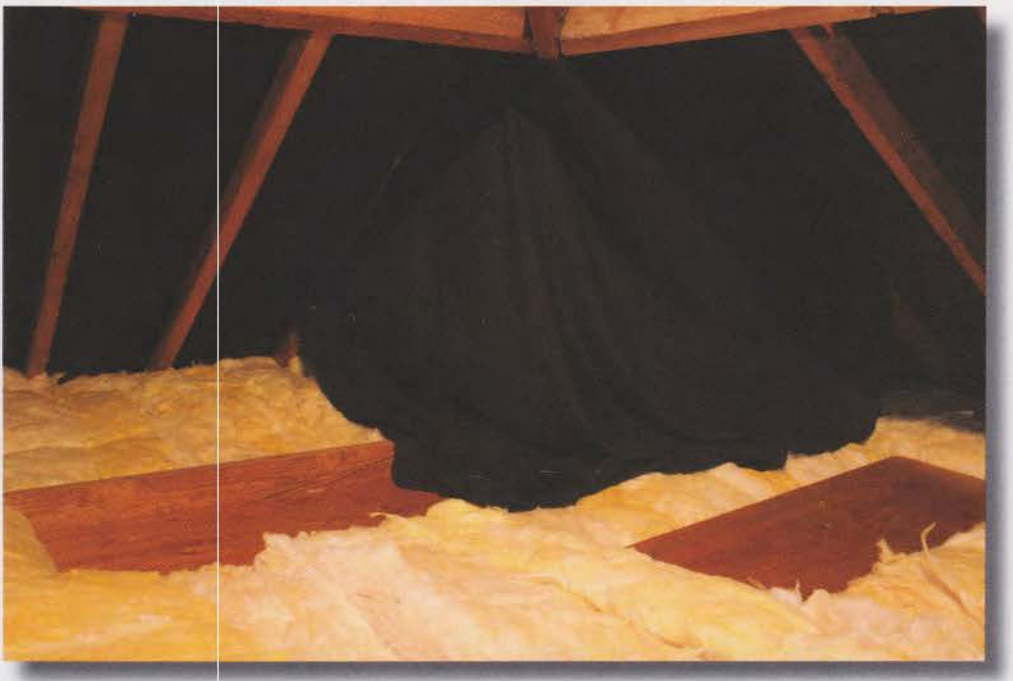
Navigating inside the loft space can be tricky due to the tight spaces, darkness and hidden dangers such as the spaces between the joists, not to mention the boxes of junk that might have been deposited there over the years. Do not discard anything as everything can be used in the concealment of your hide. You could be in a derelict building but the dwelling next door is occupied and at worst, the two properties may have adjoining loft spaces. If this is the case, your aim is to position your hide in one of the corners or as close to the loft's edge as possible. Here it will be darker and much easier to conceal the hide. As mentioned previously, you may be lucky enough to have old boxes lying around, use them to build up your hide.

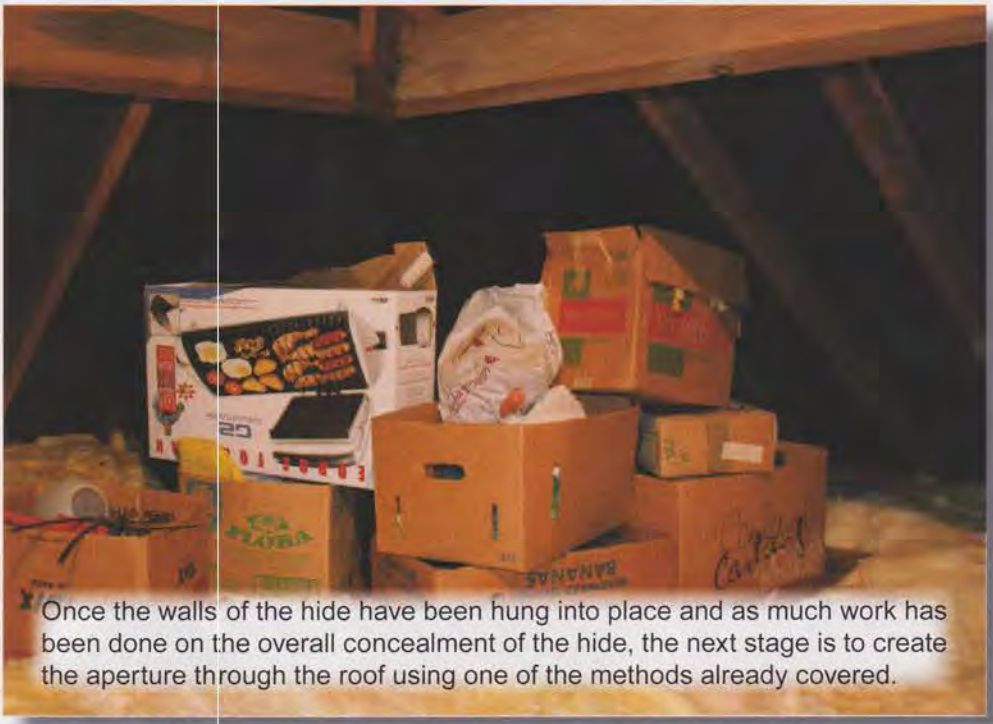
When you have located the position of your hide, the first thing you need to do is check that you have good radio communications to clearly send and receive over the network. Next lay down a strong floor, this can be made by pulling up old floor boards, removing interior doors, cupboard doors from the kitchen or wardrobes. Once there is a safe and solid floor, you can begin to set up your equipment. Ensure that you have enough height to position and operate the equipment and that you can achieve the right angle from which to observe your target.

Next, start to construct the walls of your hide. This is done by pinning black material drops from the wooden rafters on both sides and to the rear; this will create a light proof area to work in.



If you do have boxes or other large items laying around, use them to build up the position, this all helps with the overall concealment.





Once the walls of the hide have been hung into place and as much work has been done on the overall concealment of the hide, the next stage is to create the aperture through the roof using one of the methods already covered.

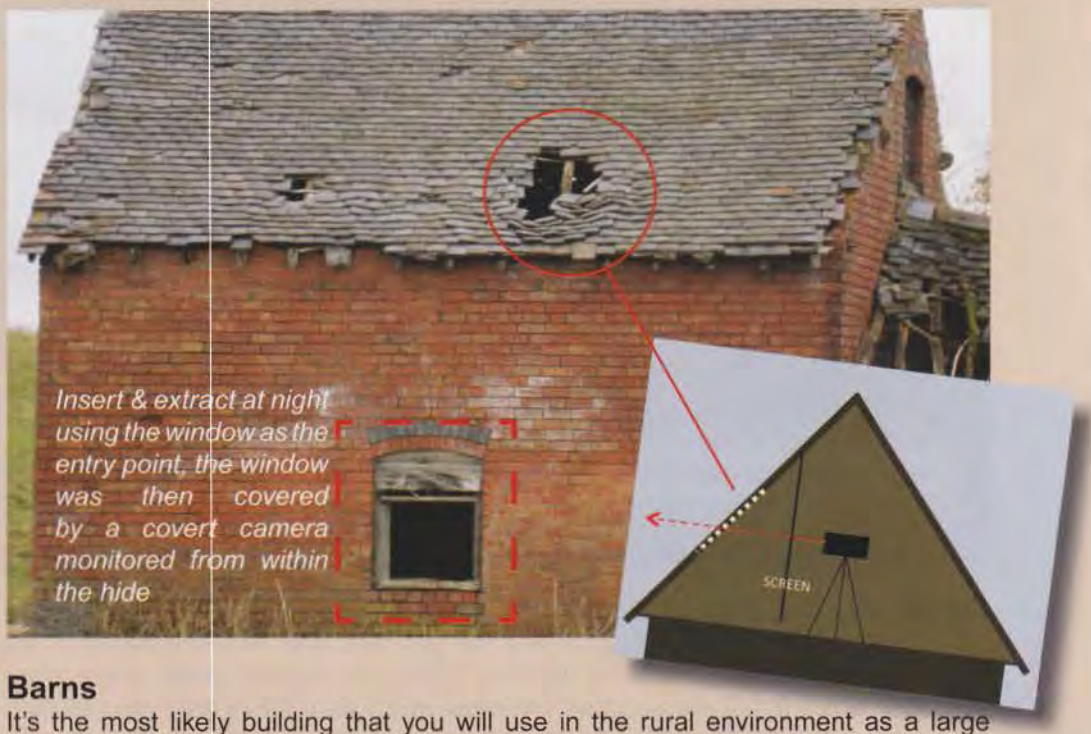
Cattle sheds & outbuildings

Using cattle sheds or outbuildings is fine, but you must take into consideration that they and therefore you might be isolated. These are usually small, single story buildings, which is not always ideal. Whereas with a barn full of hay, you can gain height by positioning yourself at the top of the hay stack; from there you should have a great position of observation.

In this picture you can see a typical stable. Although this one has a good sized roof space, which you may be able to make use of, the actual building offers little protection from compromise as it is very isolated.

I did use this building on a live operation. By splitting the team, I position myself with a two man team concealed within the roof space, and a two man extraction team on standby in a vehicle 300 metres away out of view in a lay-by.

In this close-up picture of the stable roof you can see two holes. Eyes positioned at the smaller of the two holes would draw more attention from a third party who might know what they are looking for. Use the larger of the two holes once you have hung a mesh screen in front of your position, you can operate freely behind the screen and enjoy a large arc of observation. Set your equipment up away from the hole.



Barns

It's the most likely building that you will use in the rural environment as a large number of tasks are conducted on or around farm land. The use of a hay barn, old out building or cattle shed could make all the difference to the success of your mission. Like residential properties, these buildings come in many different sizes, shapes and styles but all will serve you with the same purpose - concealment, survivability and sustainability for your operation.

Most barns are constructed from steel frames with either wooden slats or metal sheeting to form the outer walls. Out buildings and cattle sheds are more often made from a combination of bricks or stone and wood, with tiled or corrugated steel roofs. The barn below is made with both corrugated steel sheets and wooden slats.

Both barns (below left) are constructed with a steel frame. However, as you can see, the barn on the left is completely covered in sheet metal panels whereas the barn on the right has both metal and wooden slats.

This raises a dilemma, which is the best barn to use? The barn on the left offers total concealment from view, but means you will have to drill through the panels to create an aperture to observe your target area. Using the barn with the wooden slats on the right means that you can observe your target area between slats. Movement however, would be visible through the slats; back lighting will create silhouettes. The way round this would be to hang a solid material screen behind the wooden slats. The screen allows you to move around behind it without being seen. There is no right or wrong answer as to which barn would be best to use, it depends upon the conditions present and the outcome that you are trying to achieve; the decision must be made on the ground.

Constructing your hide in a hay barn is hard work, but in the winter months using these locations often means the difference between being able to keep your eyes on the target or going down with a cold. Hay offers great insulation from the elements.

I once was conducting observations from a constructed hide with hay bales at the beginning of February. That night, the temperature dropped down to -7°C. We didn't feel the cold to its true extent because of the insulation provided by the hay walls and floor surrounding us. As the sun came up, the landscape was covered in thick white frost.

Reconnaissance phase

Once you have located the barn you intend to use, conduct a CTR of the immediate area, with over watch in position as you would in all live situations.

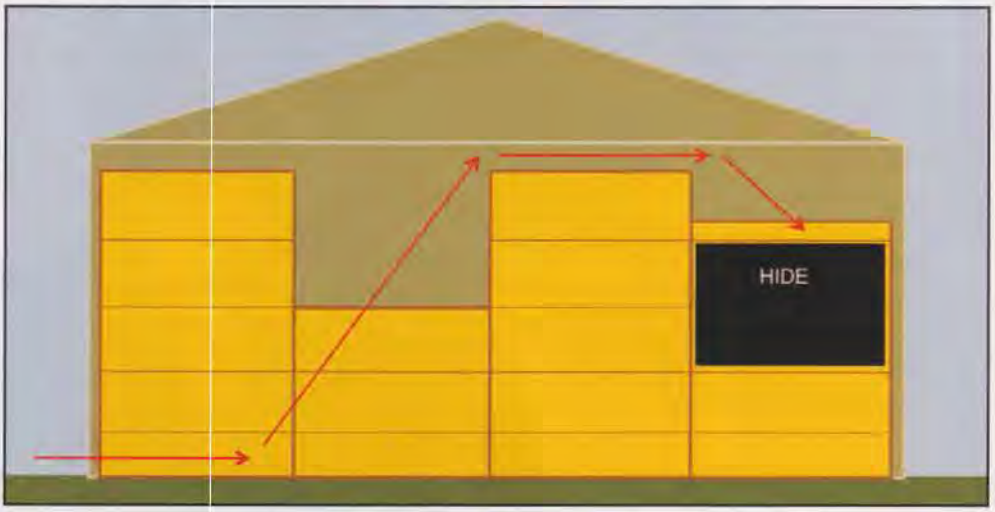
When satisfied, move in and assess the barn to ensure it will offer you the protection and concealment you require. Then from the intended hide location, check your radio communications, the roof on the barn may be made from metal, which might interfere with your signal. If this is the case, try and work around it by positioning your antenna as close to the outer wall as possible or lay it flat on top of the roof. Without communications this location cannot to be used. If radio communications are good, ensure the position offers you the correct angle to observe the target area.

I would not suggest a rotating split hide in this situation, if you are using a barn you would normally be on top of your target. Most barns are located close to occupied dwellings and the continuous movement of operators changing over will risk the team being compromised, so use it as a singular hide. If the makeup of the team is too large to accommodate everyone, then it may be necessary to place the rest of the team in a deep position with a wider field of view. From there, they can act as over watch and offer protection.

If this all checks out, call in the over watch team to your position. Ensure security is deployed while the construction phase takes place. The rest of the team will get to work on moving the hay bales.

Construction of the hide

Moving the hay bales is no easy task, they are heavy and can take two men to lift. If the bales are stacked in an interlocking method, you could find yourself moving twice as many bales as first thought. It may be that some bales will have to be broken down and disposed of in other areas within the barn, which can be a slow process. Once you have reached the depth required, start to replace the bales as best you can. You will be located at the top of the barn so with any luck, disturbance will not be seen from a third party on the ground.



Next, is to construct the hide's roof. This is done by pegging your poncho into the hay bales holding it rigid and firmly in place. Leave one of the corners free from pegs to allow access in and out. You may need to use your roof poles under the poncho to prevent sagging, then lay your wire roof section over the top to help support the weight of the hay when replaced. This only needs to be a light covering of hay, do not try to replace full hay bales over the roof unless you have used wooden beams or something of similar strength to construct your roof.

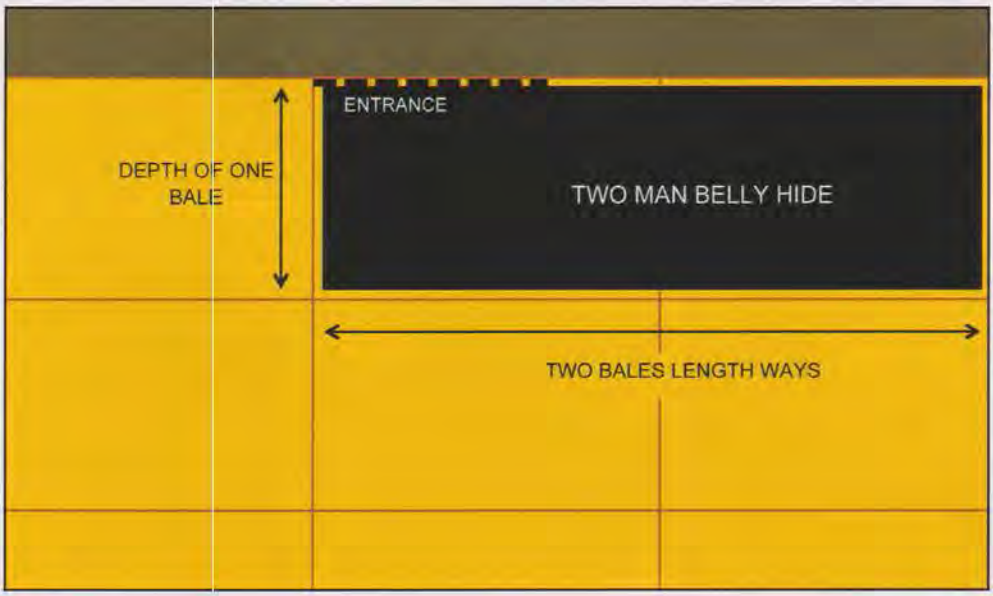
If your barn has wooden slats, hang a material screen drop in front of the hide to stop light from the outside getting in and illuminating you as you work. Create a small aperture in the screen to allow observation and filming to take place. If you are very close to the target, consider pushing a covert pin hole lens camera through, you can then observe and record any movement using the monitor inside the hide.

Once the hide is fully occupied and operating, the team will start the normal routine that takes place within any hide. Team leaders should conduct a final examination of the hide.

Belly hides

If time is against you, make a belly hide. These are much quicker to construct as you only need to remove a single depth of bales instead of two or three. In total, moving as little as four hay bales from the top would create a good sized 2 man belly hide in no time at all. Peg your poncho in place as before, using poles if required and then wire the roof sections together. Camouflage in the same way by covering the hide with a light covering of hay.

If operating as a two man team, consider deploying a covert camera positioned in the rafters of the barn. When appropriately angled, it will give you "eyes in the back of your head", and act as an early warning against compromise.



Here's the aperture circled


Stage 5
Stage 4
Stage 3

TECHNICAL HIDES - WIRELESS

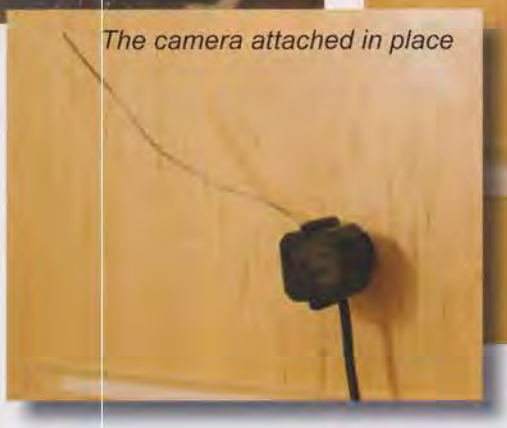
These are used when a manned hide would not be suitable for operators due to a significant level of threat or the close proximity to the target or subject.

This next section is aimed at public buildings such as hotels where there are a number of rooms inside the building that cannot be observed from the outside. It is most likely that you will require a technical trigger to alert you when your subject is on the move. This can be achieved by a visual device such as a camera or audio listening bug.

Your initial aim would be to follow your subject into the building and locate which room they are staying in. With this information, your next task is to locate a position that has "eyes on" the subject's door. If there's an available room on the same corridor then take it;

If you are able to access a room, the job will become much easier. Fixing a Velcro ring around the lens of this wireless pin hole covert camera, I can deploy the camera on to a number of different items. For example, by sticking a Velcro dot around the security spy-hole in the hotel door, I can then bring the two together to hold the camera in place as seen here in the pictures.

This will allow the operator to monitor all corridor activity covertly from the safety of the pickup vehicle waiting outside. If deployed on a large task you may be occupying more than one room.



If you cannot access an adjacent room, you'll have to deploy a device 'hidden in the open'.

Hidden in the open, means using a device that has been concealed in an everyday object. In this case, a smoke detector or fire alarm would not look out of place. Before deploying any device in the open, ensure that a full sweep has been conducted for CCTV cameras. Most hotels now have them fitted so, find or create a black spot or distraction whilst you deploy your device. A black spot is an area which is not over looked by CCTV camera.

Hard wired CCTV

Hard wired camera systems are excellent for (C/CCTV) covert closed circuit television. The camera can be concealed as before in smoke detectors, wall mounted fire alarm boxes or light fittings.

Most large public buildings have false ceilings, sometimes known as floating ceilings. Wires from the device can be run to a different location via these ceiling voids that are designed to carry air conditioning ducts and electrical wiring. The other end of the wired device is then plugged into a much larger monitor and recording system. If the device is to be used as a trigger only, it can be plugged straight into the television in your hotel room via a standard AV scart plug.

This method can be used with an audio listening device. The microphone will transfer what it receives down the coax wire and through the television or recording device.

CHAPTER 21

WINTER OPERATIONS

Surveillance operations are conducted all year round and at every minute of the day. The only difference is that surveillance in the rural environment through the winter months is hard work; it will take a much tougher and determined operator to endure the hardships in what can only be described as an unforgiving environment.

Topics Covered

- Personal clothing
- Winter camouflage
- Ghillie suits
- Rations
- Equipment
- Communications
- Hide construction
- Insertion
- Occupation
- Extraction

WINTER OPERATIONS

Just because there is snow on the ground, ice in the trees and the temperature is below zero does not mean that all surveillance stops, far from it! Surveillance operations are conducted all year round and at every minute of the day. The only difference is that surveillance in the rural environment through the winter months is hard work; it will take a much tougher and determined operator to endure the hardships of what can only be described as an unforgiving environment.

When you are operating in these harsh conditions, your personal admin must be outstanding, taking care of your equipment and yourself goes hand in hand. Both you and your equipment will stop functioning if the cold temperatures and wind chill start to take effect. This cannot be avoided but its effects can be lessened; you are going to be static for long periods of time, over this time your body's core temperature will start to drop, the more it drops, the less effective you will become. There are things that can be done to limit these effects, all of which are covered in this chapter.

Personal clothing - protection from the elements

Thinking back to the chapter on clothing and equipment, you'll remember the layering system, by wearing a combination of layers will help keep the body warm, making sure that all upper layers are tucked into the waist belt / band, also ensuring that all the body's extremities are covered, such as the head, face and hands.

Head and face

The head and face are the main areas from which body heat will be lost, not protecting these areas from the elements will result in you becoming a casualty to the environment. Simply by wearing a hat that covers the head and ears, or a full face balaclava will reduce heat loss. A full face balaclava is an excellent item of kit and can be worn as both a hat and a full head cover providing better insulation.

Masks are a very important part of any long term winter operation. The mask seen here protects the operator's lungs, it works by preventing the operator from directly breathing in extremely cold air. Over long periods of time the intake of cold air would lower the operator's core temperature making them prone to an injury from the cold.

Hand protection

In an extremely cold environment, mittens are better than gloves as they allow all four fingers to warm each other in one larger area, if you are going to wear mittens invest in the military style mitten as they have a separate trigger finger, shown here.

They will still allow you to operate your equipment, the camera shutter release, record button on your video camera and to zoom in and out with a spotting scope.

There is of course no reason why you can't wear gloves inside the mittens for extra protection, just ensure you still have the flexibility and dexterity to operate your equipment.

Footwear

You may find that you need to wear your winter footwear a size larger than normal for the extra layers of socks you'll need. In extreme cold environments such as the arctic, you will use a similar layering system for your feet as for the rest of your clothing. Starting with a thin sock that will wick away sweat, followed by a number of layers of loop stitched socks for warmth.

Your boot need to have a semi-rigid sole, which will allow you to use snow shoes, an excellent item of equipment to consider If there's deep snow on the ground. They are light weight and easy to carry when not in use.

Designed to disperse the person's body weight enabling you to walk on deep snow rather than ploughing through it, making an insertion easier and leaving less ground sign as your tracks will not be so deep.

Winter camouflage

You may think that winter camouflage is a simple case of wearing something white as a final outer shell layer and in some cases you may be right. For example, if you had to conceal yourself in an open area of pure white snow that will work. However, if having to move around and conceal yourself in a bare winter woodland, you may find that your all-white clothing stands out and in fact highlights your presence.

There are many variations and designs of winter camouflage which have been adopted by the military around the world, including the new civilian style of camouflage clothing which is being used by hunters and game sportsman. These new designs with foliage and trees printed on a plain white background are excellent, working extremely well in the surveillance role.

This is the German army alpine two-piece suit, one side is plain white and the reverse side has random stencilling of green pine needles.

Also from the German army is the alpine poncho, this too is reversible and a great item of kit to own. When stretched out flat it measures 4ft x 8ft and can be used as a very basic surface hide cover.

Here is the civilian country sportsman camouflage designed by REALTREE. Proving to be so effective that specialist military departments are turning towards this style of clothing.

Although a lot more expensive than army surplus clothing, they are better made and have many more functions, with matching footwear, headwear and gloves to complete the camouflaged system.

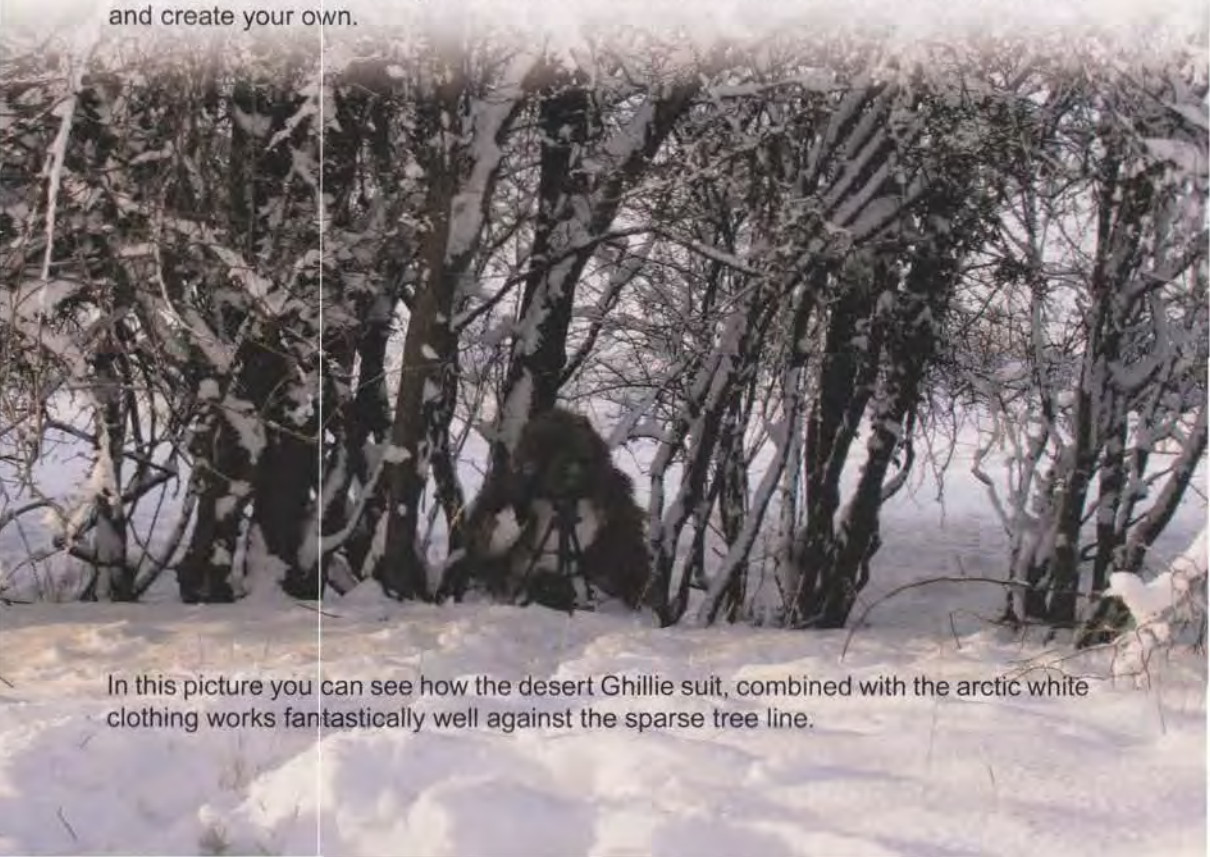
As well as personal clothing, your equipment can also be covered with matching masking tapes and camera lens covers to blend with the environment.

Covert Rural Surveillance

A specialised pattern developed by Arktis for the French mountain recce group. The coloured pattern design makes this perfect for this type of moorland where the pink colouration in the design really comes into its own, blending with the long wild moorland grasses, which have a delicate pink hue.

GHILLIE SUITS

Even in this winter backdrop there is definitely a place for the Ghillie suit. You can now buy Ghillie suits designed to be worn in this environment or invest some time and create your own.



In this picture you can see how the desert Ghillie suit, combined with the arctic white clothing works fantastically well against the sparse tree line.

EQUIPMENT

All equipment must be either spray painted white or covered by some form of concealing tape, REALTREE produce their civilian style of camouflage design printed onto rolls of concealment tape. Alternatively, use white electrical tape which works almost as well and is a lot cheaper.

When cameras and optics used for observation are placed at the aperture of the hide, ensure they are covered with white mesh to prevent shine and glare from the sun. They need to be set back from the aperture if a white mesh screen is not used to conceal the aperture itself.

Rural surveillance is normally conducted in a dark environment consisting of greens and browns where your aim is to stay within the shadows. Now you face a totally opposite environment, here everything is bright and white, therefore all your equipment must be similar coloured. Creating unnatural dark areas within this white landscape will certainly draw attention to your location.

As in all rural environments, the skin must be camouflaged to remove shine and to help you blend into the surroundings you're operating in.

RATIONS

Working in an unfamiliar environment, your body will be burning fuel much more quickly than normal as you use energy to keep you warm, this will of course depend on your operational environment, threat and how close you are to the target area. You need to consider what rations are to be carried, slow-burning carbohydrates such as oats, flap jack and pasta provide sustained energy to will keep you going. There's also a need to consume hot sweet drinks to keep the sugar levels up and keep you alert. High energy protein bars are an excellent idea to give you a lift and work very well.

Although you are operating in a cold environment your body will still be sweating causing you to lose body fluids which in turn leads to dehydration. You must still drink plenty of water to prevent this. Snow can be melted for drinking water which means less to carry on the insertion however, it requires a lot of snow to fill a standard military water bottle, more than you might imagine.

COMMUNICATIONS

With all surveillance operations being conducted that require radio communications between call-signs, a signal check must be carried out, if the hide is located in a black spot or difficult signal area you must move.

Communications equipment will be affected by the cold and harsh environment if neglected, ensure that all batteries not in use are wrapped and covered keeping them as warm as possible; the cold weather will play its part in discharging them and losing valuable power, keep them stored in a day sack / grab bag.

The main radio head unit must also be kept away from the elements as much as possible, although it is not necessary to wrap it up like the batteries as this may lead to over heating. It must be kept either in its purpose-built pouch (as seen in the communications chapter where I have fitted it into a Bergen side pouch) or located at the top of your day sack / grab bag.

The PTT and head set can be run from the day sack, as can the coax cable leading to the base plate of the antenna.

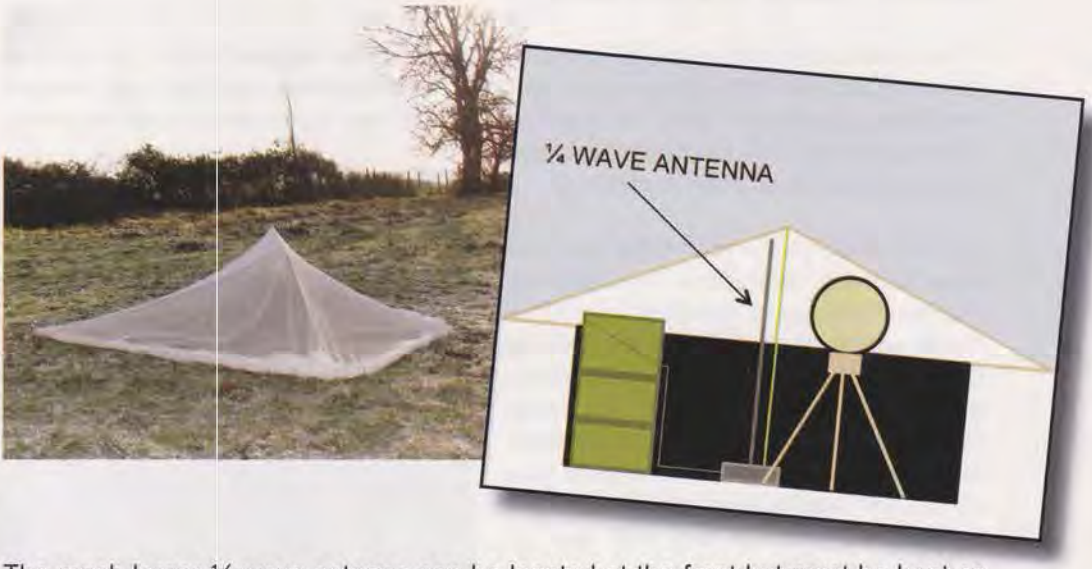
Setting up the antenna

There are a few ways this can be done, if operating from a standoff position in a wood block then use the same method as covered in the communications chapter, conceal the coax and antenna against a tree or elevate it for better signal range. Try and avoid positioning your antenna on the ground, if the snow begins to melt and your antenna base gets wet this could affect communications.

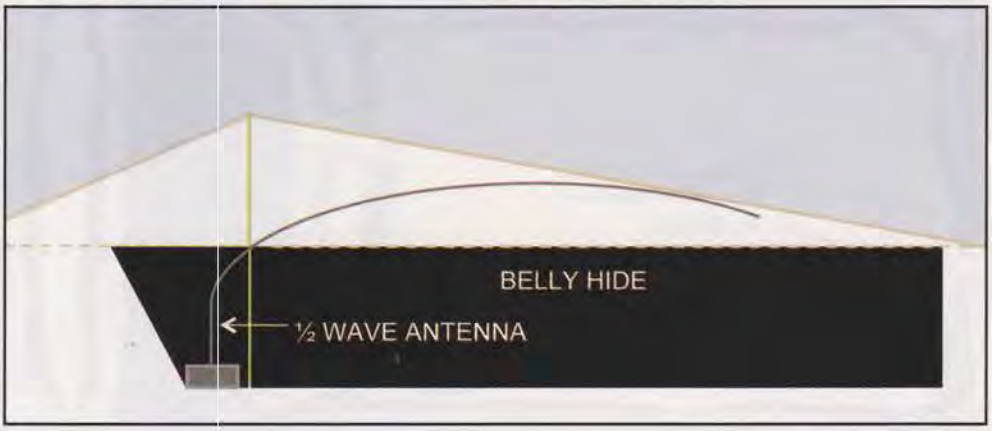
If operating from a belly hide in an open location, using either a ¼ wave or even a ½ wave antenna will help get that extra signal range where elevating is not an option.

A ¼ wave antenna can be positioned at the front of the hide, alongside the front up right pole as shown here in this picture. Due to the added depth when the snow has been removed, you'll have no problem fitting this size antenna.

The front mesh of the belly hide, depicted in the diagram to the right



The much larger ½ wave antenna can be located at the front but must be bent so that it runs down the inside centre of the hide, as shown here.



INSERTION

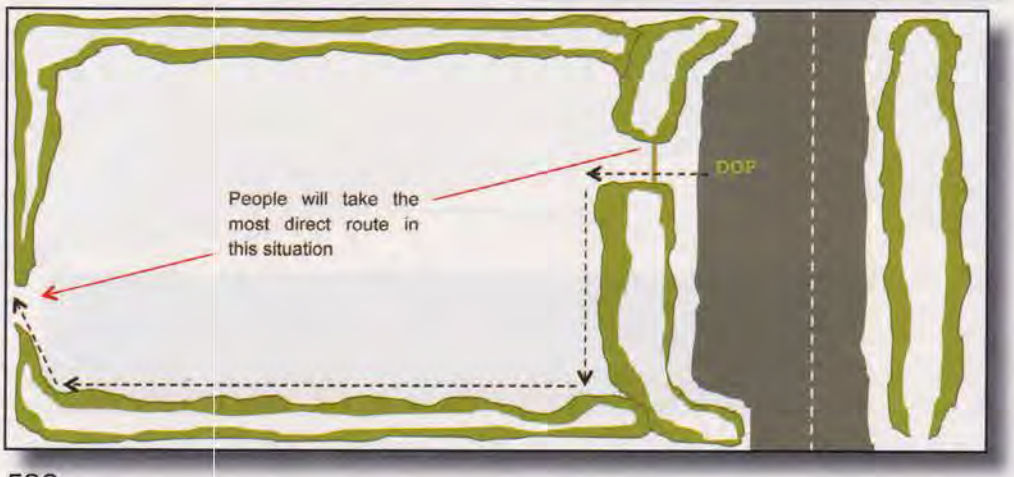
Locating your position close to the target area or subject is totally out of the question because of the ground sign you'll leave. Even a close target recce cannot be conducted, study the map and locate a number of possible hide locations where you can rely on powerful camera lenses and optics to bring your target closer. If possible always gain the high ground, locate your hide in an elevated position, from this distance you can over watch more of the target area.

Greater distances always have their advantages, you can consume warm food and drinks without the fear of your subject smelling your rations downwind, although discipline must be kept it allows you slightly more comfort.

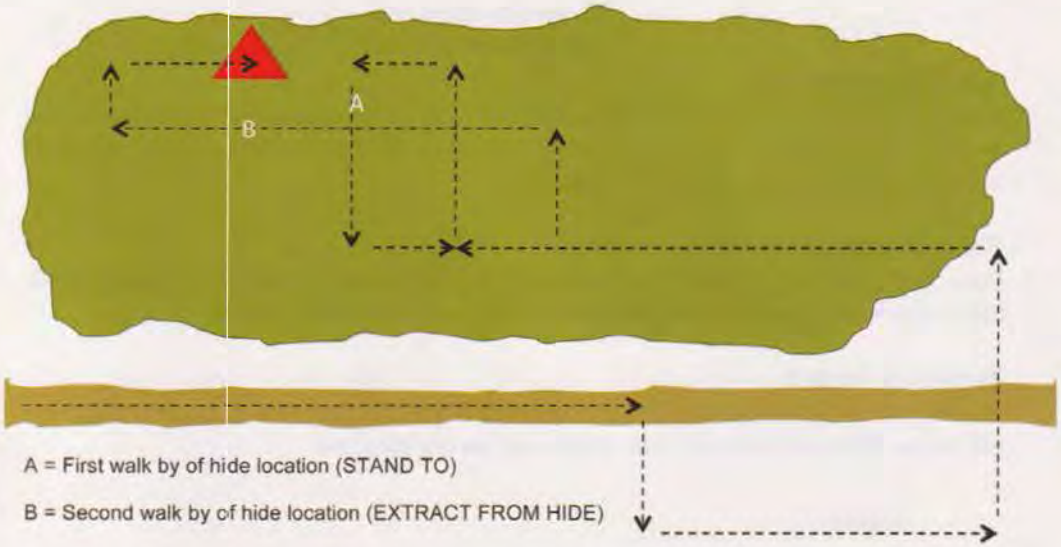
If a third party was to come across your position, a simple pretext story such as bird watching would be believable, it is not obvious that you are actually watching a person or property in the far distance.

When moving from the drop off point, walk on the outer edge of a field, as close to the boundary wall or hedge as you can get. This is the likely route that dog walkers and other people will walk, so hopefully you will not be leaving fresh footprints. If yours are the only tracks at this point, there's not much you can do about it.

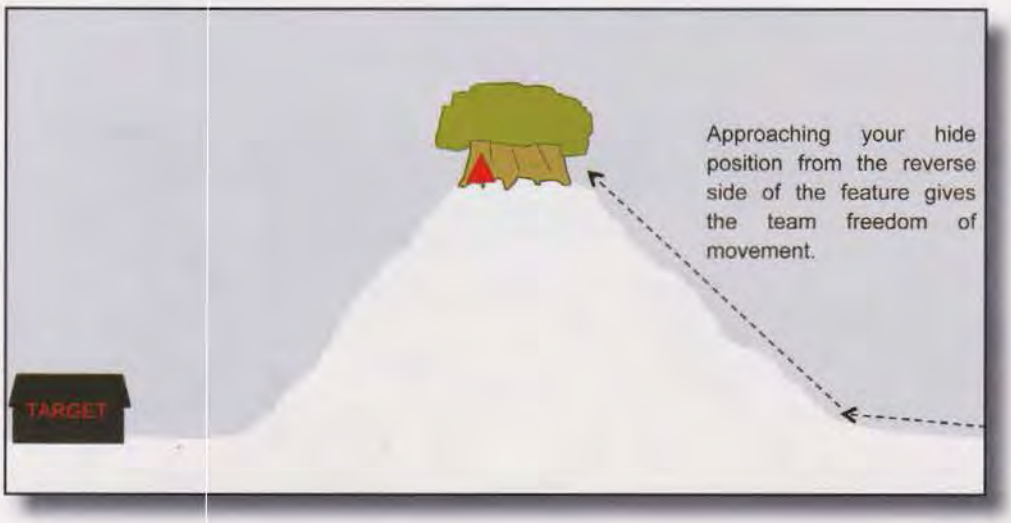
As you close in on your FRV, you will need to break track and it is at this point that your change of direction may draw the attention of any third party walking the same route. If they see your tracks disappear into the tree line, they may become suspicious and even consider following them. Therefore, ensure you don't walk directly to your hide location, this is bad practice and will lead to possible compromise!



Lay a false track, not too much as this will also draw attention but do enough for people to lose interest. Always approach your hide location from the rear and put in a number of dog legs to ensure that if a third party was to follow your tracks, they would pass the rear of your hide from a distance. This will allow the rear sentry or deployed technical devices to alert you, demonstrated in the diagram below.



If you plan to position your hide on top of a feature, always approach on the reverse side of the slope, this way if your subject happened to look towards your position you have not left visible ground sign or foot prints heading to the top of the hill. When extracting day or night you must use this method as the feature will cover your movement.



HIDES

In these conditions it is not possible to construct a sub-surface hide to any reasonable standard or time frame due to the frozen ground. Therefore, hide location is limited to two methods, these are known as...

Above the snow line
Below the snow line

Above snow level

This would otherwise be known as a surface hide, here you would conceal yourself by using man made materials you carry in on the insertion, with the aim to construct a position from which you can operate.

Below snow level

Here you would be constructing your hide within a dug out section of deep snow, below the snow line but still above the actual surface of the ground.

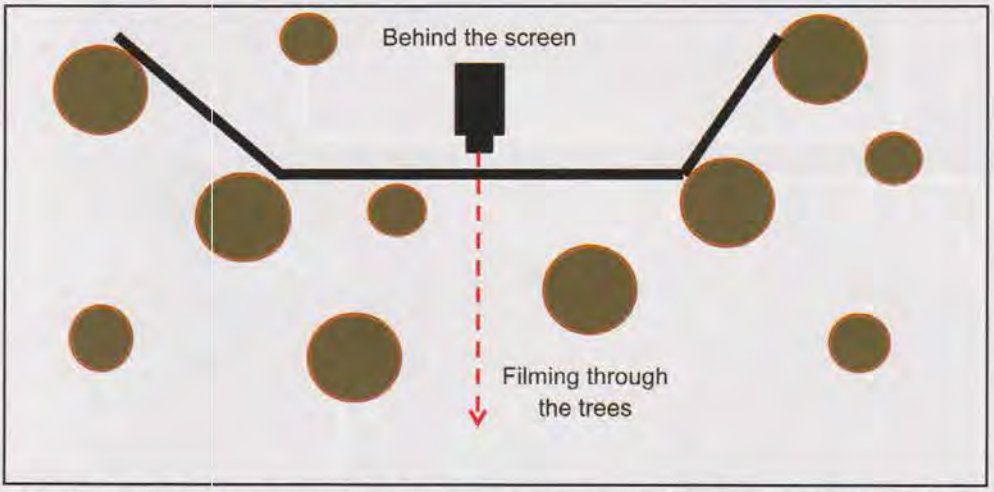
Types of hides

Although your hide can only be located either above or below the snow line there are still many different forms of hide which can be constructed

- Screens
- Dome hide (standoff observations only)
- Specialist Blinds
- Belly hide
- Dug outs

Screens

As the hide is located at a greater distance than normal from the target, you can use a very simple but effective method known as screening. Positioned so that it covers your movement from the direction of the target area, the screen works best when set back from the tree line of a wood block. Most trees lose their leaves in winter so you will be surprised how far back into the wood you can go and still be able to observe your target. As long as you stay within the perimeter of the screen, your movement and equipment will not be seen by the naked eye however, you will be visible through any form of thermal optic.

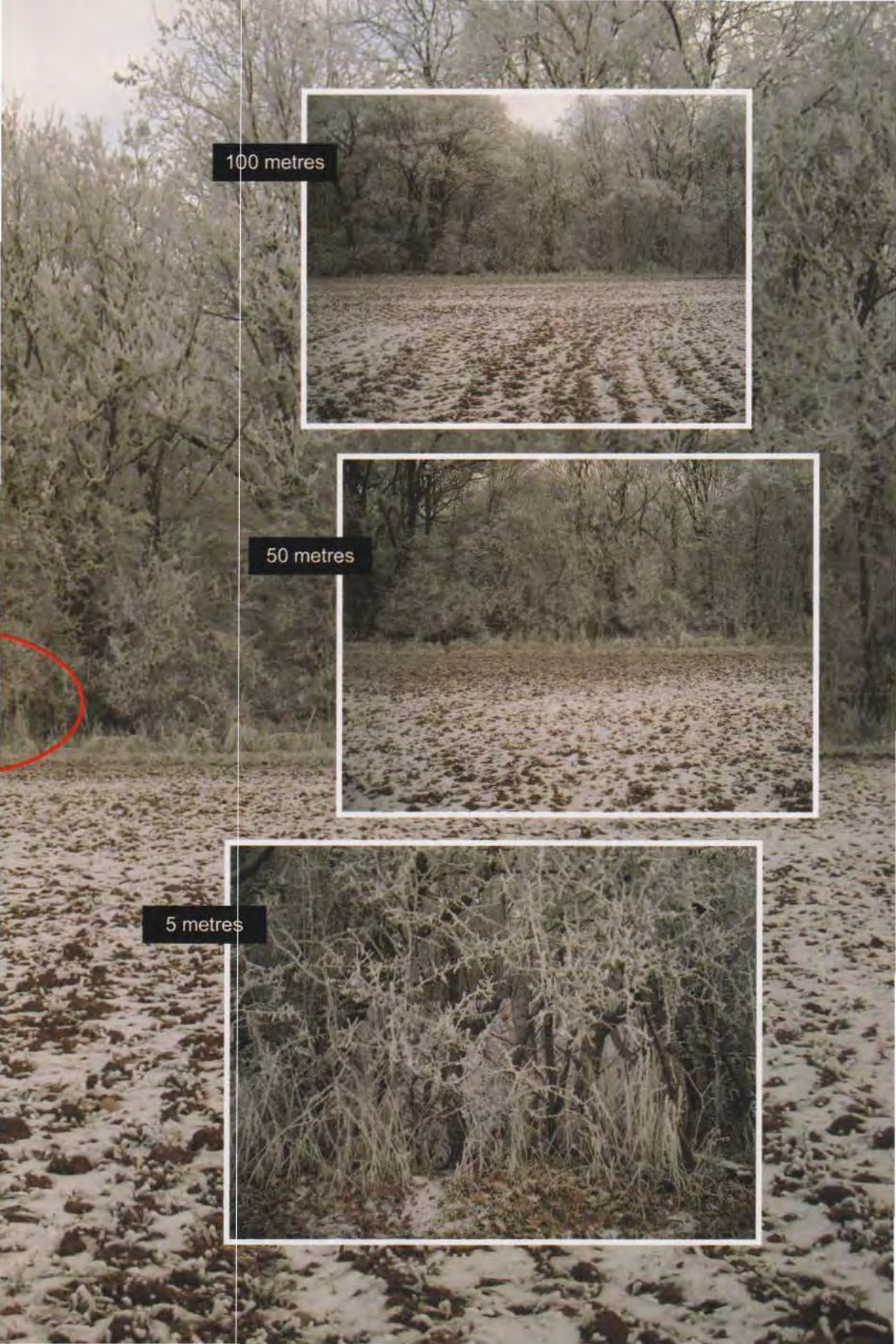


This is how the screen would look from an overhead view, positioned just back from the front of the tree line and uses the trees to add depth from side angles.

Although this will offer you concealment from the front, your rear is wide open to view and of course the elements. With no surrounding or overhead cover you have limited survivability or sustainability, but as a short term measure this method is great. This type of screen should be carried in your rural day sack throughout the winter months when snow is on the ground or snowfall has been forecast.


I designed and made this screen, it can't be found in the shops!


20 metres
15 metres
10 metres


100 metres
50 metres
5 metres

Dome hide

This style of hide offers long-term survivability and sustainability, although this method of concealment would not be recommended in the summer months, in freezing temperatures the need to be out of the elements is imperative. Without this protection on long-term jobs, you and your team will fall foul of the environment.

Dome-style hides can be brought from hunting stores or over the internet, they were originally designed for sports shooting to offer concealment to the sportsman. Also used by wildlife photographers to remain concealed when taking close-up images of wild animals and birds; as a surveillance operator you can use domes for the same reasons. Dome hides often have sealable apertures on all four sides, giving the ability to observe in more than one direction at any time.

You do not have to buy a ready made dome hide, there are many other ways to construct a similar hide. Use your hide poles to erect a frame and cover it with a white weatherproof material, such as parachute silk, which makes an excellent cover. Finally cover with an arctic white camouflage net to add depth.

Alternatively buy a second-hand dome tent used for camping, ensure that it has an inner compartment which is normally made from a white nylon material. Erect the inner tent compartment as normal then cover with an arctic white camouflage net instead of the tent's fly sheet.

As you can see in the scene below, even at close distance it starts to blend with the surroundings. In real operations, this style of hide should not be deployed less than 300 – 400 metres from the target.

Specialist blinds

You can now buy mirrored screens, which are effectively a number of solid panel sections that have been laminated with a mirrored film on one side. The panelled sections are cut to open out like a fan, narrow at the base and wide at the top.

Designed to stand upright and leaning slightly outwards, this allows the mirrors to reflect the ground surrounding it. With this angle of use the mirrors don't normally reflect the sun, although you need to take care when erecting or dismantling the blind.

These blinds have been developed with hunting in mind however, they can be adapted for surveillance uses. Just remember that a larger distance is still required between you and the target area, at close range these blinds may trick animals but will not fool humans.

If the screen is not angled correctly you will get some brighter reflected areas on parts of the blind. This can draw attention to your position.

THESE BLINDS SHOULD ONLY BE USED AT LONGER DISTANCES!!!

Belly hide

Creating a belly hide in the snow is slightly different to the normal method. Instead of digging down into the ground so that you are below the level of top soil, here you just need to dig down through the layer of snow until you hit the solid ground beneath.

This must be done in a controlled manner, using the same method as removing soil from the ground, cut the snow into blocks using your fold-up saw or spade and remove one at a time.

In most cases the snow you are removing will be easily concealed in the vast white landscape. Once you have reached solid ground, lay down inside the hole and check that you still have the target area in sight. Normally your next task would be to start constructing a roof however, in this situation it will not be possible, nor is it needed.

I have designed and built my own two-man belly hide, it consists of two poles, a large white material fly sheet with a nylon mesh front stitched in place.

The pictures below show the construction of this hide, in a real operational situation at least half of this hide would be below the snow line and invisible.

STAGES TO CONSTRUCTION

Stage 1 Fixing the frame in position

A short up-right pole positioned front centre, the shaped block is located on top of this, the longer pole which runs the length of the hide is passed through the hole at the top of the shaped block. Ensure all pole ends are firmly pushed into the ground, if the ground is too hard for this then create a hole using a knife.

Stage 2 Positioning the fly sheet

Once the poles are firmly in place, pull the fly sheet over the top, I have attached loops on the inside of the fly sheet which are then tied around the poles holding it in place. Next, peg the fly sheet to the ground, it is important that you leave one of the rear sides unpegged, this allows you to enter and exit when the hide is fully constructed.

Stage 3 Locating the front mesh panel

When positioning the mesh front panel, you need to consider the angle in which you fix it. The function of the mesh panel is to allow observation whilst offering concealment from the front. If the angle of the mesh is too steep, a dark shadow will form behind it, this due to the light not been reflected, if the hide was observed from the front this shadow is obvious.

However, if the angle is much shallower, giving a larger surface area when looking directly at it, the mesh appears to be a solid surface causing no background shadow and in turn reflecting the light much better. Unlike normal situations where you are trying to block the light, here you need to reflect as much of the light as possible.

Now the mesh is pulled into position and pegged into the ground to keep it rigid. If you look through the mesh you will see it is in fact double layered, this gives extra depth from the side

Front view of belly hide

In this photograph taken from 10 meters, you can clearly see that the more surface area you have; the more solid the mesh becomes. If less surface area was visible, the front of the hide would be much darker and an observer could identify shadows and movement inside the hide that may draw unwanted attention.

Authors design of the winter belly hide

Every part of the two man, winter belly hide was designed and created by the author; this style of hide cannot be found on the market. His design is the result of years operating in these environments, adapting and designing his own equipment to maintain his position at the forefront of covert rural surveillance.

Below the snow line

This is as close to a sub-surface hide as you are going to get, normally only constructed in very heavy snow or in countries where snow is present all year round. These hides are normally taught to alpine mountain troops on warfare courses, a vast subject so only basics will be covered.

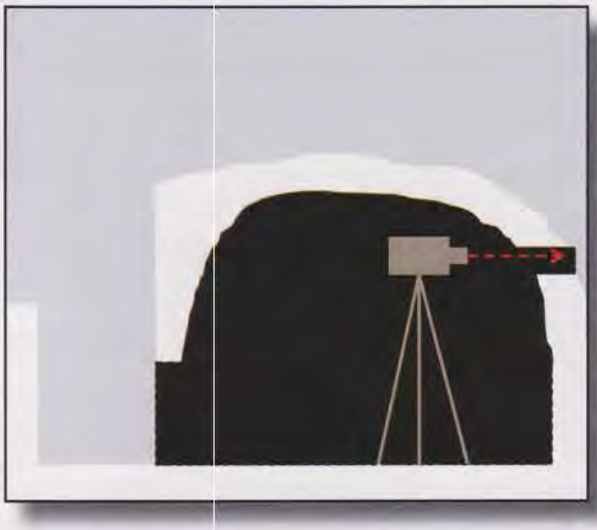
If operating in this type of mountainous terrain where the snow is so deep you can carve entire shelters into it, then this is your best option. Not only will you be removing yourselves from the outside elements, you will also be extending the length of time you can remain on task.

Your aim as always, is to find a position which affords good communications between call signs, good observation of the target area, concealment, survivability and sustainability.

Once this position has been located, start digging into the snow, positioned as always to the rear of the hide and the intended aperture. Start digging down as far as you can go, almost as as if you were digging the foundations of a building.

Clear this area and start carving your way into the flat wall you have just created, if needed cut the snow into blocks making them easier to remove.

Continue to carve a single tunnel until you are happy that it will be deep enough to house all hide members once the side walls have been excavated.



Now that you have your depth, you need to start thinking about the height. Take one of your hide poles and push it through the top of the snow towards your hide. Push it all the way in so you have at least 50cm of pole pushed into the snow, repeat this a number of times in different locations around the hide's position. When you start to expand the height of the hide from the inside, you know that once you hit the poles you still have at least 50cm of snow above you.

Once happy that the dugout is big enough to house all hide members, you need to create the aperture. Slowly carve away at the snow until you break through. Ensure you start with a very small aperture as this can always be made larger if required.

OCCUPATION

Once the observation and communications equipment is set up and in place, the next stage is to move all personal kit inside. Unlike a normal hide where you would construct a separate Bergen hide, in this environment the less moving around you do the better. Creating a Bergen hide would only leave ground sign which could lead to your compromise.

Lay a thick ground sheet down, followed by the roll mats to insulate your bodies from the cold ground, if you have Bergens, flatten them and lay on top, the more items you can get between you and the cold ground, the better.

Ensure that you wear your white snow suits, balaclava or face mask inside the hide, any dark clothing could draw attention to your location, remember your aim is to keep it as bright as possible inside the hide. In this environment, once you are in you stay in. Remember that there are no first or last light checks to be done.

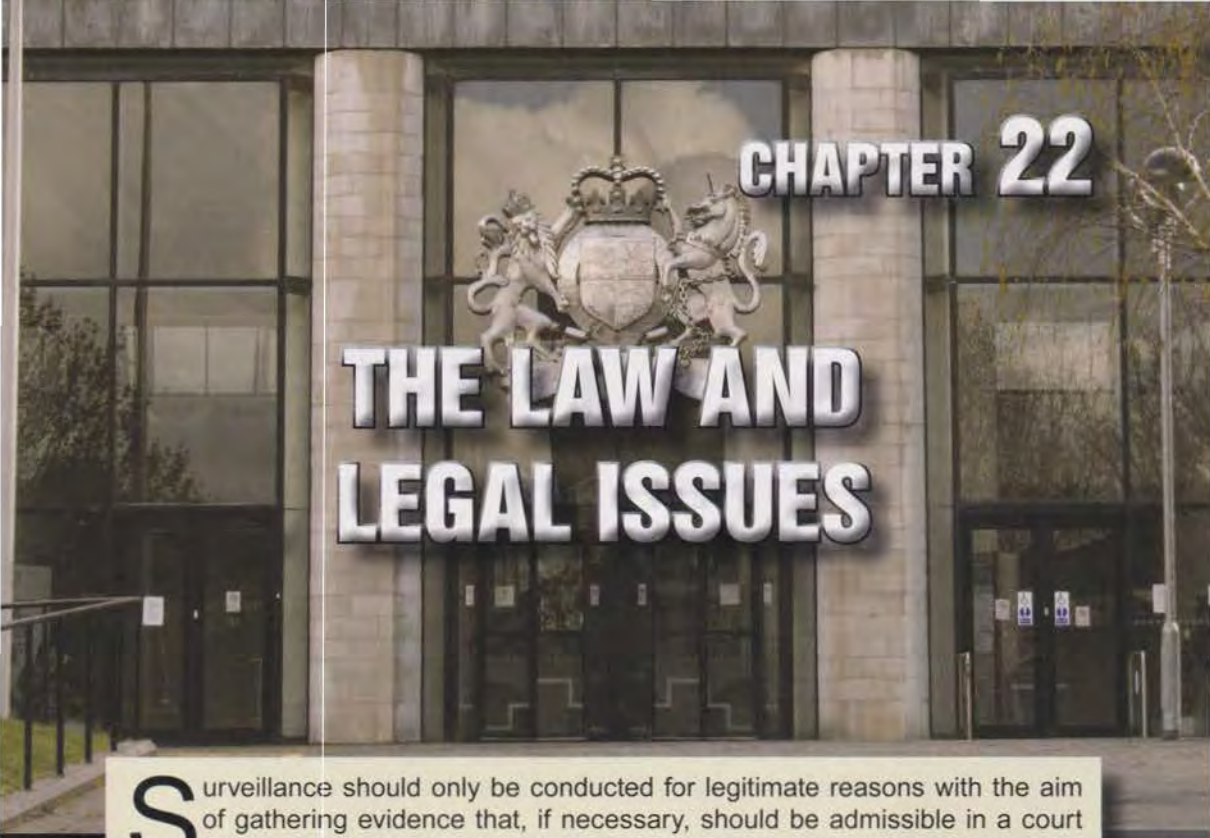
EXTRACTION

When the time comes to extract, you must ensure this is done in a controlled manner. Locate a member of the hide in a position of over watch whilst any de-construction takes place. You must always try to extract after last light or before first light, if your position has been compromised then you will not have this luxury. If this is the case then extract as covered in the rural hides chapter, using the best method to suit the situation.

Once you have extracted from the hide location, you must now consider your route out to your pick-up point. If the route to your pick-up point is via public footpaths, ensure you remove all operational clothing; conduct the final stage of the extraction in civilian clothing.

Remember to have a pretext story in case you have been seen leaving the area and are approached by a third party who insists on asking questions. You may have extracted over private land and been seen by the land owner, if this is the case ensure your pretext story is watertight.

Once back in your safe location, equipment must be cleaned and completely dried before repacking and returning to the stores.



CHAPTER 22

THE LAW AND LEGAL ISSUES

Surveillance should only be conducted for legitimate reasons with the aim of gathering evidence that, if necessary, should be admissible in a court of law. All evidence whether it is visual, audio or written should not only be accurate and truthful but must comply with current legislation.

Topics Covered

- Human Rights Act 1998
- RIPA
- Data protection
- Harassment
- Rights of way
- Tresspass

Surveillance should only be conducted for legitimate reasons with the aim of gathering evidence that, if necessary, should be admissible in a court of law. All evidence whether it is visual, audio or written should not only be accurate and truthful but must comply with current legislation.

The laws concerning the gathering, storing and disclosure of surveillance evidence vary from country to country and there can be different evidential criteria for criminal and civil matters. The authority responsible for tasking, conduct and disclosure of surveillance evidence is also different for public and private bodies so it's essential that surveillance operatives have a clear understanding of the legislative framework prior to tasking. Currently in the United Kingdom, there are several key pieces of legislation that are specifically directed at the gathering of surveillance evidence.

HUMAN RIGHTS ACT 1998

Although the Human Rights Act received its royal assent in 1998, it did not come into force until 2nd October 2000. The Act allows for UK legislation to incorporate the European Convention on Human Rights without having to go to the European Courts of Human Rights in Strasbourg. UK courts can now make judgements directly on matters concerning the human rights contained in the convention.

The Act contains a number of articles and protocols and is a weighty and complex document incorporating issues as diverse as the right to life and the right to vote. However, only two articles or sections of the act are directly relevant to surveillance and gathering evidence.

- Article 6: the right to a fair trial
- Article 8: the right to a private and family life

Article 8 gives all citizens 'the right to a private and family life'. One could easily assume that this article could actually prevent surveillance operatives from carrying out close intrusive surveillance, particularly surveillance carried out on a private residential address for example. However, Article 6 of the act 'the right to a fair trial' to some extent counters the right to privacy. If a target is suspected of criminal or fraudulent activity for example, then intrusive surveillance can be carried out lawfully, provided the surveillance complies with three key principles.

Surveillance must be...

Legal – the surveillance is carried out in a legal manner.

Necessary – it is a necessary process to achieve the aim.

Proportionate – surveillance is only as intrusive as necessary to achieve its aim.

It is also necessary to keep any third party intrusion to an absolute minimum i.e. recordings of unrelated individuals, for example friends and family.

Case study

If for example, a surveillance operative was tasked to gather video evidence of an individual in a personal injury claim and/or as part of an employment dispute over a personal injury and the instructing body was a local health authority. Operatives would not only need to understand the appropriate legislation but also the level and extent of any incapacity. If the claimant cites as part of the damages that they cannot carry out decorating and during the surveillance they are clearly seen decorating then it is entirely legal to record this activity, even though it is taking place inside the home, provided it is taken from public property and no artificial height has been gained. The direct relevance of the activity allows for inclusion of the evidence. If the target was just watching television then any footage of this would have little relevance to this particular claim and filming this activity could contravene the legislation.

Before any deployment make sure you; understand the legal framework you are operating under; understand the circumstances of the case and purpose of surveillance so you can make intelligent and informed decisions in the field.

REGULATION OF INVESTIGATORY POWERS ACT 2000

The Regulation of Investigatory Powers Act 200 (RIPA) regulates the powers of public bodies to carry out surveillance and intrusive investigations particularly the interception and monitoring of communications. The legislation was introduced to respond to advancements in technologies such as the internet and mobile communications. The legislation does not apply directly to private organisations.

The legislation is only relevant to private surveillance and investigation companies if they are acting directly on behalf of a public body and where the legislation is relevant. Surveillance and investigations between private organisations are not bound by the specific legislation of RIPA. However, many public organisations such as local authorities do instruct private contractors to carry out surveillance and in those circumstances private companies have to be compliant with the Act.

A RIPA authorisation for surveillance will specify; the target of the surveillance; the aim of the surveillance; the location of the surveillance and the period of the surveillance. The purpose of the act being to limit the extent of any intrusion to only that necessary to achieve the aim of the investigation. Any RIPA authorisation will be sought by the instructing body prior to the surveillance being tasked and teams should be we aware of the target, location, dates and limits of the surveillance well before commencement of operations.

DATA PROTECTION ACT 1998

The Data Protection Act 1998 came into force on 30th March 2000 and defines the law for processing personal data and provides a way for individuals to control information about themselves. The majority of the Act applies to businesses only but anyone holding personal data for professional purposes is legally obliged to comply with the Act.

Any surveillance company, private investigator or security consultant business that holds personal information about members of the public must by law register themselves with the Information Commissioner's Office.

Although, the Data Protection legislation can be complex there are eight key principles that processors of personal data must adhere to:

- Information must be fairly and lawfully processed.
- Information must only be processed for a specific and limited purpose.
- The stored Information must be adequate, relevant and not excessive
- Information must not be for longer than necessary.
- Information must be processed in accordance with the subject's rights.
- Acceptable security measures are in place to prevent unauthorised use or misuse of the data.
- The information is not transferred to foreign countries without adequate protection.
- Individuals have a right of access to information stored about them, subject to certain exemptions.

All surveillance and investigation companies hold a certain amount of information about other individuals by the very nature of the work. Anyone holding this information must register with the Information Commissioners Office for a small fee and seek advice on the best methods for processing and storing any data they hold. Failure to comply with the conditions of the Act could result in a fine or imprisonment.

PROTECTION FROM HARASSMENT 1997

As rural surveillance operators you may feel that this legislation is less relevant however, if you are tasked to carry out sustained operations on an individual or property then it is important that you fully understand the legislation and implications.

Whether covert surveillance is carried out for a public or private organisation, provided it is carried out lawfully and with a clear aim i.e. to detect fraud, it would not be considered harassment even if the operation was prolonged or carried out on several separate occasions.

Under this act, the definition of 'harassment' is behaviour which causes alarm or distress.

Where the act becomes more relevant is on compromise. If a target becomes aware of the surveillance, whether that is urban or rural, static or mobile, and it is clear to the operators that this is the case; to continue with surveillance can be perceived as harassment. On compromise withdraw to avoid the possibility of harassment. There is a temptation to ignore the signs of a suspected compromise for professional pride or stubbornness to achieve a particular aim. Once you suspect you have been compromised, your target will not carry out the activity you were there to record so there is little point in continuing with that part of the operation. Once it is clear you been compromised withdraw as professionally as possible and as covertly as possible and you will avoid the accusation of harassment.

Always check on any deployment whether any organisation or agency has been tasked prior to you and whether they have been compromised. Try to obtain a copy of any previous reports or footage and carry out a full risk assessment. You may have to decide for yourself whether or not a compromise has taken place as again, for reasons of professional pride, organisations may often be woolly with the facts. I always assume the worst and adapt my tactics accordingly.

THE COUNTRYSIDE & RIGHTS OF WAY ACT 2000

The Countryside and Rights of Way Act 2000 (sometimes called the CRoW Act) is an act of Parliament that came into force in November 2000. The act implements 'the Right to Roam' on uncultivated areas of England and Wales and the Ramblers Association had long campaigned for access to certain areas of the countryside for recreational and educational purposes. Not all areas are covered and the act is being implemented in stages as definitive maps showing footpaths are being produced.

In Scotland, the Land Reform Act of 2003 comprehensively codified the ancient tradition of universal access to the countryside into Scottish law, establishing rights to access and cross land for recreational purposes.

If in doubt check the appropriate mapping and recce potential vantage points prior to deployment.

TRESPASS

Trespass involves the wrongful interference with someone else's land or property. It is not necessary to prove that some harm was suffered, the act of trespass itself is sufficient to make a claim. Trespass can be intentional and unintentional but claiming ignorance is not enough to avoid the law.

As surveillance operators, you can take filmed evidence of private land as part of an investigation but that must be from a public location where any member of the public would have a natural vantage point i.e. not climbing walls or trees to gain height over a location.

It is however, possible to gain written or verbal permission from private landowners, on land overlooking the target location and use that land to site your hide and gather

evidence. Clearly, it would be necessary to check prior to deployment that there would be no conflict of interest and the situation would have to be carefully managed so as not to alert the subject.

If in any doubt, check whether land is public or privately owned, check where the nearest public footpaths and access points are and who owns any adjoining land prior to any deployment.

DATA PROTECTION ACT RE CCTV

The DPA takes into account the use of domestic cctv systems for your own private security and does not expect every householder to register with them. However, the act gives certain exemptions to the above eight enforceable principles for a CCTV camera mounted on a private and domestic property.

Section 36 of the data protection act states that personal data processed by an individual only for the purposes of that individuals personal, family or household affairs (including recreational purposes) are exempt from the data protection principles.

If a person enters the property covered by CCTV the owner does not need to put up notices stating that the person is entering a CCTV covered area. Nor is he required to provide a copy of the film he has taken to the data subject if they make a formal request.

However, if CCTV cameras pick up images outside the premises, such as a pedestrian walking past or a camera overlooks his neighbour's garden, then the principles of the Data Protection Act have to be considered and a sign put up.

However if your camera is covert, part 1 of the data protection act CCTV code of practice states

In exceptional and limited cases, if it is assessed that the use of signs would not be appropriate, the user of the scheme must ensure that they have...

1. identified specific criminal activity.
2. identified the need to use surveillance to obtain evidence of that crimina activity.
3. assessed whether the use of signs would prejudice success in obtaining such evidence.
4. assessed how long the covert monitoring should take place to ensure that it is not carried out for longer than is necessary.
5. documented the 4 points above.

Information so obtained must only be obtained for prevention or detection of criminal activity or the apprehension and prosection of offenders. It should not be retained and used for any other purpose. If the equipment used has a sound recording facility, this should not be used to record conversations between members of the public.

Operational case study

I was tasked to carry out surveillance on a subject that was known to be very alive to the prospect of surveillance. Close reconnaissance of the target area; a churchyard in an urban setting also compounded the difficulty. The churchyard was located on a crossroads with double yellow lines in all directions. The usual tactic of deploying a static vehicle hide on the road overlooking the churchyard was not possible. No one normally parked on the approach to the junction and any vehicle parked there would stand out and alert the subject. Similarly any strange vehicle in the church car park would alert the subject. Any other position did not give the necessary vantage point and arc to gain the evidence required. The position needed to be sustained for at least a few hours and the target was anticipated to be moving around the churchyard.

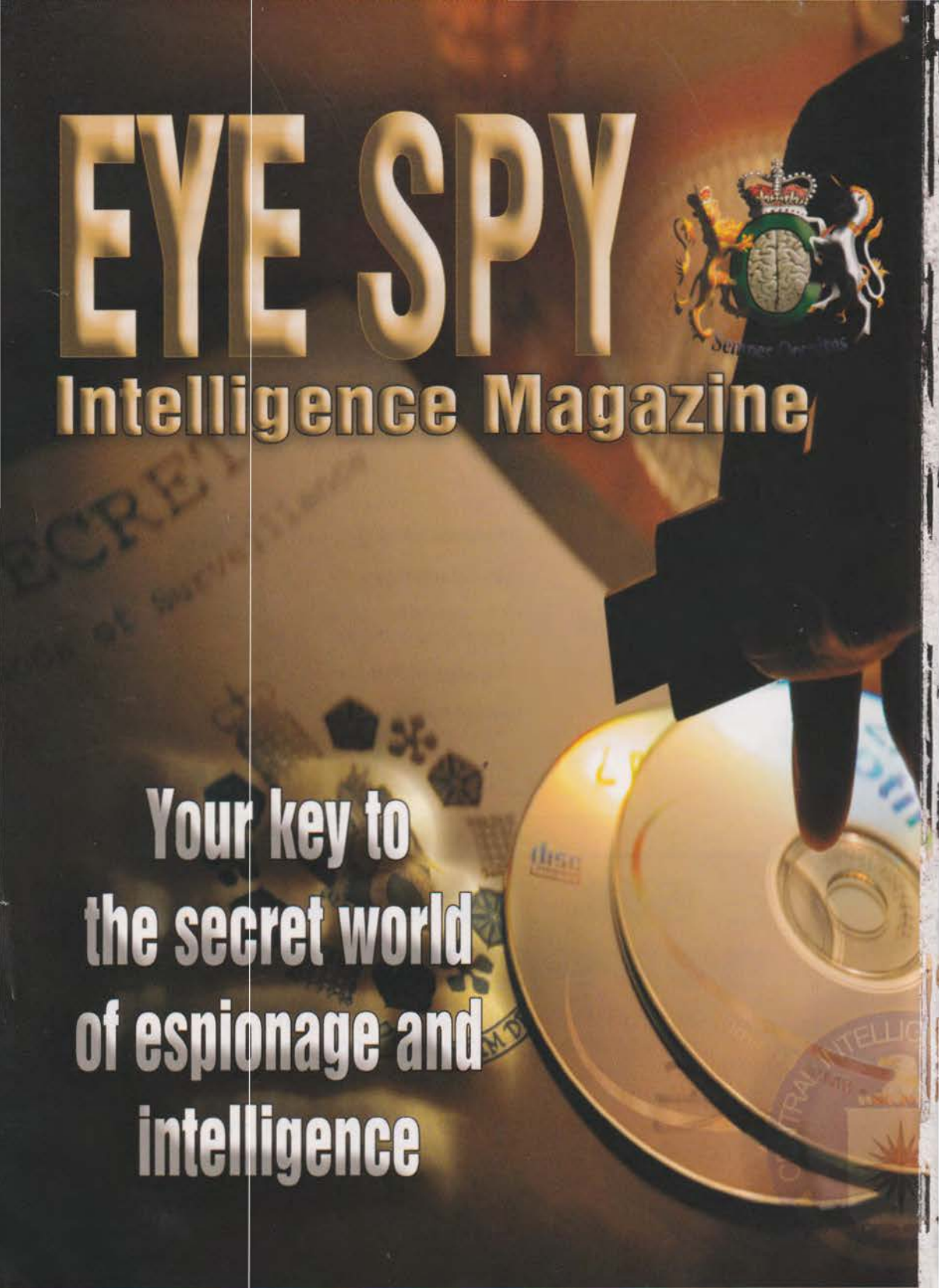
The churchyard was surrounded by private gardens which did give the appropriate view. One garden surveyed the precise area of the churchyard and approach. The garden was edged by a 6ft fence, on closer inspection the fence was made up of wooden slats. A number of natural wooden knots had lost their 'eyes' (central piece formed in the knot) creating a natural aperture from which to film unobserved.

A discussion with the owners of the property explaining our situation, the very general purpose of our investigation (a large fraud investigation in this instance) and, after showing suitable identification, the position was secured and the owner was content to let us use this position for a few hours. With the appropriate hide established behind the fence, we managed to sustain the position and gain the relevant film. The target had absolutely no idea we were there and recording his every move.

CONCLUSION

Any surveillance operation needs to be carried out lawfully. Operatives need not only to understand the general principles of privacy, intrusion and the custody of evidence but also the specific legislation as it applies to each particular tasking. What may be appropriate for one tasking may not always be appropriate for another.

Always be sure of your legal position prior to deployment and be mindful that in any civil or criminal matter, there will be an opposing legal team looking to challenge your evidence. It is often the case that surveillance evidence is crucial, so do not let a lack of understanding of the law undermine all your hard work.



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- Logging & reporting
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- Close target reconnaissance
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- Digi-scoping
- Covert cameras
- Eavesdropping
- Operating from buildings
- Winter operations
- The law & legal issues

The author of Covert Rural Surveillance served in the military for many years and conducted operations in a Reconnaissance and Surveillance role. As a qualified Reconnaissance Instructor, he was a member of the directing staff on a number of military courses, training soldiers in this specialised field.

Since leaving the military, he has worked in the private sector, conducting covert surveillance and investigations in the UK and overseas, as well as running specialist training courses.

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