# FIELD-EXPEDIENT DIRECTION FINDING



In a survival situation, you will be extremely fortunate if you happen to have a map and compass. If you do have these two pieces of equipment, you will most likely be able to move toward help. If you are not proficient in using a map and compass, you must take the steps to gain this skill.

There are several methods by which you can determine direction by using the sun and the stars. These methods, however, will give you only a general direction. You can come up with a more nearly true direction if you know the terrain of the territory or country.

You must learn all you can about the terrain of the country or territory to which you or your unit may be sent, especially any prominent features or landmarks. This

knowledge of the terrain together with using the methods explained below will let you come up with fairly true directions to help you navigate.

### USING THE SUN AND SHADOWS

The earth's relationship to the sun can help you to determine direction on earth. The sun always rises in the east and sets in the west, but not exactly due east or due west. There is also some seasonal variation. In the northern hemisphere, the sun will be due south when at its highest point in the sky, or when an object casts no appreciable shadow. In the southern hemisphere, this same noonday sun will mark due north. In the northern hemisphere, shadows will move clockwise. Shadows will move counterclockwise in the southern hemisphere. With practice, you can use shadows to determine both direction and time of day. The shadow methods used for direction finding are the shadow-tip and watch methods.

## Shadow-Tip Methods

In the first shadow-tip method, find a straight stick 1 meter long, and a level spot free of brush on which the stick will cast a definite shadow. This method is simple and accurate and consists of four steps:

- Step 1. Place the stick or branch into the ground at a level spot where it will east a distinctive shadow. Mark the shadow's tip with a stone, twig, or other means. This first shadow mark is always west —everywhere on earth.
- Step 2. Wait 10 to 15 minutes until the shadow tip moves a few centimeters. Mark the shadow tip's new position in the same way as the first.
- Step 3. Draw a straight line through the two marks to obtain an approximate east-west line.
- Step 4. Stand with the first mark (west) to your left and the second mark to your right-you are now facing north. This fact is true **everywhere** on earth.

An alternate method is more accurate but requires more time. Set up your shadow stick and mark the first shadow in the morning. Use a piece of string to draw a clean arc through this mark and around the stick. At

midday, the shadow will shrink and disappear. In the afternoon, it will lengthen again and at the point where it touches the arc, make a second mark. Draw a line through the two marks to get an accurate east-west line (see Figure 18-1).

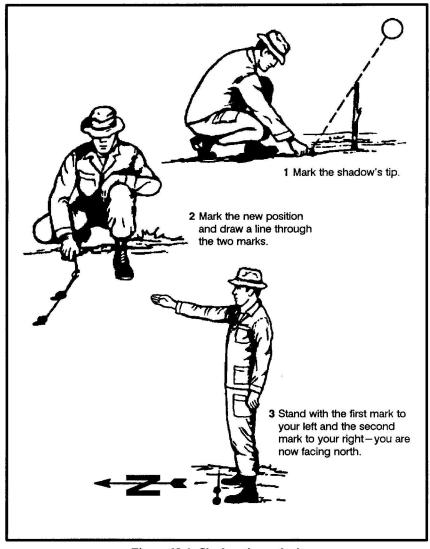


Figure 18-1. Shadow-tip method.

### The Watch Method

You can also determine direction using a common or analog watch—one that has hands. The direction will be accurate if you are using true local time, without any changes for daylight savings time. Remember, the further you are from the equator, the more accurate this method will be. If you only have a digital watch, you can overcome this obstacle. Quickly draw a watch on a circle of paper with the correct time on it and use it to determine your direction at that time.

In the northern hemisphere, hold the watch horizontal and point the hour hand at the sun. Bisect the angle between the hour hand and the 12 o'clock mark to get the north-south line (Figure 18-2). If there is any doubt as to which end of the line is north, remember that the sun rises in the east, sets in the west, and is due south at noon. The sun is in the east before noon and in the west after noon.

Note: If your watch is set on daylight savings time, use the midway point between the hour hand and 1 o'clock to determine the north-south line.

In the southern hemisphere, point the watch's 12 o'clock mark toward the sun and a midpoint halfway between 12 and the hour hand will give you the north-south line (Figure 18-2).

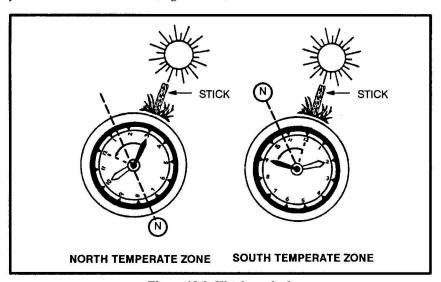


Figure 18-2. Watch method.

## **USING THE MOON**

Because the moon has no light of its own, we can only see it when it reflects the sun's light. As it orbits the earth on its 28-day circuit, the shape of the reflected light varies according to its position. We say there is a new moon or no moon when it is on the opposite side of the earth from the sun. Then, as it moves away from the earth's shadow, it begins to reflect light from its right side and waxes to become a full moon before waning, or losing shape, to appear as a sliver on the left side. You can use this information to identify direction.

If the moon rises before the sun has set, the illuminated side will be the west. If the moon rises after midnight, the illuminated side will be the east. This obvious discovery provides us with a rough east-west reference during the night.

### **USING THE STARS**

Your location in the Northern or Southern Hemisphere determines which constellation you use to determine your north or south direction.

## The Northern Sky

The main constellations to learn are the Ursa Major, also known as the Big Dipper or the Plow, and Cassiopeia (Figure 18-3). Neither of these constellations ever sets. They are always visible on a clear night. Use them to locate Polaris, also known as the polestar or the North Star. The North Star forms part of the Little Dipper handle and can be confused with the Big Dipper. Prevent confusion by using both the Big Dipper and Cassiopeia together. The Big Dipper and Cassiopeia are always directly opposite each. other and rotate counterclockwise around Polaris, with Polaris in the center. The Big Dipper is a seven star constellation in the shape of a dipper. The two stars forming the outer lip of this dipper are the "pointer stars" because they point to the North Star. Mentally draw a line from the outer bottom star to the outer top star of the Big Dipper's bucket. Extend this line about five times the distance between the pointer stars. You will find the North Star along this line.

Cassiopeia has five stars that form a shape like a "W" on its side. The North Star is straight out from Cassiopeia's center star.

After locating the North Star, locate the North Pole or true north by drawing an imaginary line directly to the earth.

# The Southern Sky

Because there is no star bright enough to be easily recognized near the south celestial pole, a constellation known as the Southern Cross is used as a signpost to the South (Figure 18-4). The Southern Cross or Crux has five stars. Its four brightest stars form a cross that tilts to one side. The two stars that make up the cross's long axis are the pointer stars. To determine south, imagine a distance five times the distance between These stars and the point where this imaginary line ends is in the general direction of south. Look down to the horizon from this imaginary point and select a landmark to steer by. In a static survival situation, you can fix this location in daylight if you drive stakes in the ground at night to point the way.

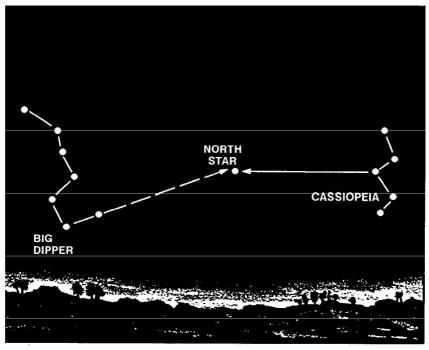


Figure 18-3. The Big Dipper and Cassiopeia.

### MAKING IMPROVISED COMPASSES

You can construct improvised compasses using a piece of ferrous metal that can be needle shaped or a flat double-edged razor blade and a piece of nonmetallic string or long hair from which to suspend it. You can magnetize or polarize the metal by slowly stroking it in one direction on a piece of silk or carefully through your hair using deliberate strokes. You can also polarize metal by stroking it repeatedly at one end with a magnet. Always rub in one direction only. If you have a battery and some electric wire, you can polarize the metal electrically. The wire should be insulated. If not insulated, wrap the metal object in a single, thin strip of paper to prevent contact. The battery must be a minimum of 2 volts. Form a coil with the electric wire and touch its ends to the battery's terminals. Repeatedly insert one end of the metal object in and out of the coil. The needle will become an electromagnet. When suspended from a piece of nonmetallic string, or floated on a small piece of wood in water, it will align itself with a north-south line.

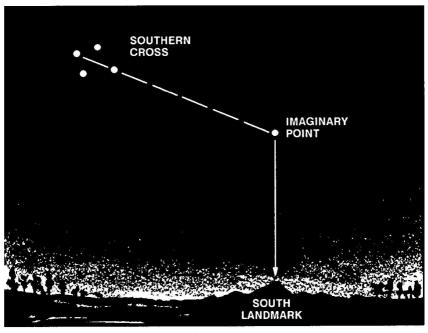


Figure 18-4. Southern Cross.

You can construct a more elaborate improvised compass using a sewing needle or thin metallic object, a nonmetallic container (for example, a plastic dip container), its lid with the center cut out and waterproofed, and the silver tip from a pen. To construct this compass, take an ordinary sewing needle and break in half. One half will form your direction pointer and the other will act as the pivot point. Push the portion used as the pivot point through the bottom center of your container; this portion should be flush on the bottom and not interfere with the lid. Attach the center of the other portion (the pointer) of the needle on the pen's silver tip using glue, tree sap, or melted plastic. Magnetize one end of the pointer and rest it on the pivot point.

# OTHER MEANS OF DETERMINING DIRECTION

The old saying about using moss on a tree to indicate north is not accurate because moss grows completely around some trees. Actually, growth is more lush on the side of the tree facing the south in the Northern Hemisphere and vice versa in the Southern Hemisphere. If there are several felled trees around for comparison, look at the stumps. Growth is more vigorous on the side toward the equator and the tree growth rings will be more widely spaced. On the other hand, the tree growth rings will be closer together on the side toward the poles.

Wind direction may be helpful in some instances where there are prevailing directions and you know what they are.

Recognizing the differences between vegetation and moisture patterns on north- and south-facing slopes can aid in determining direction. In the northern hemisphere, north-facing slopes receive less sun than south-facing slopes and are therefore cooler and damper. In the summer, north-facing slopes retain patches of snow. In the winter, the trees and open areas on south-facing slopes are the first to lose their snow, and ground snowpack is shallower.

# SIGNALING TECHNIQUES



One of your first concerns when you find yourself in a survival situation is to communicate with your friends or allies. Generally, communication is the giving and receiving of information. As a survivor, you must get your rescuer's attention first, and second, send a message your rescuer understands. Some attention-getters are man-made geometric patterns such as straight lines, circles, triangles, or X's displayed in uninhabited areas; a large fire or flash of light; a large, bright object moving slowly; or contrast, whether from color or shadows. The type of signal used will depend on your environment and the enemy situation.

### **APPLICATION**

If in a noncombat situation, you need to find the largest available clear and flat area on the highest possible terrain. Use as obvious a signal as you can create. On the other hand, you will have to be more discreet in combat situations. You do not want to signal and attract the enemy. Pick an area that is visible from the air, but ensure there are hiding places nearby. Try to have a hill or other object between the signal site and the enemy to mask your signal from the enemy. Perform a thorough reconnaissance of the area to ensure there are no enemy forces nearby.

Whatever signaling technique or device you plan to use, know how to use it and be ready to put it into operation on short notice. If possible, avoid using signals or signaling techniques that can physically endanger you. Keep in mind that signals to your **friends** may alert the enemy of your presence and location. Before signaling, carefully weigh your rescue chances by **friends** against the danger of capture by the enemy.

A radio is probably the surest and quickest way to let others know where you are and to let you receive their messages. Become familiar with the radios in your unit. Learn how to operate them and how to send and receive messages.

You will find descriptions of other signaling techniques, devices, and articles you can use. Learn how to use them. Think of ways in which you can adapt or change them for different environments. Practice using these signaling techniques, devices, and articles before you need them. Planned, prearranged signaling techniques may improve your chance of rescue.

### MEANS FOR SIGNALING

There are two main ways to get attention or to communicate—visual and audio. The means you use will depend on your situation and the material you have available. Whatever the means, always have visual and audio signals ready for use.

# Visual Signals

These signals are materials or equipment you use to make your presence known to rescuers.

### Fire

During darkness, fire is the most effective visual means for signaling. Build three fires in a triangle (the international distress signal) or in a straight line with about 25 meters between the fires. Build them as soon as time and the situation permit and protect them until you need them. If you are alone, maintaining three fires may be difficult. If so, maintain one signal fire.

When constructing signal fires, consider your geographic location. If in a jungle, find a natural clearing or the edge of a stream where you can build fires that the jungle foliage will not hide. You may even have to clear an area. If in a snow-covered area, you may have to clear the ground of snow or make a platform on which to build the fire so that melting snow will not extinguish it.

A burning tree (tree torch) is another way to attract attention (Figure 19-1). You can set pitch-bearing trees afire, even when green. You can get other types of trees to burn by placing dry wood in the lower branches and igniting it so that the flames flare up and ignite the foliage. Before the primary tree is consumed, cut and add more small green trees to the fire to produce more smoke. Always select an isolated tree so that you do not start a forest fire and endanger yourself.

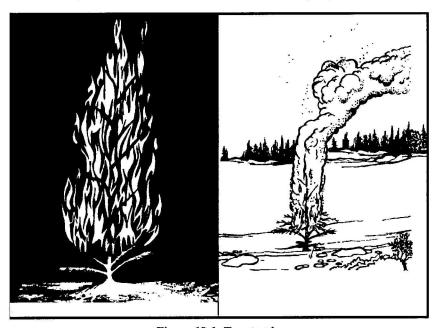


Figure 19-1. Tree torch.

### Smoke

During daylight, build a smoke generator and use smoke to gain attention (Figure 19-2). The international distress signal is three columns of smoke. Try to create a color of smoke that contrasts with the background; dark smoke against a light background and vice versa. If you practically smother a large fire with green leaves, moss, or a little water, the fire will produce white smoke. If you add rubber or oil-soaked rags to a fire, you will get black smoke.

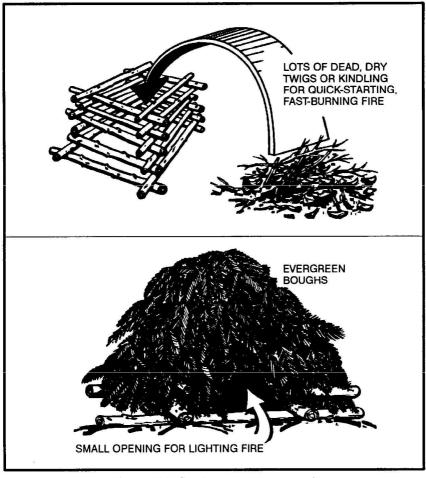


Figure 19-2. Smoke generator-ground.

In a desert environment, smoke hangs close to the ground, but a pilot can spot it in open desert terrain.

Smoke signals are effective only on comparatively calm, clear days. High winds, rain, or snow disperse smoke, lessening its chances of being seen.

### Smoke Grenades

If you have smoke grenades with you, use them in the same pattern as described for fires. Keep them dry so that they will work when you need them. Take care not to ignite the vegetation in the area when you use them.

### Pen Flares

These flares are part of an aviator's survival vest. The device consists of a pen-shaped gun with a flare attached by a nylon cord. When fired, the pen flare sounds like a pistol shot and fires the flare about 150 meters high. It is about 3 centimeters in diameter.

To have the pen flare ready for immediate use, take it out of its wrapper, attach the flare, leave the gun uncocked, and wear it on a cord or chain around your neck. Be ready to fire it in front of search aircraft and be ready with a secondary signal. Also, be ready to take cover in case the pilot mistakes the flare for enemy fire.

### Tracer Ammunition

You may use rifle or pistol tracer ammunition to signal search aircraft. Do not fire the ammunition in front of the aircraft. As with pen flares, be ready to take cover if the pilot mistakes your tracers for enemy fire.

### Star Clusters

Red is the international distress color; therefore, use a red star cluster whenever possible. Any color, however, will let your rescuers know where you are. Star clusters reach a height of 200 to 215 meters, burn an average of 6 to 10 seconds, and descend at a rate of 14 meters per second.

### Star Parachute Flares

These flares reach a height of 200 to 215 meters and descend at a rate of 2.1 meters per second. The M126 (red) burns about 50 seconds and the M127 (white) about 25 seconds. At night you can see these flares at 48 to 56 kilometers.

### Mirrors or Shiny Objects

On a sunny day, a mirror is your best signaling device. If you don't have a mirror, polish your canteen cup, your belt buckle, or a similar object that will reflect the sun's rays. Direct the flashes in one area so that they are secure from enemy observation. Practice using a mirror or shiny object for signaling now; do not wait until you need it. If you have an MK-3 signal mirror, follow the instructions on its back (Figure 19-3).

Wear the signal mirror on a cord or chain around your neck so that it is ready for immediate use. However, be sure the glass side is against your body so that it will not flash; the enemy can see the flash.

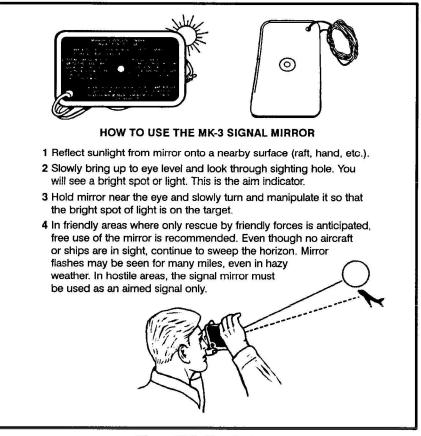


Figure 19-3. Signal mirror.

### CAUTION

Do not flash a signal mirror rapidly because a pilot may mistake the flashes for enemy fire. Do not direct the beam in the aircraft's cockpit for more than a few seconds as it may blind the pilot.

Haze, ground fog, and mirages may make it hard for a pilot to spot signals from a flashing object. So, if possible, get to the highest point in your area when signaling. If you can't determine the aircraft's location, flash your signal in the direction of the aircraft noise.

Note: Pilots have reported seeing mirror flashes up to 160 kilometers away under ideal conditions.

Figures 19-4 and 19-5 show methods of aiming a signal mirror for signaling.

Flashlight or Strobe Light

At night you can use a flashlight or a strobe light to send an SOS to an aircraft. When using a strobe light, take care to prevent the pilot from mistaking it for incoming ground fire. The strobe light flashes 60 times per minute. Some strobe lights have infrared covers and lenses. Blue flash collimators are also available for strobe lights.

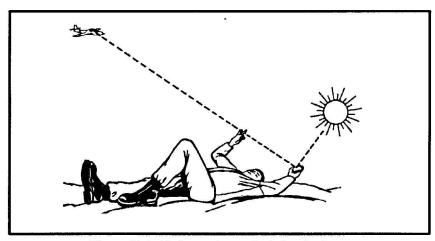


Figure 19-4. Aiming an improvised signal mirror.

#### VS-17 Panel

During daylight you can use a VS-17 panel to signal. Place the orange side up as it is easier to see from the air than the violet side. Flashing the panel will make it easier for the aircrew to spot. You can use any bright orange or violet cloth as a substitute for the VS-17.

### Clothing

Spreading clothing on the ground or in the top of a tree is another way to signal. Select articles whose color will contrast with the natural surroundings. Arrange them in a large geometric pattern to make them more likely to attract attention.

### Natural Material

If you lack other means, you can use natural materials to form a symbol or message that can be seen from the air. Build mounds that cast shadows; you can use brush, foliage of any type, rocks, or snow blocks.

In snow-covered areas, tramp the snow to form letters or symbols and fill the depression with contrasting material (twigs or branches). In sand, use boulders, vegetation, or seaweed to form a symbol or message. In brush-covered areas, cut out patterns in the vegetation or sear the ground. In tundra, dig trenches or turn the sod upside down.

In any terrain, use contrasting materials that will make the symbols visible to the aircrews.

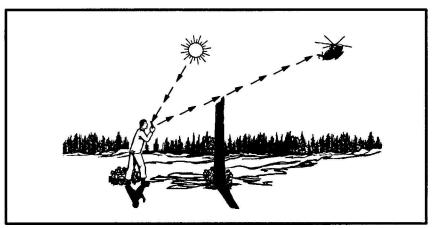


Figure 19-5. Aiming an improvised signal mirror-stationary object.

Sea Dye Markers

All Army aircraft involved in operations near or over water will normally carry a water survival kit that contains sea dye markers. If you are in a water survival situation, use sea dye markers during daylight to indicate your location. These spots of dye stay conspicuous for about 3 hours, except in very rough seas. Use them only if you are in a friendly area. Keep the markers wrapped until you are ready to use them. Use them only when you hear or sight an aircraft. Sea dye markers are also very effective on snow-covered ground; use them to write distress code letters.

# Audio Signals

Radios, whistles, and gunshots are some of the methods you can use to signal your presence to rescuers.

### Radio Equipment

The AN/PRC-90 survival radio is a part of the Army aviator's survival vest. The AN/PRC-112 will eventually replace the AN/PRC-90. Both radios can transmit either tone or voice. Any other type of Army radio can do the same. The ranges of the different radios vary depending on the altitude of the receiving aircraft, terrain, vegetation density, weather, battery strength, type of radio, and interference. To obtain maximum performance from radios, use the following procedures:

- Try to transmit only in clear, unobstructed terrain. Since radios are line-of-sight communications devices, any terrain between the radio and the receiver will block the signal.
- Keep the antenna at right angles to the rescuing aircraft. There is no signal from the tip of the antenna.
- If the radio has tone capability, place it upright on a flat, elevated surface so that you can perform other survival tasks.
- Never let the antenna touch your clothing, body, foliage, or the ground. Such contact greatly reduces the range of the signal.
- Conserve battery power. Turn the radio off when you are not using it.
  Do not transmit or receive constantly. In hostile territory, keep transmissions short to avoid enemy radio direction finding.
- In cold weather, keep the battery inside your clothing when not using the radio. Cold quickly drains the battery's power. Do not expose the battery to extreme heat such as desert sun. High heat may cause the battery to explode. Try to keep the radio and battery as dry as possible, as water may destroy the circuitry.

#### Whistles

Whistles provide an excellent way for close up signaling. In some documented cases, they have been heard up to 1.6 kilometers away. Manufactured whistles have more range than a human whistle.

#### Gunshots

In some situations you can use firearms for signaling. Three shots fired at distinct intervals usually indicate a distress signal. Do not use this technique in enemy territory. The enemy will surely come to investigate shots.

### **CODES AND SIGNALS**

Now that you know how to let people know where you are, you need to know how to give them more information. It is easier to form one symbol than to spell out an entire message. Therefore, learn the codes and symbols that all aircraft pilots understand.

### SOS

You can use lights or flags to send an SOS—three dots, three dashes, three dots. The SOS is the internationally recognized distress signal in radio Morse code. A dot is a short, sharp pulse; a dash is a longer pulse. Keep repeating the signal. When using flags, hold flags on the left side for dashes and on the right side for dots.

# Ground-to-Air Emergency Code

This code (Figure 19-6) is actually five definite, meaningful symbols. Make these symbols a minimum of 1 meter wide and 6 meters long. If you make them larger, keep the same 1:6 ratio. Ensure the signal contrasts greatly with the ground it is on. Place it in an open area easily spotted from the air.

# **Body Signals**

When an aircraft is close enough for the pilot to see you clearly, use body movements or positions (Figure 19-7) to convey a message.

# Panel Signals

If you have a life raft cover or sail, or a suitable substitute, use the symbols shown in Figure 19-8 to convey a message.

Number	Message	Code symbol
1	Require assistance.	V
2	Require medical assistance.	X
3	No or negative.	Z
4	Yes or affirmative.	Y
5	Proceed in this direction.	<b>^</b>

Figure 19-6. Ground-to-air emergency code (pattern signals).

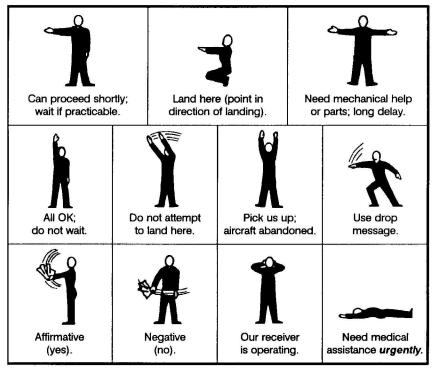


Figure 19-7. Body signals.

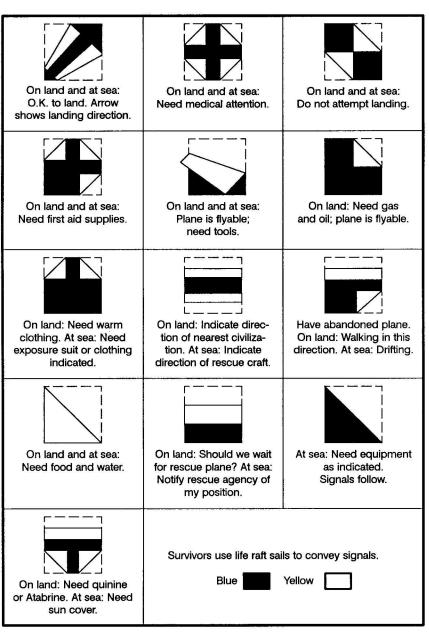


Figure 19-8. Panel signals.

# Aircraft Acknowledgments

Once the pilot of a fixed-wing aircraft has sighted you, he will normally indicate he has seen you by flying low, moving the plane, and flashing lights as shown in Figure 19-9. Be ready to relay other messages to the

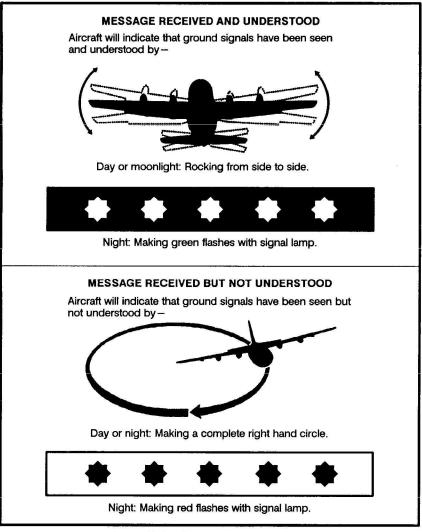


Figure 19-9. Aircraft acknowledgments.

pilot once he acknowledges that he received and understood your first message. Use a radio, if possible, to relay further messages. If no radio is available, use the codes covered in the previous paragraphs.

# AIRCRAFT VECTORING PROCEDURES

If you can contact a friendly aircraft with a radio, guide the pilot to your location. Use the following general format to guide the pilot:

- Mayday, Mayday.
- Call sign (if any).
- · Name.
- Location.
- Number of survivors.
- Available landing sites.
- Any remarks such as medical aid or other specific types of help needed immediately.

Simply because you have made contact with rescuers does not mean you are safe. Follow instructions and continue to use sound survival and evasion techniques until you are actually rescued.

# SURVIVAL MOVEMENT IN HOSTILE AREAS



The "rescue at any cost" philosophy of previous conflicts is not likely to be possible in future conflicts. Our potential adversaries have made great progress in air defense measures and radio direction finding (RDF) techniques. We must assume that U.S. military forces trapped behind enemy lines in future conflicts may not experience quick recovery by friendly elements. Soldiers may have to move for extended times and distances to places less threatening to the recovery forces. The soldier will not likely know the type of recovery to expect. Each situation and the available resources determine the type of recovery possible. Since no one can be absolutely sure until the recovery effort begins, soldiers facing a potential cutoff from friendly forces should be

familiar with all the possible types of recovery, their related problems, and their responsibilities to the recovery effort. Preparation and training can improve the chances of success.

### PHASES OF PLANNING

Preparation is a requirement for all missions. When planning, you must consider how to avoid capture and return to your unit. Contingency plans must be prepared in conjunction with unit standing operating procedures (SOPs). Courses of action you or your unit will take must also be considered.

# Contingency Plan of Action (CPA)

Intelligence sections can help prepare personnel for contingency actions through information supplied in area studies, SERE (survival, evasion, resistance, and escape) contingency guides, threat briefings, current intelligence reports, and current contact and authentication procedures. Pre-mission preparation includes the completion of a CPA. The study and research needed to develop the CPA will make you aware of the current situation in your mission area. Your CPA will let recovery forces know your probable actions should you have to move to avoid capture.

Start preparing even before pre-mission planning. Many parts of the CPA are SOP for your unit. Include the CPA in your training. Planning starts in your daily training.

The CPA is your entire plan for your return to friendly control. It consists of five paragraphs written in the operation order format. You can take most of paragraph 1, Situation, with you on the mission. Appendix H contains the CPA format. It also indicates what portion of the CPA you can take with you.

A comprehensive CPA is a valuable asset to the soldier trapped behind enemy lines who must try to avoid capture. To complete paragraph 1, know your unit's assigned area or concentrate on potential mission areas of the world. Many open or closed sources contain the information you need to complete a CPA. Open sources may include newspapers, magazines, country or area handbooks, area studies, television, radio, persons familiar with the area, and libraries. Closed sources may include area studies, area assessments, SERE contingency guides, various classified field manuals, and intelligence reports.

Prepare your CPA in three phases. During your normal training, prepare paragraph 1, Situation. Prepare paragraphs 2, 3, 4, and 5 during your pre-mission planning. After deployment into an area, continually update your CPA based on mission changes and intelligence updates.

The CPA is a guide. You may add or delete certain portions based on the mission. The CPA may be a recovery force's only means of determining your location and intentions after you start to move. It is an essential tool for your survival and return to friendly control.

# Standing Operating Procedures

Unit SOPs are valuable tools your unit has that will help your planning. When faced with a dangerous situation requiring immediate action, it is not the time to discuss options; it is the time to act. Many of the techniques used during small unit movement can be carried over to fit requirements for moving and returning to friendly control. Items from the SOP should include, but are not limited to—

- Movement team size (three to four persons per team).
- Team communications (technical and nontechnical).
- Essential equipment.
- Actions at danger areas.
- · Signaling techniques.
- Immediate action drills.
- Linkup procedures.
- Helicopter recovery devices and procedures.
- Security procedures during movement and at hide sites.
- Rally points.

Rehearsals work effectively for reinforcing these SOP skills and also provide opportunities for evaluation and improvement.

Notification to Move and Avoid Capture

An isolated unit has several general courses of action it can take to avoid the capture of the group or individuals. These courses of action are not courses the commander can choose instead of his original mission. He cannot arbitrarily abandon the assigned mission. Rather, he may adopt these courses of action after completing his mission when his unit cannot complete its assigned mission (because of combat power losses) or when he receives orders to extract his unit from its current position. If such actions are not possible, the commander may decide to have the unit try to move to avoid capture and return to friendly control. In either case, as long as there is communication with higher headquarters, that headquarters will make the decision.

If the unit commander loses contact with higher headquarters, he must make the decision to move or wait. He bases his decision on many factors, including the mission, rations and ammunition on hand, casualties, the chance of relief by friendly forces, and the tactical situation. The commander of an isolated unit faces other questions. What course of action will inflict maximum damage on the enemy? What course of action will assist in completing the higher headquarters' overall mission?

Movement teams conduct the execution portion of the plan when notified by higher headquarters or, if there is no contact with higher headquarters, when the highest ranking survivor decides that the situation requires the unit to try to escape capture or destruction. Movement team leaders receive their notification through prebriefed signals. Once the signal to try to avoid capture is given, it must be passed rapidly to all personnel. Notify higher headquarters, if possible. If unable to communicate with higher headquarters, leaders must recognize that organized resistance has ended, and that organizational control has ceased. Command and control is now at the movement team or individual level and is returned to higher organizational control only after reaching friendly lines.

### EXECUTION

Upon notification to avoid capture, all movement team members will try to link up at the initial movement point. This point is where team

members rally and actually begin their movement. Tentatively select the initial movement point during your planning phase through a map recon. Once on the ground, the team verifies this location or selects a better one. All team members must know its location. The initial movement point should be easy to locate and occupy for a minimum amount of time.

Once the team has rallied at the initial movement point, it must—

- · Give first aid.
- Inventory its equipment (decide what to abandon, destroy, or take along).
- Apply camouflage.
- Make sure everyone knows the tentative hide locations.
- Ensure everyone knows the primary and alternate routes and rally points en route to the hide locations.
- Always maintain security.
- Split the team into smaller elements. The ideal element should have two to three members; however, it could include more depending on team equipment and experience.

The movement portion of returning to friendly control is the most dangerous as you are now most vulnerable. It is usually better to move at night because of the concealment darkness offers. Exceptions to such movement would be when moving through hazardous terrain or dense vegetation (for example, jungle or mountainous terrain). When moving, avoid the following even if it takes more time and energy to bypass:

- · Obstacles and barriers.
- · Roads and trails.
- Inhabited areas.
- Waterways and bridges.
- Natural lines of drift.
- Man-made structures.
- All civilian and military personnel.

Movement in enemy-held territory is a very slow and deliberate process. The slower you move and the more careful you are, the better. Your best security will be using your senses. Use your eyes and ears to

detect people before they detect you. Make frequent listening halts. In daylight, observe a section of your route before you move along it. The distance you travel before you hide will depend on the enemy situation, your health, the terrain, the availability of cover and concealment for hiding, and the amount of darkness left.

Once you have moved into the area in which you want to hide (hide area), select a hide site. Keep the following formula in mind when selecting a hide site: BLISS.

- B Blends in with the surroundings.
- L Low in silhouette.
- I Irregular in shape.
- S Small in size.
- S Secluded.

Avoid the use of existing buildings or shelters. Usually, your best option will be to crawl into the thickest vegetation you can find. Construct any type of shelter within the hide area only in cold weather and desert environments. If you build a shelter, follow the BLISS formula.

### **Hide Site Activities**

After you have located your hide site, do not move straight into it. Use a button hook or other deceptive technique to move to a position outside of the hide site. Conduct a listening halt before moving individually into the hide site. Be careful not to disturb or cut any vegetation. Once you have occupied the hide site, limit your activities to maintaining security, resting, camouflaging, and planning your next moves.

Maintain your security through visual scanning and listening. Upon detection of the enemy, the security personnel alert all personnel, even if the team's plan is to stay hidden and not move upon sighting the enemy. Take this action so that everyone is aware of the danger and ready to react.

If any team member leaves the team, give him a five-point contingency plan. Take such steps especially when a recon team or a work party is out of the hole-up or hide site. It is extremely important to stay healthy and alert when trying to avoid capture. Take every opportunity to rest, but do not sacrifice security. Rotate security so that all members of your movement team can rest. Treat all injuries, no matter how minor. Loss of your health will mean loss of your ability to continue to avoid capture.

Camouflage is an important aspect of both moving and securing a hide site. Always use a buddy system to ensure that camouflage is complete. Ensure that team members blend with the hide site. Use natural or man-made materials. If you add any additional camouflage material to the hide site, do not cut vegetation in the immediate area.

Plan your next actions while at the hide site. Start your planning process immediately upon occupying the hide site. Inform all team members of their current location and designate an alternate hide site location. Once this is done, start planning for the team's next movement.

Planning the team's movement begins with a map recon. Choose the next hide area first. Then choose a primary and an alternate route to the hide area. In choosing the routes, do not use straight lines. Use one or two radical changes in direction. Pick the routes that offer the best cover and concealment, the fewest obstacles, and the least likelihood of contact with humans. There should be locations along the route where the team can get water. To aid team navigation, use azimuths, distances, checkpoints or steering marks, and corridors. Plan rally points and rendezvous points at intervals along the route.

Other planning considerations may fall under what the team already has in the team SOP. Examples are immediate action drills, actions on sighting the enemy, and hand-and-arm signals.

Once planning is complete, ensure everyone knows and memorizes the entire plan. The team members should know the distances and azimuths for the entire route to the next hide area. They should study the map and know the various terrain they will be moving across so that they can move without using the map.

Do not occupy a hide site for more than 24 hours. In most situations, hide during the day and move at night. Limit your actions in the hide

site to those discussed above. Once in the hide site, restrict all movement to less than 45 centimeters above the ground. Do not build fires or prepare food. Smoke and food odors will reveal your location. Before leaving the hide site, sterilize it to prevent tracking.

# Hole-Up Areas

After moving and hiding for several days, usually three or four, you or the movement team will have to move into a hole-up area. This is an area where you can rest, recuperate, and get and prepare food. Choose an area near a water source. You then have a place to get water, to place fishing devices, and to trap game. Since waterways are a line of communication, locate your hide site well away from the water.

The hole-up area should offer plenty of cover and concealment for movement in and around the area. Always maintain security while in the hole-up area. Always man the hole-up area. Actions in the hole-up area are the same as in hide site, except that you can move away from the hole-up area to get and prepare food. Actions in the hole-up area include—

- Selecting and occupying the next hide site (remember you are still in a dangerous situation; this is not a friendly area).
- Reconnoitering the area for resources and potential concealed movement routes to the alternate hide site.
- Gathering food (nuts, berries, vegetables). When moving around the area for food, maintain security and avoid leaving tracks or other signs. When setting traps and snares, keep them wellcamouflaged and in areas where people are not likely to discover them. Remember, the local population sometimes heavily travels trails near water sources.
- Getting water from sources within the hide area. Be careful not to leave tracks of signs along the banks of water sources when getting water. Moving on hard rocks or logs along the banks to get water will reduce the signs you leave.
- Setting clandestine fishing devices, such as stakeouts, below the surface of the water to avoid detection.
- Locating a fire site well away from the hide site. Use this site to prepare food or boil water. Camouflage and sterilize the fire site

after each use. Be careful that smoke and light from the fire does not compromise the hole-up area.

While in the hole-up area, security is still your primary concern. Designate team members to perform specific tasks. To limit movement around the area, you may have a two-man team perform more than one task. For example, the team getting water could also set the fishing devices. Do not occupy the hole-up area longer than 72 hours.

# RETURN TO FRIENDLY CONTROL

Establishing contact with friendly lines or patrols is the most crucial part of movement and return to friendly control. All your patience, planning, and hardships will be in vain if you do not exercise caution when contacting friendly frontline forces. Friendly patrols have killed personnel operating behind enemy lines because they did not make contact properly. Most of the casualties could have been avoided if caution had been exercised and a few simple procedures followed. The normal tendency is to throw caution to the winds when in sight of friendly forces. You must overcome this tendency and understand that linkup is a very sensitive situation.

# **Border Crossings**

If you have made your way to a friendly or neutral country, use the following procedures to cross the border and link up with friendly forces on the other side:

- Occupy a hide site on the near side of the border and send a team out to reconnoiter the potential crossing site.
- Surveil the crossing site for at least 24 hours, depending on the enemy situation.
- Make a sketch of the site, taking note of terrain, obstacles, guard routines and rotations, and any sensor devices or trip wires. Once the recon is complete, the team moves to the hide site, briefs the rest of the team, and plans to cross the border at night.
- After crossing the border, set up a hide site on the far side of the border and try to locate friendly positions. Do not reveal your presence.

- Depending on the size of your movement team, have two men surveil the potential linkup site with friendly forces until satisfied that the personnel are indeed friendly.
- Make contact with the friendly forces during daylight. Personnel chosen to make contact should be unarmed, have no equipment, and have positive identification readily available. The person who actually makes the linkup should be someone who looks least like the enemy.
- During the actual contact, have only one person make the contact. The other person provides the security and observes the linkup area from a safe distance. The observer should be far enough away so that he can warn the rest of the movement team if something goes wrong.
- Wait until the party he is contacting looks in his direction so that he
  does not surprise the contact. He stands up from behind cover, with
  hands overhead and states that he is an American. After this, he
  follows any instructions given him. He avoids answering any tactical
  questions and does not give any indication that there are other team
  members.
- Reveal that there are other personnel with him only after verifying his identity and satisfying himself he has made contact with friendly forces.

Language problems or difficulties confirming identities may arise. The movement team should maintain security, be patient, and have a contingency plan.

Note: If you are moving to a neutral country, you are surrendering to that power and become a detained person.

# Linkup at the FEBA/FLOT

If caught between friendly and enemy forces and there is heavy fighting in the area, you may choose to hide and let the friendly lines pass over you. If overrun by friendly forces, you may try to link up from their rear during daylight hours. If overrun by enemy forces, you may move further to the enemy rear, try to move to the forward edge of the battle area (FEBA)/forward line of own troops (FLOT) during a lull in the fighting, or move to another area along the front.

The actual linkup will be done as for linkup during a border crossing. The only difference is that you must be more careful on the initial

contact. Frontline personnel are more likely to shoot first and ask questions later, especially in areas of heavy fighting. You should be near or behind cover before trying to make contact.

# **Linkup With Friendly Patrols**

If friendly lines are a circular perimeter or an isolated camp, for example, any direction you approach from will be considered enemy territory. You do not have the option of moving behind the lines and trying to link up. This move makes the linkup extremely dangerous. One option you have is to place the perimeter under observation and wait for a friendly patrol to move out in your direction, providing a chance for a linkup. You may also occupy a position outside of the perimeter and call out to get the attention of the friendly forces. Ideally, display anything that is white while making contact. If nothing else is available, use any article of clothing. The idea is to draw attention while staying behind cover. Once you have drawn attention to your signal and called out, follow instructions given to you.

Be constantly on the alert for friendly patrols because these provide a means for return to friendly control. Find a concealed position that allows you maximum visual coverage of the area. Try to memorize every terrain feature so that, if necessary, you can infiltrate to friendly positions under the cover of darkness. Remember, trying to infiltrate in darkness is extremely dangerous.

Because of the missions of combat and recon patrols and where they are operating, making contact can be dangerous. If you decide not to make contact, you can observe their route and approach friendly lines at about the same location. Such observation will enable you to avoid mines and booby traps.

Once you have spotted a patrol, remain in position and, if possible, allow the patrol to move toward you. When the patrol is 25 to 50 meters from your position, signal them and call out a greeting that is clearly and unmistakably of American origin.

If you have nothing white, an article of clothing will suffice to draw attention. If the distance is greater than 50 meters, a recon patrol may avoid contact and bypass your position. If the distance is less than 25 meters, a patrol member may react instantly by firing a fatal shot.

It is crucial, at the time of contact, that there is enough light for the patrol to identify you as an American.

Whatever linkup technique you decide to use, use extreme caution. From the perspective of the friendly patrol or friendly personnel occupying a perimeter, you are hostile until they make positive identification.

### CAMOUFLAGE



In a survival situation, especially in a hostile environment, you may find it necessary to camouflage yourself, your equipment, and your movement. It may mean the difference between survival and capture by the enemy. Camouflage and movement techniques, such as stalking, will also help you get animals or game for food using primitive weapons and skills.

### PERSONAL CAMOUFLAGE

When camouflaging yourself, consider that certain shapes are particular to humans. The enemy will look for these shapes. The shape of a hat, helmet, or black boots can give you away. Even animals know and run from the shape of a human silhouette. Break up your outline by placing small amounts of vegetation from the surrounding area in your uniform, equipment, and headgear. Try to reduce any shine from skin or

equipment. Blend in with the surrounding colors and simulate the texture of your surroundings.

# Shape and Outline

Change the outline of weapons and equipment by tying vegetation or strips of cloth onto them. Make sure the added camoutlage does not hinder the equipment's operation. When hiding, cover yourself and your equipment with leaves, grass, or other local debris. Conceal any signaling devices you have prepared, but keep them ready for use.

### Color and Texture

Each area of the world and each climatic condition (arctic/winter, temperate/jungle, or swamp/desert) has color patterns and textures that are natural for that area. While color is self-explanatory, texture defines the surface characteristics of something when looking at it. For example, surface textures may be smooth, rough, rocky, leafy, or many other possible combinations. Use color and texture together to camouflage yourself effectively. It makes little sense to cover yourself with dead, brown vegetation in the middle of a large grassy field. Similarly, it would be useless to camouflage yourself with green grass in the middle of a desert or rocky area.

To hide and camouflage movement in any specific area of the world, you must take on the color and texture of the immediate surroundings. Use natural or man-made materials to camouflage yourself. Camouflage paint, charcoal from burned paper or wood, mud, grass, leaves, strips of cloth or burlap, pine boughs, and camouflaged uniforms are a few examples.

Cover all areas of exposed skin, including face, hands, neck, and ears. Use camouflage paint, charcoal, or mud to camouflage yourself. Cover with a darker color areas that stick out more and catch more light (forehead, nose, cheekbones, chin, and ears). Cover other areas, particularly recessed or shaded areas (around the eyes and under the chin), with lighter colors. Be sure to use an irregular pattern. Attach vegetation from the area or strips of cloth of the proper color to clothing and equipment. If you use vegetation, replace it as it wilts. As you move through an area, be alert to the color changes and modify your camouflage colors as necessary.

Figure 21-1 gives a general idea of how to apply camouflage for various areas and climates. Use appropriate colors for your surroundings. The blotches or slashes will help to simulate texture.

### Shine

As skin gets oily, it becomes shiny. Equipment with worn off paint is also shiny. Even painted objects, if smooth, may shine. Glass objects such as mirrors, glasses, binoculars, and telescopes shine. You must cover these glass objects when not in use. Anything that shines automatically attracts attention and will give away your location.

Whenever possible, wash oily skin and reapply camouflage. Skin oil will wash off camouflage, so reapply it frequently. If you must wear glasses, camouflage them by applying a thin layer of dust to the outside of the lenses. This layer of dust will reduce the reflection of light. Cover shiny spots on equipment by painting, covering with mud, or wrapping with cloth or tape. Pay particular attention to covering boot eyelets, buckles on equipment, watches and jewelry, zippers, and uniform insignia. Carry a signal mirror in its designed pouch or in a pocket with the mirror portion facing your body.

### Shadow

When hiding or traveling, stay in the deepest part of the shadows. The outer edges of the shadows are lighter and the deeper parts are darker. Remember, if you are in an area where there is plenty of vegetation, keep as much vegetation between you and a potential enemy as possible.

Area	Method	
Temperate deciduous forest	Blotches	
Coniferous forest	Broad slash	
Jungle	Broad slash	
Desert	Slash	
Arctic	Blotches	
Grass or open area	Slash	

Figure 21-1. Camouflage methods for specific areas.

This action will make it very hard for the enemy to see you as the vegetation will partially mask you from his view. Forcing an enemy to look through many layers of masking vegetation will fatigue his eyes very quickly.

When traveling, especially in built-up areas at night, be aware of where you cast your shadow. It may extend out around the comer of a building and give away your position. Also, if you are in a dark shadow and there is a light source to one side, an enemy on the other side can see your silhouette against the light.

### Movement

Movement, especially fast movement, attracts attention. If at all possible, avoid movement in the presence of an enemy. If capture appears imminent in your present location and you must move, move away slowly, making as little noise as possible. By moving slowly in a survival situation, you decrease the chance of detection and conserve energy that you may need for long-term survival or long-distance evasion.

When moving past obstacles, avoid going over them. If you must climb over an obstacle, keep your body level with its top to avoid silhouetting yourself. Do not silhouette yourself against the skyline when crossing hills or ridges. When you are moving, you will have difficulty detecting the movement of others. Stop frequently, listen, and look around slowly to detect signs of hostile movement.

### Noise

Noise attracts attention, especially if there is a sequence of loud noises such as several snapping twigs. If possible, avoid making any noise at all. Slow down your pace as much as necessary to avoid making noise when moving around or away from possible threats.

Use background noises to cover the noise of your movement. Sounds of aircraft, trucks, generators, strong winds, and people talking will cover some or all the sounds produced by your movement. Rain will mask a lot of movement noise, but it also reduces your ability to detect potential enemy noise.

### Scent

Whether hunting animals or avoiding the enemy, it is always wise to camouflage the scent associated with humans. Start by washing yourself and your clothes without using soap. This washing method removes soap and body odors. Avoiding strong smelling foods, such as garlic, helps reduce body odors. Do not use tobacco products, candy, gum, or cosmetics.

You can use aromatic herbs or plants to wash yourself and your clothing, to rub on your body and clothing, or to chew on to camouflage your breath. Pine needles, mint, or any similar aromatic plant will help camouflage your scent from both animals and humans. Standing in smoke from a fire can help mask your scent from animals. While animals are afraid of fresh smoke from a fire, older smoke scents are normal smells after forest fires and do not scare them.

While traveling, use your sense of smell to help you find or avoid humans. Pay attention to smells associated with humans, such as fire, cigarettes, gasoline, oil, soap, and food. Such smells may alert you to their presence long before you can see or hear them, depending on wind speed and direction. Note the wind's direction and, when possible, approach from or skirt around on the downwind side when nearing humans or animals.

### METHODS OF STALKING

Sometimes you need to move, undetected, to or from a location. You need more than just camouflage to make these moves successfully. The ability to stalk or move without making any sudden quick movement or loud noise is essential to avoiding detection.

You must practice stalking if it is to be effective. Use the following techniques when practicing.

# **Upright Stalking**

Take steps about half your normal stride when stalking in the upright position. Such strides help you to maintain your balance. You should be able to stop at any point in that movement and hold that position as long as necessary. Curl the toes up out of the way when stepping down so the outside edge of the ball of the foot touches the ground. Feel for sticks and twigs that may snap when you place your weight on them. If you start to step on one, lift your foot and move it. After making contact with the outside edge of the ball of your foot, roll to the inside ball of

your foot, place your heel down, followed by your toes. Then gradually shift your weight forward to the front foot. Lift the back foot to about knee height and start the process over again.

Keep your hands and arms close to your body and avoid waving them about or hitting vegetation. When moving in a crouch, you gain extra support by placing your hands on your knees. One step usually takes 1 minute to complete, but the time it takes will depend on the situation.

# Crawling

Crawl on your hands and knees when the vegetation is too low to allow you to walk upright without being seen. Move one limb at a time and be sure to set it down softly, feeling for anything that may snap and make noise. Be careful that your toes and heels do not catch on vegetation.

# **Prone Staking**

To stalk in the prone position, you do a low, modified push-up on your hands and toes, moving yourself forward slightly, and then lowering yourself again slowly. Avoid dragging and scraping along the ground as this makes excessive noise and leaves large trails for trackers to follow.

# **Animal Stalking**

Before stalking an animal, select the best route. If the animal is moving, you will need an intercepting route. Pick a route that puts objects between you and the animal to conceal your movement from it. By positioning yourself in this way, you will be able to move faster, until you pass that object. Some objects, such as large rocks and trees, may totally conceal you, and others, such as small bushes and grass, may only partially conceal you. Pick the route that offers the best concealment and requires the least amount of effort.

Keep your eyes on the animal and stop when it looks your way or turns its ears your way, especially if it suspects your presence. As you get close, squint your eyes slightly to conceal both the light-dark contrast of the whites of the eyes and any shine from your eyes. Keep your mouth closed so that the animal does not see the whiteness or shine of your teeth.

# CONTACT WITH PEOPLE



Some of the best and most frequently given advice, when dealing with local peoples, is for the survivor to accept, respect, and adapt to their ways. Thus, "when in Rome, do as the Romans do." This is excellent advice, but there are several considerations involved in putting this advice into practice.

### CONTACT WITH LOCAL PEOPLE

You must give serious consideration to dealing with the local people. Do they have a primitive culture? Are they farmers, fishermen, friendly people, or enemy? As a survivor, "cross-cultural communication" can vary radically from area to area and from people to people. It may mean interaction with people of an extremely primitive culture or contact with people who have a relatively modem culture. A culture is identified by

standards of behavior that its members consider proper and acceptable but may or may not conform to your idea of what is proper. No matter who these people are, you can expect they will have laws, social and economic values, and political and religious beliefs that may be radically different from yours. Before deploying into your area of operations, study these different cultural aspects. Prior study and preparation will help you make or avoid contact if you have to deal with the local population.

People will be friendly, unfriendly, or they will choose to ignore you. Their attitude may be unknown. If the people are known to be friendly, try to keep them friendly through your courtesy and respect for their religion, politics, social customs, habits, and all other aspects of their culture. If the people are known to be enemies or are unknowns, make every effort to avoid any contact and leave no sign of your presence. A basic knowledge of the daily habits of the local people will be essential in this attempt. If after careful observation you determine that an unknown people are friendly, you may contact them if you absolutely need their help.

Usually, you have little to fear and much to gain from cautious and respectful contact with local people of friendly or neutral countries. If you become familiar with the local customs, display common decency, and most important, show respect for their customs, you should be able to avoid trouble and possibly gain needed help. To make contact, wait until only one person is near and, if possible, let that person make the initial approach. Most people will be willing to help a survivor who appears to be in need. However, local political attitudes, instruction, or propaganda efforts may change the attitudes of otherwise friendly people. Conversely, in unfriendly countries, many people, especially in remote areas, may feel animosity toward their politicians and may be more friendly toward a survivor.

The key to successful contact with local peoples is to be friendly, courteous, and patient. Displaying fear, showing weapons, and making sudden or threatening movements can cause a local person to fear you. Such actions can prompt a hostile response. When attempting a contact, smile as often as you can. Many local peoples are shy and seem unapproachable, or they may ignore you. Approach them slowly and do not rush your contact.

### THE SURVIVOR'S BEHAVIOR

Use salt, tobacco, silver money, and similar items discreetly when trading with local people. Paper money is well-known worldwide. Do not overpay; it may lead to embarrassment and even danger. Always treat people with respect. Do not bully them or laugh at them.

Using sign language or acting out needs or questions can be very effective. Many people are used to such language and communicate using nonverbal sign language. Try to learn a few words and phrases of the local language in and around your potential area of operations. Trying to speak someone's language is one of the best ways to show respect for his culture. Since English is widely used, some of the local people may understand a few words of English.

Some areas may be taboo. They range from religious or sacred places to diseased or danger areas. In some areas, certain animals must not be killed. Learn the rules and follow them. Watch and learn as much as possible. Such actions will help to strengthen relations and provide new knowledge and skills that may be very important later. Seek advice on local hazards and find out from friendly people where the hostile people are. Always remember that people frequently insist that other peoples are hostile, simply because they do not understand different cultures and distant peoples. The people they can usually trust are their immediate neighbors—much the same as in our own neighborhood.

Frequently, local people, like ourselves, will suffer from contagious diseases. Build a separate shelter, if possible, and avoid physical contact without giving the impression of doing so. Personally prepare your food and drink, if you can do so without giving offense. Frequently, the local people will accept the use of "personal or religious custom" as an explanation for isolationist behavior.

Barter, or trading, is common in more primitive societies. Hard coin is usually good, whether for its exchange value or as jewelry or trinkets. In isolated areas, matches, tobacco, salt, razor blades, empty containers, or cloth may be worth more than any form of money.

Be very cautious when touching people. Many people consider "touching" taboo and such actions may be dangerous. Avoid sexual contact.

Hospitality among some people is such a strong cultural trait that they may seriously reduce their own supplies to feed a stranger. Accept what

they offer and share it equally with all present. Eat in the same way they eat and, most important, try to eat all they offer.

If you make any promises, keep them. Respect personal property and local customs and manners, even if they seem odd. Make some kind of payment for food, supplies, and so forth. Respect privacy. Do not enter a house unless invited.

# CHANGES TO POLITICAL ALLEGIANCE

In today's world of fast-paced international politics, political attitudes and commitments within nations are subject to rapid change. The population of many countries, especially politically hostile countries, must not be considered friendly just because they do not demonstrate open hostility. Unless briefed to the contrary; avoid all contact with such people.