SIGNALING TECHNIQUES

One of your first concerns when you find yourself in a survival situation is to communicate with the outside world. 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.

APPLICATION

You need to find the largest available clear and flat area on the highest possible terrain and you will need to use as obvious a signal as you can create.

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.

You will find descriptions of 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 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 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.

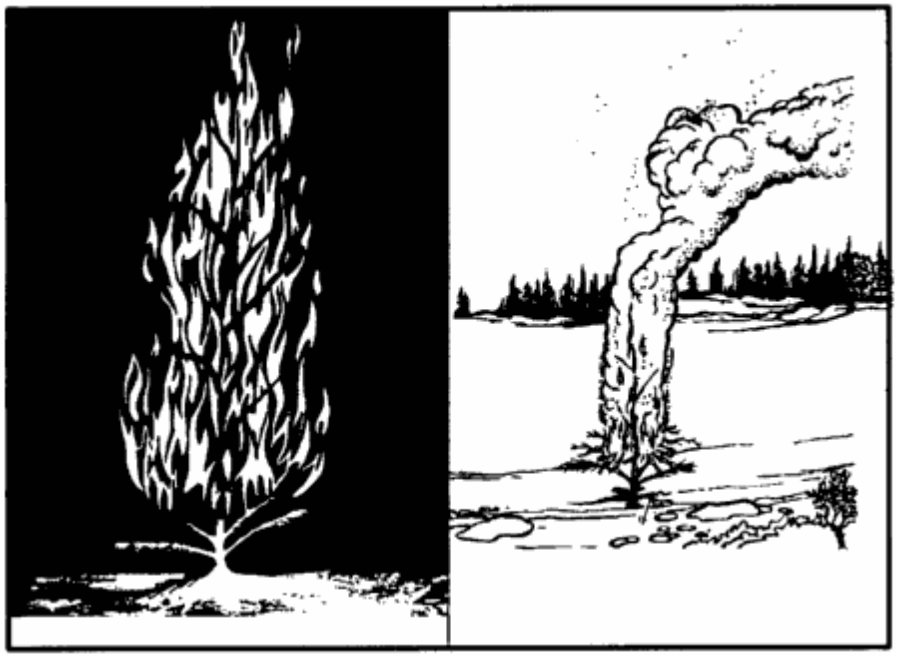

Figure 1

Smoke

During daylight, build a smoke generator and use smoke to gain attention (Figure 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.

Figure 2

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.

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.

Wear the signal mirror on a cord or chain around your neck so that it is ready for immediate use.

CAUTION

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

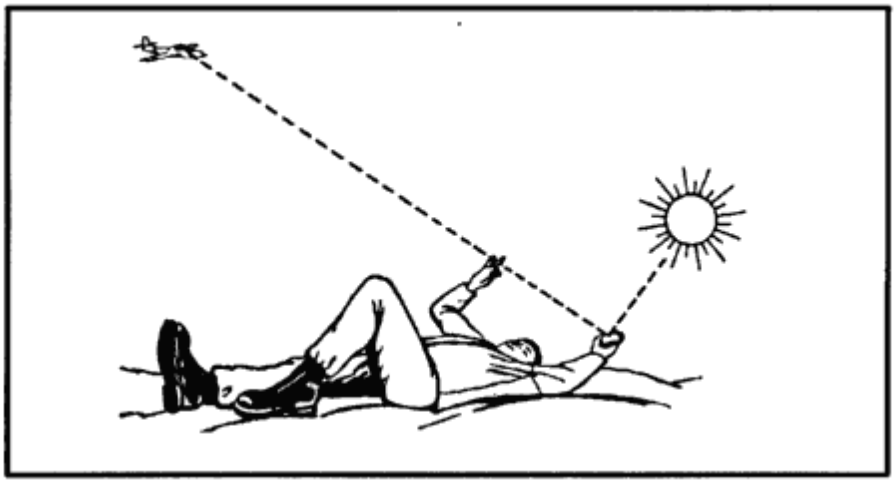

Figure 4

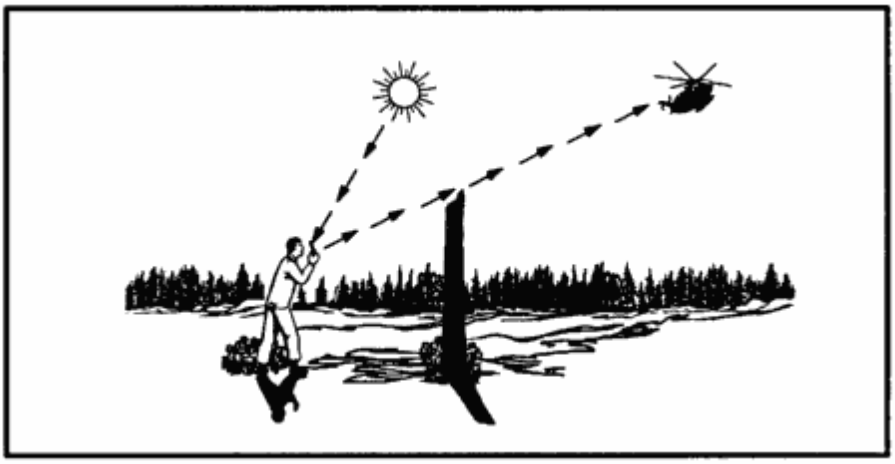

Figure 5

Flashlight

At night you can use a flashlight to send an SOS to an aircraft.

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. In tundra, dig trenches or turn the sod upside down.

In any terrain, use contrasting materials that will make the symbols visible from the air.

Audio Signals

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

Cell Phone

A cell phone can be used to call for help. Most areas have 911. Must cell phones have a GPS build into them and can be tracked via satellites. The strength of the charge on the battery is critical and you must use it sparingly. To obtain maximum performance from cell phones, use the following procedures:

- Try to transmit only in clear, unobstructed terrain. Since cell phones are line-of-sight communications devices, any terrain between the cell phone and the receiver will block the signal.
- Conserve battery power. Turn the cell phone off when you are not using it. Do not try and call someone when you do not have a cell signal.
- Turning the cell phone on for 10 minutes every two hours or so will allow rescuers to pick up the GPS signal from the phone and will guide them to you.
- In cold weather, keep the battery, or cell phone, inside your clothing when not using the cell phone. 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 cell phone and battery as dry as possible, as water will destroy the phone and render it useless.

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.

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 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.

Number	Message	Code symbol
1	Require assistance.	V
2	Require medical assistance.	X
3	No or negative.	N
4	Yes or affirmative.	Y
5	Proceed in this direction.	↑

Figure 6

Body Signals

When an aircraft is close enough for the pilot to see you clearly, use body movements or positions to convey a message. The pilot may not be able to see you so ensure that you have every opportunity to be found by waving brightly colored or contrasting colored objects to you or your surroundings.

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 7. After a pilot has spotted you, you must stay in the general area as he will radio your position so rescuers can respond to help you.

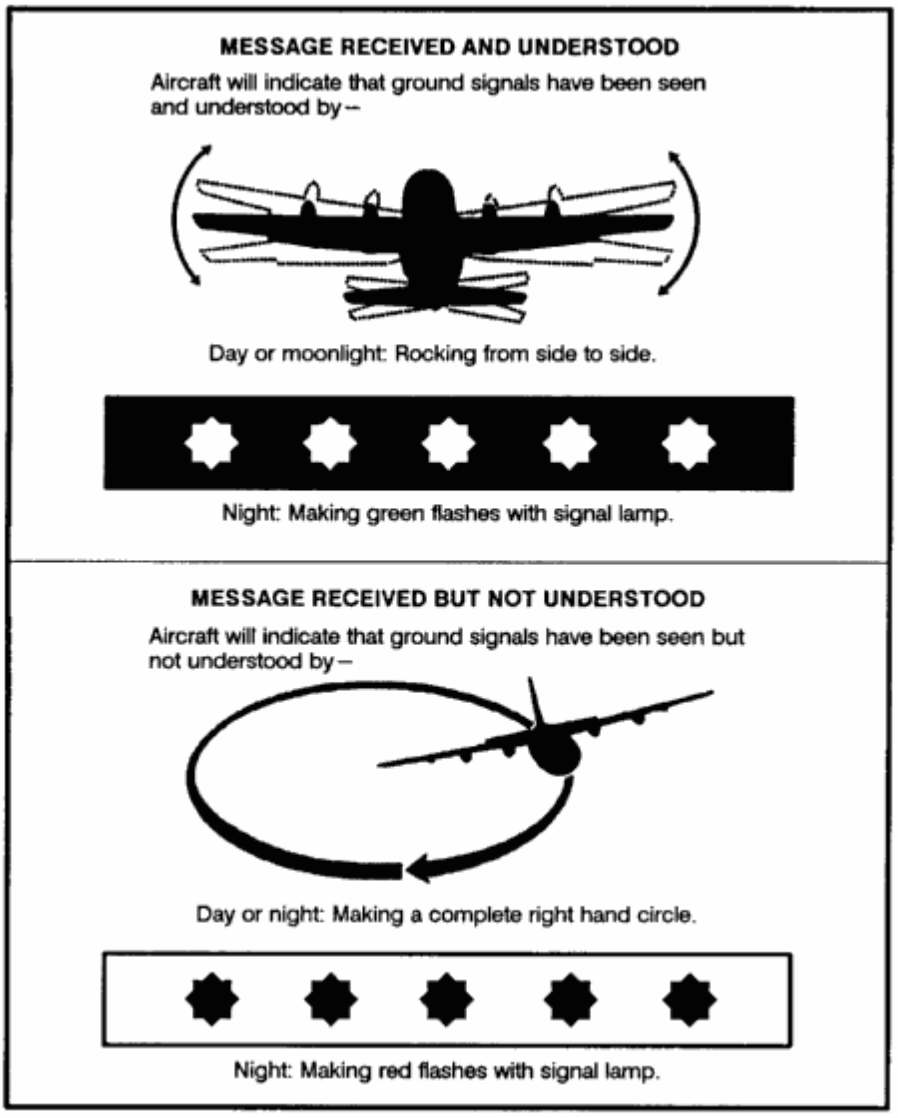

Figure 7