

Emergency Distress Signals



There may be occasion either through work or recreation when a group or an individual gets into difficulty. This could be during leisure activities like hill walking, or through exposure to hostile environments and conflict zones if serving in the military.

It is always sensible to have a few different methods to raise the alarm in an emergency and a way to attract the attention of any rescue teams who may be out looking for you. The way in which a distress signal is sent can vary from the extremely basic whistle to the more technically sophisticated GPS location beacon. I am going to take a look at a range of different signalling devices and also some improvised methods that are commonly taught on survival courses.

How you signal will depend greatly on what equipment that you have at your disposal, the type of environment that you are in – including enemy held areas, and what natural resources there are available. The weather and time of day will also influence how you signal, for example, flashing a torch on a bright and sunny afternoon is not going to be as effective as using a heliograph to aim and reflect the sunlight which will appear much brighter.

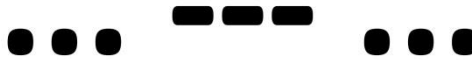
Recognised Distress Signals



A whistle is a vital item in any survival kit

There are a few different distress signals that are recognised as a sign for being in need of help. Six blasts in succession from a whistle or another sound source such as a road horn followed by a one minute silence and then repeated is the international distress signal. An alternative to this is six flashes of a torch light followed by a one minute pause before repeating. The reply to this type of signal is a blast of three whistle or flashes of light.

Another well known distress signal is 'SOS' which stands for 'Save Our Souls'. The abbreviation 'SOS' can be drawn out as a ground to air signal using very large lettering in sand or marked out with stones or other objects instead. The letters 'SOS' can also be signalled by using morse code. Again either a noise or a light source can be used for this.



Morse code for SOS

In sunny conditions, a reflective surface such as shiny metal or a mirror can be used to reflect the sunlight to catch the attention of any possible rescuers. A purpose designed signal mirror called a Heliograph can be carried and allows for accurate signalling to rescue teams and aircraft.



A Heliograph is used to reflect sunlight and attract attention



How to use a heliograph

Signal Fires



A group of three fires is a recognised distress signal

The next distress signal that is internationally recognised is a group of three fires that are equally spaced in a line or triangle formation. Signal fires are very effective but can be time consuming and labour intensive to collect enough material to build. Signal fires also need to be lit at the right moment to catch the attention of any potential rescuers. If you are not able to build three fires, a single fire will still be effective as long as it is sited in a clearing where it will be easily seen and not have the flame and smoke obscured by a dense tree canopy. The general rule for using any fire when signalling is that you use more smoke by day and a brighter flame by night. A smoky fire is created by burning green vegetation or plastic and rubber objects. It is more effective if the colour of the smoke contrasts against the background. So for darker backgrounds, a lighter grey / white smoke will stand out better and is achieved by burning green foliage such as evergreen boughs. In lighter conditions such as snow, darker smoke will stand out better and is given off by burning man made or oil based items.



A signal fire

Bright Objects



Use bright objects such as a survival bag to make your location more obvious

Bright coloured objects which stand out from the surrounding area can be laid out in a suitable position soon after getting into difficulty. These items could range from light coloured parachutes, metal from wreckage or orange survival shelters and reflective foil blankets. These improvised signalling items are not reliant on a power source and will mark your position continuously until removed.



A storm shelter offers instant protection and is highly visible

Strobes



A civilian emergency strobe (left) and the military MS 2000M strobe

Strobe lights are a very effective way to signal in dark conditions. Strobes are extremely bright and can be seen for many miles. The military use strobe markers such as the MS 2000M and there are also civilian equivalents. A standard camera flash can also be used as an improvised signalling strobe. Although strobes are great for marking your position, once a rescue aircraft arrives in the area the strobe should be turned off to avoid dazzling the pilot and crew. A basic torch can then be used to continue marking your location – whilst not pointing it directly at the aircraft.



The military MS 2000M strobe in action

Ground to Air Signals

Signals such as ‘SOS’ can be marked out on the ground. Any ground to air sign will need to be large enough to be seen clearly by aircraft flying above. A suitable clearing should be selected to mark out the sign. The shapes and lettering - as with smoke from a signal fire, will need to stand out from the background and can be marked out by using purpose ground to air markers, debris, parachutes, rocks or wood / branches. If the ground is soft enough to dig (like with snow and sand) any shapes and lettering can be carved into the ground which will create a shadow around the characters making them stand out even further.

SOS	Save our souls
V	Need assistance
X	Need medical assistance
Y	Yes
N	No
↑	Gone this way

Ground to air signals

Technology

A mobile phone is probably the first thing that you will try and use to call for help. Mobile phones are great when there is a phone signal, but coverage can be non-existent in some areas. You still might be able to call 999 if you have no signal from your service provider as other networks may be available for making emergency calls. If you need assistance after getting into difficulties when out on the hills and are able to do so, dial 999 ask for the police and once through ask for mountain rescue. Give information such as your location (grid reference), injuries, number of people in the group, mobile phone numbers for others in the group (as an alternative if your phone fails). Some mountain rescue teams are now using the ‘SARLOC’ app. SARLOC allows the rescue team to send a

text message to someone who requires assistance and has a smart phone that is in signal. Once the message is opened by the casualty or lost individual, a web page is opened on their smart phone. Information about the smart phone location is then automatically sent back to the rescue team.

Personal locator beacons (PLB) are now widely available on the civilian market. When activated the beacon transmits a radio signal on 406 MHz to the Cospas-Sarsat network. The distress signal is then relayed to ground terminals which then send the distress signal to the National Maritime Rescue Coordination Centre (if in the UK) who activate search and rescue resources. The military have used PLB's for a number of years. These include the Tactical Beacon (TACBE) and the Search and Rescue Beacon Equipment (SARBE). Personal locator beacons have been responsible for saving countless lives over the years – both on land and at sea.

No matter how dire the situation – there is always hope. Rescue is only a signal away.