

**Reprint of Joint Publication 3-50.1, Volume I, National Search and Rescue Manual**  
**Appendix C: Emergency Signals**  
**Formatting by Scott E. Lanis (© 1998)**

By tradition and international agreement, certain signs and signals indicate distress or emergency. Common signals are listed in this appendix; however, this list is not all-inclusive. Other internationally accepted emergency signals are contained in the International Code of Signals (Defense Mapping Agency Hydrographic Topographic Center Pub 102). That publication also contains a color plate of the international flags and pennants. SRUs in maritime areas should carry a copy of that publication.

**VISUAL/AURAL DISTRESS SIGNALS**

1. Certain signals normally indicate distress.
  - a. A gun, or other explosive signal, fired at intervals of about a minute. Tracer bullets have been detected as far away as 6 miles, but it is difficult to pinpoint survivor location from that distance.
  - b. A continuous sounding with any fog-signaling apparatus.
  - c. Rockets or shells, throwing red stars, fired one at a time at short intervals.
  - d. The International Code signal of distress indicated by the code group NC. See the International Code of Signals (Defense Mapping Agency Hydrographic Topographic Center Pub 102) for other code groups with emergency significance.
  - e. A square flag having above or below it a ball or anything resembling a ball.
  - f. Flames on a vessel, as from a burning oil barrel. Fires are probably the most effective nighttime signal survivors may use. Fires have been sighted as far away as 50 miles, with the average range varying with the size of the fire and the absence of other light sources.
  - g. A rocket parachute flare or a hand flare showing a red light. Flares, star shells, and rockets have been sighted as far away as 35 miles, with an average of 10 miles. Pyrotechnic flares are effective at night, but during daylight their detectability ranges are reduced by 90 percent.
  - h. Orange smoke-generating signals. These have been sighted as far away as 12 miles, with an average distance of 8 miles. Smoke signals are most effective in calm wind conditions or open terrain. Effectiveness is reduced with wind speeds above 10 knots.
  - i. Slowly and repeatedly raising and lowering arms outstretched to each side.
  - j. Inverted United States flag (marine craft).
  - k. Flashes from a signal mirror. Mirror signals have been detected as far away as 45 miles and from as high as 16,000 feet, although the average detection distance is 5 miles.
  - l. Dye-stained water or snow, normally green or red. Fluorescent sea-dye markers have been sighted as far away as 10 miles, although the average detection distance is 3 miles.

## 2. The following pyrotechnic signals have specific meanings:

One red, or a succession of reds If from a submarine If by pararescue	I am in distress and require immediate assistance. Attempting emergency surfacing, keep clear. Impossible to proceed as planned.
Two red By pararescue	Survivor injured, need doctor and medical kit.
One red, one green By pararescue	Radio inoperative, drop another.
One green By aircraft (used near airport) By submarine By pararescue	Request permission to land. Have fired exercise torpedo. (Initial notification) all is well.
Two green By pararescue By SRU	Survivor ready for pickup as arranged. I have sighted survivors.
One green every 5 to 10 minutes By SRU	Request distressed crew fire red pyro (interval halved when red pyro sighted).
Succession of green By aircraft	Have urgent message to transmit.
One white By aircraft By ship By pararescue	Submarine is below me. Man overboard. Ready for flotation kit or aero-kite drop.
Two white By pararescue	Ready for MA-1 kit drop.
Two whites, 3 minutes apart By submarine	Am surfacing, keep clear.
Series of whites, 10 seconds apart By ship or aircraft	Alter your heading to avoid restricted area.
One white, one green By pararescue	Ready for raft drop.
One white, one red By pararescue	Flotation device damaged, drop another.
Two white, one green By SAR aircraft	Rescue successful.
Two white, one red By SAR aircraft	Rescue unsuccessful.
One yellow By submarine	Ascending to periscope depth.

## 3. The following smoke signals have specific meanings:

Orange smoke	I am in distress and require immediate assistance.
Red smoke By submarine	Attempting emergency surfacing, keep clear.
Two orange smokes, few seconds apart By SAR aircraft	I have survivors in sight.
Two white or two yellow, 3 seconds apart By submarine	Am surfacing, keep clear.
Black or white smoke bursts, 10 seconds apart By ship	Alter your heading to avoid restricted area.

4. A surface-to-air visual code for use by survivors is shown in Figure C-1. IMO/ICAO Message Visual Signals (below):

Require Assistance	<b>V</b>
Require Medical Assistance	<b>X</b>
No or Negative	<b>N</b>
Yes or Affirmative	<b>Y</b>
Proceeding in this direction	<b>↑</b>

### **ELECTRONIC DISTRESS SIGNALS**

1. Radiotelegraph.
  - a. The group "SOS" in the Morse code.
  - b. The radiotelegraph alarm signal, which is designed to actuate the radiotelegraph auto-alarms of vessels so fitted. The signal consists of a series of 12 dashes sent in 1 minute, the duration of each dash being 4 seconds, and the duration of the interval between 2 consecutive dashes being 1 second.
2. Radiotelephone.
  - a. The spoken word "Mayday."
  - b. The radiotelephone alarm signal, consisting of 2 tones transmitted alternately over periods of from 30 seconds to 1 minute.
  - c. EPIRB and ELT signals. EPIRBs and ELTs indicate distress of an aircraft or surface vessel. They are activated by water immersion, excessive G-forces (aircraft crash), or manually. See Chapter 3 for EPIRB/ELT frequencies and characteristics.
3. Radar.
  - a. IFF/SIF code 7500 indicates hijacking.
  - b. IFF/SIF code 7600 indicates lost communications.
  - c. IFF/SIF code 7700 indicates distress.
  - d. Any chaff radar target.

### **INTERNATIONAL AIRCRAFT-TO-SURFACE CRAFT SIGNALS**

1. The following maneuvers performed in sequence by an aircraft indicate the aircraft wishes to direct a surface craft toward an aircraft or a surface craft in distress:
  - a. Circling the surface craft at least once;
  - b. Crossing the projected course of the surface craft close ahead at low altitude and
    - (1) Rocking wings,
    - (2) Opening and closing throttle, or
    - (3) Changing propeller pitch; and
  - c. Heading in the direction in which the surface craft is to be directed.
2. Surface craft assistance no longer required is indicated by crossing the wake of the surface craft close astern at a low altitude and
  - a. Rocking wings,
  - b. Opening and closing throttle, or
  - c. Changing propeller pitch.



No.	Message	Code Symbol	No.	Message	Code Symbol
1	Operation completed	LLL	5	Have divided into two groups. Each proceeding in direction indicated	
2	We have found all personnel	LL	6	Information received that aircraft is in this direction	
3	We have found only some personnel	++	7	Nothing found. Will continue to search	NN
4	We are not able to continue. Returning to base	XX			

Figure C-2. Surface-Air Visual Signal Code for Use by Rescue Units



Figure C-3. Body Signals

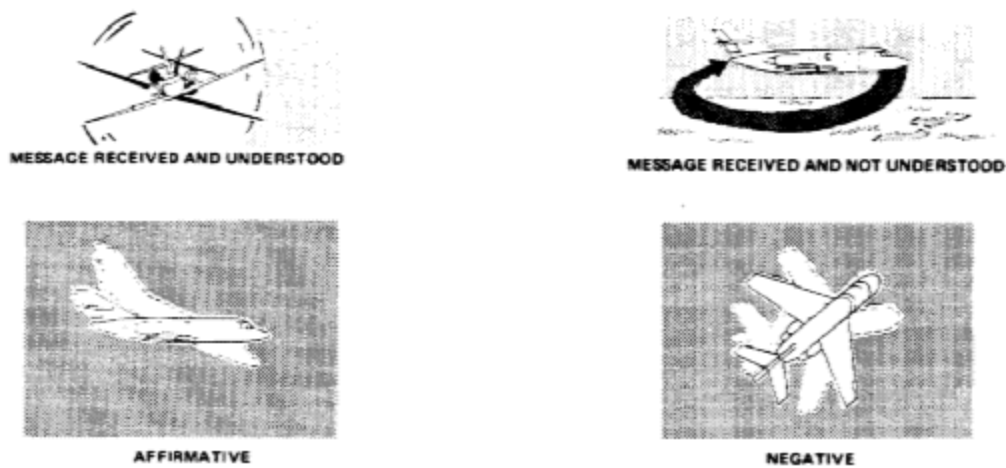


Figure C-4. Standard Aircraft Acknowledgment

COLORED DIAGRAMS



ON LAND WALKING IN THIS DIRECTION  
AT SEA DRIFTING

PANEL SIGNALS

SURVIVORS USE LIFERAFT  
SAILS TO CONVEY SIGNALS

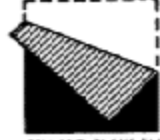
NOTE: ANY SQUARE PIECE OF CLOTH  
OR CANVAS WITH EACH SIDE OF  
CONTRASTING COLORS CAN BE USED



ON LAND NEED QUININE  
ON AT&RIFT  
AT SEA NEED SUN COVER



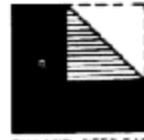
ON LAND NEED WARM  
CLOTHING  
AT SEA NEED EXPOSURE  
SUIT OR CLOTHING  
INDICATED



ON LAND PLANE FLY  
& ABLE, NEED  
AT SEA TOOLS



ON LAND NEED FOOD  
&  
AT SEA AND WATER



ON LAND NEED GAS AND  
OIL PLANE IS  
AT SEA FLYABLE



ON LAND NEED MEDICAL  
&  
AT SEA ATTENTION



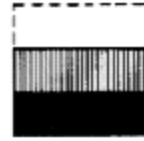
ON LAND NEED FIRST AID  
&  
AT SEA SUPPLIES



ON LAND NEED EQUIPMENT  
&  
AT SEA AS INDICATED  
SIGNALS FOLLOW



ON LAND INDICATE DIREC  
TION OF NEAREST  
CIVILIZATION  
AT SEA INDICATE DIREC  
TION OF RESCUE  
CRAFT



ON LAND SHOULD WE WAIT  
FOR RESCUE PLANE?  
AT SEA NOTIFY RESCUE  
AGENCY OF MY  
POSITION



ON LAND O.K. TO LAND  
&  
AT SEA ARROW SHOWS  
LANDING DIREC  
TION



ON LAND DO NOT  
&  
AT SEA ATTEMPT  
LANDING

Figure C-5. Panel Signals