

Appendix E - Distress and Emergency Signals

Overview

Many signals have been devised over the years to signal a condition of distress or other emergency status. Those listed in this Appendix are those which are most common, have been accepted by international agreement or national custom, or which may be significant for occasional use by SAR units.

Because of the large number of possible signals of various types that may be used to indicate an emergency condition or may be used for emergency communication, this list is not all-inclusive.

International Distress Signals

- a. A gun or other explosive signal fired at intervals of about a minute.
- b. A continuous sounding of any fog-signalling apparatus.
- c. Rockets or shells, throwing red stars fired one at a time at short intervals.
- d. A signal sent by radiotelephony consisting of the spoken word 'Mayday'.
- e. The International Code Signal of distress indicated by the code group NC. (See the International Code of Signals for other code groups with emergency significance.)
- f. A signal consisting of a square flag having above or below it a ball or anything resembling a ball.
- g. Flames on a vessel (as from a burning tar barrel, etc.).
- h. A rocket parachute flare or a hand flare showing a red light.
- i. A smoke signal giving off a volume of orange-coloured smoke.
- j. An orange coloured sheet with a black square and circle or a black "V" or other appropriate symbol.
- k. Slowly and repeatedly raising and lowering arms outstretched to each side.
- l. The radiotelephone alarm signal consisting of two tones transmitted alternatively over periods of from 30 seconds to 1 minute.
- m. Signals transmitted by Emergency Position Indicating Radio Beacons, EPIRBs or Personal Locator Beacons (PLBs).
- n. Approved signals transmitted by radio communication systems.
- o. A dye marker.

Search and Rescue Signals - Australian Area

Signals with Surface Craft

When it is necessary for an aircraft to direct a surface craft to the place where an aircraft or surface craft is in distress, the aircraft shall do so by transmitting precise instructions by any means at its disposal. If such precise instructions cannot be transmitted or when necessary for any other reason, the instructions shall be given by using the procedure prescribed herein.

The following procedures performed in sequence by an aircraft shall mean that the aircraft is directing a surface craft towards 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 a low altitude, opening and closing the throttle or changing the propeller pitch; and
- c. Heading in the direction in which the surface craft is to be directed;

The following procedure performed by an aircraft shall mean that the assistance of the surface craft to which the signal is directed is no longer required:

- a. Crossing the wake of the surface craft close astern at a low altitude, opening and closing the throttle or changing the propeller pitch.

- b. Repetition of such procedures shall have the same meaning.

Current maritime signalling procedures include:

- a. For acknowledging receipt of signals:
 - i. the hoisting of the Code Pennant (vertical red and white stripes) close up (meaning understood);
 - ii. the flashing of a succession of T's by signal lamp in Morse code; and
 - iii. the changing of heading.
- b. For indicating inability to comply:
 - i. the hoisting of the international flag N (a blue and white checked square); and
 - ii. the flashing of a succession of Ns in Morse code.

Civil Air-Ground Code

Australian civil authorities use the following air-ground code:

Signal	Meaning
Aircraft orbits ground party at low level changing engine noise	I require your attention
Aircraft flies overhead ground party at low level and sets off in a particular direction.	Follow aircraft in same direction
Aircraft rocks wings and orbits.	Investigate object/position underneath aircraft orbit
Aircraft drops smoke on a particular location	Investigate object/position adjacent to smoke
Aircraft drops message canister.	Retrieve and read instructions contained in the canister

Figure E.1 – Air-Ground Visual Signal Code

International SAR Signals

The following visual signals are internationally recognised. They are authorised for use in the Australian SRR.

Number	Message	Code Symbol
1	Require Assistance	V
2	Require Medical Assistance	X
3	Proceeding in this Direction	
4	Yes or Affirmative	Y
5	No or Negative	N

Figure E.2 - Ground - Air Visual Signal Code for use by Survivors

Note: If in doubt use international symbol – SOS

Number	Message	Code Symbol
1	Require Fodder	FF
2	Require Evacuation	III
3	Power Failure	VI

Figure E.3 - Ground - Air Visual Signal Code for use in Civil Emergencies

Notes:

1. Aldis Lamp Signals
 - a. Red flashes indicate not understood
 - b. Green flashes indicate message understood
2. Air-Ground Signals

The following signals by aircraft mean that the signals have been understood:

 - a. During hours of daylight - rocking the aircraft's wings
 - b. During hours of darkness - by flashing the aircraft's landing or navigation lights ON and OFF twice.

Lack of the above signals indicates that the message has not been understood.

3. Fig 2.3.1 and Fig 2.3.2 conform to ICAO and NATO standards.

Visual Distress Signals

THE REGULATIONS

This information is directed primarily to recreational boaters, but the requirements discussed also apply to operators of vessels engaged in the carrying of six or fewer passengers. The Visual Distress Signal requirements for most commercial vessels are in Title 46 of the Code of Federal Regulations.

The requirement to carry visual distress signals became effective on January 1, 1981. This regulation requires all boats when used on coastal waters, which includes the Great Lakes, the territorial seas and those waters directly connected to the Great Lakes and the territorial seas, up to a point where the waters are less than two miles wide, and boats owned in the United States when operating on the high seas to be equipped with visual distress signals.

The only exceptions are during daytime (sunrise to sunset) for:

- Recreational boats less than 16 feet in length.
- Boats participating in organized events such as races, regattas or marine parades.
- Open sailboats not equipped with propulsion machinery and less than 26 feet in length.
- Manually propelled boats.

These boats only need to carry night signals when used on these waters at night.

PYROTECHNIC VISUAL DISTRESS SIGNALING DEVICES...

Must be Coast Guard approved, in serviceable condition and stowed to be readily accessible. If they are marked with a date showing the serviceable life, this date must not have passed. Launchers produced before Jan. 1, 1981, intended for use with approved signals are not required to be Coast Guard Approved.

USCG Approved Pyrotechnic Visual Distress Signals and Associated Devices include:

- Pyrotechnic red flares, hand held or aerial.
- Pyrotechnic orange smoke, hand held or floating.
- Launchers for aerial red meteors or parachute flares.

The purpose of the regulation is to assure that boaters have a way of attracting attention and securing assistance should the need arise. Properly used visual distress signals will also help reduce the time it takes to locate a boat in difficulty when a search is underway. This will reduce the possibility of a minor emergency becoming a tragedy.

NON - PYROTECHNIC VISUAL DISTRESS SIGNALING DEVICES...

Must carry the manufacturer's certification that they meet Coast Guard requirements. They must be in serviceable condition and stowed to be readily accessible.

This group includes:

- Orange distress flag.
- Electric distress light.

No single signaling device is ideal under all conditions and for all purposes. Consideration should therefore be given to carrying several types. For example, an aerial flare can be seen over a long distance on a clear night, but for closer work, a hand-held flare may be more useful.

Visual Distress Signals: Types

A wide variety of signaling devices, both pyrotechnic and non-pyrotechnic, can be carried to meet the requirements of the regulation.

- Recreational boats less than 16' operating in coastal waters need only carry night signaling devices when operated at night. All other boats must carry both night and day signaling devices.
- Any combination can be carried as long as they add up to three signals for day use and three signals for night use. Three day/night signaling devices meet both requirements.



Note: If pyrotechnic devices are selected, a minimum of three must be carried. Pyrotechnic devices come with an expiration date, which is 42 months from the date of manufacture. To meet carriage requirements, you must have at least three un-expired flares aboard. You may carry expired flares as back up, but they will not count towards the legal requirement.

The following details a combination of devices which can be carried in order to meet the requirements:

- Three hand-held red flares (day and night). Flares must be under 42 months of age.
- One electric distress light (night only).
- One hand-held red flare and two parachute flares (day and night). One hand-held orange smoke signal, two floating orange smoke signals (day) and one electric distress light (night only). **Flares must be under 42 months of age.**

DAY USE ONLY

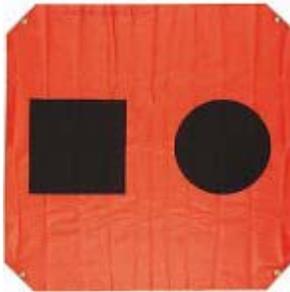
Hand Held Orange Smoke Distress Signals.



Floating Orange Smoke Distress Signals. These come in two varieties, one lasting approximately 5 minutes, one lasting 15 minutes.



Orange Distress Signal Flag for Boats. The distress flag must be at least 3 x 3 feet with a black square and ball on an orange background. It is accepted as a day signal only and is especially effective in bright sunlight. The flag is most distinctive when waved on something such as a paddle or a boat hook or flown from a mast.



Sea-marker dye is useful when air search has been initiated. Comes in several colors, and should be used when chances of being spotted are high.

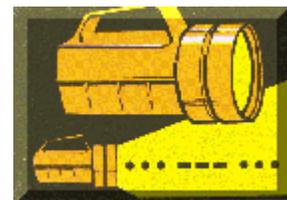


Although not recognized by USCG as a carriage requirement, a well-handled **signal mirror** can be very effective in calling attention to oneself. It is low in cost and has an unlimited shelf life.



NIGHT USE ONLY

Electric Distress Light for Boats: The electric distress light is accepted for night use only and must automatically flash the international SOS distress signal, which is three short flashes, three long flashes, and three short flashes. Flashed four to six times each minute, this is an unmistakable distress signal, well known to most boaters. The device can be checked any time for serviceability if shielded from view.



NOTE: An ordinary flashlight is not acceptable since it must be manually flashed and does not normally produce enough candle power. The Regulation States: "No person in-a boat shall display a visual distress signal on water to which this subpart applies under any circumstances except a situation where assistance is needed because of immediate or potential danger to the persons aboard."

DAY AND NIGHT USE

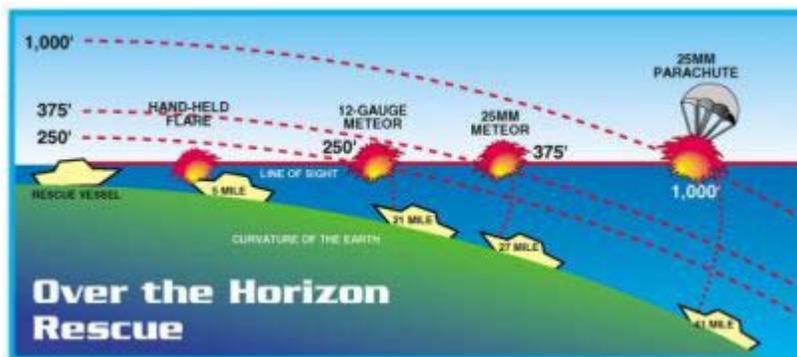
- **Hand Held Flare Distress Signal**
- **Parachute Red Flare Distress Signals** (25 mm or larger) These signals require use in combination with a suitable launching device.
- **Hand Held Rocket-Propelled Parachute Red Flare Distress Signals.**
- **Distress Signal for Boats, Red Aerial.**
- **Pyrotechnic Flare** (These devices may be either meteor or parachute assisted type.)
Some of these signals may require use in combination with a suitable launching device.

WARNING . . .

In some states the pistol launcher for meteors and parachute flares may be considered a firearm. Therefore, check with your state authorities before acquiring such launcher.

Visual Distress Signals: When and How to Use Them

Visual distress signals are part of your boat's safety equipment. Check them before you leave harbor. Their intended purpose is to summon help should the need arise. Visual distress signals can only be effective when someone is in a position to see them. Therefore, when employing pyrotechnic devices, do so only when you see or hear a boat or airplane or you are reasonably sure that someone on shore is in position to see your signal and take action. Good judgment is an essential part of successful use of visual distress signals.



All distress signaling devices have both advantages and disadvantages. The most popular, because of cost, are probably the smaller pyrotechnic devices. Pyrotechnics make excellent distress signals, universally recognized as such, but they have the drawback that they can be used only once. Additionally, there is a potential for both injury and property damage if not properly handled.

Pyrotechnics devices have a very hot flame, and the ash and slag can cause burns and ignite material that burns easily. Projected devices, such as pistol launched and hand-held parachute flares and meteors, have many of the same characteristics of a firearm and must be handled with the same caution and respect.

The hand-held and the floating orange smoke signaling devices are excellent (if not the best) day signals, especially on clear days. Both signals are most effective with light to moderate winds because higher winds tend to keep the smoke close to the water and disperse it which makes it hard to see.

Red hand-held flares can be used by day, but are most effective at night or in restricted visibility such as fog or haze. Only Coast Guard or SOLAS flares are acceptable for use on recreational boats. When selecting such flares look for the Coast Guard approval number and date of manufacture. Make sure that the device does not carry the marking: "Not approved for use on recreational boats," and that no more than 3 years have passed since manufacture.

What if you see a Visual Distress Signal given off by another vessel?

The unwritten law of the sea requires that a mariner come to the aid of a mariner in distress. Therefore, should

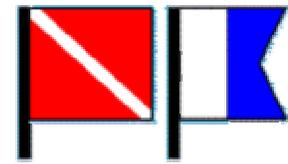
you see a distress signal, immediate and positive action should be taken. Notify the nearest Coast Guard station or State authority by radio. Channel 9 on CB and Channel 16 on VHF marine radio (156.8 MHz) are recognized distress channels. If you can assist the stricken vessel without endangering yourself, you should. The Federal Boat Safety Act of 1971 contains a "Good Samaritan" clause stating: "Any personwho gratuitously and in good faith renders assistance at the scene of a vessel collision, accident, or other casualty without objection of any person assisted, shall not be held liable for any act or omission in providing or arranging salvage, towage, medical treatment, or other assistance where the assisting person acts as an ordinary, reasonably prudent man or woman would have acted under the same or similar circumstances."

FLAGS

Flags serve a variety of purposes in the marine environment. There is no legislation governing the flying of any flag on numbered, undocumented or licensed vessels. However, there is a proper etiquette involved when displaying flags.

Recreational boaters may fly flags to display boating affiliations. For example, many yacht clubs provide triangular shaped burgees to members. And, members of the U.S. Power Squadrons and U.S. Coast Guard Auxiliary fly flags to identify themselves. Boaters also fly flags to identify their home state or nationality.

Flags are also used for specific boating activities and navigational purposes. For example, boats with scuba divers must fly a "diver down" flag when divers are in the water. There are two types of diver down flags and both are appropriate to display. They are a red flag with a white diagonal stripe and a rigid replica of an "alfa" flag.



Another example is the flags used by committee members and participants of events sponsored by the United States Yacht Racing Union.

Flags are also used to signal your need for help. When in distress, a boat should fly an orange flag with a black square and black ball. A man overboard flag, consisting of the letter "O", can be fixed to a staff which is in turn fixed to a life ring.

	ALFA DIVER DOWN		JULIETTE KEEP CLEAR		SIERRA ENGINES GOING ASTERN
	BRAVO DANGEROUS CARGO		KILO DESIRE TO COMMUNICATE		TANGO KEEP CLEAR OF ME
	CHARLIE YEST		LIMA STOP INSTANTLY		UNIFORM
	DELTA KEEP CLEAR		MIKE I AM STOPPED		REQUIRE ASSISTANCE
	ECHO ALTERING TO STARBOARD		NOVEMBER NO		WHISKEY NEED MEDICAL ASSISTANCE
	FOXTROT DISABLED		OSCAR MAN OVERBOARD		XRAY
	GOLF WANT A PILOT		PAPA ABOUT TO SAIL		YANKEE DRAGGING ANCHOR
	HOTEL PILOT ON BOARD		QUEBEC		ZULU REQUIRE TUG

 <p>INDIA ALTERING TO PORT</p>	 <p>ROMEIO</p>	
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