

Water Awareness and Change Certificate Manual

Module 09: Advanced Boating Safety

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Module 09: Advanced Boating Safety	Initial Release	1.0	18 Sep 2009
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Outcomes

After completing this module, the certificate holder will:

- Be able to list the safety equipment carried by Cat R vessels
- Be able to demonstrate the use of the safety equipment on board Cat R vessels
- Be able to implement the buddy system.
- Display and recognise international distress signals.

1 Safety

Before setting out on a journey on any large stretch of water it is necessary to ensure that all possible safety precautions have been taken.

A thorough knowledge of rescue agencies such as N.S.R.I, S.A.P.S. Water Wing and any other local facilities needs to be gathered plus the means to contact them. A plan of the proposed voyage needs to be lodged with an independent person or organisation and this must include as much information as possible. The intended destination and route plus the expected time of arrival need to be stipulated. The number of participants and vessels should be recorded and arrangements made to report the eventual arrival at the destination. Arrange a "failsafe" emergency destination or halfway checkpoint to report progress or to meet a shore-based support party.

All crew must be thoroughly briefed on all aspects of the journey and especially on how to act in an emergency or bad weather situation. A buddy system should be instituted and all members should hold the minimum swimming badge. Knowledge of first aid and C.P.R. is a must.

Suitable clothing should be carried by every member to cover both sunny and bad weather conditions. Suitable headgear and sunscreen creams are a must and sufficient drinking fluids and drinking times should be planned. Avoid being too ambitious and rather allow more than enough time to complete the journey or cut it down to shorter legs

It goes without saying that there must be adequate personal buoyancy aids for every crew member and this must be carried in an easily accessible place if not actually being worn.

The vessel itself must also be adequately fitted with buoyancy, sufficient to support the entire crew and cargo while full of water or capsized. All equipment must be tied in to the boat to avoid it being lost in a capsize.

Discuss or practice possible situations to identify and sort out weaknesses before they occur and ensure every member knows what is expected of them.

There is no substitute for common sense in an emergency.

2 Safety Equipment List

In the "Merchant Shipping Act, 1951 (Act No. 57 Of 1951) - Merchant Shipping (National Small Vessel Safety) Amendment Regulations 2011, the following is prescribed in the as the minimum safety equipment to be onboard in good working condition

Description of safety equipment	Cat R	Other vessels <7m	Additional Remarks
Approved Buoyancy Aid	X	X	One buoyancy aid of the appropriate size for each person aboard Buoyancy aid must comply with SABS 1417/1987 or the equivalent ISO standard
Waterproof torch, including a full set of spare batteries and a spare bulb	X		Required only for vessels operating at night. Spare bulb and batteries to be kept in a watertight container.
1.5 kg dry powder fire extinguisher	X		One per engine
2 oars or paddles	X		Required only for power driven vessels with only a single outboard engine
Capsize rope for use when the vessel is inverted in water	X	X	Required only for inflatable and ski-boats and multi-hull dinghies
Full set of sails, including storm sails where appropriate	X		Applicable only to sailing vessels >7m in length
Proper patent anchor and chain with suitable length of rope of suitable length and of suitable strength for the area of operations	X		Vessels < 6m in overall length – at least 3m of chain Vessels > 6m in overall length – at least 5m of chain
1 litre of drinking water per person	X	X	
First Aid Kit	X		Suitable for the vessel's size, complement and intended operations, to the satisfaction of the safety officer. First aid kit to include an elementary first aid manual.
Suitable air bellows	X		Required only on inflatable vessels
Spares	X		Adequate for the purpose of carrying out emergency repairs to machinery and essential equipment onboard. Duct tape is always useful
Tools	X		Adequate for the purpose of carrying out emergency repairs to machinery and essential equipment onboard. Should include a sharp knife

Description of safety equipment	Cat R	Other vessels <7m	Additional Remarks
2m x 2m red or white canvas	X		Only applicable to vessels not painted in visible colours
Unexpired, approved handheld smoke marker	X		Optional but recommended
Suitable tow line	X	X	Not less than 10m in length
Bailing device	X	X	Required on all vessels that are not self-draining.
Sound signalling device	X		Optional but recommended
Sea Anchor	X		Optional but recommended Complete with suitable rope and tripping line
Two unexpired, approved handheld flares	X		Optional but recommended
Unexpired, approved parachute flare	X		Optional but recommended

Table 1: Safety equipment list

- All safety equipment must be securely tied in to the boat to avoid it being lost in a capsize.
- All buoyancy aids, lifebuoys, Dan buoys, flares and life rafts belonging to a category R vessel must be permanently marked with the vessel's approved ID number

2.1 Capsize Bottle

The capsise bottle needs to be prepared before heading out. The bottle needs to be a robust, waterproof container with a screw on lid.

The capsise bottle must be clearly marked with the vessel's ID number and reflective tape and painted in a bright colour is possible. The bottle with its contents must be buoyant and attached to the vessel by a lanyard (approx 2m) in such a way that it can be easily accessed in a capsise

The bottle should contain:

- Flares
- A knife
- ID sheet – a large sheet of light coloured plastic that will float. It can be spread on the surface of the water to aid searchers or used as a shelter if ashore
- Emergency rations
- Survival blankets
- Whistle
- Waterproof torch with a spare bulb and batteries
- Signalling mirror

The bottle needs to be maintained regularly as the rations, flares and batteries will degrade over time.

2.2 Life Jackets

All life jackets must be approved by the S.A.B.S. and S.A.M.S.A. They must have a whistle and reflective tape strips and be in a good condition.

Basic checks to perform on life jackets.

- The life jacket is not faded and there is no loose stitching.
- The buoyancy foam has not been compressed.
- The tying tapes are in good condition.
- The reflective tape is properly attached and not faded.
- The life jacket is off appropriate size for the crew member

It is the skipper's duty to make sure that all passengers and crew are wearing their life jackets correctly in the following circumstances.

- When surf launching or beaching
- By all non-swimmers and persons under the age of 10.
- In turbulent waters or inclement weather.
- At any other time that the skipper decides.



Figure 1: Life Jackets

2.3 Capsize Rope

A capsized rope or grab line is a means for keeping the occupants of the capsized vessel with the vessel.

- A grab line is typically a permanent fixture, looping from the gunwales of the vessel. Most semi-rigid inflatables have such lines.
- A capsized rope is a soft braided rope of at least 16mm in diameter and length of 2,5 times the length of the vessel. The rope must be secured to either the bow or stern eye, coiled and secured under the gunwale.
- It is recommended that the end of the capsized rope be attached to the capsized bottle.
- In the event of a capsized, the rope is easily retrieved with the bottle. The rope is run around the hull and motor through the bow / stern eyes and secured tightly. The rope then provides hand and foot holds on the overturned hull.

2.4 Flares

Flares are by far the best piece of equipment you can have for attracting attention when you require assistance. Familiarise yourself with the flares on your vessel beforehand as you may not have time in an emergency. Flares can be classed in the major categories:

- Parachute flares are visible for up to 7mn. Always read the manual as not all flares operate the same way. To fire a parachute flare, hold the flare downwind and away from the body. Aim the flare vertically and firmly squeeze the trigger. The flare has a built in mechanism to fight back against the wind and deploy above you.
- Pencil flares are fired from a flare gun and are visible for 5-7 nm. Typically the gun comes with 6 cartridges. Fire a flare by screwing the flare into the launcher and pulling the trigger.
- Hand held flares offer a more cost effective solution and are visible for up to 5nm in good weather. Before using a hand held flare, wrap your hand with a wet cloth or other protective material. Hold the flare away from the body and over the water before firing. Make sure the hot ash falls into the water and not into the boat. Once lit, slowly wave the flares back and forth.

Flares do expire, so you need to check the date of expiry.

It is an offence to fire a flare if you are not in an emergency situation. You could be sentenced to 6 month in jail or a R10 000 fine and held responsible for any costs incurred in the rescue operation.

2.5 Smoke Markers

Familiarise yourself with the markers on your vessel beforehand as you may not have time in an emergency. After activating the marker, it must be thrown into the sea. The markers have a delayed action as the smoke is toxic

Orange smoke is very effective during air search operations during daylight hours. Smoke markers cannot be used during the night or in strong winds.

3 Buddy System

The **buddy system** is a procedure in which two people, the buddies, operate together as a single unit so that they are able to monitor and help each other. In water activities, the main benefit of the system is improved safety: each may be able to prevent the other becoming a casualty or rescue the other in a crisis. There should not be more than 3 people in a buddy group as it becomes difficult to keep track of more than 2 others

In an emergency, the leader only needs to check on a few groups rather than the entire crew.

4 Distress signals

There are many different signals that are internationally recognised as distress signals. All are listed below, but some of these are not possible on a small vessel, so they are not described in detail.

- A gun or other explosive signal fired at intervals of 1 minute
- Continuous sounding of fog horn
- Red star rockets, fired one at a time at short intervals
- An SOS (... --- ...) in Morse code. This can be done using a radio, or visual / audio signalling (whistle, horn, mirror or flashlight)
- Radio signal of the spoken word "Mayday". See module 62 (Radio) for more information.
- Flag signals N over C



- Any flames on a vessel
- Red hand held or parachute flare. See section 2.3
- Orange smoke markers. See section 2.5
- Slowly and repeatedly raising arms from an outstretched horizontal position.
- Signals from an emergency position-indicating radio beacon (EPIRB)

5 Clothing

Weatherproof includes sun proof. Our sun is as big an enemy as bad weather and adequate sunscreens and suitable headgear is a must. Take lots of fluids and ensure crew drinks often. Thirst is an indication that dehydration is already setting in. Sun stroke or heat exhaustion can lay low otherwise willing crew and this can endanger boat safety. There is no shade out on the water!!

"Wet' clothing is probably adequately covered by a windbreaker or anorak. Even if clothing is wet underneath, if the wind is at least shed then a body warmth can be maintained much as in a wet suit. A woollen jersey will maintain body heat even when wet. Cover torso before legs. A hood to stop water trickling down the neck is good. Long trousers can be a danger when swimming and legs, although wet and cold are less important than a warm torso.