

G R E A T  
**Circle**

USER MANUAL

EMERGENCY

# ***Coastmaster® Oceanmaster®***

USER'S HANDBOOK & EMERGENCY  
DEPLOYMENT MANUAL



# Great Circle Life Rafts

**Great Circle Life Rafts meet or exceed the highest specifications set down by Australian marine authorities, International Standards Organisation and boating associations. They feature premium components, top quality craftsmanship and meticulous quality control. If the worst should happen, in the most demanding of sea conditions, you can be confident that your Great Circle Life Raft is designed and equipped to help save your life.**

- ISO 9001:2000 – Quality assured manufacturing facility
- ISO 9650 – International life raft design, quality and compliance certification
- SOLAS – International life raft design, quality and compliance certification
- Australian Sailing / Yachting New Zealand & ISAF compliant
- NSCV (Australian Commercial Survey) compliant

This manual contains important safety information on the operation and care of your Great Circle Life Raft. Please ensure you and your crew read this manual thoroughly so that in the event of an emergency lost time is minimised and everyone knows how the life raft works and how to deploy it.

Considerable care has been taken to ensure that information contained within this manual is as accurate as possible. However, liability cannot be accepted for inaccuracies or omissions.

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## Contents

A brief introduction of life raft types	4
Life raft overview	5
Deployment overview	8
Mounting Cradle overview	10
Stowing your life raft	11
Up to three year extended service interval	14
12 Year guarantee	14
What to expect on deployment of the life raft	15
Emergency equipment packs	17

### EMERGENCY SECTION

Deploying and using your life raft in an emergency	19
Aids to survival	22
Maintaining your life raft	24
Critical first aid responses	26
Distress signaling	28
Instructions for using emergency fishing tackle	32
Rescue procedures	33
Evacuating sick or injured persons at sea	34
General maintenance of your life raft	34
Transportation of your life raft	35
Service information	35

## Welcome to Great Circle

Thank you for choosing a Great Circle Life Raft. You can be confident you have made an important decision about the safety for all on board. Whether you venture far offshore, travel the coast or explore waters close to home, an emergency can develop that overwhelm your crew to the point where abandoning the vessel becomes a serious option. That's where a Great Circle Life Raft is ready to help save you and your crew's lives. Our rafts are engineered to aid survival in extreme conditions, but they are also easy to handle, easy to store and deployable by just about anyone aboard.

Great Circle Life Rafts range in size from four to 65 person capacity and are ideal for both commercial and recreational vessels.

# 1

## A brief introduction of life raft types

Life rafts are generally classified by their method of launching and deployment. There are two types: Throw Overboard and Davit Launch. This manual is devoted to the Throw Overboard type.

The Throw-Overboard type may be manoeuvred overboard manually, or may be dropped into the sea from its stowage cradle by gravity, or may float free by means of a Hydrostatic Release Unit when the stricken vessel sinks and the life raft inflates at the sea surface.

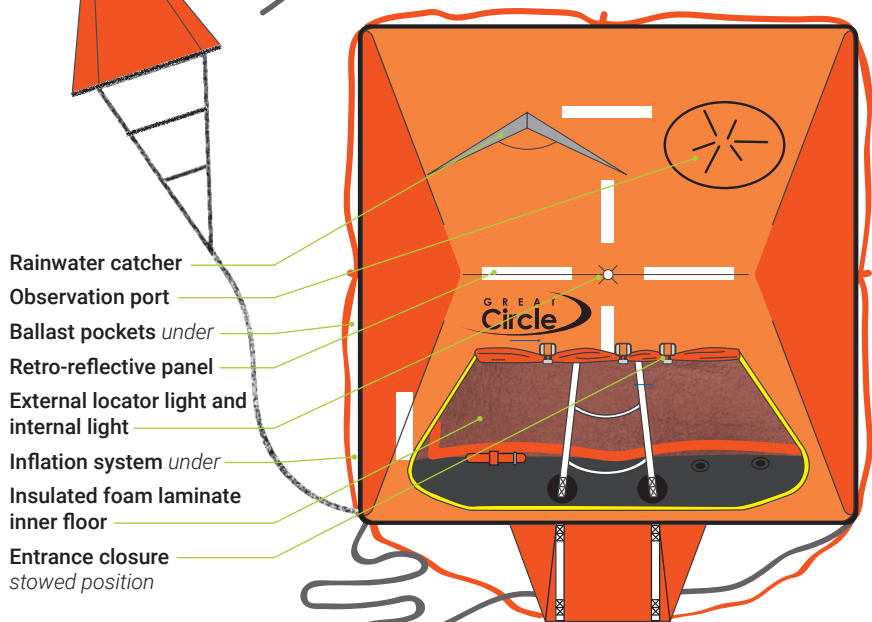
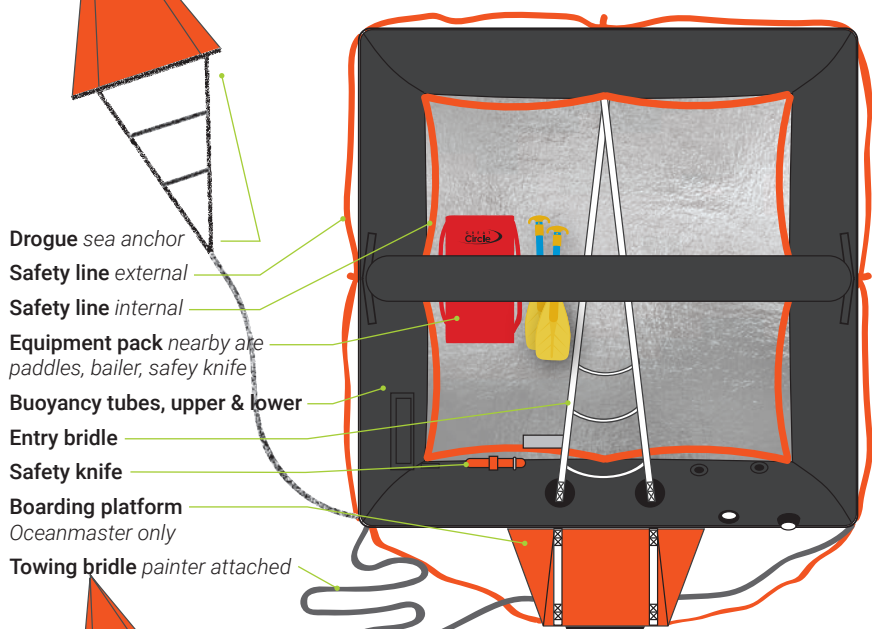
The life raft is inflated by fully withdrawing its painter line and providing a sharp tug as the end of the line is reached. The painter line is usually 8 or 10 metres long. The Throw-Overboard type requires survivors to board the floating life raft by stepping into it, or climbing down the vessel's side or using an evacuation slide to reach the life raft's entry point. Survivors already in the water may require assistance with boarding.



2

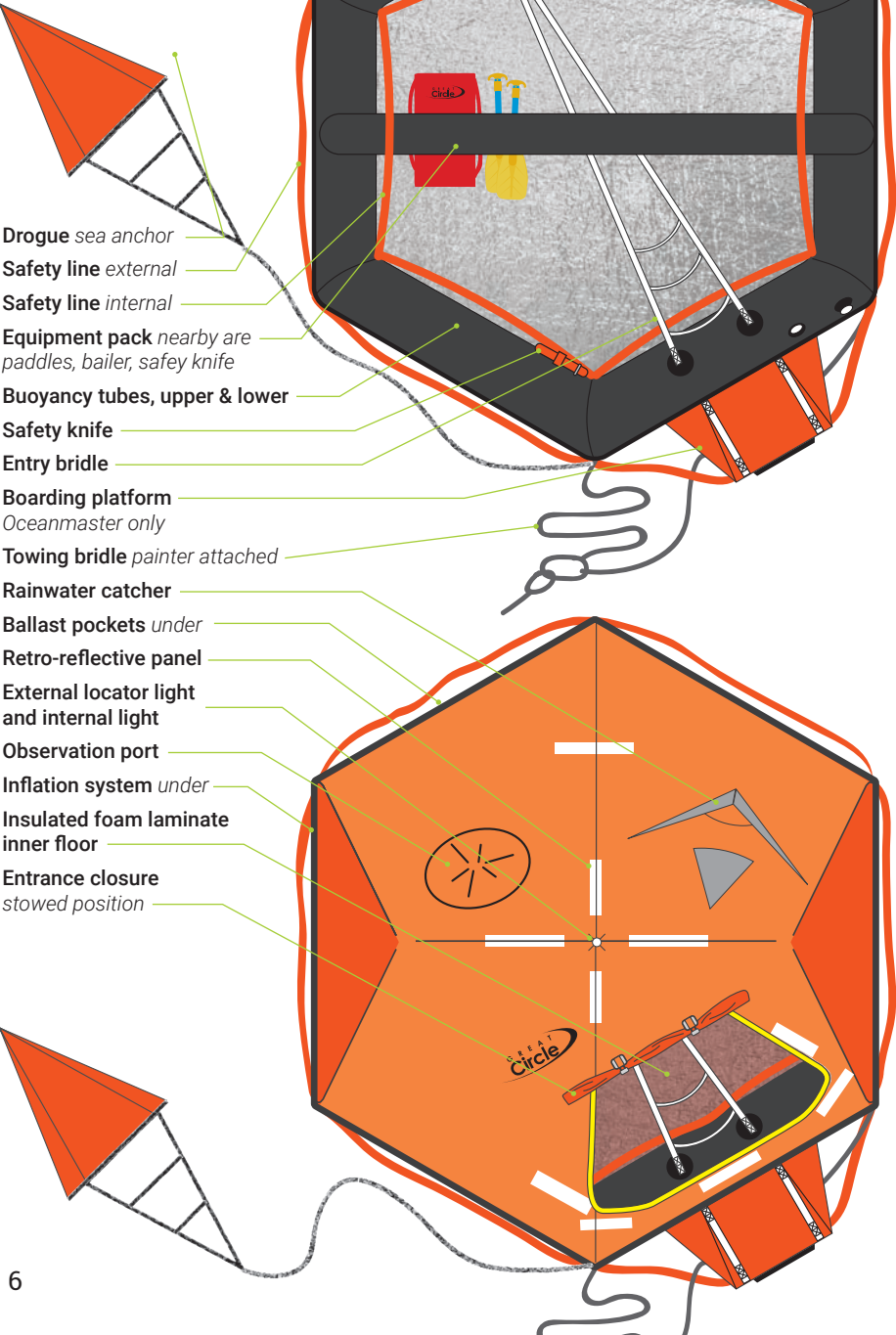
# Life raft overview

Coastmaster 4, Coastmaster 6, Oceanmaster 4





# **Oceanmaster 6** **Oceanmaster 8**



## Oceanmaster 10 Oceanmaster 12

Safety line *external*

Safety line *internal*

Equipment pack  
*nearby are paddles,  
bailer, safety knife*

Buoyancy tubes,  
upper & lower

Entry bridle

Safety knife

Boarding platform  
*Oceanmaster only*

Towing bridle  
*painter attached*

Drogue sea anchor

Entrance closure  
*closed position*

Observation port

Rainwater catcher

Ballast pockets *under*

Retro-reflective panel

External locator light  
and internal light

Inflation system *under*

Insulated foam  
laminate inner floor

Entrance closure  
*stowed position*

### 3

## Deployment overview

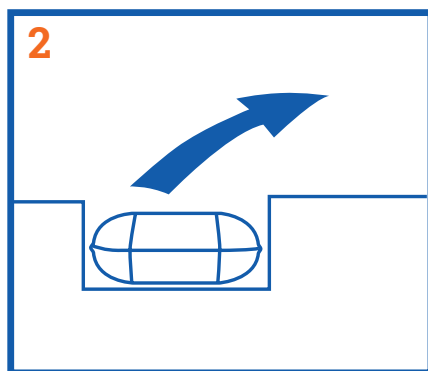
Inflatable life rafts are universally recognised as providing the most efficient method of evacuating survivors from a vessel in distress. The simple process of fully withdrawing the life raft's painter line means that within seconds of the life raft touching the water, it is fully inflated and ready to save lives.

No-one ever expects to have to use their life raft and survivors who have had to abandon their boats were no doubt grateful that their properly functioning life raft offered reassurance for their survival needs.

Time is always the critical factor and a knowledge of how the life raft operates and how to deploy it quickly can save precious minutes – and possibly lives.



**Put on a life jacket**



**Ready the life raft for deployment and confirm that the painter line is attached to a strong point on the vessel**



**Throw entire life raft overboard in the direction of the wind**



**Pull on the painter line to activate inflation mechanism**





**Right overturned life raft if necessary**



**Enter life raft**



**Throw rescue quoit to other survivors**



**Undo or cut painter line with safety knife located near life raft's entrance**



**Move away from stricken vessel**



**Read emergency guidelines for additional instructions**

# 4

## Mounting Cradle overview

Canister size: 4 to 8 person

### A

380 4 person (series 2)

430 6 person (series 2)

445 4-6-8 person

### B

230 4 person (series 2)

280 6 person (series 2)

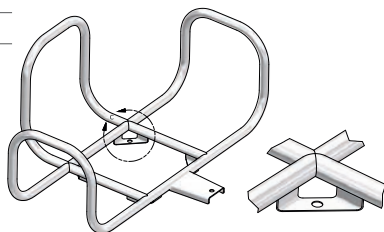
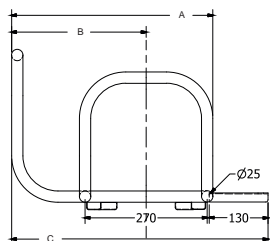
298 4-6-8 person

### C

480 4 person (series 2)

550 6 person (series 2)

567 4-6-8 person

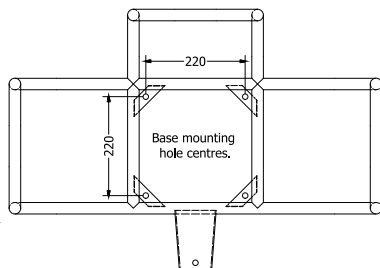
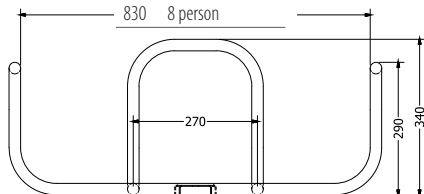


680 4 person (series 2)

750 6 person (series 2)

780 4-6-8 person

830 8 person



Canister size: 8 to 12 person

### A

445 8 person > 24hr pack 10 person

485 10 person > 24hr pack 12 person

### B

295 8 person > 24hr pack 10 person

335 10 person > 24hr pack 12 person

### C

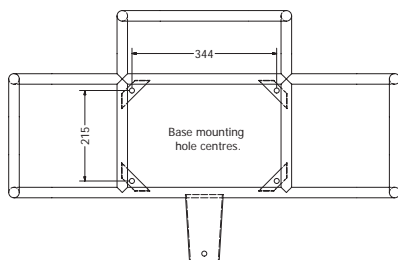
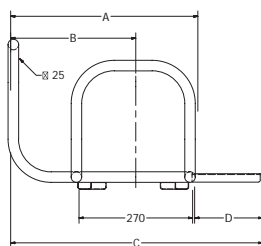
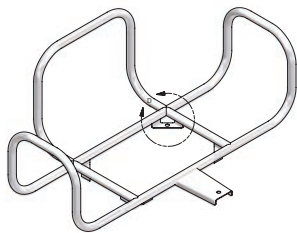
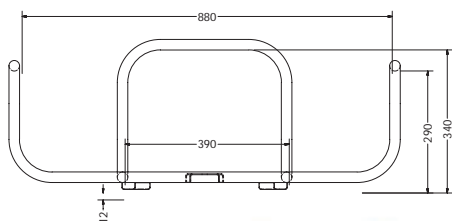
600 8 person > 24hr pack 10 person

655 10 person > 24hr pack 12 person

### D

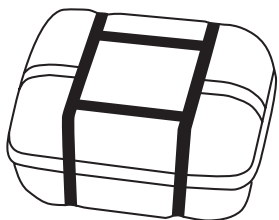
150 8 person > 24hr pack 10 person

160 10 person > 24hr pack 12 person



## 5 Stowing your life raft

It is important to take care when stowing your Great Circle Life Raft to ensure it is accessible at all times. The ability to deploy your life raft quickly is vital irrespective of sea conditions and other circumstances. Good practice dictates that it should be capable of being launched in under 15 seconds and that it be an important part of offshore passage preparations. Where canisters are secured to a cradle with a locking facility, this must be undone before making any passage.

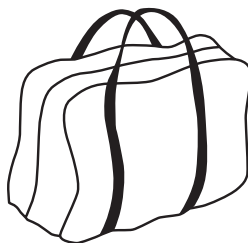


### Canister Stowage

**Neat and low profile hard fibreglass case for cradle or deck mount stowage.**

1. Always store the life raft in an easily accessible location. Ensure that it is not stowed close to any source of heat (e.g. engine or generator) or in proximity to oil products such as diesel, petrol/gasoline
2. Stow flat on deck with top uppermost or if stowed in a cradle, ensure that the instructions are clearly visible.
3. Ensure that the canister is securely lashed down to prevent accidental movement and damage. Check lashings periodically for tightness and any signs of ultra-violet damage.
4. Regularly inspect canister drain holes to ensure that they have not become blocked.

**IMPORTANT: Before deployment ensure that the painter line is attached to a strong point on the vessel.**



### Valise Stowage

**Compact, strong and highly visible polyester case for locker or cabin stowage.**

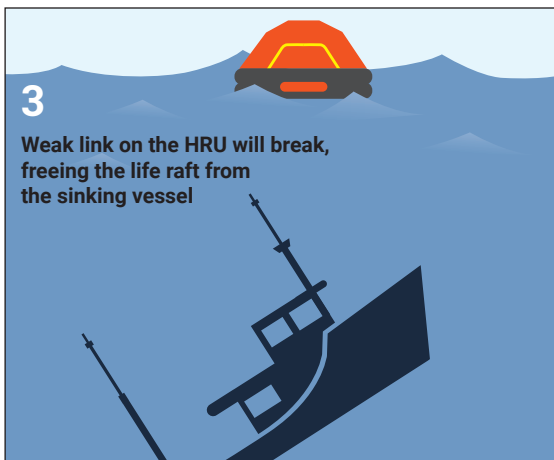
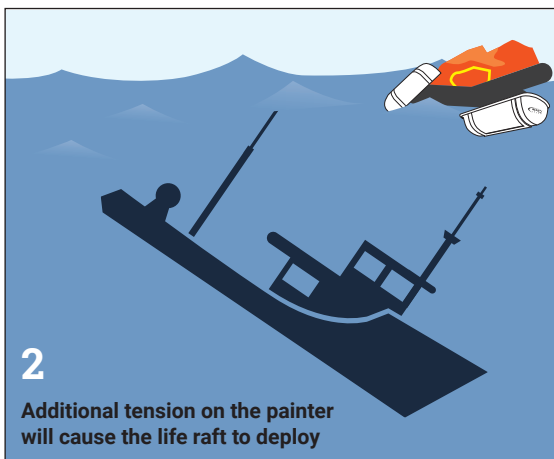
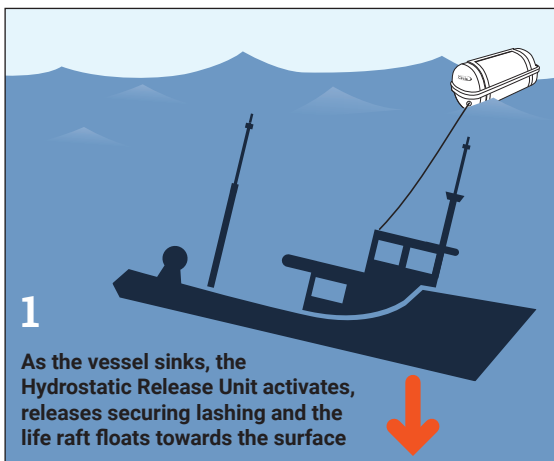
1. Always store the life raft in a dry and easily accessible location. Ensure that it is not stowed close to any source of heat (e.g. engine or generator) or in proximity to oil products such as diesel, petrol/gasoline.
2. Valise packed life rafts are made from a heavy polyurethane fabric and to avoid excessive wear, store securely so that it does not move around in its stowage compartment. Also ensure that nothing heavy or sharp shares the same compartment as this could cause damage. Improper stowage may cause damage to the life raft or its contents.
3. Ensure that your raft is readily accessible and that handles are free and uppermost before any passage. When transporting, always carry the life raft by its handles.

**IMPORTANT: Before deployment ensure that the painter line is attached to a strong point on the vessel.**

# Hydrostatic Release Unit (HRU)

HRUs are regularly installed as a component of the lashing system that secures a canister packed life raft to a vessel's deck or launching structure. In a vessel sinking emergency, water pressure alone is sufficient to operate the release mechanism to free a life raft for deployment, without any human input. The releasing system does not depend on a pyrotechnic device or a battery to release the life raft or life boat.

At a depth of between 1.5 to four metres, water pressure depresses an internal diaphragm within the device. This operates the cutting mechanism within the release housing that secures the life raft container to its cradle or mounting position.



The life raft will then float free of the sinking vessel and rise towards the surface with the raft's painter line paying out as the vessel continues to sink. When all the free length of painter line is paid out, the inflation mechanism of the life raft is activated; the life raft inflates and continues to rise towards the surface.

At this point of inflation, the weak link on the HRU breaks, frees the painter line and allows the life raft, now completely unattached to the vessel, to continue to float to the surface, ready for boarding.

Most HRUs are maintenance free and have a 2 – 3 year service life. The device should be replaced with a new unit on reaching its service expiry date.

## Installation guide for liferafts



1. Attach the top connection point with a shackle to life raft lashing or slip hook.
2. With the aid of a shackle, connect the life raft's PAINTER LINE to Weak Link as shown in the illustration.
3. Attach the bottom connection point with a shackle to vessel's deck or mounting cradle.

## 6

### Up to three year extended service interval

Your Great Circle Life Raft is vacuum sealed in a rugged plastic envelope and lays inside its hard fibreglass canister or valise carry bag. Hermetic storage provides extra protection and extended servicing intervals and ensures your life raft is ready for any emergency.

Since life rafts contain many degradable components, we recommend the following minimum service schedule:

1st service – within 3 years

2nd service – within 3 years of first service

3rd service – within 3 years of second service

4th service – within 3 years of third service

5th and subsequent service intervals – not exceeding one year

Some marine authorities and boating organisations require life rafts for commercial vessels under survey requirements and yachts engaged in racing be serviced annually or at specified regular intervals. Great Circle Life Rafts will be pleased to advise you of your servicing requirements in these Instances.

Servicing of Great Circle Oceanmaster Life Rafts should be carried out by an authorised Great Circle Life Raft service facility. Call us at Great Circle on: 1300 306 381 (Australia wide), email to: [sales@greatcircleliferafts.com.au](mailto:sales@greatcircleliferafts.com.au) or visit our web site: [www.greatcircleliferafts.com.au](http://www.greatcircleliferafts.com.au) and we will be pleased to assist you further.

## 7

### 12 Year guarantee

We guarantee quality because we know that when you're miles out at sea, your life may depend on our craftsmanship. Our confidence in the quality, workmanship and reliability of our life rafts allow us to provide a 12 year guarantee (conditional) for all the life rafts we manufacture, provided they undergo inspections at required intervals in a Great Circle Life Raft's approved service facility. The guarantee is valid only on return of the guarantee card and subject to the terms and conditions therein.



## 8 What to expect on deployment of the life raft



On smaller commercial and private vessels an inflatable life raft is usually launched by throwing or pushing the entire container or valise overboard and pulling its lanyard to initiate the inflation mechanism.

At least 8 metres of painter line will need to be pulled out from the container of either life raft type before this action activates a compressed gas cylinder which inflates the various air chambers that make up the life raft. The life raft will inflate quickly, with excess gas gushing out of the safety relief valves. A common initial reaction is that there is a fault with the life raft, but in fact all life raft cylinders carry much more compressed gas than the life raft actually needs for full inflation. This excess gas is discharged from the safety valves and is evidenced by a whistling sound.

The sea anchor (drogue) will stream automatically on deployment with some life raft types and on others it will need

to be manually set on boarding - it will lay folded on the floor. The drogue will hold the raft up to the wind and waves and significantly reduce the chances of capsizing. It should also tend to keep the raft's opening to the lee of the weather.

After inflation, both the exterior locator flashing strobe light and interior illumination light will activate automatically. After boarding both lights are individually controllable by switches on the battery pack.

A raft is designed to inflate the right way up - because of the weight of the compressed gas cylinder and equipment pack - but there is a small chance that it may inflate upside down. It may be possible to right an upside-down life raft from the vessel, but if that fails, it will need to be done from the water with the aid of the instructions following later in this manual.

When crew members are ready to board,

they should remove shoes and sheath sharp objects. The golden rule of survival is to stay dry. Try to step straight into the raft from the stricken vessel. But circumstances may see survivors in the water and the need to board from the water.

Some people may find it difficult, without assistance, to get over the high freeboard of the buoyancy tubes even with the aid of an entrance ramp or ladder and support bridle. If possible, more able survivors should enter the life raft first and assist others, including with the aid of the rescue quoit and line thrown to survivors more distant to the life raft.

On entry, the life raft's emergency equipment pack will be found securely lashed to one side of the life raft's interior. Loose items, including rations, flares and torch are contained within this heavy duty nylon case with zipper closure to prevent loss. Paddles, bailer, rescue quoit and safety knife are individually tethered or stowed in dedicated pockets on the buoyancy tubes for quick access at all times after boarding.

Once all crew are safely aboard, it will be necessary to disconnect the painter and paddle clear of the stricken vessel. If fitted, and as soon as possible, erect and deploy the radar reflector and the Search and Rescue Radar Transponder (SART) according to instructions within their stowage cases. The radar reflector and SART along with retro-reflective panels on the body of the life raft will greatly assist detection by search vessels and aircraft. A check to see that the sea anchor is streaming correctly should occur promptly and remains an ongoing priority to oversee. The sea anchor will significantly reduce drift and capsize potential.

When the life raft is fitted with an inflatable floor, this will need to be manually inflated with the aid of the hand bellows, located within the life raft's equipment pack. The inflation/topping up valve is specially marked on the life raft's floor. The other life raft floor type consists of composite aluminium, cellular foam and rubber underside and no further action is required. In both cases, the insulated floor will offer greater seating comfort and lessen the effects of cold ingress from the water below.

Whenever possible, survivors should place themselves around the perimeter of the life raft – to increase stability and reduce overturning potential in rough weather.

Thereafter maintaining the life raft, familiarising everyone with the contents of the emergency pack, watching for rescuers and achieving best possible comfort levels for all on board will become the ongoing routine.

## **Abandoning Ship is a Harrowing Experience**

There is no doubt that a vessel emergency that sees survivors' take to a life raft is an extremely stressful undertaking for all on board. Some survivors may also suffer shock reactions where they impulsively abandon all hope rather than strive for survival. Those survivors should be vigorously supported and offered encouragement. In reality the situation is far from hopeless as modern life rafts are designed and equipped to save all those on board. Thankfully, they have proved their worth on countless numbers of occasions.

## 9 Emergency equipment packs

All Great Circle Life Rafts come fitted with an emergency pack. Their contents comply with specifications laid down by marine authorities, boating organisations or specific request from customers.

What is generally referred to as NSCV Pack (ISO Over 24 hr.) contains emergency items required by vessels operating under Australian State Government Marine Authority survey standard, for example, commercial vessels and charter boats.

Vessels operating under Australian Maritime Safety Authority (AMSA) requirements and commercial vessels engaged in international charter, international passage making or trade usually have emergency equipment packs that comply with SOLAS standards.

Open Reversible Life Rafts installed on commercial vessels are required to have emergency equipment packs that comply with local marine authority requirements – usually HSC Code (ORL) packs.

LIFE RAFT EQUIPMENT		ISO Under 24hr Pack	ISO Over 24hr Pack	Voyager Pack
Emergency Equipment inventory		Qty	Qty	Qty
Bailer	Use to remove water within the life raft	1	1	1
Bellows and connection tube	Use to manually inflate or top-up buoyancy tubes	1	1	1
Sea anchor (drogue) & 30 metres of line	Use to reduce drift and capsize potential. When two are fitted, one is permanently attached, the second spare	1	1	1
Safety knife	To cut lines etc. Fixed blade with safety rounded point.	1	1	1
Life raft repair kit (Conical leak stoppers, clamps)	Use to repair damage or leaks to buoyancy tubes	1	1	1
Rescue quoit & line	30 metre line and quoit attached to safety line to assist survivors in the water	1	1	1
Radar reflector (SOLAS)	Use to assist searching vessels and aircraft. To be erected on boarding	0	0	0
Paddles	Use to manoeuvre life raft	2	2	2
Adsorbent Sponge	Use to remove condensed water from the life raft floor etc.	2	2	2
Life raft operation & survival instructions	A copy of this manual is included within pack	1	1	1
Lifesaving signal code guide	Internationally recognized visual signs to relay messages to rescuers	1	1	1
Lighting system (exterior & interior)	Automatically operates on inflation with manual on/off switches for day or night	2	2	2

<b>SIGNALLING EQUIPMENT</b>		ISO Under 24hr Pack	ISO Over 24hr Pack	Voyager Pack
Emergency Equipment inventory		Qty	Qty	Qty
Hand flare, red	Day or night distress signal	3	6	3
Smoke Signal, orange (SOLAS)	Daytime distress signal	0	0	0
Parachute rocket flares, red (SOLAS)	High altitude day or night distress signal	2	2	2
Signalling whistle	Use to attract attention	1	1	1
Signalling mirror/heliograph	Long range hand-held signaling mirror. Aims reflected sunlight to rescuers	1	1	1
Torch, spare batteries & bulb	Use for illumination and signaling	1	1	1
EPIRB (406 MHz digital)	Satellite signaling beacon. Minimum 48 hour operational life	0	1	0
SART (Search & Rescue Radar Transponder)	Electronic device reacts to the emission of a radar pulse	Fitted on request	Fitted on request	Fitted on request

<b>CREW EQUIPMENT</b>		ISO Under 24hr Pack	ISO Over 24hr Pack	Voyager Pack
Emergency Equipment inventory		Qty	Qty	Qty
Water, 500ml sachets		1	3	2
Food, 10,000 kj (per person) (SOLAS)	High energy food, each 10,000 kj. pack contains 8 x food bars	0	1	1
Drinking cup	Use to ration water consumption	1	1	1
Can opener	Use to open canned food etc.	1	1	1
Plastic bags, sealable (per person)	Use for personal hygiene, seasickness etc.	1	1	1
Sunburn cream Sun factor +30	Use to prevent sun damage or sooth skin	0	2	2
Seasickness tablets (per person)	Use to lessen effects of motion sickness	6	6	6
Fishing kit	Use to catch fish or birds	0	1	1
First aid kit (NSCV or SOLAS compliant)	Use to support injured or sick survivors	0	1	1
Thermal protection aid	Use to reduce heat loss of injured or effected survivor	0	2	0
Water resistant notebook & pencil	Use for logging ration usage etc.	1	1	0

**Please note: This Emergency Equipment Pack Inventory is provided as a guide only – contents may vary according to the area in which the vessel is engaged, intended usage of the vessel or by specific requirements. Always check the life raft's Certificate of Service and its actual Equipment Inventory contents for an accurate listing.**

## 10 Deploying and using your life raft in an emergency situation



- 1** Put on as much warm clothing as possible, making sure to cover head, neck, hands and feet. If an immersion suit is available, put it on over warm clothing. Put on a lifejacket and secure it properly.
- 2** Send a mayday by radio transceiver or telephone and seek acknowledgement if possible. Activate an emergency beacon (EPIRB) - if this has not already been done.
- 3** Ready the emergency abandon ship kit including additional water and blankets. Any available flares, EPIRB and portable two-way VHF radio should be taken aboard the raft.
- 4** Taking seasick tablets is highly recommended as most people suffer some motion sickness on boarding their life raft.
- 5** When ready to board, remove shoes and sheath sharp objects.
- 6** Don't launch the raft too early; in rough weather it will be difficult to hold alongside for long.

# Priority actions

## 1. Ensure the life raft's painter line is attached to a strong point on the vessel.

### **Throw or release canister overboard & pull painter to start inflation**

Ready the life raft for deployment by removing the lashing on the slip hook that secures the canister to its storage cradle. Pull out a length of painter line from the container and check that the painter's end is firmly attached to a strongpoint on the vessel. If necessary, reposition the canister and then throw or drop the entire canister overboard. Pull on the painter line until the remaining line is extracted from the canister (this line is at least 8 metres long). A final sharp tug will trigger the automatic inflation of the life raft. After inflation, secure the life raft against the vessel for boarding.

### **DO NOT deploy the life raft on deck as sharp objects may damage it.**

## 2. Board life raft

Transfer any additional gear and survival supplies from the stricken vessel to the life raft. If possible try to stay dry. Crew members should board the life raft by ladder or rope from the stricken vessel or by jumping into the entrance if height is not excessive. From the water, try to board the life raft as soon as possible in order to shorten the immersion time and subsequent body heat loss. Remember, cold is the greatest killer in maritime emergencies. Enter the life raft with the aid of the boarding ramp or ladder. Crew members should pull themselves up and slide into the raft head first. The internal lifelines may help survivors pull themselves all the way in. If required, throw rescue-quoit and attached line to other survivors in the water and haul them to the life raft. Disabled or unconscious survivors should be lifted under their armpits and slid backwards into the life raft. External locator light and internal light will turn on automatically when the life raft is fully inflated. During daylight, turn lights off at the marked on/off switches on the battery pack. Erect and attach radar reflector as soon as possible.



### 3. Ready life raft to be freed from stricken vessel

Check the life raft is functional and that both buoyancy tubes and arch are correctly inflated. If the stricken vessel is still afloat, remain secured to it unless fire, risk of explosion, imminent sinking or some other danger means it is advisable to sever the painter line. A disabled but floating vessel will always provide a greater search target for rescuers than will a life raft. If the decision is made to disconnect the painter, untie it from the vessel or use the safety knife stowed in the pocket next to the raft's entry. Try to save as much line as possible. Get away from the stricken vessel by using the paddles provided within the equipment pack.

Close the safety valves with the attached rubber plugs as soon as the over-pressure from the inflation process has dissipated.

Tie multiple life rafts together as there is safety in numbers including more survival gear and expertise to share and it is easier to spot two life rafts than one.

### 4. Deploy drogue (sea anchor) and close entrances

Check that the drogue has deployed – this should occur automatically. Its primary role is to help the raft resist capsize but life rafts can drift rapidly and the drogue reduces the rate of drift and assists searchers by reducing the raft's distance from the distress position. In hostile weather close entrances when everybody is inside.

### 5. Tend crewmembers injured or in a state of shock

Keep victims as warm and dry as possible and, if necessary, refer to first aid kit provided within emergency pack.

## Subsequent Actions

### 1. Bail out water inside the life raft

A bailer and sponges are provided to assist in drying the raft's interior.

### 2. Adjust ventilation

Ensure good ventilation at all times and adjust entrances and ventilator(s) to suit current conditions. By varying the point of attachment, the drogue can be used to alter the position of the raft's openings relative to the seas, allowing more shelter or better ventilation.

### 3. Open emergency pack

Familiarise every crewmember with the contents and function of items within the emergency pack. When not required, lash down all gear so nothing is lost if the raft capsizes or is swamped.

### 4. Activate EPIRB

Confirm EPIRB is working and leave it on; don't switch it off until advised to do so by rescuers.

### 5. Establish a watch system

One hour watches in pairs is recommended, one person should be on duty as outside lookout and the other on duty inside, responsible for the life raft, water catchment etc.

### 1. Nominate someone to take charge

Good leadership and high morale are crucial for survival. A good leader takes on the responsibility of keeping the other survivors as organised, calm and comfortable as possible. Taking to a life raft is an extremely stressful undertaking and the emergency may cause some survivors to go into shock. A good leader will point out the situation is far from hopeless and that the life raft is designed and equipped to save all those on board.

### 2. Take seasickness tablets as soon as possible

Even hardened sailors are almost certainly going to be seasick in a life raft. Seasickness interferes with your chances of survival by loss of precious body fluid, incapacitation and greater vulnerability to hypothermia.

### 3. Establish a routine

The discipline of a routine focuses attention on the positive work of survival and ensures that essential tasks are done.

#### **Suggested routine;**

- Watch for ships, aircraft, other survivors and useful wreckage.
- Flash the signalling mirror all around the horizon when there is sunshine – rescuers can see your flashes before you can see them.
- Look for signs of land.
- Maintain the life raft – tube inflation, a dry floor, adequate ventilation, equipment, etc.
- Track rations consumption.

### 4. Water and Food Use

Other than injured persons, healthy survivors should drink no water on the first day as the body has sufficient water content and further consumption will only cause the excess fluid to be passed as urine. Withholding water consumption will also cause the body to activate water saving mechanisms. Thereafter allow  $\frac{1}{2}$  litre per person per day, using the marked measure to ration. Water rationing should be at the discretion of the leader after due consideration of the water quantity in store, expected time before rescue and the possibility of rain. Drink water in sips throughout the day to minimise urination. When drinking, the lips should be wetted first and the inside of the mouth and throat moistened by gargling before the water is swallowed. Collect rain water when possible and use this before the sachets. Maintaining your body's water balance is a prime requirement of survival as water is the major constituent of our bodies. Water is a higher priority than food. You can probably live for weeks without food, but your survival will be measured in days if you have no water. Food digestion drains needed water from your body and exaggerates thirst, so if water is in short supply, don't eat. Drinking saltwater will also promote water loss through the kidneys and intestines and shorten your survival time. A rainwater collector is incorporated into the canopy and a flexible tube on the inside allows rainwater to be collected in plastic bags or empty containers.

Food rations should be divided into small portions and eaten in the spread of the day. Each portion should be chewed thoroughly before swallowing.

*Flash the signalling mirror all around the horizon when there is sunshine – rescuers can see your flashes before you can see them.*

#### **5. Do not smoke**

Smoking may provoke seasickness and increase thirst. Obviously, any open fire on-board increases the risk of damage to the life raft.

#### **6. Protection against cold and heat**

To stay warm, survivors should sit or lie closely together. Inflate the floor using the hand pump to minimise contact with the sea below. It is more beneficial to protect against the cold beneath than the cold above.

To lessen excessive heat, deflate the floor to maximise cooling effects from seawater. Open entrance(s) to promote ventilation.

#### **7. Avoid exposure to strong sunlight**

#### **8. Arrange suitable sanitary arrangements**

Attempt to keep life raft interior clean.

## 1. Buoyancy Tube Pressure

After the life raft has been in use for some time, or with the transition from daytime to night (and subsequent cooler temperatures) it may become necessary to top up the pressure in the two buoyancy tubes and the canopy arch. Use the hand bellows and connecting tube provided in the equipment bag and inflate them until the buoyancy tubes and arch tube have become firm. Top-up valves are fitted to both buoyancy tubes just inside the entrance and on the arch tube. After topping up the tubes, cap the valves.

**Note: Pressure relief valves fitted on the outside of the raft may operate and emit a whistling sound when releasing excess gas pressure.**

## 2. Life Raft Repairs

If a leak is discovered in a buoyancy tube, immediately repair it by sticking on a patch, or by screwing in one of the conical leak plugs, or by applying a repair clamp from the repair kit.

When using glued patches wipe the area dry and roughen the rubber thoroughly with the abrasive cloth supplied. Apply two layers of glue on both the raft and patch and then press the patch onto the damaged area. Use a hard object to squeeze out any trapped air, working from the patch centre to the outer edge.

Carefully top up with the bellows after repairing. If one buoyancy tube is deflated, the other tube will keep the survivors afloat. See fig. 1a & 1b.

### How to repair a damaged buoyancy tube

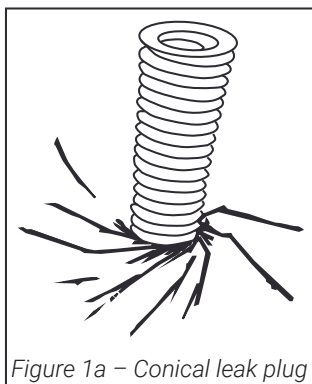


Figure 1a – Conical leak plug

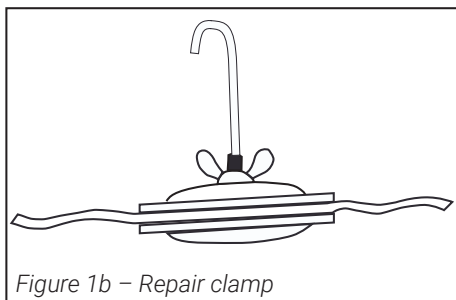
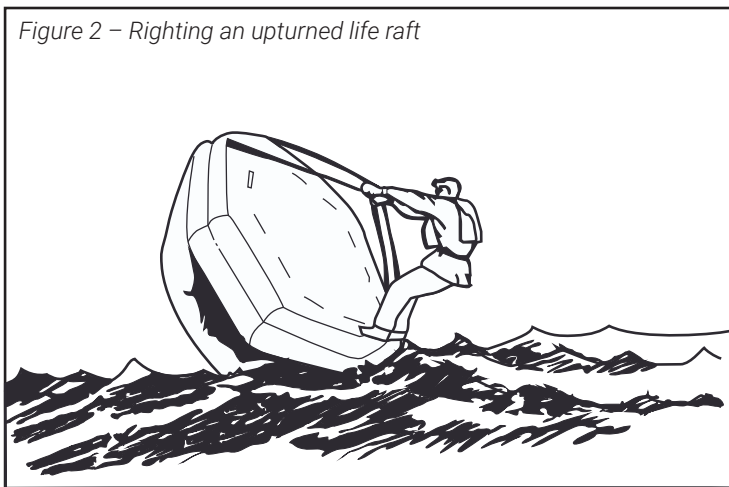


Figure 1b – Repair clamp

### 3. Overturned Life Raft

Although unlikely, in rough or windy conditions your life raft may overturn. One person can right a capsized raft if it is done quickly, before the canopy fills with water. To right the raft, swim to the side marked **RIGHT HERE** – this is the location of the heavy inflation cylinder. Turn the life raft canopy into the wind and reach up and pull on the righting strap using the cylinder pocket as a foot support. As the raft turns over, swim clear quickly. If the inverted canopy is full of water, the raft may be more difficult to right and more people may be required to pull on the righting strap. See fig. 2.

*Figure 2 – Righting an upturned life raft*



### 4. Canopy Lights

Your life raft is provided with two battery powered lights on the canopy. One light is fitted inside the canopy for low level, general illumination and for reading survival instructions. The second light is fitted outside on the centre line of the canopy's top. Its primary function is to aid survivors in the water and to assist other survivor craft or rescue vessels locate the life raft. On a dark night with good visibility, the light is visible for at least two nautical miles.

Both lights operate automatically on inflation of the life raft and will do so continuously for at least twelve hours. During daylight hours, conserve battery energy by means of the on/off switches on the battery pack or by disconnecting the power cables.

## Consult First Aid Kit for additional instructions

To be prepared for first aid responses, it pays to be a fully qualified doctor, paramedic or nurse. As most mariners don't have those qualifications, we must do our best to cope with emergency situations with as much knowledge as we can provide at the time.

### What is normal?

Age	Breaths per minute	Pulse per minute	Temperature by:	
			mouth	rectum
Infant (under 1 year)	30-50	up to 140	up to 37°C	up to 38°C
Child (1-8 years)	20-30	up to 100	up to 37°C	up to 38°C
Child over 8 yrs/adults	10-20	60-80	up to 37°C	up to 38°C

### 1. Hypothermia

Hypothermia occurs when the body's core temperature drops below 35° Celsius. It can occur if a person is in cold water for more than about 10 minutes. Indications are drowsiness followed by unconsciousness. Most drowning victims first suffer from hypothermia. Act quickly. Remove the wet clothing, lay the victim down and cover with blankets and wrap in a space blanket or Thermal Protective Aid. Cover the head and neck. If available, apply heat using hot water bottles or heat packs to neck, armpits and groin. Use body heat (hugging) to increase victim's body temperature. Give warm, non-alcoholic drinks often. Once improved, generate more heat through exercise.

#### *The Effects of Hypothermia on Most Adults*

Water Temperature °C	Exhaustion or Unconsciousness	Expected Survival Time
0.2	Under 15 mins	Under 15 – 45 mins
0.3 – 4	15 – 30 mins	30 – 90 mins.
4 – 10	30 – 60 mins	1 – 3 hrs.
10 – 16	1 – 2 hrs.	1 – 6 hrs
16 – 20	2 – 7 hrs	2 – 40 hrs.
20 – 27	3 – 12 hrs	3 hrs. to Indefinite
Over 27	Indefinite	Indefinite

### 2. Seasickness

Seasick survivors lose large amounts of body fluid through vomiting. It puts added demands on limited survival supplies and causes discomfort to other survivors. Protection against its onset is highly important. Seasickness tablets are tied to the hand-hold in the life raft. Adults may take three tablets with water in 24 hours, as required. Sufferers should breathe fresh air and have their faces wiped with a moistened towel as required.



### 3. Semi-Drowning

Act quickly to get air into the victim's lungs as soon as possible using **CPR – Cardio-Pulmonary Resuscitation**

1. Place the heel of your hand on the victim's breastbone at the centre of their chest. Place your other hand on top of your first hand and interlock your fingers.
2. Position yourself with your shoulders above your hands.
3. Using your body weight (not just your arms), press down by 5-6cm (2 – 2.5 inches) on their chest.
4. Keeping your hands on the victim's chest, release the compression and allow the chest to return to its original position.
5. Repeat these compressions at a rate of 100 to 120 times per minute.

#### **CPR with Rescue Breaths**

##### **(EXPIRED AIR RESUSCITATION (EAR))**

In addition to chest compressions, it may be necessary to give Rescue Breaths to further aid the victim.

After 30 chest compressions described above, give two rescue breaths by undertaking the following procedures:

1. Clear mouth and air passage by placing the victim on their side to allow any obstruction e.g. water, to clear.
2. Lay on back, tilt head back and lift chin.
3. Close the nose with your thumb and forefinger.
4. Take a deep breath and blow into the mouth, raising the victim's chest.
5. Remove your mouth and allow the chest to fall.
6. Repeat for two breaths, listening or feeling for exhaled air as the chest falls.



Check the victim's neck for a pulse. If there is a pulse, but no breathing, continue EAR. If you can't feel a pulse and the patient becomes blue-grey with dilated pupils, then the heart may have stopped. **Restart CARDIO PULMONARY RESUSCITATION (CPR)**

1. Continue compressions and breaths in a ratio of 30 compressions to 2 breaths (4 cycles per minute).
2. Check pulse every minute.

**Once breathing resumes or if vomiting occurs, place the victim on their side, in the recovery position and clear obstructions.**

### 4. Sunburn

When exposed to strong sunshine, areas of skin will soon blister and may become septic. Avoid long exposure to sunshine. Treat sunburn with burn or scald ointment.

### 5. Salt water Ulcers

Ulcers may form on the buttocks after prolonged life raft use. Change sitting position frequently and attempt to keep skin and clothing dry to prevent ulcer formation. Treat ulcers with skin ointment.

# 14

## Distress signalling

### 1. EPIRBs

EPIRBs (Emergency Position Indicating Radio Beacons) now stand side-by-side with radio as the best means of alerting rescue authorities to a vessel in distress. The endorsement of the International Maritime Distress and Safety at Sea (GMDSS) regulations, means that EPIRB distress transmissions are monitored by all seafaring nations of the world, and most importantly, are acted upon by those countries' rescue authorities.



## How an activated 406 MHz EPIRB or PLB quickly brings help

Upon turning on (activation), an EPIRB (Emergency Position Indicating Radio Beacon) or PLB (Personal Locator Beacon) transmits a unique, registered signal whose purpose is to alert search and rescue authorities of a possible emergency situation. Overhead, a special system of polar orbiting satellites called the COSPAS-SARSAT system detects and quickly routes the signal via a Rescue Coordination Centre (RCC) to local Search and Rescue teams, on land, water or air, who use the information to track and locate the ship or individual in jeopardy as rapidly as possible. As soon as the 406MHz digital signal is turned on, a second 121.5 MHz analogue signal is activated. This secondary frequency is used by SAR to home in on the beacon as they approach it.

A 406 MHz beacon transmits for a quarter of a second immediately when turned on and then transmits a digital burst of information once every 60 seconds thereafter.

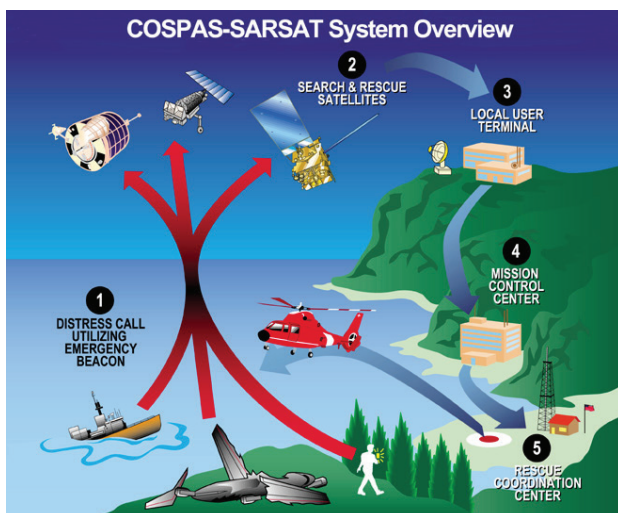
### Information transmitted includes:

- Which country the beacon originates from
- A unique 15-digit hexadecimal beacon identification code (a 15-Hex ID)
- The encoded identification of the vessel or aircraft in distress
- When so equipped, a GPS (Latitude/ Longitude) position

With new beacon purchases, the Hex Code should be registered with Australian Maritime Safety Authority (AMSA) - or other international authority. Registration provides Search and Rescue agencies with crucial information such as:

- Phone numbers to call
- A description of the vessel, aircraft, vehicle, or person (in the case of a PLB)
- The home port of a vessel or aircraft
- Any additional information that may be useful to SAR agencies

Registration information allows SAR agencies to start a rescue more quickly and the information provides a quick and easy way for the SAR agencies to check and eliminate false alarms.



## When activating and deploying a beacon in an emergency

Follow the activation steps described in the Operator's Manual

- Provide the beacon with a clear view of the sky above. Do not operate inside of a life raft or under a canopy
- Take the beacon with you if abandoning ship
- Tether the beacon with its lanyard to the life raft or person and allow it to float free. Do not hold the antenna
- Best signal transmissions are obtained by keeping the EPIRB or PLB upright
- Once activated, do not turn the beacon off for any reason, including the saving of battery power

*Once activated, do not turn the beacon off for any reason, including the saving of battery power*

## 2. Pyrotechnic Signals

There are only a limited number of pyrotechnic signals available within the emergency pack and these should only be used when there is a strong likelihood that they will be seen by potential rescuers.

Hold flares away from the life raft, on the downwind side if possible. Read pyrotechnic instructions fully before use. See fig. 3.

**Parachute Signals:** Use when there is good reason to believe that inhabited land, a possible rescue ship or aircraft is within the estimated visibility range of your signals.

**Hand Flares:** Use when the light of a ship, or aircraft, or lights onshore are visible to you. Red hand flares can also be used in daytime.

**Smoke Signal:** Use in daytime when a ship, or aircraft, or inhabited land is visible to you.

*Figure 3 – Sending a Pyrotechnic Distress Signal*



## 3. Sending an SOS

The international signal requesting urgent assistance is the Morse Code; SOS. Use the hand torch to signal as follows:

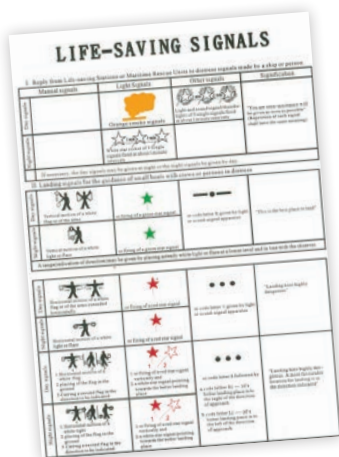
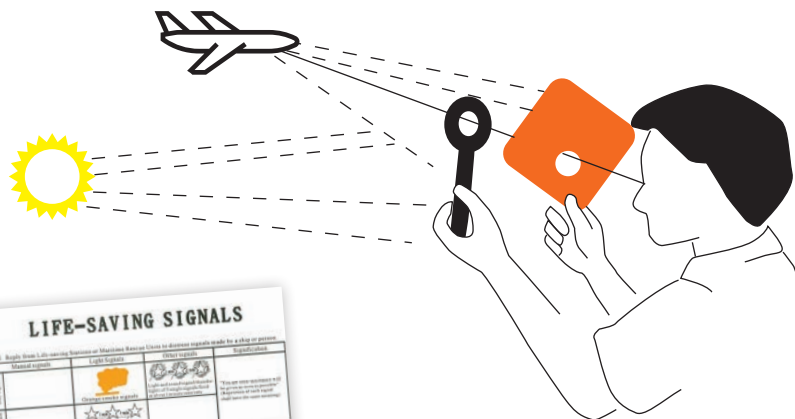
■ ■ ■ — — — ■ ■ ■ (Morse Code: SOS)

#### 4. Instructions for using a Signalling Mirror/Heliograph

The Heliograph is a highly polished mirror which reflects sunlight so as to attract the attention of a passing ship or aircraft. The Heliograph's mirror has an observation hole in one corner, around which concentric circles and cross lines are cut. It is used in conjunction with the bearing Sighting Key.

##### To use the Heliograph:

1. Place the Signalling Mirror lanyard over the user's neck
2. Hold the mirror in one hand and point toward the sunlight or light source
3. With the plastic Sighting Key in the other hand, position it so that it is in line with the mirror
4. Rock the mirror until the hole in the mirror centralizes on Sighting Key hole.
5. By aligning the two holes on the target, the light source beam is directed towards the target



#### 5. Life Saving Signals

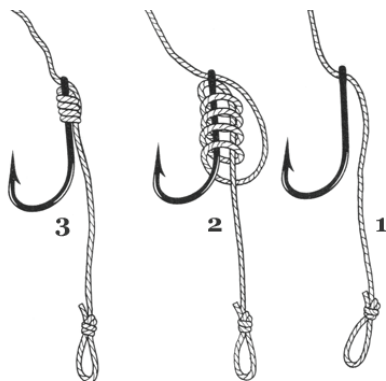
The illustrated Life Saving Signals Code card shows internationally recognised signals and their meanings and is used to visually communicate over distance via arm and hand gestures to search and rescue vessels and aircraft.

## Instructions for using emergency fishing tackle

Most fish species are edible except those with bristles or spines instead of scales and some tropical reef fish. These species may be poisonous. Remember however that eating fish to supplement food rations will include some salt intake and additional water rations are required. The emergency fishing tackle kit comprises hooks, lures and line.

- 1. Secure the end of the fishing line to a hand grip** in the survival craft or life raft, or to a belt loop on your life jacket to avoid losing the line and tackle should a fish strike.
- 2. Watch for schools of feeding fish.** Birds diving into the water will indicate the presence of such a school. Small fish jumping out of the water are another indication. Get as near to the school as possible and stay with it if you can. Small fish may also gather under the survival craft or life raft as it provides good protection from larger predators.
- 3. Imparting action to the lure may help hook the fish when they strike.**
- 4. When fishing with meat** or similar real bait, it may be necessary to let a fish take the bait in its mouth before giving a sharp tug on the line to set the hook. With artificial lures, set the hook as soon as you feel a strike.
- 5. Try for small rather than large fish.** If a caught fish is so large that tackle breakage is likely, slowly feed extra line through your fingers, always keeping a steady pressure on the line. The fish will soon tire, making landing easier.
- 6. When landing a fish, avoid line breakage** - use the life raft bailer, or some other aid to lift the caught fish aboard the survival craft or life raft.

### How to securely attach a hook



## 16 Rescue procedures

### Vessel Rescue and Towing

If the life raft has been spotted by a search vessel, prepare for rescue by donning life jackets and standing by to catch the life line thrown from the rescue vessel. This vessel will most likely approach and leave the life raft from the leeward side. If necessary, the life raft's drogue should be drawn in to prevent fouling of the rescue vessel's propellers.

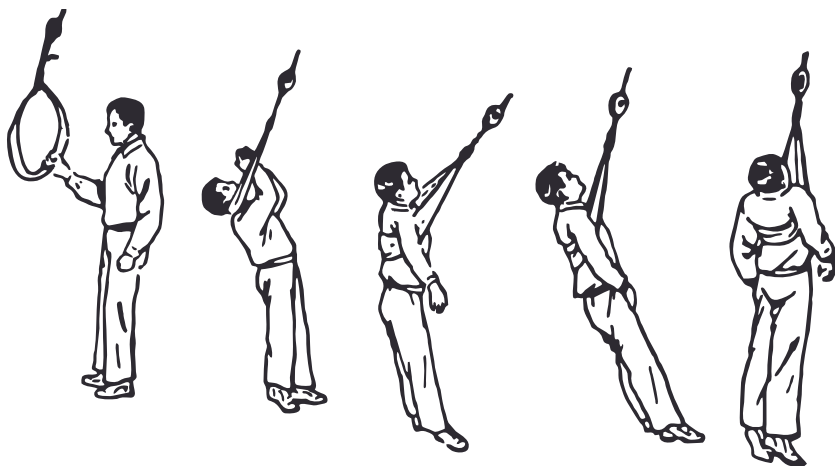
If the life raft needs to be towed during the rescue operation, the towing line should be connected to the painter line or the towing bridle (the painter is itself attached to this bridle). Do not use the hand lifelines attached around the perimeter of the life raft.

### Helicopter Rescue

Because of possible dangers to a helicopter rescue crew, it is advisable to collapse the canopy/arch structure to facilitate evacuation operations. The lower structure will also be less susceptible to rotor wind complications.

**When ready to evacuate, follow directions from the helicopter rescue crew;**

1. Point your arms upwards and through the rescue harness.
2. With the harness positioned under your armpits, adjust as tightly as possible.
3. Lower arms to waist or hold onto hoist connection and follow rescuer's directions



## **17 Evacuating sick or injured persons at sea from one vessel to another or to a helicopter**

Deploy the life raft as previously described and secure it beside the vessel. A crewmember should board the life raft and deflate the canopy arch by unscrewing the arch's Deflation/Topping-up valve. The sea anchor should also be deployed to stabilise and further secure the life raft. Place the victim in the life raft with an assistant. Use ropes to extend the painter line and allow the life raft to separate from the vessel to reach a safe rescue distance of 20-50 metres. Thereafter follow instructions from the rescue crew.

## **18 General maintenance of your stowed life raft**

Other than following the suggested service schedule, your Great Circle Life Raft will require minimum maintenance.

It is recommended that canister mounting installations be inspected weekly, or as a minimum, become an important part of offshore passage preparations. In particular, canister securing lashings should be checked for tightness and that the canister is properly fitted to the cradle. If necessary, adjust the canister and lashing accordingly.

Maintain the canister by cleaning it with fresh water and if stubborn grime is an issue add a small quantity of mild washing detergent. Automotive polish can be used to restore the shine on the canister. Avoid harsh chemicals.

We recommend that life rafts packed in valise carry cases (soft packs) be visually inspected externally at least annually by the owner or skipper for signs of damage which may lead to malfunction. Nevertheless, inspection intervals should always be governed by the vessel's usage and passage plans. A full service is recommended to be conducted within three years.

An occasional wipe down of the polyurethane case with a clean, fresh water dampened, cloth to remove any salt or grime is suggested. Do not use harsh cleaning chemicals.



## 19 Transportation of your life raft

It is recommended that a canister or valise packed life raft be transported in a horizontal position. Protective wrapping or placing the life raft in a transportation container is recommended. This action not only protects the life raft but the painter line cannot be inadvertently withdrawn from the life raft's case. Do not place any other equipment on the top of the canister or valise or its packaging.

Life rafts are classed as Dangerous Goods when being transported by commercial carriers. They fall under the following shipping criteria:

PROPER SHIPPING NAME: Life Saving Appliances, Self Inflating					
Contents	Classification	UN Number	Subsidiary risk	Packing Group	Marine pollutant
Marine Life Raft	9	2990	Nil	N/A	No

## 20 Service information

The identification label is located on the canister top or on the side of the valise case, and indicates life raft details including the date of the next recommended service inspection. This information can also be found on the life raft's Certificate of Service. This document accompanied the life raft.

### Life Raft Service

The steps involved in inspecting and servicing a Great Circle Life Raft are comprehensive and contained within an approved life raft service manual.

Servicing of Great Circle Oceanmaster Life Rafts should be carried out by an authorised Great Circle Life Raft service facility. Call us at Great Circle on: 1300 306 381 (Australia wide), email to: [sales@greatcircleliferrafts.com.au](mailto:sales@greatcircleliferrafts.com.au) or visit our web site: [www.greatcircleliferrafts.com.au](http://www.greatcircleliferrafts.com.au) and we will be pleased to assist you further.

Great Circle is also part of a global life raft service network and our rafts can be serviced at numerous locations around the world.

**We value and respect the confidence you have placed in  
your Great Circle Life Raft.**

**Your safety is always our top priority.**

**Great Circle Marine Pty Ltd**

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