
	SEAFARERS TRAINING CENTER	M-BPST(I)-02
	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

SEAFARERS TRAINING CENTER INC



Proficiency in Personal Survival Techniques

***In accordance to International
Convention on Standards of Training,
Certification and Watchkeeping for
Seafarers (STCW), 1978, as amended.***

	SEAFARERS TRAINING CENTER	M-BPST(I)-02
	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

AIM

The aim of this model course is to meet the mandatory minimum standards of competence for seafarers for safety familiarization, basic training and instruction in personal survival techniques in accordance with Section A-VI/1, and as set out in table A-VI/1-1 of the STCW Code.

Seafarers employed as part of a ship's complement, or engaged in any capacity on board ships on the business of those ships, with designated safety or pollution-prevention duties in the operation of the ship shall, before being assigned to any shipboard duties, receive appropriate approved basic training or instruction in personal survival techniques as set out in table A-VI/1-1 of the STCW Code.


OBJECTIVE

The objective is to provide trainees with guidance and information to gain knowledge, understanding and proficiency required to achieve the objectives of the learning outcomes to demonstrate their competence in personal survival techniques in accordance with section A-VI/1, and as set out in table A-VI/1-1 of the STCW Code.

The course syllabus covers the in table A-VI/1-1 of the STCW Code, and trainees successfully completing this course will gain knowledge and skills to be able to survive at sea in the event of ship abandonment.

Trainees should be able to demonstrate the ability to:

- Don a lifejacket.
- Don and use an immersion suit.
- Safely jump from a height into the water.
- Right an inverted liferaft while wearing a lifejacket.
- Swim while wearing a lifejacket.
- Keep afloat without a lifejacket.
- Board a survival craft from the ship and water while wearing a lifejacket.
- Take initial actions on boarding survival craft to enhance chance of survival.
- Stream a drogue or sea-anchor.
- Operate survival craft equipment.
- Operate location devices, including radio equipment.

	SEAFARERS TRAINING CENTER	M-BPST(I)-02
	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

ENTRY STANDARDS

This course is principally intended as basic training for seafarers employed or engaged in any capacity on board a ship as part of the ship's complement with designated safety duties in operation of the ship. All trainees must certificate of good health

COURSE CERTIFICATE OR DOCUMENT

On successful completion of the course and demonstration of competence, a document may be issued certifying that the holder has met the standard of competence specified in table A-VI/1-1 of the STCW Code

COURSE INTAKE LIMITATIONS

The maximum number of trainees attending each session will depend on the availability of adequate numbers of instructors, equipment and facilities available to conduct the training. The course intake is limited by 15 trainees. The course will be dictated the theoretical part in the facilities of STC Dominicana and the practical part in the sea.

STAFF REQUIREMENTS


Instructors should be appropriately qualified in accordance with the provisions of section A-I/6 of the STCW Code for the type and level of training or assessment involved.

TRAINING FACILITIES AND EQUIPMENT

Suitable teaching spaces equipped with the relevant facilities should be provided to facilitate the effective delivery of training, which could be through lectures, group exercises and discussions, as appropriate.

EQUIPMENT:


- Lifebuoy ring
- Life Jacket
- Immersion suit
- Thermal Protective Aids
- Life raft
- S.A.R.T
- E.P.I.R.B.
- Bouyant Smoke Signal Orange
- Water rations
- Food rations

	SEAFARERS TRAINING CENTER	M-BPST(I)-02
	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

BIBLIOGRAPHY

[1] Sea Survival Handbook: The Complete Guide to Survival at Sea. 2008, by Keith Colwell, ISBN978-1-905104-31-4
Lifesaving appliances & Survival Techniques I.C.Brindle & Co. Ltd.


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	SEAFARERS TRAINING CENTER	M-BPST(I)-02
	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019


TIMETABLE

COURSE OUTLINE

COURSE OUTLINE	APPROXIMATE TIME (HOURS)	
	LECTURES	PRACTICAL ACTIVITY
1. SAFETY GUIDANCE AND INTRODUCTION TO SURVIVAL AT SEA	0.75	
12.1 Safety guidance 12.2 Principles of survival at sea 12.3 Types of life-saving appliances normally carried on ships 12.4 Introduction of SOLAS training manual 15.5 Safety symbols related to survival		
2. EMERGENCY SITUATIONS AND MUSTERING	0.75	
2.1 Types of emergencies 2.2 Muster list and emergency signals 2.3 Value of crew training and drill		
3. EVACUATION	0.75	
3.1 Abandoning ship – last resort 3.2 Abandoning ship – complications 3.3 Personal preparation for abandoning ship 3.4 Need to prevent panic 3.5 Crew duties to passengers 3.6 Crew duties - launching survival craft 3.7 Master's orders to abandon ship		
4. PERSONAL LIFE – SAVING APPLIANCES	0.75	2.25
4.1 Lifebuoys 4.2 Lifejackets 4.3 Immersion suits/anti-exposure suit 4.4 Thermal protective aids 4.5 Personal survival kits and group survival kits		
5. SURVIVAL CRAFT AND RESCUE BOATS	0.75	1.50
5.1 Lifeboats 5.2 Liferrafts 5.3 Rescue boats		


	SEAFARERS TRAINING CENTER	M-BPST(I)-02
	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

COURSE OUTLINE	APPROXIMATE TIME (HOURS)	
	LECTURES	PRACTICAL ACTIVITY
6. SHIP ABANDONMENT AND SURVIVAL	0.75	3.00
6.1 Actions to be taken when required to abandon ship 6.2 Actions to be taken when in the water 6.3 Actions to be taken when aboard a survival craft		
7. EMERGENCY RADIO EQUIPMENT	0.75	0.75
7.1 Two-way VHF 7.2 Emergency position-indicating radio beacons (EPIRBs) 7.3 Search and rescue transponders (SART/AIS-SART)		
8. SURVIVOR'S ACTION WHEN BEING RESCUED	0.75	0.75
8.1 Communicating with the rescue ship and helicopter 8.2 Survivor's preparation before being rescued 8.3 Actions to be taken by the survivor when being rescued by ship 8.4 Actions to be taken by the survivor when being rescued by helicopter		
EXERCISES		0.75
SUB-TOTAL TRAINING HOURS	6	9
TOTAL TRAINING HOURS	15 HOURS	

	SEAFARERS TRAINING CENTER	M-BPST(I)-02
	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

COURSE TIMETABLE

	1st PERIOD (1.5	2nd PERIOD	3rd PERIOD	4th PERIOD
DAY 1	1. SAFETY GUIDANCE AND INTRODUCTION TO SURVIVAL AT SEA 2. EMERGENCY SITUATIONS AND MUSTERING	3. EVACUATION 4. PERSONAL LIFE – SAVING APPLIANCES	4. PERSONAL LIFE – SAVING APPLIANCES (continued)	4. PERSONAL LIFE – SAVING APPLIANCES (continued) 5. SURVIVAL CRAFT AND RESCUE BOATS
DAY 2	5. SURVIVAL CRAFT AND RESCUE BOATS (continued)	6. SHIP ABANDONMENT AND SURVIVAL	7. EMERGENCY RADIO EQUIPMENT (continued)	8. SURVIVOR'S ACTION WHEN BEING RESCUED THEORETICAL EXERCISES

	SEAFARERS TRAINING CENTER	M-BPST(I)-02
	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

CHAPTER 1: SAFETY GUIDANCE AND INTRODUCTION TO SURVIVAL AT SEA


The International Treaty on Norms of Formation, Degree and Guard for the sailors, 1978 was adopted by the International Marine Organization in 1978. This Agreement didn't go into effect until 1984 due to a slow process of acceptance by the state members in the Convention. In 1992, the Agreement was ratified by many governments (Administrations). The state members in the convention recognized that it was necessary to do a complete revision, and this was quickly fulfilled. The Agreement was reviewed and was signed in April of 1995; this revision was called STCW - 95 (for its initials in English for Standard of Training, Certification and Watchkeeping for Seafarers)

The revision to the Agreement STCW was necessary due to the great number of accidents that could be attributed to human factors; there was a big gap that still existed partly because of the competition for the change of supplies of the crew and to the variable quality of the education and systems of training. Although this contained some good principles, it was not specific enough to be implemented properly. Mainly, it didn't provide enough aid for the implementation and control on the part of the authorities. The Code STCW95 established certain minimum requirements for seafarers. The new requirements took effect on February 1, 1997. The requirements of basic training apply, in particular, for those who begin their training after August 1, 1998.

Objective of the course:

The Objective of the Personal Survival Techniques Course is to enable the participant with the standard required as per Section A VI/ 1-1 of the Code STCW 95. At the end of the course the participant should:

- Know the types of urgent situation that can take place on board of a ship
- Know the types of life saving devices on a lifeboat and their use
- Know the survival boats and their use
- Know the location of the personal devices of rescue
- Know the principles related with survival at sea

	SEAFARERS TRAINING CENTER	M-BPST(I)-02
	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019


- Know the importance of the formation exercises

Some instructions during emergency situations:

1. Immediately upon boarding the vessel, each person should familiarize himself with his assigned location in the event of an emergency.
2. All crew members should be thoroughly familiar with the duties they are assigned to perform in the event of an emergency.
3. All persons should participate in emergency drills and should be properly dressed including properly donned life preserver or exposure unit
4. In all vessels carrying passengers, the STEWARD DEPARTMENT shall be responsible for warning passengers, seeing that passengers are properly dressed and have correctly donned their life preservers, assembly and directing passenger movement and ensuring that a supply of blankets be taken to the lifeboats.
5. The proper chain of command is indicated by the sequential numbers assigned to each department. Should a key person become disabled the next senior member of the department must take over the disabled person's place.
6. The Chief Mate should be responsible for the maintenance and readiness of lifesaving and firefighting appliances and equipment above the main deck.
7. The First Assistant Engineer must be responsible for the maintenance and readiness of all lifesaving and firefighting appliances and equipment on the main deck and below.

The main life-saving appliances normally carried on ships:

- Lifebuoys
- Lifejackets
- Survival craft
- Rescue boat
- Immersion suit/anti-exposure suit (AES)
- Thermal protective aids

	SEAFARERS TRAINING CENTER	M-BPST(I)-02
	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

- VHF radio: navigation and communication equipment (echo sounder, lead line, safety check cards, up to date charts and maps, VHF, GPS, emergency VHF antenna, etc.)



- Flares




- First aid kit



- Serviced fire extinguisher for each accommodation space.
- Medicines



	SEAFARERS TRAINING CENTER	M-BPST(I)-02
	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019



Requirements of the STCW Convention 78', as amended.


The basic training applies for those members of the crew of registered ships, engaged in any function on that ship, as an elementary part of the operations, and with specific and designated obligations of security and prevention of the contamination. There are four main elements of basic formation that include:

- Techniques of personal survival
- Prevention and fight against fires
- Elementary first aid
- Personal security and social responsibility

CHAPTER 2 EMERGENCY SITUATIONS AND MUSTERING

2.1. Types of emergencies:

Fire, collapse, or injuries are constant dangers on board a boat on the high seas. The difference between a marine urgency and a marine disaster is often determined by the

	SEAFARERS TRAINING CENTER	M-BPST(I)-02
	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

organization training and teamwork of the crew. These three things don't happen by chance but through training.

The types of chances and the way to act such in as well as the procedures in case of surviving at the time of leaving the boat will be treated here.


Emergencies can be very different, and even the same emergency can present different characteristic as for its causes, it's importance, the means of combating it and its consequences. There are emergencies that can happen when the ship is on the sea and also, they can equally happen in port.

There are emergencies that have a component of speed that is to say, they happen quickly and it is necessary to make decisions quickly. Others have a slower process. There are occasions in that an emergency gets complicated because of outside influence or human behavior. The abandonment of a ship is for example, a very different operation in bad weather and decisions have to be made as to whether it is a good time or bad time to abandon.

2.1.1. Emergencies that lead to abandoning ship:


In an emergency in port it is possible to have attendance of the port services to reduce their effects, as to injuries to people and material damage.

- **Fire:** When the ship is moored to the wharf, it is very probable that any fire outbreak will be extinguished with the aid of the fire equipment onshore. When the ship is anchored, it is possible that it will also have the aid of tugboats to fight the fire, in addition to the services of its own firefighting crew.

	SEAFARERS TRAINING CENTER	M-BPST(I)-02
	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019




- **Hull failure:** When water penetrates in the interior of the ship, the case of a flood of the interior compartments of the ship can cause the ship to sink. When the ship is tied to the wharf, the sinking usually is not total, since the openwork of the ports allow that the ship leans back in the bottom without sinking completely, although this depends on the port and of the size of the ship.
- **Collision:** is called when two ships have a more or less violent in undesired contact. When the ship is in port, the collisions are usually produced by errors or accidents during the maneuvers. These collisions take place at very low speed. An important risk is when one or both ships are tankers and the heat generated by the friction of the plates of a ship against those of the other one, can be enough to set on fire the hydrocarbons gases and to produce great explosions.

	SEAFARERS TRAINING CENTER	M-BPST(I)-02
	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019



- **Explosions:** when the ship transports merchandise that by the action of the fire can get to explode. The international code of dangerous merchandise indicates with great detail that other shipments are susceptible of explosion or big fire and gives norms for packing, labeling and stowing safely on-board vessels.
- **Shifting of cargo:** it is an emergency that doesn't cause personal damages, but it does to the waters and the environment. If it is a tank ship loading a dry cargo ship with fuel, it can happen that it continues putting products when the tank already has been filled, allowing the fuel to overflow and spill out into the sea. Sometimes it is possible to fully or at least partially contain the spill in cover by means of sand, wood, sacks, etc.
- **Run Aground:** this takes place when the ship strikes the sea bed or rocks unwittingly, mainly at its bottom.


	SEAFARERS TRAINING CENTER	M-BPST(I)-02
	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019



- **Foundering:** if the quantity of water that enters on board is not properly controlled, the ship will sink without remedy. The water that enters can be controlled by trying to close or to plug the water route or draining to the sea the water that penetrated on both operations.



- **Loss of the stability:** for failures in the calculations of stability or by the haste in loading the ship, or because load landslides have taken place for effects of the balances, the ship loses its capacity to correct itself after a balance. If it is not corrected, the ship ends up turning and it collapses. This is the main cause of disappearance of the ships and crews in the sea.

	SEAFARERS TRAINING CENTER	M-BPST(I)-02
	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

- **Man overboard:** this is always a risk, whether the ship is navigating at sea or is in port.




- **Others:** emergencies of industrial type that can be suffered on board: burns, injury due to incorrect handling of tools, suffocations due to entering confined spaces that are lacking in oxygen, freezing, excessive exposure in the sun, fractures of bones and dislocations, intoxications due to breathing toxic atmospheres, contact with corrosive liquids on parts of the body, nutritious and ethylic intoxications etc.

2.2. Muster list and emergency signals

2.2.1. Muster list:

The starting point of the Survival on board and the training of survival is the Muster List. The Muster List is a list of tasks and/or functions and alarm signs in situations of urgency for each one of the crew members of the ship; this chart or lists of functions it is a requirement demanded by the international Agreement of Security of the Human Life in the Sea, as well as National regulations.

	SEAFARERS TRAINING CENTER	M-BPST(I)-02
	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019


Com. Party		Type	Pts	Rider's Muster List							
				1	2	3	4	5	6	7	8
1	S	10									
1	S	10									
1	C	20									
1	S	10									
2	S	10									
2	C	20									
2	S	10									
3	C	20									
3	S	10									
3	S	10									
4	S	10									
4	S	10									
4	C	20									
5	S	10									
5	S	10									
5	C	20									
5	S	10									
Mill		40									
Home		40									
History		100									
TOTAL		300									

S = Soldier = 10 points C = Captain = 20 points
 Permission to reproduce this Muster List is granted to the consumer by the copyright holder. Copyright © 2003. All rights reserved. International Log on to: <http://stc.seafarers.com> and replacement Dispatch Cards.

The Muster List is prepared by the Official in charge of the Security on board the ship and signed by the Captain of the ship. Every time that a new captain ascends on board, one of his first duties is to prepare a new muster list. When a new crew member boards the ship, the crew member is assigned with a particular task and his name is put in the list; likewise, also the ship weighs anchor of port, he will have to conduct a shamle so that the new crew members become familiar with the procedures of emergency as well as the location of the different life saving devices. Copies of the muster list are located in places of common stay of the crew members like in their booths or lodgings, dining rooms, recess rooms, sailing bridge, machines room, etc.

2.2.2. Emergency signals:

The alarms are given on board to indicate the type of urgency. These alarms can either be given by the bell that it is listened within the ship or they can be emitted with the whistle of the ship that can be listened within the ship or in deck. The alarms are given by a combination of short or long

	SEAFARERS TRAINING CENTER	M-BPST(I)-02
	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

sounds or the continuous ringing. The following alarms are typical examples that can be used on board.


- **Fire alarms:** continuous short sounds with the whistle of the ship and with the bell for a period not smaller to ten seconds.
- **Man overboard:** three long sounds with the whistle of the ship that will be repeated several times. This is the international sign of the letter O for "Oscar" that means "Man overboard". There is not equivalent sign for this alarm.
- **Abandonment of the ship:** six or more short sounds or followed by a long sound with the whistle of the ship and the same sign with the bell of the ship.

2.3. Value of crew training and drill

The periodic exercises assure that all the crew members know how to use the survival equipment. They also serve so that the survival equipment is always available and under good conditions. It is vital to have:

- a. **A good organization of rescue with:**
 - A good list of personal obligations.
 - A task for each crew member.
 - Some good general signs.



	SEAFARERS TRAINING CENTER	M-BPST(I)-02
	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

b. A good formation in rescue and survival for:

- The effective putting in practices of the organization.
- The correct flexibility of the organization so it can face all dangerous situations.

CHAPTER 3: EVACUATION

3.1. Abandoning ship – last resort

The desperation and the distress can take us, in a situation of danger, to abandon our craft in a precipitate way and without adopting the minimum cautions of security.

- ✓ **Golden rule:** "the craft will be abandoned only when it offers less protection guarantees than any other means of survival, and never, if it is possible, without having emitted aid messages and adopting the preparatory basic measures of the abandonment."


There are two main reason to abandon ship:

- a. If your boat sinks.
- b. If your boat catches fire and the fire cannot be controlled.

If there is no grave danger of the boat immediately sinking, then stay with your boat because:

- It carries far more supplies than your liferaft
- It will probably offer better shelter from the elements
- You may be able to find a way to jury-rig a repair and improve your conditions
- It makes a much larger target for rescuers to see

The most important factor for the survival in the sea is determined by what is done when the abandoning the ship order is received or, if all communication is cut, when deciding for

	SEAFARERS TRAINING CENTER	M-BPST(I)-02
	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019


own initiative that the ship should be abandoned. The experience in the Pacific has demonstrated the advantage that the men have the shoes on when they abandon the ship. The shoes are a great disadvantage when swimming without the lifesaver vest, but the lack of them is lamentable once on land, in a desert. This is also seen in the case of being saved by a naval craft in tropical areas. The plates of the cover warm up so much by the sun that it is not possible to walk barefoot on them.

3.2. Abandoning ship – complications

To abandon the ship, it is necessary to wait that it stops; trying to use a boat lifeboat, only jumping in case it is impossible to get down with a hose, rope, net or stairs. Remember the to put on the gloves and to lower taking alternately with each hand and not slipping and burning the hands; they will be needed later. If it is necessary to jump, to cross the arms strongly against the lifesaving vest and after choosing a clear place below, jump with legs extended legs and the feet together. If you have to throw yourself without a boat or raft been lowered (in a sea not totally calm) do it on the windward flank. In that way the wind won't push the ship to the drift against you. You have to be careful not to be taken again to the ship by the sea. To avoid this, jump by prow or stern, the one that is closer to the water.

If the helixes still work, it jumps for the prow. Swim untiringly to move away from the ship surrounding the prow or the stern. Once the petroleum or other dangers are past, rest and swim or wade slowly, toward the nearest floating device or group of survivors. It is better to decide which way to go before throwing yourself to the water, because it is better seen from covert than from the water.

If there is fuel oil floating, it should be avoided in all the possible ways, maintaining the head high and the mouth closed. To swallow petroleum, make sick and if it penetrates in the eyes it will be swollen for a few days. Nevertheless, serious consequences have rarely been suffered by the contact of the petroleum in the sea, nor the wounds gave indications of delay in healing themselves.

	SEAFARERS TRAINING CENTER	M-BPST(I)-02
	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

If it is necessary to jump from the ship over petroleum on fire, the burns can be avoided if one is good swimmer, doing the following procedure that has been used with success. Jump through the flames with the feet down; he/she swims then under the water all the possible time, then leave the water impelling yourself with a strong kick (like the one made when playing water polo) and giving a wide stroke at the same time to separate the flames in order to breathe over the fire; then dive and continue swimming under the water. This way it has been possible to cross 180 meters of petroleum burning. For this it is necessary to get rid of the lifesaver and other annoying garments.

3.3. Personal preparation for abandoning ship

Don't leave boat until your boat leaves you! It is packed full of supplies and useful equipment that will aid your survival.


A few tasks, carried out before you abandon, may save your boat: emptying water tanks, therefore turning them into buoyancy tanks, closing the engine-cooling-water seacock, and disconnecting the raw-water feed and using the engine-cooling system to pump out the bilge.

3.4. Need to prevent panic

Logically every sea man will take advantage of any opportunity to learn how to swim. Nevertheless, to maintain the serenity is as important as to know how to swim. The lifesaving vest will sustain a man with all its clothes. Many have drowned because they lose serenity and moved in the water without any direction. Don't waste energy screaming or swimming unnecessarily. Swim or wade slowly toward a boat or raft or any floating device that can serve as support.

3.5. Crew duties to passengers

- The loss of heat in the water decreases a lot if one wears a lot of clothes. If you foresee to have to be in the water, it can be vital to get dressed with more clothes.
- In all moment the lifesaver vest should be worn.


	SEAFARERS TRAINING CENTER	M-BPST(I)-02
	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

- Emission of aid message, according to the radio-telephonic procedure, activation of the radio beacon.
- Stop the ship (if the raft is thrown into the water, it could be lost).
- Have ready rafts, hoops, vests, and all the material that will be evacuated including the radio beacon.
- Cover up well.
- Replace heavier footwear for other lighter.
- Adjust the vest correctly.
- Embark directly, if it is possible, in the raft. After embarking all the material and checking that the whole crew is there, cut the retainer that ties us to the craft.
- If it is necessary to jump into the water, do it standing, holding the vest, covering the nose and mouth.
- Distribute pills against the sickness.
- Steady all the material.
- Drain and dry the interior of the raft.
- Organize guard turns.
- To distribute all the weigh in the raft to avoid tipping over.
- Release the floating anchor.

3.6. Crew duties – launching survival craft

Prior to launching the liferaft:

1. Secure the painter to strongpoint – ask another crew member to check the knot. A round turn and two half-hitches is sufficient but any knot that holds will do.
2. Check that the water is clear of debris or the raft may be damaged as soon as it inflates.
3. Launch the liferaft to the leeward (downwind) side of boat.

	SEAFARERS TRAINING CENTER	M-BPST(I)-02
	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

Liferafts are heavy and difficult to manhandle – a six-man raft can weigh between 25kg (55lb) and 75kg (165lb) depending on its quality, type and contents. Launch them from as near to the stowage site as possible. It may need two people to lift the liferaft canister.

4. Pull the painter. It's likely to be up to 10 meters (33ft) long.
5. When the painter is fully extended, a sharp tug will trigger the gas inflation mechanism.
6. The raft will inflate in 30 to 60 seconds.

3.7. Master's orders to abandon ship

Don't leave your boat until your boat leaves you! It is packed full of supplies and useful equipment that will aid your survival.


A few tasks, carried out before you abandon, may save your boat: emptying water tanks, therefore turning them into buoyancy tanks, dosing the engine-cooling-water seacock, and disconnecting the raw-water feed and using the engine-coding system to pump out the bilge.

3.8. Main dangers to survivors

3.8.1. Main danger survivors face after abandoning the ship:

- **Survival in cold water:** body goes through four stages when immersed in cold water:

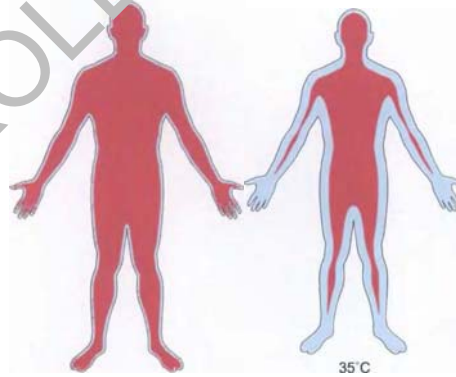
Length of Time immersed	Risks
0--3 minutes	Diving reflex and cold shock
3-30 minutes	Swim failure
More than 30 minutes	Hypothermia
Post-immersion	Hydrostatic squeeze. secondary

	SEAFARERS TRAINING CENTER	M-BPST(I)-02
	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

	drowning, post-rescue collapse (during and after rescue)
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Because the human body loses heat 26 times faster in water than in air, immersion in cold water can be extremely dangerous.

- Hypothermia:** occur in water of up to 24 degrees C and sets in as the core body temperature drops from 37 to 35 degrees C. In northern European waters in the summer, your survival time with clothing and lifejacket is between two and twelve hours. In winter, it ranges from several minutes to two hours. The exact length of time depends upon on the water temperature, sea state, clothing, gender, fitness, health, shivering rate and age of the person.



- Effects of seasickness:** be aware that there will be a great temptation to collapse into the liferaft and relax. Now's not the time to rest. Get organized before the cold saps your strength and your ability to use your hands.

If anti-seasickness medication has not been taken before boarding the raft, open the liferaft pack, find anti-seasickness tablets and take them now. Everyone must take one.

	SEAFARERS TRAINING CENTER	M-BPST(I)-02
	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

Seasickness is the nausea and vomiting caused by the motion of the raft.

It can result in:


- Extreme fluid loss and exhaustion.
- Loss of the will to survive.
- Others becoming seasick.
- Attraction of sharks to the raft.
- Unclean conditions.

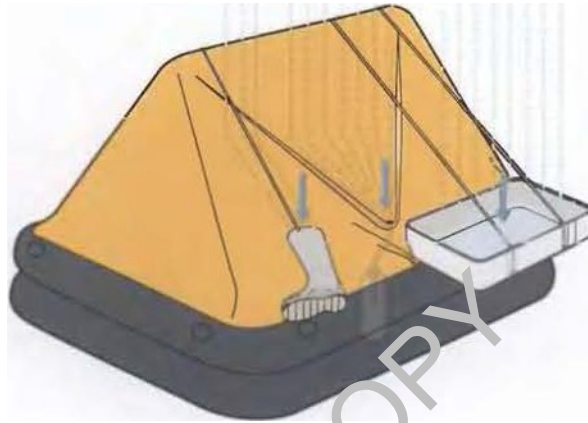
To treat seasickness:

- Wash both the patient and the raft to remove the sight and odor of vomit.
- Keep the patient from eating food until his nausea is gone.
- Have the patient lie down and rest.
- Give the patient seasickness pills if available. If the patient is unable to take the pills orally, insert them rectally for absorption by the body.

Some survivors have said that erecting a canopy or using the horizon as a focal point helped overcome seasickness. Others have said that swimming alongside the raft for short periods helped, but extreme care must be taken if swimming.


- **Water and food rationing:** for survival, the human body needs water more than food. Tests have shown that a person will live for only seven to ten days without water assuming there is no excessive fluid loss but can survive for 20 to 30 days without food.

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	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019



You can try to collect in a bottle the rain, that is a solution to dehydration.

- **Saltwater Sores:** these sores result from a break in skin exposed to saltwater for an extended period. The sores may form scabs and pus. Do not open or drain. Flush the sores with fresh water, if available, and allow to dry. Apply an antiseptic, if available.
- **Blindness/Headache:** if flame, smoke, or other contaminants get in the eyes, flush them immediately with salt water, then with fresh water, if available. Apply ointment, if available. Bandage both eyes 18 to 24 hours, or longer if damage is severe. If the glare from the sky and water causes your eyes to become bloodshot and inflamed, bandage them lightly. Try to prevent this problem by wearing sunglasses. Improvise sunglasses if necessary.
- **Constipation:** this condition is a common problem on a raft. Do not take a laxative, as this will cause further dehydration. Exercise as much as possible and drink an adequate amount of water, if available.

	SEAFARERS TRAINING CENTER	M-BPST(I)-02
	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019


- **Difficult Urination:** this problem is not unusual and is due mainly to dehydration. It is best not to treat it, as it could cause further dehydration.

- **Sunburn:** sunburn is a serious problem in sea survival. Try to prevent sunburn by staying in shade and keeping your head and skin covered. Use cream or Chap Stick from your first aid kit. Remember, reflection from the water also causes sunburn.

- **Sharks:** whether you are in the water or in a boat or raft, you may see many types of sea life around you. Some may be more dangerous than others. Generally, sharks are the greatest danger to you. Other animals such as whales, porpoises, and stingrays may look dangerous, but really pose little threat in the open sea.

Sharks feed at all hours of the day and night. Most reported shark contacts and attacks were during daylight, and many of these have been in the late afternoon. Some of the measures that you can take to protect yourself against sharks when you are in the water are:

- Stay with other swimmers. A group can maintain a 360-degree watch. A group can either frighten or fight off sharks better than one man.
- Always watch for sharks. Keep all your clothing on, to include your shoes. Historically, sharks have attacked the unclothed men in groups first, mainly in the feet. Clothing also protects against abrasions should the shark brush against you.
- Avoid urinating. If you must, only do so in small amounts. Let it dissipate between discharges. If you must defecate,

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	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

do so in small amounts and throw it as far away from you as possible. Do the same if you must vomit.


When you are in a raft and see sharks:

- Do not fish. If you have hooked a fish, let it go. Do not clean fish in the water.
- Do not throw garbage overboard.
- Do not let your arms, legs or equipment hang in the water.
- Keep quiet and do not move around.
- Bury all dead as soon as possible. If there are many sharks in the area, conduct the burial at night.

CHAPTER 4: PERSONAL LIFE-SAVING APPLIANCES

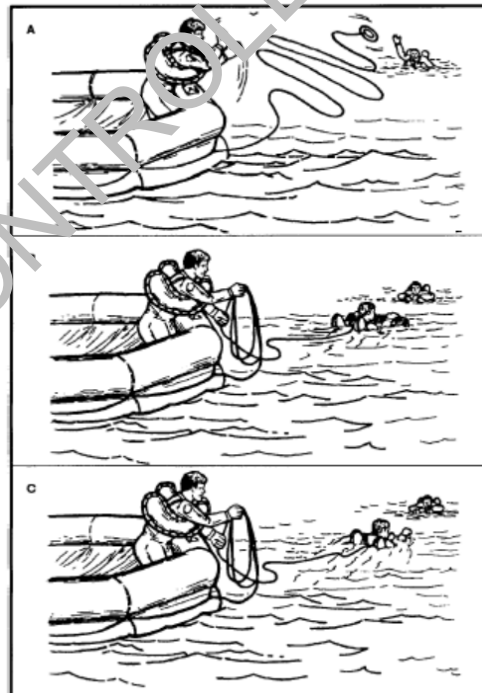
4.1. Lifebuoys

- Not to have neither an external diameter bigger than 800mm nor an internal diameter smaller than 400 mm.
- Built of a floating material.
- To be able to support not less than 14.5 Kg of iron in sweet water.
- To have a mass not inferior to 2.5 Kg.
- To stop burning in two seconds if it is on flames.
- To be built so that it can resist a fall to the water from where it is packed over the corresponding flotation line to the condition of minimum openwork in water of sea or from a height of 30 meters.

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	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019


How to use a lifebuoy:

1. Prepare yourself to throw the Lifebuoy by approaching to the nearest corner of the swimming pool deck Bend your knees maintain your balance and hold the line with one hand.
2. Aim your throw so that the Life Buoy will fall just near the swimmer and is within the reach If the Life Buoy is away from the swimmer's reach, throw the Life Buoy again.
3. Make sure that the Life Buoy does not hit the swimmer.
4. Slowly pull the Life Buoy with the rope. Make sure to lean your body weight away from the swimmer to pull.
5. If the swimmer is wearing a Life Jacket, hold the collars of the Jacket and pull out the swimmer If the swimmer is not wearing the Life Jacket, Cross and hold the swimmer's palm; pull upwards and turn the swimmer simultaneously so that the swimmer rest on the Deck.



4.2. Lifejackets

The lifejackets are one of the most important elements in the rescue equipment. But it is only good to maintain floating a person, but it doesn't protect from cold or heat. The vest is designed to:

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	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

- Maintain floating person that is totally dressed and wearing shoes.
- Make that an unconscious person, no matter how he fell to the sea, floats with the mouth and head outside of the water.

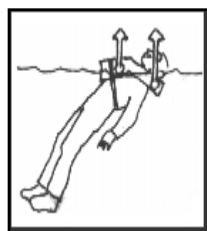



All of them:

- Can be placed over the clothes
- Can be tied to a rope or tow guide
- Allows that the person who to abandon the ship, jumps from a certain height without losing the vest.
- Have a whistle to get the attention
- Have reflective ribbons or fringes.

4.2.1. Purpose and use of the Lifejacket:

The vest can see and feel that it is too bulky and uncomfortable to wear, but it is essential to have it on before the abandonment of the ship. It should stay on until the shipwreck is picked up by the rescue services. It is impossible or very difficult to place and adjust the lifejacket in the water. If the abandonment takes place in cold waters the low temperature can weaken or make lose consciousness of the shipwreck. If he is not wearing a lifejacket, he will drown for sure.



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	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019


If the shipwreck wears correctly the vest, and if for any reason he can't help himself, the vest will maintain him floating.

Types of inflation:

- a. **Oral-only inflation (blow air into):** inflatable lifejackets that can only be inflated through a top-up tube are not recommended. Due to the physiological effects of falling into cold water, you will not be able to inflate the lifejacket.
- b. **Manual gas inflation:** it will not inflate automatically; the jacket is inflated by the wearer pulling on the toggle. It will not inflate automatically. The firing mechanism should have some means of indicating if the jacket has been fired - often it is as simple as a small green clip over the toggle lever. If this is not present, unscrew and check that the seal on the bottle has not been pierced - if in doubt rearm.

Always carry spare gas bottles and clips so that the lifejacket can be immediately rearmed.

- c. **Automatic gas/cartridge inflation:** there are several different designs of automatic gas-inflation firing heads that give various degrees of protection to the cartridge or pill. Automatic operation uses a spring-loaded plunger held in place by either a compacted paper cartridge or a pill. When the cartridge or pill becomes wet it expands or dissolves, releasing the plunger so that it pushes the pin through the gas-bottle seal.

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	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019


4.2.2. Jumping into the Water:

A not well-done jump can cause injuries or even the death to the shipwreck, or to other people, or to essential elements of the equipment. To make a good jump it is necessary:

- To cover the nose and mouth
- To hold the vest with the arms and elbows
- To have the feet together and straight, very straight.
- Before jumping, look to the water and avoid to jump over other people or over floating debris or other obstacles.
- To jump taking a step ahead, with the parallel look to the horizon and forward.
- you should not jump on the boats, or over the hood of the rafts, unless it is absolutely necessary. You should never jump on the raft from more than 4.5 meters.

4.3. Immersion suits/anti-exposure suit

- Can be unpacked and put on without aid in less than 2 minutes.
- It stops burning after being on fuel after 2 seconds.
- It covers the whole body but not the face.
- It has the necessary to reduce to the minimum the air intake in the legs.
- It doesn't allow the water to penetrate excessively when falling from a height of 4.5 m.

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	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019



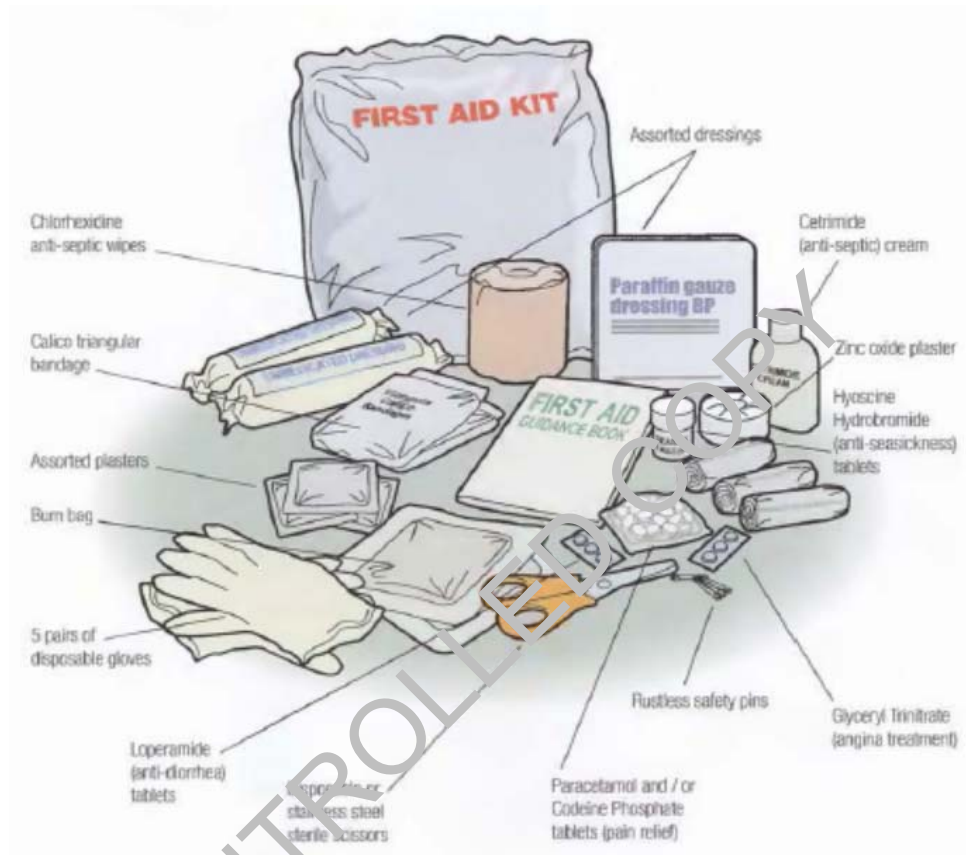
4.4. Thermal protective aids

- It is manufactured with waterproof material with thermo conductivity below 0.25 W and it will reduce the heat loss that a person can suffer by convection and evaporation.
- It has to be unpacked and put on without help in a lifeboat. It will allow the user to take off it in the water in not more than 2 minutes.
- It protects in temperatures of the air among -30°C and $+20^{\circ}\text{C}$.



4.5. Personal survival kits and group survival kits


The quality of the first-aid kit supplied will vary depending on the quality of the liferaft. The SOLAS first-aid kit provides a broad range of medical items and will be found on many rafts or can be specified for inclusion.



CHAPTER 5: SURVIVAL CRAFT AND RESCUE BOATS

The lifeboats that can be boats, rafts or rescue boats. They provide:

- ✓ Shelter to the survivors taking them outside of the water.
- ✓ Protection against the wind, rain, waves and mainly of the cold, of the heat and of the sun.
- ✓ Easier localization for the search services and rescue.
- ✓ Water and food with the rations contained in the equipment of the boat.

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	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

5.1. Lifeboats

The lifeboats, together with the lifesaver rafts, are the essential elements for a prolonged survival in the sea, especially when the duration of the survival, the climatologically inclemency or the presence of dangerous animals makes intolerable a prolonged immersion in the water.

The lifeboats are a means of rescue more resistant than the lifesaving rafts. Nevertheless, they present the negative counterpart that their launching and putting in flotation the water is more difficult than in the case of the rafts, particularly if these operations should be carried out with bad time.




5.1.1. Building material:

The lifeboat can be:

- ✓ Of fiber glass, reinforced with polyester, with the stem, keel and metal sternpost.
- ✓ Metallic, of aluminum plates generally riveted.
- ✓ Wooden, that is much more used at the present time.

5.1.2. Form and propulsion:

Traditionally the lifeboats have been "open" boats, that is to say, without cover it close. This type of boat protects, up to a certain point of the surge and wind, but it

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	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019


protects less of the extreme temperatures or hydrocarbon flames set afire on the sea. More recently, and following the requirements of the SOLAS, have appeared in the ships the type of "closed" lifeboat; that is to say, they are boats with a rigid and closed cover that covers it totally giving better protection to the persons. There is another type of lifeboat called "partially closed" that as its name indicates has a rigid covering in only a portion of its length. All the lifeboats can prepare oars for maneuver and propulsion. Most of the lifeboats have a diesel engine for a maneuver and more effective propulsion. Some lifeboats are designed to rig the sails, generally a "Latin" one and a jib.



5.1.3. Main elements of a lifeboat:

The integral elements of a lifeboat are, without the listing to be exhaustive, the following:

- Gunwale
- Anchor chain
- Escape hook
- Garland
- Addition to fix hood
- Buttonhole of Hood


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	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

- Cabin
- Fogonadura
- Equipment box
- Oar stone bench
- Lady
- Fluorescent tape
- Bomb of water
- Life rope
- Antenna support
- Bilge keel
- Bagpipe
- Varenga
- Bracket of the rudder
- Tank of water
- Cleat
- Lining
- Escape hook


5.1.4. Equipment of lifeboat:

The equipment that the lifeboats should take depends on the type of the ship, its size and navigation to that is dedicated. This equipment is well specified in the SOLAS agreement. The following listing is representative of the equipment that normally takes the merchant ships of sailing of height.

- Set of two floating oars for each stone bench
- Two floating spare oars
- A floating espadrille
- 1 ½ games of brackets or tellers attached to the boat by means of chains or ropes
- A boat hooks

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	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

- Two spigots for each hole of drainage attached to the boat by chains or ropes A bailer and two cubes of stainless material
- A rudder attached to the boat and a cane
- Two axes, one in each end of the boat
- A lamp with enough oil for 12 hours
- Two boxes of appropriate matches in a tight recipient
- A mast with steel stay and galvanized
- A set of orange candles
- A compass inside its or with means of illumination.
- A hung garland and tied around and on the outside of the boat lifeboat
- A floating anchor of appropriate dimensions
- Two buoys of large enough, one will be tied to the end of the prow of the lifeboat with gauze and cazoquete so that it can be thrown and the other one will be firmly tied to the rudder of the lifeboat and also ready to be used.
- A recipient that contains 4 and 2 liters of oil vegetable or animal. The recipient will be built in such a way that can be tied to the floating anchor.
- A portion of food for each person that the boat can take. These portions will have to remain in tight containers that will be placed inside a watertight container.
- A watertight recipient that contains 3 liters of drinkable water for each crew member that can take the lifeboat.
- A desalination apparatus able to produce a liter of drinkable water by crew member A stainless ladle to drink.
- Four flares with parachute able to give a brilliant red light at great height
- Six flares of hand of approved type of a brilliant red light.
- Two floating fumigants devices of approved type (to be used by day).
- A first-aid kit of first aids inside a tight box, containing the following articles: 4 wet towels; an ounce of burn ointment; 30 adhesive band of ¾ inches x 3 inches (sterile); a sterile adhesive band of 2 inches x 5 yards; a clamp; a

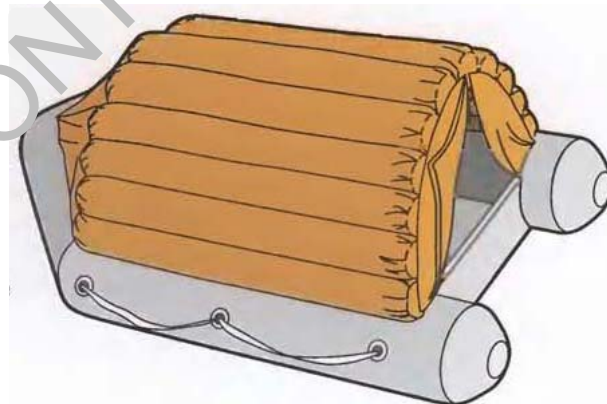
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	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

scissor; 8 ounces of suspension against the diarrhea; 10 disposable glasses to drink; ½ ounce of antiseptic liquid; ½ ounce of ammonia; 10 pills against the sickness; 10 pills of salt; 8 ounces of distilled water; 50 aspirins; 2 plastic spoons; an adhesive band of ½ inch and 5 yards.


- A waterproof lantern adapted to signal in the Morse code, with a battery set and spare bulb inside a waterproof container.
- A mirror of approved type appropriated to make signals during the day.
- A pocket knife with a can opener. Two floating guides.
- A manual bomb
- A whistle
- A fishing kits

5.2. Liferrafts

Many are based on an inflatable dinghy fitted with a liferaft gas inflation system and a canopy for shelter. While the craft can be rowed or sailed to safety, the lack of ballast pockets make them unstable in a seaway.



Since some areas have minimal rescue services, many bluewater sailors design their own survival craft, based on an inflatable or rigid dinghy with a small rig that allows them to effect their own rescue. However, these may not always be able to be readied and launched as quickly as a liferaft.

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In the merchant ships, the rafts can be from 6 until 25 people's rafts. The number of people of each raft is marked on the cover and on the raft.

5.2.1. Means of Launching:

- **Stopper:** it maintains the raft close to the ship. If it sinks it should break. It is good to inflate the raft manually.
- **Hydrostatic release:** it inflates the raft automatically when it has submerged.




5.2.2. Operation or inflating:

- Locate the stopper that appears on the cover. Its other ends get to the mechanism of the gas cylinder. If the stopper is pulled the raft inflates next to the ship.
- The stopper should always be firm to the ship.
- The raft should never be thrown to the water before receiving the corresponding order. The lashings of the raft are released (they release automatically).
- Test to check if the stopper is firmly attached to the ship.
- Test that the raft will get to the water.
- The raft is thrown to the water.
- The stopper is pulled; maybe there is a lot to pull.



- It should be avoided that the raft touches hardly the flank of the ship.



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	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

5.2.3. General data:

- Don't throw the raft until the right moment
- Have it ready to throw
- Wait for the order
- The stopper will break if the ship when sinking tries to drag the raft; but in this case it should be tried by all possible means to cut the stopper before it breaks.
- The whistle of the security valves can be heard when gas is allowed to leave after it is inflated or when the temperature increases. It is not important.


5.2.4. Embarkation to the lifesaver raft:

- If it is possible to embark being dry, that is to say, without touching the water. Climb and access.
- A void jumping. If it is necessary, only in the entrance, from less than 4.5 meters.
- The raft will be cut if we use in a bad way: metallic tools; hard shoes with ironwork; piercing objects; etc.
- It is difficult to embark from the water without help.
- Use of the garlands.
- Submerged support points.
- The wounded enter head first, with the back down, with a lot help and care.

5.2.5. Equipment of the Lifesaving raft:

The equipment should be in their respective place in the raft. If it is possible it should have another equipment in a table in the classroom. All the lifesaving equipment can be considered in some of the three big groups:

- General assistant equipment

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	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

- Help for the localization
- Ration of food and it water


5.2.5.1. General Assistant Equipment:

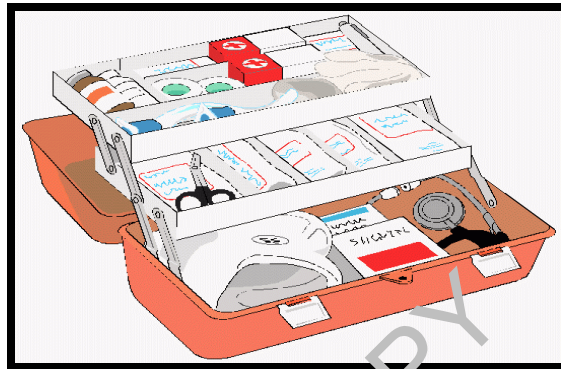
Each one of the equipment elements is explained, relating them with the high-priority actions that should be executed with such equipment in the raft.

- **Knife:** it is next to the entrance. It is of security. I use primordial: to Cut the stopper to be released of the ship.



- **Zaguales (oars):** so that the raft can move away from the ship; to maneuver to pick up survivors; to reunite with other rafts.
- **Pills against the Sickness:** they are in the package of survival.
- **Inflating Bomb:** to inflate the floor if it is necessary and to stuff the cameras of the flotation.
- **A Small Hoop and End:** it is next to a flotation camera. Easy to use in the rescue of surviving.
- **Bailer and Sponges:** to drain the water and to dry the interior of the raft.
- **Package of Survival:** it Contains elements that are not usually used immediately: useful small, ration, localization equipment, book with instructions to survive.
- **First-aid kit:** For the treatment in the wounded.
- **Equipment to Repair Jabs:** Detection, localization and repair of the jab. Inflating Gas Carbon dioxide (CO₂) or a mixture of this gas with Nitrogen.

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5.2.5.2. Aids for the localization:

- Hand lamp
- Signal mirrors
- Pyrotechnic signs



- Class and type of pyrotechnic signs
- Portable radio. It doesn't belong to the equipment of the raft, but it is brought from the bridge.

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5.2.5.3. Portions of foods and water:

- 1.5 liters of water per person.
- 12 ounces food, that doesn't make you thirst, per person;
- 6 ounces per person of candies.

5.2.6. Rescue of a crew member to the drift:


If a member of the crew is to the drift and far from the raft:

- If the raft oars, go after picking the floating anchor. Throw him a floating rope with a buoy at the end.

If it far from the ship sends somebody to the rescue, adopting the following cautions: he should be tied to the raft by a rope, swim to leeward of the raft, and if it is possible, equipped with a neoprene or survival suit.

5.3. Rescue boats

- The length should be above 3.8. m and under 8.5 m.
- It should be able to take to 5 seated people and a lying one.
- It should be able to maneuver to speeds of up to 6 knots and to maintain this speed for 4 hrs.
- It should be able to maneuver in stirred up sea and to tow the biggest raft on board the ship to a speed of 2 knots.

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	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019




CHAPTER 6: SHIP ABANDONMENT AND SURVIVAL

6.1. Actions to be taken when required to abandon ship

Drills for abandoning ship:

1. Make everybody aware that you are preparing to abandon ship. Stay calm.
2. Activate the EPIRB. Press DSC distress button on VHF / HF radio. Make a voice distress call.
3. Fire parachute rockets if someone is likely to be within 30 miles.
4. Get everyone on board to put on layers of warm clothing. Extra clothing will not weigh you down in the water. Initially, it will help you float.
5. Waterproof clothing will reduce cold-water shock and heat-sapping water flow around your body. Use an immersion suit. Keeping warm is a priority.
6. Check everyone has donned lifejackets correctly – use a buddy system to speed things up. Inflate lifejackets before entering the water.
7. Have a drink (non-alcoholic) and take anti-seasickness tablets.
8. Find the grab bag and as many useful extras as you can lay your hands on.
9. Standby to launch the liferaft in case the vessel has to be abandoned quickly.

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What you need to survive:

To ensure your survival you need the correct equipment with the right knowledge and, most importantly, a belief and will to survive. The four tenets of survival are protection, location, water and food. To this end, the survivor requires:

Equipment

- Personal survival aids
- Life-saving appliances
- Grabbag

Knowledge

- What equipment you have
- How to use it properly
- Have a strategy ready

Will to Survive


- Believe you will be rescued
- Avoid blame
- Positive attitude

6.2. Actions to be taken when in the water

Only enter the water if you are unable to board the raft direct from the boat.



If possible, enter the water slowly, either by lowering yourself on a rope or by using the boat's fixed or emergency boarding ladder. This will minimise the effects of cold-water shock.

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	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

6.3. Actions to be taken when aboard a survival craft


Read the survival notes in the liferaft instruction booklet to refresh your memory. Stow equipment that needs to be kept dry in resealable bags. Some rafts will have stowage pockets on the canopy tube high above the water.

Establish a routine as soon as possible. If there are sufficient crew, put two people on watch for between 20 minutes and 2 hours depending on the weather conditions. Make sure the watch system is fair.



Outside watch should keep a lookout for ships, aircraft, other survivors and dangers. They must be fully briefed on signaling with flares, heliograph and VHF. Inside watch should keep the raft inflated, treat and look after casualties, collect water, bail out etc.

Switch off the liferaft light during the day to preserve its power. It may seem very dim but to an SAR helicopter or lifeboats night-vision goggles it will stand out for miles. Switch off and save lifejacket lights -you may be able to use them when the liferaft light fails. SOLA rafts have an inflatable radar reflector. Wetting the canopy may also increase the radar reflection range.

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	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

CHAPTER 7: EMERGENCY RADIO EQUIPMENT


The procedures that are described next are obligatory in the Marine Mobile Service and they have for object to allow the exchange of messages among stations and to facilitate the effective reception of a message of danger. The frequencies for the signs, calls and aid traffic are: VHF Channel 16 (156.8 MHz) and in Halfwave 2.182 KHz.

7.1. Two-way VHF

The duration of the communications in the aid channels, except in situation of danger, it will be limited to the minimum essential to establish the contact and to agree the work channel, and it should not exceed a minimum. It is prohibited all emission that can cause harmful interferences in the aid communications: it alarms, urgency or security and especially: the useless transmissions; the transmissions of false or deceiving signs; the transmissions of signs and of superfluous correspondence; the transmission of signs without identification.

Three levels of aid messages exist, depending on the graveness of the situation:

- **Danger MAYDAY-MAYDAY-MAYDAY**; it is good us to announce a serious and imminent danger. Use norms: it should only be used in the event of needing it aids immediate. For their emission the frequencies of 2.182 and Channel 16 of VHF are used. It is necessary to speak clear and slowly, pronouncing the numbers and letters one to one. If there is language problem, the International Code of Signs should be used. Content of the message: Name of the craft; Situation (Coordinated or delays and its distances); reason of the call of danger.
- **Urgency PAN PAN**; it is used to transmit messages that have relationship with the security of a craft or of people, although a serious or immediate danger doesn't exist. It has priority on all the communications, except those of danger.
- **Security SECURITÉ-SECURITÉ-SECURITÉ**; it is used to transmit messages relative to the security of the sailing or important meteorological warnings.

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	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

Using a VHF DSC radio:

Make sure the radio is switched on and reserving position information from GPS.

Different makes of radio transceiver operate in slightly different ways but the general approach shown below will operate most sets. However, make sure everyone on board knows how the radio works.

Lift the cover over the distress button and press and release the distress button once. This will (usually) provide a menu of types of distress.


If there's time, select the type of distress that suits your circumstances.

Press and hold the distress button again for five seconds (the radio will count down) until the can is sent. The radio may sound an alarm. Press CLR to stop the audio alarm. The radio will switch automatically to Ch 16. Make your voice Mayday call.

DSC distress calls will be sent automatically every four minutes. for as long as the radio can do so, until an acknowledgement is received.



It is necessary to clarify that these signs should be used appropriately, in order to that the help is the corresponding to the case. For example, if a mishap takes place in our motor,

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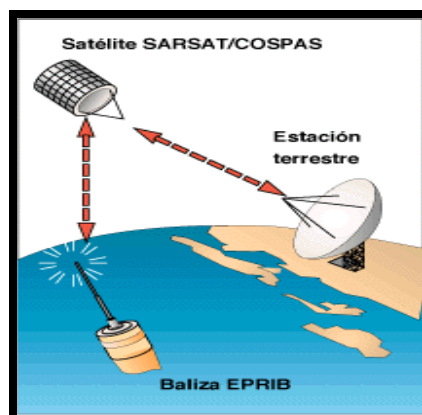
we cannot navigate for lack of wind, etc. and we want that the adequate aid, we will emit a message of " urgency " and not one of" danger ".


7.2. Emergency position-indicating radio beacons (EPIRBs)

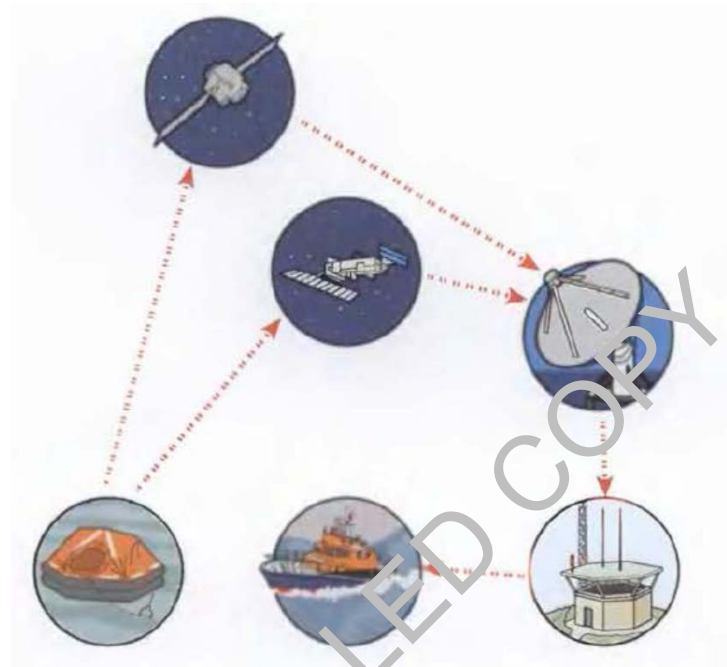
It is recommended without dependence of the size of the ship, the acquisition of buoys of 406 MHz, they are but more precise than the ones of 121.5 MHz. When you have the occasion, remember that it is an effective system to be able to locate you in the event of emergency that is why so important to takes one on board, although it is not obligatory for their craft.

Carry out in appropriate maintenance that figures in the manual of the same one, the radio buoy should only be used in the event of emergency, since otherwise unnecessary immobilizations of the rescue means take place. The radio buoys are not substituting of the traditional elements of transmission of aid messages (channel 16 of VHF and 2.182 KHz), if not that it is a complementary element. Don't forget that the radio buoys should be meetly registered to be easily identifiable in the event of emergency.

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7.3. Search and rescue transponders (SART/AIS-SART)

The system COSPAS-SARSAT is the system used for search and rescue with the help of satellite, projected to locate the aid buoys. Their object is to lend help to all the organizations of the world dedicated to search operations and rescues when it happens a catastrophe, either in the sea, in the air or in earth. The technical requirements that should complete are the following ones:

- That they have capacity to transmit an aid alert in the band of 406 MHz
- That it is installed in an easily accessible place.
- That it is ready to be loosen manually and can be transported by a person to a craft of survival.
- That it can be released and to float if the ship sinks and it is activated automatically when is floating.

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	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

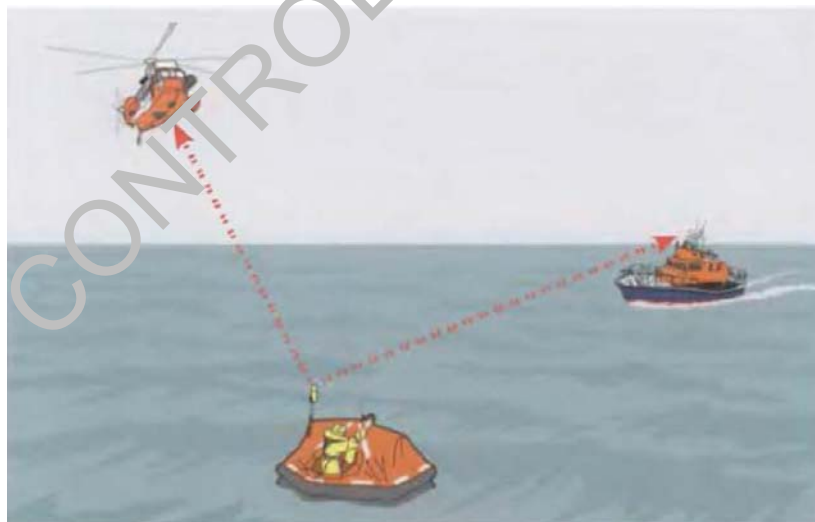
CHAPTER 8: SURVIVOR'S ACTION WHEN BEING RESCUED

8.1 Communicating with the rescue ship and helicopter

Using SARTs


A Search-and-Rescue Radar Transponder is an alert and position-finding electronic device that produces a distinctive 'echo' on the screen of any 9GHz radar. Previously only used on commercial vessels' liferafts, SARTs are now available sufficiently small enough to be fitted as an optional extra in most leisure liferafts.

Range will depend on the height of the SART and the height of the Radar scanner. A SAR helicopter at 1000m (3000ft) can pick up a SART 48 miles away. A radar scanner 7m above the waterline will 'see' a SART at about 6 miles.



8.2 Survivor's preparation before being rescued

The SART starts transmitting when it receives a radar signal. Switch off your vessel's radar before abandoning ship, to prevent your SAAT from transmitting before rescuers are in range. Position the SART as high as possible to achieve the greatest range.

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8.3 Actions to be taken by the survivor when being rescued by ship


While many professional ships' crews practice emergency recovery, there are some that may have no idea how to go about retrieving survivors from a small boat or liferaft.

It's important! to communicate effectively with them because it will be difficult for the captain and crew to appreciate the size and effects of the waves on a small vessel or liferaft.

Beware - the liferaft (or boat) can be sucked in to a lightly loaded ship's propeller.



Due to exhaustion and the effects of the cold, you will not be in a fit state to climb a ship's ladder. In the excitement of the rescue, it's easy to think you can. There are many reported cases where survivors have tried to climb the ladder only to be lost when they fall off it after climbing only a few rungs.


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The ship may be able to lower a basket or a cargo net to lift everyone in together. A large net can lift the whole raft with the survivors inside.



The best option is for the ship to lower a fast rescue craft that will come to the raft and pick up survivors. The ship will stand off and create a lee for the rescue boat to work. The rescue craft, its crew and the survivors will then be lifted back on board. This avoids exerting the survivors. Remember to take your small grab bag with ID documents etc.



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8.3 Actions to be taken by the survivor when being rescued by helicopter

As with lifeboat rescue, the helicopter may have difficulty seeing you. If a 406/121.5 EPIRB or PLB is available, make sure it's switched on and operating. Switch on the liferaft lights – they may seem dim to you but a pilot using night vision goggles will see them clearly, use your torch to signal to the helicopter.


If you have one, use a handheld VHF to communicate with the helicopter. Pilots use clock notation. For example, 'We are lying at your 4 o'clock'.

Use orange smoke - during the day – or handheld red flares to pinpoint your position.



The helicopter crew will instruct you what to do. Do as they say - they are the experts.

Take care not to all crowd to one side of the raft or dinghy - the prevailing wind and the downdraught of the helicopter may be enough to turn the raft over.


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Most SAR helicopters will lower a winch man into the raft. Be aware that some countries' SAR units use different methods. Some may drop a rescue diver first, others may use a rescue basket.


If the helicopter is using a 'hi-line' to help guide and steady the winch man, hold on to the line while the winch man is pulled back up to the helicopter. Do not tie it to the raft, and make sure it does not become tangled with the remaining casualties.



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	PROFICIENCY IN PERSONAL SURVIVAL TECHNIQUES	REV. 8 - 2019

If the winch man suspects a casualty is hypothermic he will lift them in a horizontal position either in a stretcher or use a double strop - one underneath the arms and one under the back of the knees.



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