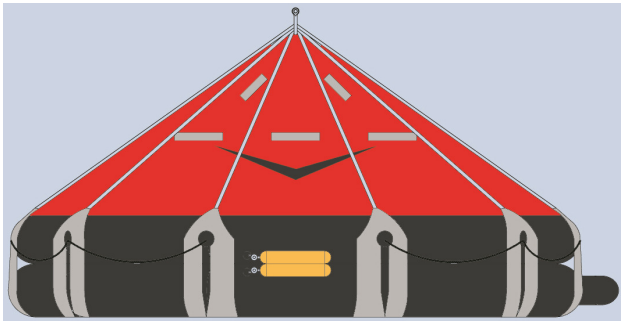
EUROSUL Fornecedora de Navios Ltda.
Rua Iapó, 180 - Alphaville Graciosa - Pinhais - PR
www.eurosul.com
crl@eurosul.com
Fone: +55 41 3668-1319

INSTRUCTION MANUAL

Eurosul/Sollax-D type – Launched Inflatable Liferaft



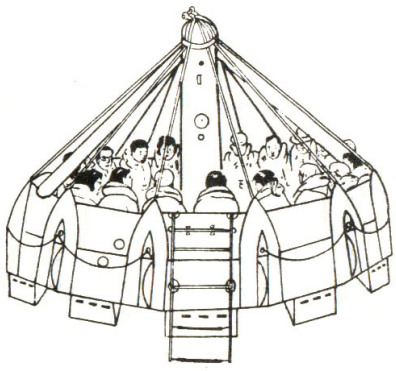
Eurosul/Sollax D Davit-launched inflatable liferaft was found to be in accordance with relevant requirements of the regulations of "*1996 Amendments to 1974 SOLAS* and *Rules for the life Saving Appliances*" .and testing complied with"*Resolution of MSC 81 (70)*". ***Eurosul/Sollax D*** Davit launched inflatable liferaft is one of the life-saving appliances which has been designed and manufactured for various ships equipped with special davit- launched devices. It is made of rubberized Polyamide fabric and components. It is reliable in construction, complete of equipment, and simple for handling.

Eurosul/Sollax D davit-launched inflatable liferaft series specification

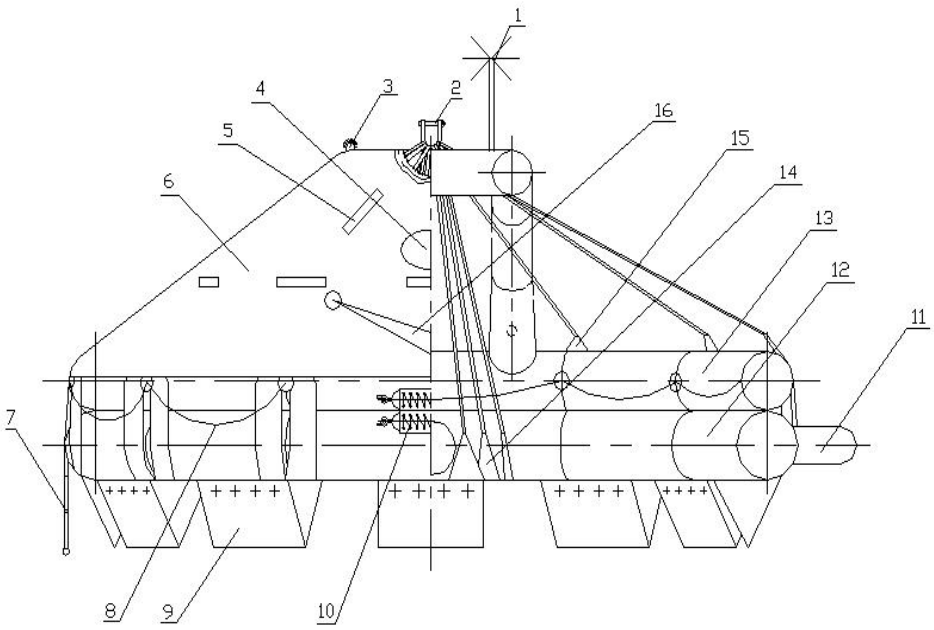
Type	ZHR-D15	ZHR-D16	ZHR-D20	ZHR-D25
Carrying Capacity	15	16	20	25
Physical form	regular ten-side			Long twelve-side
Length（mm）	3555	3555	4020	4370
Width（mm）	3380	3380	3825	3845
Diameter（mm） Upper buoyancy chamber	φ300	φ300	φ310	φ340
Diameter（mm） Lower buoyancy chamber	φ330	φ330	φ350	φ370
Height（mm）	1750	1750	1700	1800
F.R.P container diameter（mm）	φ700	φ700	φ730	φ730
F.R.P container Length（mm）	1300	1300	1550	1550
Weight（kg）Less than	165	167	184	222

Brief Introduction of the Construction

The most distinctive feature of ***Eurosul/Sollax D*** liferaft is that it can be inflated at the sides when accident happens to the ship. Persons in distress, especially those old, weak, women and children can embark directly from the deck. After the liferaft has been fully accommodated, it will be launched from the embarkation position to the water directly by the davit aboard. In this way, persons in distress can safely embark the liferaft without jumping down from the height to water or swimming or embarking the ***Eurosul/Sollax D*** liferaft also has performances which the ordinary liferaft possesses.



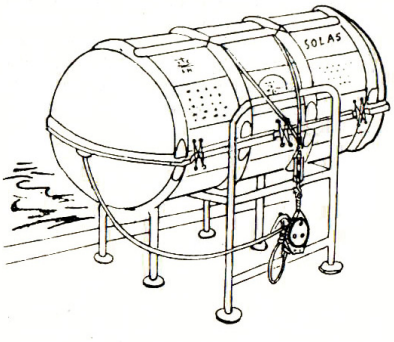
The liferaft consists mainly of the upper and lower buoyancy chambers, boarding ramp, canopy arches, canopy (orange-colored), davit belt, and floor. The lower buoyancy chamber is connected with the boarding ramp through the unidirectional valve to fabricate an air cell, and the upper buoyancy chamber, which is connected to the canopy arches by two one-way valves, forms another separate air cell. These two air cells are inflated independently from two CO_2+N_2 gas cylinders. The floor is also two separate air cell and can be inflated manually with a bellows. Ten or twelve davit belts with enough strength are arranged at even interval around the body. These belts start at outside o the body for assembling, pass through the gap between the outside and inside skins of the canopy and gather together into a lifting shackle at the top, the liferaft can be lifted through the shackle connected with the davit belts.



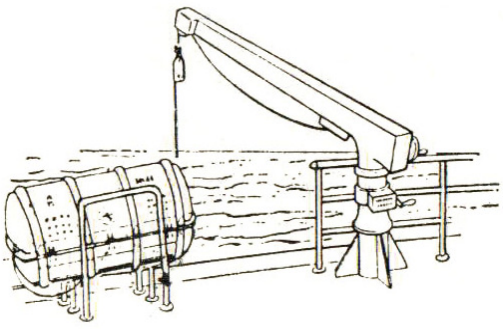
1. Radar reflector
2. Shackle
3. Position lamp
4. Viewing port
5. Retro-reflective material
6. Canopy
7. Raft ladder
8. Lifeline
9. Water pocket
10. Inflated steel bottle
11. Boarding ramp
12. Lower buoyancy chamber
13. Upper buoyancy chamber
14. Inside band
15. Outside band

There are retro-reflective material, rain catchment and identification light on ***Eurosul/Sollax D*** liferaft. In front o the entrance, a safe boarding lap and a boarding ladder are fitted or easy embarking or persons in water. The liferaft body is fitted for stable lines. A valve for replenishment and deflation is fitted each on the upper and lower buoyancy chambers. Two valves are fitted on the floor. A deflated valve is fitted each on canopy arches and boarding ramp. A safety valve is fitted each on the upper and lower buoyancy outside and on the canopy arches. Righting strap, head painter and water stabilizing pockets are evenly arranged at lower side of the floor. Liferaft is provided with fresh water, food, first-aid, signals, radar reflector and repairing tools.

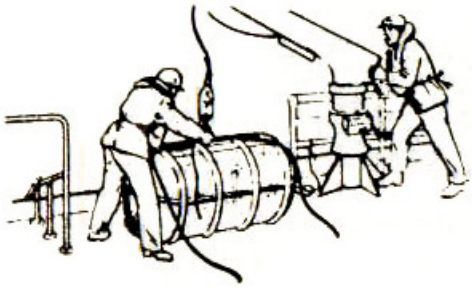
Stowage of Liferafts



This inflatable liferaft should be folded and packed in a f.r.p container which normally fastened to the rack fitted at ship's side and stowed a proper place near to the davit or ready using it without trouble. The operating line leading from the f.r.p. container is to be secured on the hydrostatic release units.

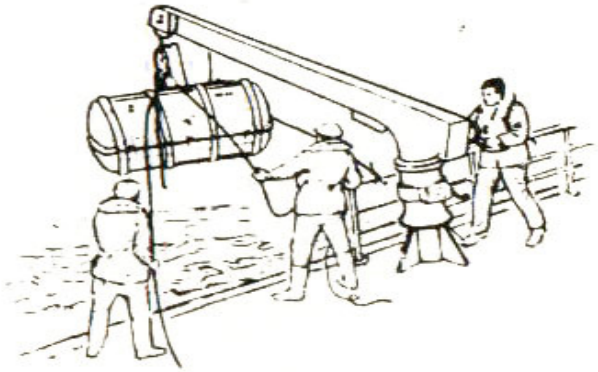


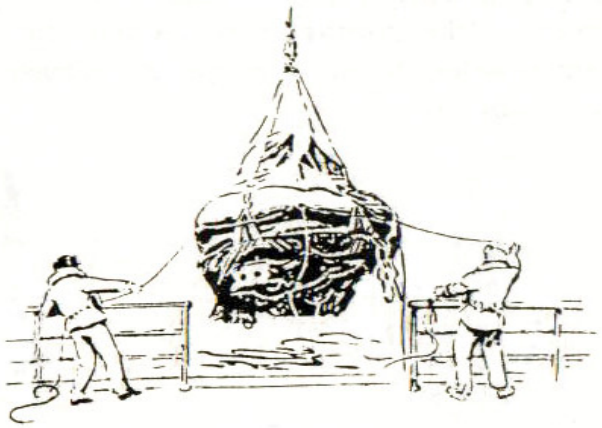
A - Using of Davit-launched Liferafts method:



1 - The liferaft is placed under the davit. A small door on the container is opened and hanged the lifting shackle from the quick release hook.

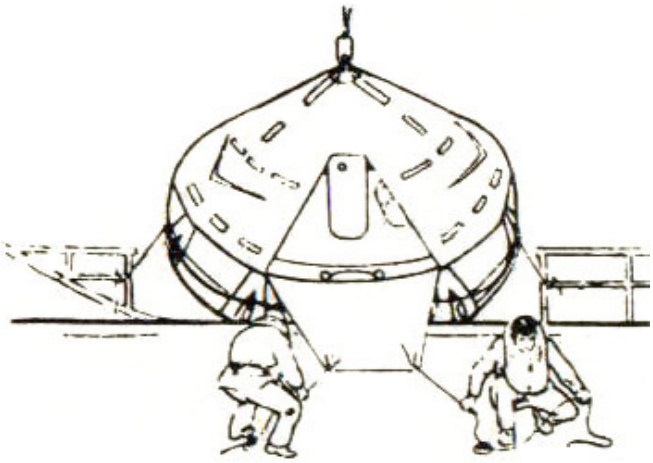
2 - Two stable lines are pulled out from the small door. A proper length of the operating line is drawn out and the liferaft is then lifted to the side of the ship.



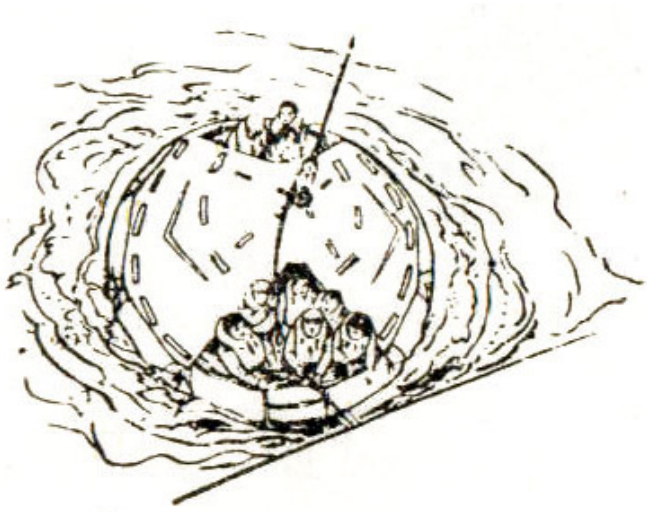


3 - The operating line being pulled on, the liferaft is then inflated. The entrance of the liferaft is got along the side of the ship lifting.

4 - The safety-boarding flap is laid, 2 ropes connected with fastened to the deck.



5 - Then survivors embark on the liferaft through the flap.



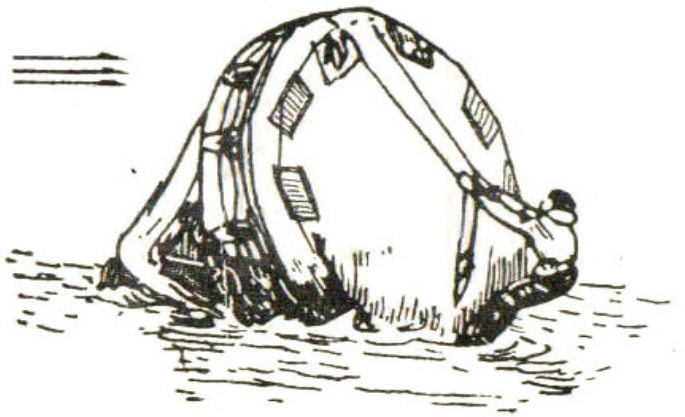
6 - The stabilizing line, ropes of the boarding flap the brake of the davit being taken off, the liferaft is then lowered down to the surface of water. A person in the liferaft pulls on the line attached to the quick release hook and makes the lifting shackle released. The liferaft is now on the water stably.

7 - Survivors take the paddles out and make the liferaft leave the ship quickly so as to avoid being sunken down by the sinking ship.

B - Launching method:

1 - When launching, release the hydrostatic release unit and let the liferfat launch automatically into the water or alternatively cast the liferaft overboard by hand. The liferaft will be inflated automatically into its shape with CO_2+N_2 gas released from the CO_2+N_2 gas cylinders. if the liferaft is stowed at a height less than 11 meter from the waterline, pull the operating line to open the quick discharging valves of the gas cylinders then the liferaft will be inflated into its shape.

2 - When the liferaft has been inflated into its shape, persons, after putting on their life-jackets, may board the liferaft across the boarding ramp or ladders hanging over side the ship or by the aid of other means, or by the boarding ladders fitted at the front entrance and boarding ramp locating on rear entrances of the raft which will enable the persons in the water to climb on board. If the distress ship has a low side, crews may jump over board from the deck into the raft, but great care should be taken to the safety of other people.



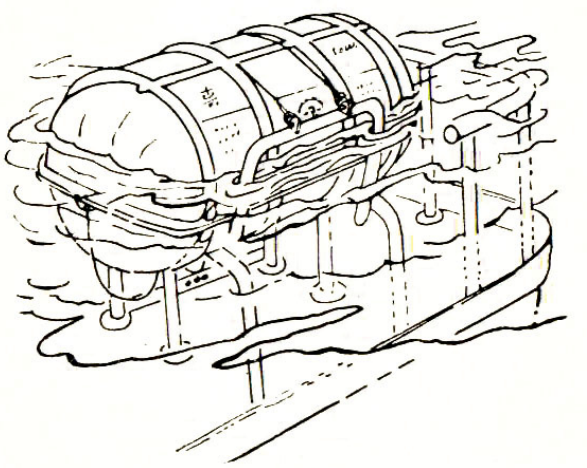
3 - In particular cases which the liferaft inflates in an inverted position, a man wearing a lifejacket may climb on the raft and stand on the side where the gas cylinders are fitted. Then take off one side of the righting strap. Grasp the righting strap and pull steadily while leaning as far backwards as possible, this will turn the raft over. And it is easier to right the raft with the wind.

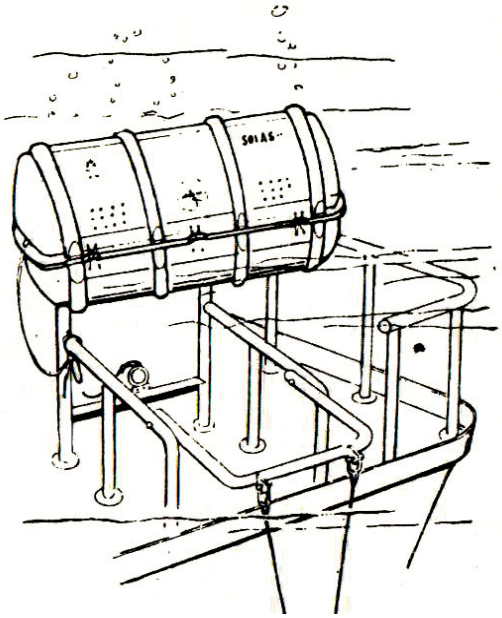
4 - After boarding, survivors immediately take out the knife and cut the operating line which is connected with the sinking ship, and then practise the paddles to make the liferaft leave the sinking ship so as to avoid being sunken down by it .

C - In case the distress:

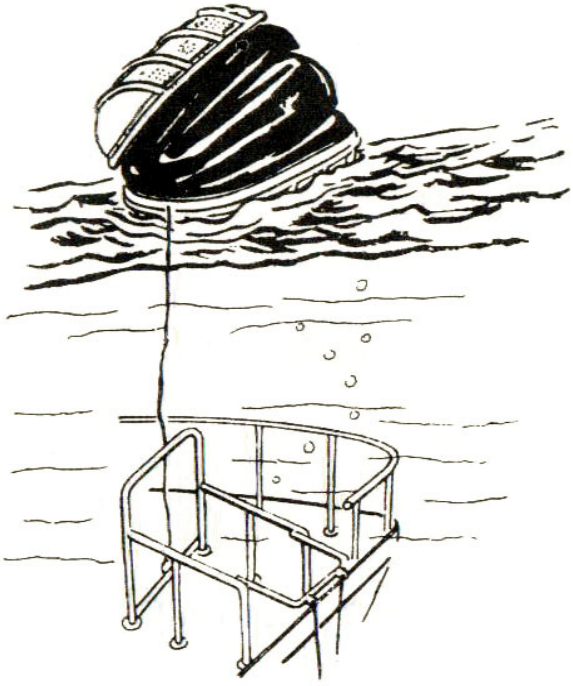
Ship in a rapid sinking and have no time for launching the liferaft through the davit, the liferaft can be automatically released by a hydrostatic release device when it sinks to a certain depth from surface. Working process o the liferaft is as following.

1. The liferaft sinking down together with the distress ship.





2. Under the action of water pressure within a depth of 4 meters, the hydrostatic release device immediately disconnect the rope fastening the container. Then the container begins to float.



3 - With continuous sinking of the ship and floating of the container, the filling valve of the cylinders is then initiated. The liferaft is automatically inflated.

4 - By means of the buoyancy provided by the inflated liferaft, a weak line connected with the operating line is broken. The liferaft is disconnected with the sinking ship. New , survivors in water can board the liferaft.

Subsequent Actions

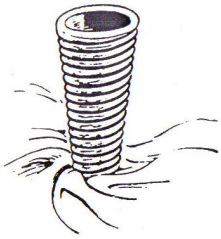
1. Take out the bellows from the repair bag, connect the inflation pipe of the bellows to the inflation valve in the floor. Screw out the valve and inflate. After that screw in the valve.

2. Take out the relief valve's plug from repair kit. Screw it on the relief valve in outside of buoyancy chamber. If the temperature is too high and make the pressure in the rafts too high, screw out the plug, let the relief valve work before screw on the plug.

3. Take out the radar reflector (square or round) from the emergency pack then install it correctly according to its manual.

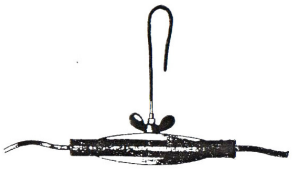
4. Since the raft is made of rubberized polyamide fabric, at a certain period elapse after inflation there might be slight leaking of gas from the buoyancy compartments, or when the air temperature has reduced considerably, the pressure in the buoyancy compartments may also be liable to drop. In case of significant pressure drop in a certain compartment, use the bellows to top it up. The method is same as item 1.

5. If there are any leaks or piercing resulted from outside causes, take out the leak stoppers from the equipment bag to plug the holes as shown in Fig. 20, or use the repair clamps to clamp the piercing as shown in Fig. 21. For permanent repairs, first make the repair area rough by emery paper, then apply some adhesive, last put on the rubberized polyamide fabric with adhesive to patch the damage. (after patching, allow 5 minutes interval and then re-inflating the patched compartment).



(1) Use the emergency plug to plug the holes.

(2) Use the repair clamps to clamp the piercing.



(3) Use rubberized fabric and adhesive for repairing.

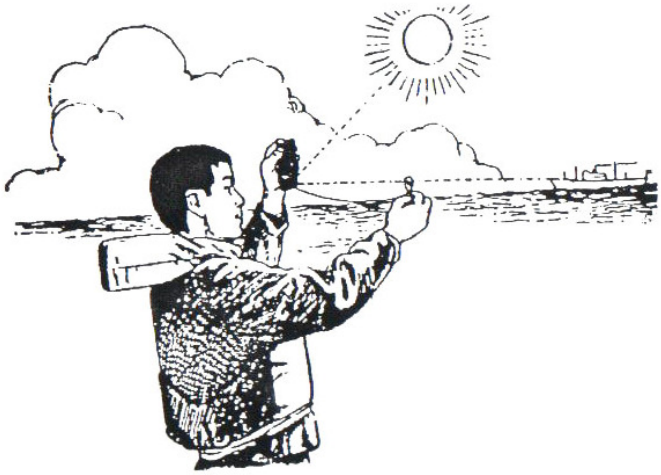
6. The identification light on top of the canopy and the illuminating light inside the raft are supplied from dry cells. If you needn't light, please insert the plug.

7. In case of water accumulate inside the raft, take out the bailer and sponges from the repair bag to clear out the water.

8. During raining, use the empty fresh water bottles or tins, or other means available to collect the rain water through the rain water catchment collection tube and store for use.

How to Send Signals for Help

1. Daytime



(1) Signals may be sent by the daylight signaling mirror with the aid sunlight

(2) Blow whistle to make rescuers pay attention sound of the whistle can transmit a long distance at down stream o wind.

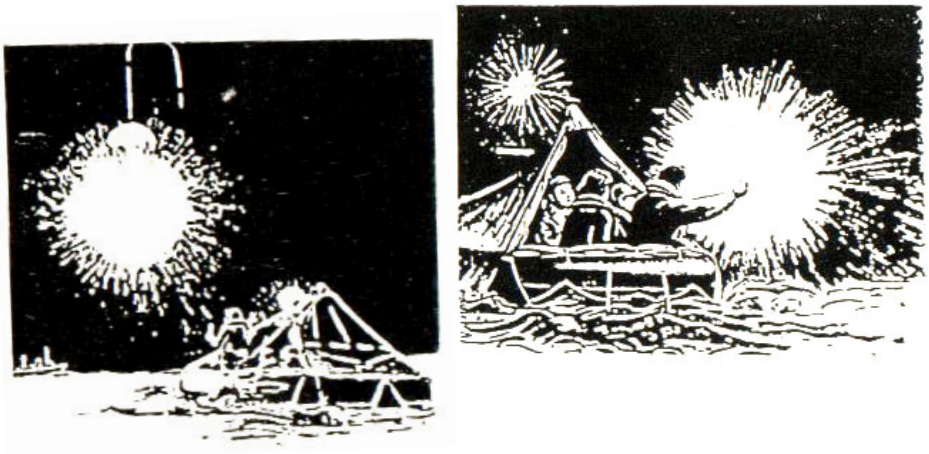
2. Night

(1) Launch the rocket parachute flare.

(2) Use red hand flare.

(3) Send morse code signal using the water-tight electric torch.

(4) Indicate the location of the liferaft using the identify light on top of the liferaft.



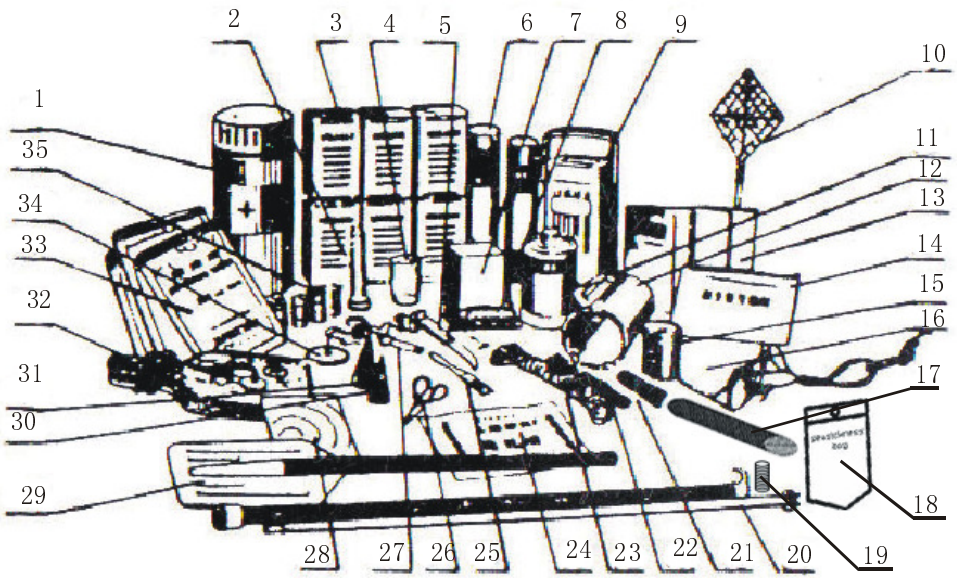
Cautions

1. After the liferaft is launched to water and released, it should immediately be oared away from the ship so as to avoid been driven in to the vortex of the sunken ship. Then the sea anchor should be dropped into water and keep the liferaft far away from the distress area.

2. Put the curtain down as to avoid from the attack o stormy waves and cold weather.

3. Keep a rational use of the food rations, fresh water, medicines and signaling apparatus stowed in the liferaft. Keep the medicines and signaling apparatus in dry condition, lest they may become useless.

4. The literaft should be checked annually when the liferaft is stowed. Attention must be paid that the seal rope shouldn't all off so as to prevent the liferaft from any damage due to water entering or mouse biting.



1. First-aid kit
2. Torch
3. Food rations
4. Drinking cup
5. Knife
6. Rocket parachute flares
7. Sponge
8. Fishing tackle
9. Red hand flares
10. Radar reflector
11. Buoyant smoke signals
12. Bailer
13. Manual for survivors
14. Illustration for survival signal
15. Mending solution
16. Sea-anchor
17. Thermal protective aids
18. seasickness bag
19. anti-seasickness medicine
20. Support of radar reflector
21. Scrape flake
22. Mending cloth
23. Painter
24. Emery paper
25. Brush
26. Scissors
27. Whistle
28. Daylight-signaling mirror
29. Paddles
30. Emergency plug
31. Emergency plug
32. Bellows
33. Fresh water tins
34. Emergency repair clamp
35. Dry cells