

TOPSL LIFERAFT STUFF

Preamble:

When Lacerta's Plastimo Liferaft went in for its tri-annual service at Mayday Marine, Ron Parker organised a group viewing. Gary, who carries out the service, was also a Royal Navy sea survival instructor. What follows is précis of some the good information gained that afternoon. I have tried to make this as generic as possible in order to gain the widest relevance.

Liferaft Mechanics:

- The hard shell case is not “sealed”, its function is to protect the Liferaft from mechanical damage while waiting to be used. The straps burst open when the lanyard is pulled. Whether hard shelled or in a soft bag, the principles are the same.
- The Liferaft itself and its equipment are contained within a vacuum -sealed bag that is designed to rupture in a structured way when the gas bottle (carbon dioxide -CO₂ + 3% nitrogen) is discharging. It takes about 12 seconds for the liferaft to fully inflate. [The nitrogen ensures that the nozzle does not become blocked with solidified (frozen) CO₂]
- The bottle has twin outlets that fill 2 independent tubes on our size of liferaft. Each single tube is capable of supporting the rated capacity of the liferaft. The upper tube has a non-return valve that leads to the canopy arch tube. A leak in the arch tube could deflate the upper tube but not vice-verse.
- Each liferaft has an approximate 25% overload capacity.
- Although there is 10 Metres of line attached to the Liferaft, there is a loop after about 1 metre from the boat end that is attached to the firing mechanism. This is a sharp, pointed tube that pierces the sealing disc to release the gas. The moral here is DO NOT pull the line out of the canister – you might end up with a lot more than you bargained for! If required, add another section to lengthen the available line for a more convenient tie down point.
- It is the action of pulling the lanyard out from the canister that “fires” the gas bottle. Do recognise that dropping the canister overboard will not necessarily cause inflation.
- The “survival kit” contained within the liferaft should be considered as liferaft survival, not human survival i.e. you need take stuff for yourselves! (See previous grab bag advice).

All the kit is stowed by the doorway.

- | | |
|--------------------------------------|---------------------------------------|
| ▪ 1 x Rescue quoit with 30m of line | ▪ 1 x Pair of oars |
| ▪ 2 x Sponges | ▪ 1 x Bailer |
| ▪ 1 x Waterproof torch and batteries | ▪ 1 x Life saving signal card |
| ▪ 3 x Red hand flares | ▪ 1 x floating knife |
| ▪ 1 x Drogue (sea anchor) | ▪ 1 x Set of repair clamps (puncture) |
| ▪ 6 x Anti sea sickness tablets | ▪ 1 x Hand pump |

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Some Practical Information

- The safest place for the crew is IN the yacht until such time as it becomes untenable. Recall the number of yachts still afloat but awash following the Fastnet disaster.
- Preparations, both physical (grab bag etc) & mental (briefing, delegation of tasks) are key factors in survival. Don't leave these to the last minute!
- The liferaft should only be deployed immediately before boarding. It should not be deployed "in case it might be needed later". This latter course of action is likely to have disastrous consequences with the liferaft being punctured by sharp objects, ripped at attachment points by snagging or being damaged in a multitude of ways.
- Deploy the liferaft from its stowage; pull the lanyard towards you to initiate the inflation & eventually to pull the liferaft to a boarding position.
- The liferaft may be upside down. The righting line will probably be taped to the underside, not swinging free as it is on sea survival practice.
- There are weighted water pockets that fill to give additional stability when the raft is upright.
- The strongest person should be the first one in. This may seem odd but the person at the boarding point helps to pull all the others in! Make sure you are all on board with all the necessary kit before closing the cover!
- Cut the lanyard to separate you from what is left of the yacht. The safety knife is stowed conveniently near the lanyard attachment. The line will eventually break before the liferaft gets dragged under.
- The over-pressure relief valves WILL be opening and closing to adjust the pressure in the buoyancy tubes. EXPECT these noises to go on for about 15 minutes! (This is normal). After 15 minutes consider capping the valves to prevent further venting on the assumption they have malfunctioned.

[Note: on the Plastimo raft, these valves vent into habitable space, on the Seago they vent externally. It is important that you keep the habitable area well vented, particularly during this period to avoid the effects of incipient CO₂ poisoning].

- Now you are on our own! Your preparations will now have chance to prove themselves.

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- **PROTECTION / LOCATION / WATER / FOOD.**

- **Protection:**

Hypothermia is a serious consideration. It goes without saying that any attempts at getting / keeping dry are really important. Shared bodily warmth may be a vital ingredient. More modern liferafts are smaller than the older ones for this reason.

There is a rope around the inside perimeter of the raft. Its best use may be as a lap strap rather than for holding on. This may be quite tight but it will hold you in place with the liferaft being thrown about at sea.

The Plastimo raft has an inflatable floor. This must be pumped up manually. The Seago has a silvered thermo floor.

Some liferafts, including the Seago have a boarding strap that goes right across the middle of the raft and over the entrance. Once everyone is in, the recommendation is to remove & stow it. The idea is to remove anything that may trap you should the raft turn over. Don't throw anything away; you may need it later.

Location: Deploy the sea anchor as soon as practical to keep you near the last known location of the yacht. (This would be sent with the DSC message).

Turn on the EPIRB, having previously secured it to the raft. Know when & how to use the flares safely.

Water:

There is a limited supply of water. In this situation you will only NEED a small amount of water and then only after urination has ceased for a while.

Take the seasickness tablets whether you feel sick or not. Vomiting is a quick way to lose considerable amounts of precious water.

Food:

Really this is well down the list and will not be an issue providing rescue occurs within a reasonable time frame. It is important that everyone urinates & defecates at the earliest opportunity. You'll probably only be going to do this once, thereafter your body will conserve resources for itself.

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Non Technical Issues:

- Leadership, structure and discipline as well your own determination have a vital impact on your chances of survival.
- Delegate tasks. It is important that everyone has task on which to focus. One important task is to husband the raft. This means regulating the pressure in the chambers by pumping or releasing the pressure if it gets too much as well as checking the whole raft over generally - a daily or even hourly ritual. One can imagine that cleanliness and good order are also of high priority.

[Note: fairly recently there was a case in the warm Mediterranean where the crew of a large motor yacht abandoned ship into 2 identical liferafts. When they were rescued a few days later, the occupants of one raft were in pretty good shape while the others were on their last legs. The only difference was the organisation on board].

- Be alert to signs of secondary drowning, especially if someone has had real soaking before boarding the raft.
- Anyone who has been in the water for a while will be affected by hydrostatic squeeze. This keeps blood from the extremities. Try to keep them horizontal until normal circulation returns.

Rescue:

- Have good idea of what the rescuers might expect from you when they arrive.
- Pre-arrange the disembarkation order.
- Rescue by helicopter will probably entail collapsing the cover (the upper chamber might deflate as well as well, depending on the design) and then all sitting on it to prevent the cover acting like a windsock, carrying the raft away in the down-draught. This also means you can be lifted cleanly. Wherever possible, the preference is for a horizontal lift.

None of the above is meant as a substitute for studying authoritative publications, it's just a taster of some of the issues involved.

Let's hope none of us ever need to put this to the test!

Chris Williams
03/02/2009

OFFSHORE

The Offshore liferaft has Butyl rubber tubes which give excellent strength and durability. The canopy is made from a rip-stop nylon making it 100% waterproof unlike rafts that have a polyester canopy which suffer from stress cracks when folded for long periods. The Seago Offshore liferaft has an automatic light, thermo insulated floor, weighted boarding ladder, reflective tape, four 30 Litre water ballast pockets and a rain water collection system, the liferaft is also equipped with an RORC safety pack (see list for details).



VALISE



CONTAINER

RORC PACK LIST:-

- 1 X RESCUE QUIT WITH 30M OF LINE
- 1 X PAIR OF OARS
- 2 X SPONGES
- 1 X BAILER
- 1 X WATERPROOF TORCH AND BATTERIES
- 1 X LIFE SAVING SIGNAL CARD
- 3 X RED HAND FLARES
- 1 X FLOATING KNIFE
- 1 X DROGUE (SEA ANCHOR)
- 1 X SET OF REPAIR CLAMPS
- 6 X ANTI SEA SICKNESS TABLETS
- 1 X HAND PUMP

**PBO Magazine 2007
BEST on TEST**



	Tube Dia.	Weight		Packed Dims (mm)	
		Valise	Container	Valise	Container
4 Man	2 x 210mm	23.5Kg	28Kg	L600 x W240 x H380	L650 x W430 x H280
6 Man	2 x 230mm	29Kg	38Kg	L700 x W240 x H400	L740 x W480 x H290
8 Man	2 x 260mm	35Kg	45Kg	L720 x W280 x H420	L740 x W480 x H330

Information line **01825 873 567** or email sales@seagoyachting.co.uk

LIFERAFT EQUIPMENT



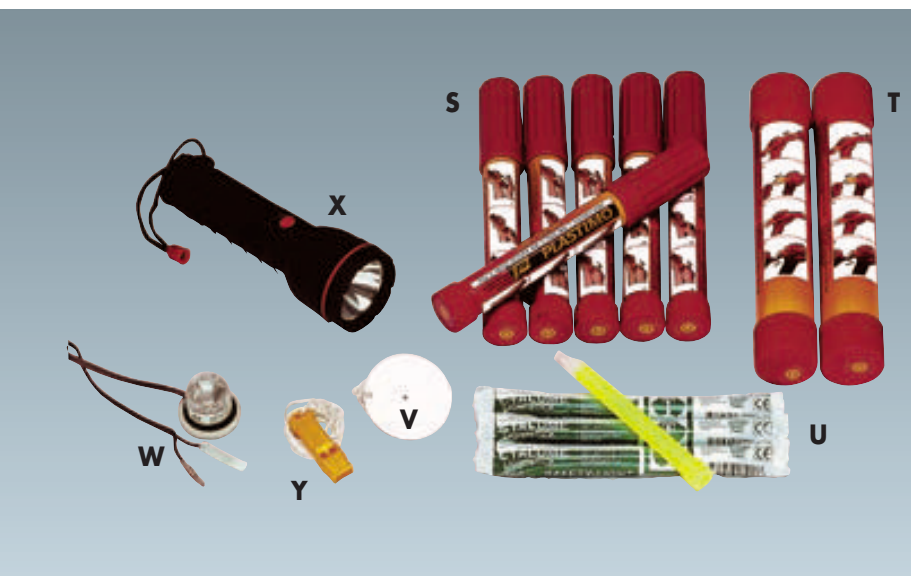
Raft equipment

Equipment	Liferaft model								
A. Floating anchor	1 0.40 m ² + 10 m line	1 0.40 m ² + 10 m line	2 0.40 m ² + 10 m line	1 0.67m ² + 30 m line	1 0.60m ² + 30 m line	1 0.60 m ² + 30 m line	2 SOLAS anchors + 30m line (1 automatic anchor)	1 0.67 m ² + 30 m line	1 0.67 m ² + 30 m line
B. Pump	1	1	1	1	1	1	1	1	1
C. Thermal protective blanket	-	-	-	-	-	2, SOLAS	2, SOLAS	-	2, SOLAS
D. Paddles	1	2	2	2	2	2	2	2	2
E. Floating knife	1	1	1	1	1	1	1	1	1
F. Rescue quoit with line	1+ 15 m line	1+ 30 m line	1+ 30 m line	1+ 30 m line	1+ 30 m line	1+ 30 m line	1+ 30 m line	1+ 30 m line	1+ 30 m line
G. Bailer	1	1	1	1	1	1	1	1	1
H. Sponge	1	2	2	2	2	2	2	2	2
I. Repair kit	1	1	1	1	1	1	1	1	1
J. Checkbook and liferaft instructions manual	1	1	1	1	1	1	1	1	1
K. Survival instructions and signal card	1	1	1	1	1	1	1	1	1



Personal survival

- Raincatching gutter on canopy									
L. Rainwater collecting pouch									
M. Water (quantity per person)									
N. Graduated cup									
O. Food rations (quantity per person)									
P. Fishing kit									
Q. First aid kit									
R. Seasickness pills (6/person)		✓	✓	✓	✓	✓	✓	✓	✓
- Seasickness pouch (1/person)				✓		✓	✓	✓	✓



Signalling equipment

S. Handflares, SOLAS									
T. Parachute rockets, SOLAS									
- Floating smoke, SOLAS									
U. Chemical light sticks									
V. Signalling mirror									
W. Light on top of canopy									
- Retro-reflective tapes on canopy									
- Retro-reflective tapes on bottom (to spot capsized raft)									
- Radar-reflecting tapes							7300 cm ²		
X. Waterproof torch									
- Spare batteries and bulb for torch			✓	✓		✓	✓	✓	✓
Y. Whistle			1	1		1	1	1	1

Cruiser Standard	Cruiser ORC	Cruiser ORC+	Coastal ISO	Offshore	Capri	Ibiza	Transocean ISO-ISAF Pack <24h	Transocean ISO-ISAF Pack >24h
1	1	2	1	1	1	2	1	1
0.40 m ² + 10 m line	0.40 m ² + 10 m line	0.40 m ² + 10 m line	0.67m ² + 30 m line	0.60m ² + 30 m line	0.60 m ² + 30 m line	SOLAS anchors + 30m line (1 automatic anchor)	0.67 m ² + 30 m line	0.67 m ² + 30 m line
1	1	1	1	1	1	1	1	1
-	-	-	-	-	2, SOLAS	2, SOLAS	-	2, SOLAS
1	2	2	2	2	2	2	2	2
1	1	1	1	1	1	1	1	1
1+ 15 m line	1+ 30 m line	1+ 30 m line	1+ 30 m line	1+ 30 m line	1+ 30 m line	1+ 30 m line	1+ 30 m line	1+ 30 m line
1	1	1	1	1	1	1	1	1
1	2	2	2	2	2	2	2	2
1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1

-	1	1	-	1	1	1	1	1
-	-	1	-	1	1	1	1	1
0.2 litre	-	0.5 litre	-	-	1.5 litre	-	-	1.5 litre
-	-	1	-	-	-	-	-	-
-	-	-	-	-	500 g	-	-	500 g
-	-	1	-	-	1	-	-	-
-	-	1	-	-	1	1	-	1
-	✓	✓	✓	✓	✓	✓	✓	✓
-	-	-	✓	-	✓	✓	✓	✓

-	3	3	3	3	4	3	3	6
-	-	2	2	-	2	2	2	2
-	-	-	-	-	2	2	-	-
-	-	2	2	-	-	-	2	2
-	-	1	1	-	1	1	1	1
-	-	-	1	1	1 inside + 1 outside	1 inside + 1 outside	1	1
-	300 cm ²	300 cm ²	900 cm ²	900 cm ²	900 cm ²	900 cm ²	900 cm ²	900 cm ²
-	-	-	600 cm ²	600 cm ²	600 cm ²	600 cm ²	600 cm ²	600 cm ²
-	-	-	-	-	-	7300 cm ²	-	-
1	1	1	1	1	1	1	1	2
-	-	✓	✓	-	✓	✓	✓	✓
-	-	1	1	-	1	1	1	1