EQUIPMENT

The Care & Maintenance of Safety Products

Safety at Sea Seminar
Annapolis, MD

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It’s the law  
(and it makes good sense)

2.03.1 All equipment required by Special Regulations shall:

a) function properly

b) be regularly checked, cleaned and serviced

c) when not in use be stowed in conditions in which deterioration is minimized

d) be readily accessible

e) be of a type, size and capacity suitable and adequate for the intended use and size of the yacht.
More good sense

2.03.2 Heavy items:

a) ballast, ballast tanks and associated equipment shall be permanently installed

b) heavy movable items including e.g. batteries, stoves, gas bottles, tanks, toolboxes and anchors and chain shall be securely fastened

c) heavy items for which fixing is not specified in Special Regulations shall be permanently installed or securely fastened, as appropriate
Key Equipment Goals:

Good crew, boat & equipment

**Train**, the good crew, on the boat & equipment

**Practice** using all routine and emergency equipment
Before going offshore, practice inshore in heavy weather

“What winch does the reef line go to?”

Can you do this at night?
Can you do this, navigate & change watches at night?
You carry all of this safety equipment:

- Emergency Antenna
- Plotting Sheets
- EPIRBs
- Spotlight
- Medical Kit
- Radar Reflector
- Flashlights
- Light Sticks
- SOLAS Flares
- PLBs
- Emergency Water
- Waterproof Flare Container
You need to know where it is

Stowage and Safety Diagram from Akela, RP 78
Next time you are sailing along at a good speed in the middle of the night with no moon and salt spray on your glasses, consider:

What is your collision & flooding plan?
What plugging & patching equipment do you carry?

February 2014
Svendborg Maersk lost 500 containers off the coast of France

March 2013
Barge Atlantic Trader lost 22 off Jacksonville
Dec 2015, another barge, 25 more

What is your collision & flooding plan?
What plugging & patching equipment do you carry?
Damage Control Kit with specialized tools
EPIRBs and PLBs

- Ensure it is registered TO YOUR BOAT
  - beaconregistration.noaa.gov
- Replace batteries every 5 years (or as req’d)
- Replace hydro release every 2 years
- Self-test feature
  - 406 MHz units can be tested at any time
  - GPS-enabled models can verify GPS operation
- Store your beacon where it can be reached quickly
  - “Cynthia Woods” beacon below decks
EPIRB located in cockpit where it could be easily deployed
Personal Protective Equipment

“Sunset” Friday:
Inflatable PFDs, Foul Weather Gear, Watch Caps, Hoods & Gloves

Down the Bay Race, May 2013 (Memorial Day Weekend!)
20-37 knots of wind       COLD!
✓ Personal decision, mandated by skipper or race rules
✓ Common: When reefing, when reefed, at night
✓ Consider distance offshore / seas / wind / # POB
Type I, II, III IV & V PFDs
Why use inflatables?
1. Non-restrictive
2. Excellent in-water performance
3. Compatible with harnesses
Belt packs are suitable for day-racing,

But…

“yoke-type” are better
Inflatable PFD Maintenance

Visual Inspection
No tears, wear, salt or green crud

Manual Inflation & Leak Test
Overnight; Inspect C02

Inspect water-activated bobbin; replace red with yellow versions
Check expiration dates on inflator water sensors
Most prefer an inflatable with integral harness

Some prefer a harness that can be worn with type 3, float coat, or inflatable without integral harness
Old fashioned hooks can’t be released under load & may accidently unhook

Modern tethers have quick release on your end and locking hook(s) on boat end.
✓ Quick release toward your strong hand.

Jacklines, & practice tether management
Lifesling

1. Mount properly
2. Fake the line in the bag (don’t coil)
3. Tie the bitter end to the boat

Practice
maneuvering the
boat & recovering
the victim
Throwable Devices & Throw Ropes

Alternatives to Life Sling

Ring Buoy

Buoyant Cushion or Horsehoe Buoy with Water Light

Throw Rope

Whistle
Personal Safety Gear: Mr. John Young in water

31 hours in water

Wearing blue & grey

CG flew over him at night on night vision goggles,

but he had no illumination

You must be seen to be rescued.

Mr. John Young, one of two survivors, was in the water for a remarkable 31 hours before being rescued. With him is Rescue Swimmer, AST3 Shaun Legas from Coast Guard Air Station Traverse City, who helped recover Mr. Young, U.S. Coast Guard Photo
Personal Safety Gear

- Replace batteries in strobes, flashlights, headlights every six months; use lithium or alkaline batteries
  - Alkaline batteries retain 80% of charge, 3 years, 20°C

- Inspect zipper sliders for corrosion; avoid metal sliders if possible

- Inspect knives for corrosion and sharpness

- Add fanny pack or pouch on PFD to store small items
  - Strobe
  - Knife
  - Headlight
  - Light sticks
Life Rafts
Life Rafts

✓ Inspect according to manufacturer recommendations
✓ Only use factory authorized service stations
✓ Store in dry location when not needed
✓ Keep valise life rafts dry unless in use
Life Rafts

✓ Make sure the tether is made fast to the boat

✓ Can you get the life raft on deck?
  ▪ Raft on “Cynthia Woods” stored below deck

✓ Establish an Abandon Ship Plan and Review with crew
Proper Equipment, Proper Training, Position & PFDs
greatly increase the chance of avoiding accidents,
and a successful rescue if required

Sail & Race Safely & Well…See you on the water!
BACKUP
Remember “P” !!!

▪ “Preparation Equals Performance”
  ▪ Admiral James Loy, Commandant of the USCG thru 9/11

▪ The 7 Ps:
  ▪ Proper Prior Planning Prevents Piss Poor Performance

▪ And if you remember nothing else…
  ▪ #1: Position Position POSITION!!!
  ▪ #2: PFDs PFDs PFDs!!!
Can you see me?
How about now?

The SEE/RESCUE® Streamer
25’ & 40’ long

Orange smoke flare would be similar but doesn't last as long
Different inflatables for different applications

- **Buoyancy:**
  - 16, 24, 35, and 60 lb.
  - 75, 100, 150, 275 Newton

- **Harness:** no harness, or belt pack

- **Inflation:**
  - Water activated
  - Manual
  - Either
The Type I/SOLAS Option

• OK in-water performance
• Difficult to work on deck
• Difficult to use with harnesses
Inflatable PFD with personal equipment

PLB, Streamer, Mirror, Whistle, Strobe Light, Flashlight & Knife
Perhaps add personal pen flares offshore
Modern inflators have a window so you can see whether they are ready to go
The Hydrostatic Advantage

1. Very unlikely to have an accidental inflation
2. Five year replacement
Different Inflators

1F Inflator

6F Inflator

Old auto inflator

Manual Inflator
Use the correct replacement cylinder
All contain 35g, but are *not* interchangeable

Secumar  Halkey  Hammar
Manual, automatic, or both?
Silkscreen on inflation bladder shows proper replacement cylinder.
Rearming kit for specific inflatable models
Silkscreen on inflation bladder shows proper replacement cylinder.
M/V Selkirk Settler
November 2006, Lake Superior

A nasty day with boarding seas...
Same laker a few minutes later...

Lookouts won’t be able to see well.

Radars don’t work well in heavy rain & seas.

Radar reflectors may not survive.

Can your hatches, ports & vents keep solid water out?
EPIRBs
Emergency Position Indicating Radio Beacons

PLBs
Personal Locator Beacons
Signaling...

- **Mirrors** work *GREAT* in sunny weather!
- **Whistles** can be heard much further than yelling.
- **Flashlight**, waved frantically & pointed at the rescuer, can be better than a steadily beating strobe light.
- **Flares** must be perfectly timed.

Beware sparks & slag
Chem Lights & Retro Tape

- **Chem Lights:**
  - No maintenance & long-lasting
  - Emergency light if power loss
    - (e.g.: compass light)

- **Retro tape:**
  - No maintenance & long lasting
  - It’s always there
  - Works amazingly well

Thunderstorm returning from Bermuda, 2008
END