



# Staying Afloat

**Give your life raft the longest life possible with proper service and maintenance**

By Tor Pinney

**O**f all the equipment we pile onto and into our boats, the life raft is unique at least in this respect: Nowhere else do we spend so much money on something we so fervently hope we'll never use.

While a life raft is not a legal requirement aboard non-commercial vessels in the U.S., how many of us are reckless enough to venture offshore without something into which we and our fellow crewmembers can escape and survive if the worst happens and our boat sinks or burns at sea?

A new, six-person, offshore life raft in a canister and deck cradle costs between \$3,000 and \$8,000—a

big bill for a budget-conscious cruiser. So today, many boaters are turning to the Internet to shop for secondhand rafts on websites like eBay and Craig's List. These pre-owned (but never used) rafts often seem like a bargain when compared to buying new.

Unfortunately, most old life rafts for sale are past due for inspection, some by many years. Before they can be relied upon to inflate and float when needed, they must be re-certified, which raises some questions. What exactly is re-certification? Who does it, and why should I trust them? How long does it take and what does it cost? Will this old raft pass? What if it doesn't?

Life raft service technicians must be manufacturer factory trained and certified for every individual brand and model life raft they service. Their completion certificates are often proudly displayed in the shop, like the ones shown at right, hanging in Vane Brothers Marine Safety's service facility in Norfolk, VA.

Bottom, senior service technician Shelia Ketterman removes the raft from its cradle and (since this is a full five-year inspection) pulls the lanyard to auto-inflate the raft with its own inflation bottle



### THE BIG GAMBLE

A couple brought a secondhand life raft into a repacking facility in Norfolk, Virginia. The woman had surprised her skipper husband for his birthday, buying it for him on eBay at a "bargain price." Typically, it was many years past due for re-certification.

When the inspecting technician pulled the auto-inflation lanyard, the raft quickly opened and filled, and then all of the valves blew out with a loud POP and the raft collapsed like a punctured balloon. It was trashed, un-repairable, a sorry sight—and the owners were a sorry couple. They took the condemned, loosely folded remnants home with them saying they would try to get their money back from the seller. We wish them luck.

Thanks to easy availability on the Internet, more and more budget conscious sailors are buying secondhand life rafts. The rafts often appear to be a bargain compared to the high price of purchasing new. However, very few of them are sold with a current inspection certificate, and most are sold "as is, where is."

Herein lies the Big Gamble.

If you buy an old raft that hasn't been inspected in many years, it

stands a very good chance of being condemned. In fact, that is the most likely outcome! According to United States Marine Safety Association board member Frank Hornig, "Most life rafts purchased secondhand and out of date (on their certification inspections) ultimately fail their inspection. They're not repairable and by law must be condemned." In other words, they're absolutely worthless and useless. The shop will return the raft to you, loosely folded and boldly marked "CONDEMNED," and just about all you can do with it is drop it into the nearest dumpster.

### THE BOTTOM LINE

If you're going to buy a secondhand, uncertified life raft, insist that the seller agree—in advance and in writing—to pay for any necessary repairs above the specific dollar amount that you're prepared to spend in addition to the purchase



price. In other words, if you buy a raft for \$1,000 and feel it would still be a good value if you sunk \$2,000 into it after inspection and re-certification (which is easily possible), then require that the seller agree to pay for repairs above the \$1,000 difference.

If the seller's share of the service facility's repair estimate turns out to be more than he or she is willing to pay, or if the raft is condemned outright (as is often the case), then the seller must refund your money and take back the raft. Be sure to clarify details such as who would pay for the return shipping of a damaged or condemned raft.

This way you're protected from buying an unusable, un-repairable piece of junk and the seller is agreeing not to profit from selling you



The life raft technician uses a detailed worksheet to ensure that every single item in and on the raft is inspected, tested and replaced if necessary. After inflating the raft with compressed CO2/nitrogen from its inflation bottle, the technician then purges the chemicals from the raft's inflation chambers by vacuuming, then refilling the raft using a shop air hose, and vacuuming again. This raft's inflation bottle valve had been recalled by the factory since its last inspection. After noting the information, the technician replaced it with a new one. Replacement of factory recall items is typically free to the customer.

one. Considering the high statistical likelihood of the old raft proving to be problematic when it's inspected, this is the only reasonable and fair way to do it. If the seller will not agree to these terms, it would be imprudent to buy that life raft—no matter how low the price.

When you do bring or send in your “new” old raft to a service facility for re-certification, always ask up front for an inspection and total-cost estimate before authorizing them to repair, repack and re-certify the raft. That way you and/or the seller can make an informed decision on how or whether to proceed.

## CHOOSING A SERVICE FACILITY

All American life raft service facilities must be USCG inspected and approved, and all technicians have to be manufacturer factory trained and certified for every individual brand and model they service. In addition to Coast Guard monitoring, life raft manufacturers periodically send representatives to inspect the repacking facilities they authorize, which effectively doubles the outside oversight a shop must satisfy.

Unfortunately, this is not always the case in third world countries. There is one particularly disturbing story of some locals at a South Pacific port who set up shop and charged cruisers to inspect, repack and re-certify their life rafts. What they actually did, however, was put a bag of cement into the canister to make it weigh what it should and give that back to the skipper, who set sail believing his life raft was up to date and ready if needed. Then they'd sell the purloined raft to someone else. Presumably, those scoundrels have long since been drawn and quartered, but their story highlights the need to have your raft serviced in an authorized, certified, monitored shop.

This doesn't mean cruisers have to bring their raft back to the U.S. to keep it current. All life raft manufacturers utilize authorized repacking facilities around the world, where you can expect the same careful, safe workmanship you'd get at home. For example, Switlik, which manufacturers in Trenton, New Jersey, lists inspection shops in Australia, Bahrain, Brazil, Chile, Caribbean, Egypt, Japan, Mexico, New Zealand, Nigeria, Pakistan, Saudi Arabia, Singapore, South Africa, Spain and United Arab Emirates. In most cases, the same shop will also be authorized to service many other brands of recreational and commercial rafts.

When you're ready to have a life raft repacked for the first time, try to visit a few manufacturer-authorized service facilities. Note whether the place appears to be clean and well organized. Talk to the technicians. Ask them how long they've been doing this and how many individual training certifications they have. You should come

away with a good feeling about the shop and the experience of the people in it. If it is simply impossible for you to visit facilities, seek recommendations from boat owner groups and cruising forums. Choose deliberately the first time, and in the future you'll be able to send your raft in for servicing with complete confidence.

## GETTING YOUR RAFT TO A SHOP

You can ship your life raft to a service center, but there are several good reasons to bring it in yourself, at least the first time. (Also bring any hold-down cables that secure the canister to its cradle, and bring the cradle itself if you can.)

Shipping a life raft can be costly. Depending on your point of origin, the freight roundtrip may cost as much as the gasoline you'd burn driving to the shop, and even the price of a modest motel room if you have to stay overnight. In any case, it's not going to cost you much more money to go yourself, and the time it takes will be time well spent.

As long as you've made an appointment in advance, most shops will allow you to watch them open your raft the morning you arrive with it. If they won't, consider finding another shop. In addition, most will be glad to show you how to use it. You'll learn a lot, and your first-hand familiarity with the life raft that is on board your boat could be invaluable should you ever need to deploy and board it.

## WHAT WILL HAPPEN?

A life raft service facility basically does three things to ensure the rafts they process will function properly when needed: inspect, repack and re-certify. In the course of inspection, the technician inflates the raft and checks for stitch, seam or glue failure, tube and valve leaks, general wear, kit inventory, inflation bottle and valve condition, and a long list of other features. He or she will also automatically replace items with past-due expiration dates, such as flashlight batteries, flares, and food and water packs, plus anything else that's not looking and working perfectly. The shop should return all the old items they've removed—this offers you proof that the items were indeed faulty and relieves them of having to dispose of hazardous materials.

Facilities are required to replace faulty items with manufacturer-specified equipment brands and models. For that reason, they may refuse to substitute comparable equipment that you picked up at your local marine store hoping to save a few bucks. They'll also treat the raft to any applicable manufacturer parts recalls and/or required upgrades, usually at no additional cost to the



Service technicians bench-testing life raft equipment. A hydrostatic release on a canister-packed life raft is a wise option. This water pressure-activated hydrostatic release illustrates its function. When the mechanism senses a water depth of 1.5 to 4 meters, it automatically severs a line connecting the cradle retaining cables so the raft can float free of a sinking vessel. Then it provides a weak link that releases the inflation lanyard after that has been pulled by the rising canister hard enough to trigger the inflation bottle's valve. This allows the inflating raft to rise to the surface where it can be boarded by crewmembers.

customer.

You can give the shop additional items to pack into the raft, but they must be limited to what the technician feels will safely fit and what the shop and the raft manufacturer allow. Adding some equipment, such as ACR Electronics' 406 EPIRBs, PLBs, SARTs and survival radios, will even void the raft's warranty.

### A WORTHY ADDITION

Regardless of what equipment is packed with or carried into a life raft, adding a hydrostatic release onto the securing cables of a canister-packed raft is a wise option. A hydrostatic release automatically releases the raft if your boat sinks before you're able to launch the raft manually.

Most release mechanisms work by automatically cutting a rope link in the securing cable that holds the raft in its deck cradle. The hydrostatic unit, activated by the higher atmospheric pressure underwater, is pre-set to cut the line when it reaches a depth of 5 to 10 feet, allow-

ing the life raft to rise to the surface and automatically inflate. An integral weak link in the tether ensures that the raft cannot be pulled down again with the sinking boat.

Whether you spend the additional \$100 or so for a hydrostatic release is your call, but considering the likely result of not having one if you ever find yourself treading water above your sunken vessel, it could be a good investment.

### THE COSTS

Re-certifying a life raft that's up to date and doesn't need anything replaced or repaired is likely to cost \$400 to \$500 plus shipping. Add another \$100 or so for additional testing at five-year inspections. A raft with an expired certification will usually cost more to bring back up to snuff (from \$800 to \$1,800, according to one shop's estimate). It all depends on what the inspector finds when he or she opens it up.

Expect to pay top dollar for replacement items. One invoice listed

\$23.70 for six D-cell flashlight batteries (\$3.95 each), \$38.98 for a pair of stainless steel bands to re-secure the canister and \$59.85 for three hand-held flares. Ouch!

While some charges might seem excessive, remember that shops have to recoup their considerable investment in ongoing training for technicians in addition to maintaining the high, mandatory safety standards imposed by Coast Guard and industry regulations. This is the price of knowing that your life raft was serviced by professionals. If the time ever comes that you have to use it, you'll know it was money well spent. ~

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### REGULAR INSPECTIONS...NECESSARY OR NOT?

The United States Marine Safety Association estimates that between 5,000 and 15,000 recreational life rafts are inspected annually in the U.S., yet this is just a fraction of the rafts out there that are due or overdue for re-certification. Annual servicing is expensive and inconvenient, and you might wonder why you should bother. What could possibly go wrong in one year with a life raft perched high and dry on deck or stowed in a locker? The answer is, a lot.

Shop technicians all have stories to tell,

ranging from funny to frightening. Mine recalled one raft that came in, perfectly ordinary on the outside, but teeming with cockroaches inside. Another housed a huge ant nest, and still another contained a family of mice. Life rafts may seem impregnable in their tight valises and sealed canisters, but persistent critters can and do get in, perhaps attracted by the food rations inside, or maybe just homesteading.

Even without an alien invasion, life rafts need to be aired out. Over time, a folded raft will form creases, creating weak

points in the fabric. For these reasons, it's wise to keep your life raft up to date with its recommended inspection schedule.

Older recreational life rafts were designed to be inspected annually, with a more thorough examination every five years. Today, however, some manufacturers are vacuum-bagging their rafts inside the canister or valise. Those units need only be inspected every three years. Vacuum bagging adds to the up front cost of those rafts, but will save the owner time and money in the long term.

# THE ABANDON SHIP SURVIVAL KIT

Should you have to abandon ship, the completeness of the survival kit you take with you could mean the difference between life and death. Prepare it as if you're actually going to rely upon it, entirely and exclusively, for many weeks.

Pack the survival gear in a heavy-duty plastic river-rafting bag or strong duffel bag and store it, together with two 5-gallon jugs of water, in a readily accessible location, such as a cockpit locker. Tie a brass or sturdy plastic whistle on a lanyard to the outside of the bag. The pack and jugs should float (fasten a life preserver to the pack and leave some air in the water jugs) and should have secured to each of them 30 feet of brightly colored polypropylene

line as lanyards. Refill the water jugs with fresh water before each offshore passage, and be sure to inspect and upgrade the entire kit thoroughly at least once a year.

Offshore life rafts contain more survival equipment than their coastal or coastwise counterparts, but conditions aboard any recreational life raft will be much improved with a well-stocked ditch bag. If you're working within a tight budget, you might save money by purchasing a US Coast Guard-certified coastal life raft (rather than an offshore model), which is essentially an offshore-capable raft with less equipment included, and then make up the equipment difference in your own ditch bag.

## PACKED LOOSELY IN BAG

- 1 hand-operated water desalinator watermaker, with instruction manual
- 2 compact solar stills
- Collapsible 10-inch radar reflector and/or parafoil kite reflector
- 1-gallon jug of water
- 6-foot square piece of Dacron cloth
- Cutting board (1 square foot 1/4" plywood or starboard)
- 2 1-gallon foldable water jugs
- 2 paddles with collapsible handles
- Raft sea anchor
- Raft patching kit
- Raft pump plus one spare pump (or repair parts)
- Hand bearing compass
- Fishing trident (with points well protected) and broom handle
- Double-banded spear gun with extra stainless steel tips
- Dive mask or goggles
- Fish gaff (with point well protected)
- Clean sponge (for collecting condensation)
- 2 light rain suits
- Sea soap
- Sharpening stone
- Two sprouting jars (for sprouting seeds and beans)
- Rubber sandals (for rocky landfalls)

## TIGHTLY SEALED IN PLASTIC CONTAINERS

- EPIRB, 406 MHz
- Handheld VHF with fresh batteries packed separately
- Handheld GPS with fresh batteries packed separately
- Waterproof flashlight with fresh batteries packed separately
- Spare flashlight batteries
- Flares: 6 hand-launched parachute, 6 hand-held red, 4 hand-held white, 2 orange smoke, 1 Very pistol with 12 red parachute and 6 red meteor flares, and/or Solas flares
- 1 signal mirror
- 12 high-energy food bars
- 20 packages and cans of food
- Large container of honey
- Large, sealed bag of dried fruit
- Assorted seeds and beans for sprouting (mung, alfalfa, etc.)
- 2 dozen heavy-duty self-sealing sandwich bags
- Assorted plastic bags
- 2 small can openers
- 2 spoons, 2 forks
- 2 butane lighters and several books of waterproof matches
- Pads of paper & 4 pencils
- Photocopy of passports
- \$100 cash in 10s and 20s
- Duplicate credit card
- Small-scale chart of ocean in which you are sailing
- Protractor
- Small container underwater epoxy
- Tube of quick-cure bedding compound

- Duct tape
- Pliers
- Screwdriver
- Wire saw
- Rigging knife on lanyard
- Fish fillet knife in sheath
- 1 bottle multi-vitamin pills including vitamin C
- Small medical kit
- 2 rolls surgical gauze
- Lots of seasick pills
- Large container of sun-block cream
- Jar of Vaseline petroleum jelly
- 2 toothbrushes
- Dental floss
- 3 sizes Dacron sail thread, 200 feet of each
- 6 stainless steel sail needles
- 100 feet each of 1/8-inch and 1/4-inch line
- 12 fishhooks, 1/2- to 1-inch, single and three-pronged
- 2 spools 80-lb. test fishing line
- 20 feet leader line
- 10 feet of 1/16-inch stainless steel seizing wire
- 2 pair nylon stockings (for collecting plankton)
- 2 white towels
- 2 space blankets
- 2 long-sleeved shirts and two sweaters
- 2 sets polypropylene underwear
- 6 pocket-sized chemical heaters (from a camping store)
- Survival manual