PORTLAND PUDGY

4. Exposure Canopy

Table of Contents:

Portland Pudgy Exposure Canopy **1**

Portland Pudgy Proactive Lifeboat System 1

General Safety Information 2

Abandon Ship Plan 2

Portland Pudgy Exposure Canopy Components **3**

Setting Up the Exposure Canopy **5**

Instructions for Presetting the Exposure Canopy 5

Step A. Secure the Canopy Fore and Aft Sections to the Pudgy 6

Step B. Secure the Fore and Aft CO2 Cylinders to the Support Tubes 6

Step C. Secure the Middle Section 8

Step D. Attach Pull-Cord with Three-Inch Ball and Velcro Tag to Lanyard of CO2 Inflation Valve 9

Step E. Cover the Canopy and Pudgy with Boat Cover 9

Inflating and Deflating the Tubes **9**

Inflating the Fore and Aft Sections 9

Inflating with CO2 Cylinders 10

Inflating Manually 10

Deflating Fore and Aft Tubes 10

Inflating the Middle Section Tubes 11

Deflating the Middle Section Tubes 11

Securing Portland Pudgy Lifeboat to Mother Boat **11**

Drain Plug 11

Emergency Painter 11

Securing the Pre-Set Portland Pudgy Lifeboat to the Deck 11

Securing the Pre-Set Portland Pudgy Lifeboat to Davits 12

Deploying the Pudgy with Pre-Set Exposure Canopy **12**

Deploying the Pre-Set Portland Pudgy Lifeboat 13

Setting Para-Anchor for Use with Canopy **14**

Righting Pudgy with Inflated Canopy in Place **14**

Righting the Empty Portland Pudgy Lifeboat 14

Righting with One or More Passengers Aboard 15

Rowing the Pudgy with Canopy Preset **15**

Using the Sail Kit with the Exposure Canopy **16**

Setting up the Sail Kit with the Exposure Canopy in Place 16
Exposure Canopy Maintenance 18
Stowing the Exposure Canopy 18
Emergency Supplies and Equipment to be Provided by Owner 19
Exposure Canopy Index 21

PORTLAND PUDGY EXPOSURE CANOPY

The exposure canopy converts the Portland Pudgy to an unsinkable self-rescue lifeboat that protects you from heavy weather and exposure. The Pudgy lifeboat can be rowed, motored, or sailed to shipping lanes or safety. The exposure canopy can be preset (see page 5), or you can stow it (along with other safety equipment) within the double hull of the boat (page 18) and set it up on the water.

Unsinkable. The basic Portland Pudgy is unsinkable because of closed cell foam under the floor, and in a USCG test, it took 1855 pounds (841.4 kg) to submerge the boat to its gunwales. The inflated exposure canopy provides an additional 430 pounds (195 kg) of buoyancy. The inflated exposure canopy makes the Portland Pudgy lifeboat self-righting when empty.

Comfortable. The Pudgy has 16.1 square feet (1.50 sq. m) of floor space. The USCG requires 16 square feet for a four person life raft. The Portland Pudgy's middle seat is removable, and the flat floor is six feet two inches long (1.92m), designed so that two people can comfortably stretch out to sleep. Unlike a life raft, the Pudgy's floor can be kept dry. It has channels for water leading to a drain with a plug. (The Pudgy is self-draining when carrying less than 30 pounds (13.61 kg).) In addition, the floor is insulated; because of the double wall thickness and the foam under the floor, the floor is not as cold as in most life rafts. For optimum comfort, it would be wise to store a thin inflatable mattress.

Portland Pudgy Proactive Lifeboat System

If you plan to use your Portland Pudgy as a potential lifeboat, certain items are essential:

- Exposure canopy
- Sea anchor (see *5. Para-Anchor*)
- Boat cover (*see 6. Boat Cover*)
- Safety harness eyes
- Boarding ladder/fender (MFC) (see *6. Boarding Ladder/Fender*)
- Bailing pump (see *8. Pump*).

If you want to be able to sail to safety, obviously, the sail kit is needed (see 3. *Sail Kit*). In addition, the electrical system and solar panel for recharging can be used for powering electronic devices such as GPS, torch, etc. (see *7. Electrical System*).

In addition, there are several pieces of essential survival equipment that you must supply. This includes ditch bag, fresh water and other provisions, fresh water still, emergency painter, and strobe light among other things. See *Emergency Supplies and Equipment to be Provided by Owner* on page 19.

Proactive and self-contained. The Portland Pudgy proactive lifeboat system is a self-contained unit. All of the safety equipment you plan to use, including the exposure canopy stored in its dry bags, the para-anchor, the sail kit, the ditch bag, electrical devices, and other equipment, can be stowed in the interior hull storage compartments, via the hatches, or neatly under seats.

The exposure canopy and sea anchor can be pre-set for emergency use. The exposure canopy inflates in about seventeen seconds after the lanyard is pulled. It uses two inflation chambers, each with a CO2 cylinder and a high-quality valve. (The valves are approved by the Navy for their one-man life raft.)

General Safety Information

It is the captain's responsibility to examine, test, and be familiar with everything he or she plans to use in an emergency. Read this manual carefully and practice using the equipment. Before an emergency arises, install your exposure canopy and manually inflate it to thoroughly understand how it works.

Tether all important equipment to the boat.

IMPORTANT: Do not abandon ship until all attempts to control damage have been tried and the boat is definitely about to sink, explode, or be consumed by fire. Send out distress signals before abandoning ship. Common thinking is that you should stay in one place and wait to be rescued, and that it is safest to stay with your mother vessel if at all possible. If separated from mother boat, you do not have a working EPIRB, or if you are in waters where rescue is unlikely, then it is the captain's call whether to remain relatively stationary or to be pro-active with your Portland Pudgy and sail toward safety.

Abandon Ship Plan

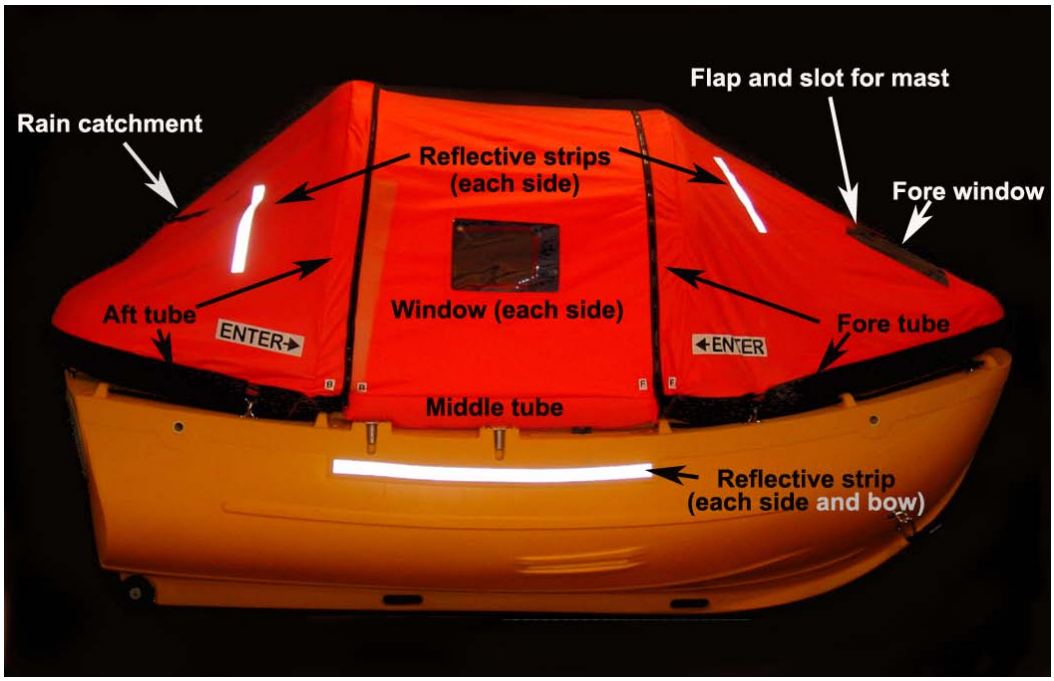
Make a clear abandon ship plan before the need to abandon ship arises. It should be in writing, and known to all crew and passengers. It should specify procedures for deploying the Pudgy, including:

- putting the Pudgy in the water,
- boarding the Pudgy,
- keeping the Pudgy tethered to mother vessel while passengers board, and severing that connection (if necessary) once everyone is aboard the Pudgy or tethered to it,
- use of the exposure canopy and sea anchor if available.

Have periodic abandon ship drills. Practice boarding the Pudgy from your boat as well as climbing into the Pudgy from the water.

PORTLAND PUDGY EXPOSURE CANOPY COMPONENTS

The photograph below shows the exposure canopy components visible from the exterior. You must provide your own ditch bag and any special safety equipment such as water still (see page 19). Portland Pudgy offers a sea anchor, boarding ladder/fender, and sail kit as well (see respective chapters in this owner's manual).



Fore and aft sections: The fore and aft sections are each constructed of an inflatable six-inch (15.24 cm) diameter tube. One tube curves around the bow of the boat and one around the stern. Each tube curves upward toward the center of the boat, forming an arch. Each section is fastened onto the boat using snap hooks and web belts that clip and fasten onto the exposure canopy pad-eyes and belt loops along the gunwale.

These tubes support a fabric canopy of coated nylon. The outside of the canopy is emergency orange for high visibility, and the inside is a neutral color (recommended by the USCG to reduce seasickness).

Both the fore and aft tubes can be inflated by CO2 cylinders supplied with the canopy, manually (using the pump provided), or orally, using a tube (not supplied).

The fore section (labeled **"front"**) is fastened to the bow gunwale, and the aft section (labeled **"back")** is fastened to the transom gunwale.

Exposure canopy with middle section partially unzipped

Both the fore and aft tubes can hinge up at the bow and stern to allow access to the bridle or para-anchor (fore section), or the tiller or rear access hatch (aft section).

There are two reflective strips on the fore and aft sections, as well as **"ENTER"** labels indicating the entrance between the fore and aft sections.

The **fore section's vinyl** window has a hole with a protective flap at the top, so you can insert the sail kit's mast and down haul line through the hole and seat the mast in the mast cup in the floor of the boat. See photo, top right.

The outside of the **aft section** has a rainwater catchment device ("V" shaped piping with an attached tube and a twist open/twist closed valve that opens inside the boat). See photo, middle right.

Middle section: The middle section of the canopy (see photo, bottom right) zips onto the fore and aft sections, which support it when they are inflated. The zippers are double-pull, and can be zipped open or closed from either direction. You can only completely unzip the middle section (to remove it) from one end of the zipper. The other end has a stop to prevent it coming off completely. When sailing, the middle section should be unzipped to the side with the stop.

The middle section has an orally-inflated six-inch (15.24cm) diameter tube at the bottom of either side. These tubes keep the middle section of canopy snug at bottom. There is a two-inch x four-inch (5.1cm x 10.2cm) Velcro patch on either end of these tubes. These patches secure the ends of the middle tubes to the elbows of the fore and aft tubes, which also have Velcro patches. When fore, aft, and middle sections of the six-inch diameter tubing are connected, they form a continuous enclosure around the cockpit of the boat.

The middle section has two windows (one on each side). Note that the zippers are double-pull, so you can also unzip them from the bottom to the top.

When pre-setting canopy, the two middle tubes should be kept inflated. The middle section should be zipped to the fore and aft sections.

Important: The method for pre-setting the middle section differs depending on how you are carrying the Pudgy lifeboat (on deck or cabin, on arm davits, or on Weaver davits). See *Step C. Secure the Middle Section*, page 8.

Fore section, showing window, and flap for mast

Aft section, Showing Rainwater Catchment

The Middle section rolled down.

SETTING UP THE EXPOSURE CANOPY

This section describes pre-setting exposure canopy so that the exposure canopy is already in place if an emergency should occur.

Normally you will preset the canopy while on land or on the deck of your boat. You can also set up the exposure canopy when you are at sea in the Pudgy. Follow the steps outlined in this section, and when you are ready, inflate the support tubes following the instructions beginning on page 9.

WARNING: You must cover the pre-set canopy securely with the Portland Pudgy boat cover. Without the cover, the canopy fabric could be blown about, causing inflation.

You can row the Pudgy with the exposure canopy pre-set. Simply remove the middle section to allow access to seats and oarlocks. You must also remove and stow the inflation ball cords. See *Rowing the Pudgy with Canopy Preset* on page 15.

Instructions for Presetting the Exposure Canopy

You can preset the exposure canopy so that is ready for use at any time. The following are the basic steps in presetting the canopy. If you are setting up the canopy while aboard the Pudgy, omit Step E.

Step A. Secure the canopy fore and aft sections to the Pudgy (see page 6).

Step B. Secure the fore and aft CO2 cylinders, if not already installed (see page 6).

Step C. Secure the middle section (see page 8).

Step D. Attach the two pull-cord clips with three-inch ball to each inflation valve (see page 9).

Step E. If pre-setting the canopy, cover the canopy and Pudgy with a boat cover (see page 9). You must keep the canopy covered with the boat cover if canopy is pre-set, to prevent its flapping in the wind, accidental inflation, and sun damage. These steps are explained below.

Exposure canopy in place and protected with boat cover

Stern strap of boat cover

Step A. Secure the Canopy Fore and Aft Sections to the Pudgy

Forward & Aft Webbing Attachment

Forward

Aft

1. **Fore section snap hooks:** On each side of the rear part of the canopy's fore section there are two stainless steel snap hooks (four, total) on one-inch (2.54 cm) wide webbing. (These snap hooks can only be secured when the tube is deflated.) Secure each snap hook to the corresponding pad eye on the gunwale (located about 9" in front of the leeboard slot) on the port and starboard sides.
2. **Aft section snap hooks:** Procedure same as for fore section. The snap hooks are attached to the corresponding pad-eyes on the gunwale a few inches behind the leeboard slot.)
3. **Fore and aft webbing:** There are two 1-inch wide web straps on the forward part of the canopy's fore section as well as on the aft part of the canopy's aft section. Pass each of these straps through the corresponding belt-loop pad eyes on either side of the bow gunwale and through the push button buckle (see photo of aft section, at right, above). Pull until it stops. (The webbing should form a loop around the tube, which is about six inches (15.24 cm) in diameter.

Note: The purpose of the fore and aft belt-loop attachment system is to let you loosen the webbing in the push button buckle so the canopy can hinge open for access to the bridle and/or the sea anchor at the bow, and the rear access hatch and rudder at the stern. See *Setting up the Sail Kit with the Exposure Canopy in* Place, page 16, for a photo showing this.

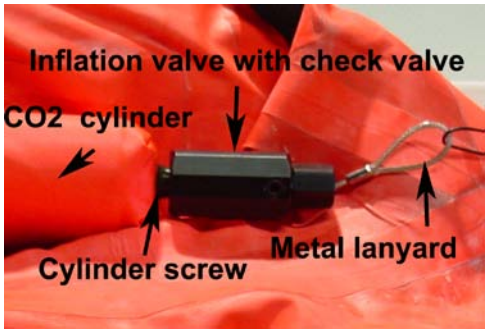
Step B. Secure the Fore and Aft CO2 Cylinders to the Support Tubes

If the CO2 cylinders are not already in place, use the following procedure for the fore and aft sections of the canopy. They should be kept in place for instant deployment.

The photos below show all of the parts described in the procedure detailed in this step.

First, make sure the inflation valve is "armed," i.e. that the metal lanyard is in the valve. DO NOT PULL (see CAUTION below.) Normally, you do not have to arm the valve: it should be armed when it comes from the factory. If the wire lanyard is not attached, the valve is not armed and cannot be discharged.

If lanyard is NOT attached, it can be put in place. With the CO2 cylinder detached from inflation valve proceed as follows:



Detail showing inflation/check valve and CO2 cylinder connection on the deflated canopy

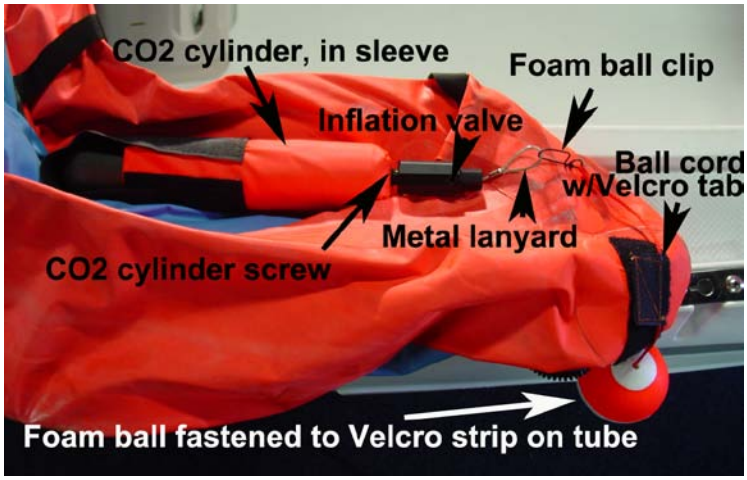
1. Loosen the cap on the inflation valve to the point where you can insert the lanyard ball back in the hole. **Do not remove the cap completely,** because the spring inside is likely to fall out.
2. Carefully, with a soft object (such as a pencil eraser) push in the dagger plunger (where the CO2 cylinder screw enters the inflation valve).
3. Push the small ball of the metal lanyard into the hole inside the inflation valve (under the cap), so that the lanyard ball is fully seated in the inflation valve hole.
4. Tighten the cap back on the inflation valve.

   The lanyard is now secured in place.

   CAUTION: DO NOT PULL THE LANYARD UNLESS USING IT TO INFLATE THE CYLINDER.

   With the CO2 cylinder "armed," you are ready to secure the CO2 cylinders to the tubes, as follows:

5. Insert the CO2 cylinder into the sleeve near the "elbow" of the support tube. Insert the cylinder screw end (nipple end) first, so that the screw end protrudes through the hole at the end of the sleeve.
6. Smear a small amount of waterproof grease around the threads of the cylinder's screw end.



7. Screw the cylinder into the CO2 inflation valve (holding the valve with care to avoid twisting the fabric of the support tube). Make sure you have screwed the cylinder into the valve all the way. It should be a snug, hand-tightened fit.
8. Secure the Velcro strap at the **base of the sleeve** to hold the cylinder in place.

CAUTION: To prevent accidental inflation, always keep the metal lanyard on the inflation valve disconnected from the pull-cord with large three-inch ball when removing the canopy for storage, when storing the canopy, or when moving the Pudgy around on deck. This means that in presetting the canopy, DO NOT connect the pull-cord with large ball to the metal lanyard on the valve until you have:

- secured the fore and aft sections to the Pudgy (see page 6),
- secured the fore and aft CO2 cylinders (see page 6), and
- secured the middle section of the canopy (see page 8).

Also see *Step D. Attach Pull-Cord with Three-Inch Ball and Velcro Tag to Lanyard of CO2 Inflation Valve* on page 9.

Step C. Secure the Middle Section

1. Identify the fore and aft edges of the middle section. To do this, match up the labels on the middle section and on the fore and aft sections—front to front (F to F), and back to back (B to B). The forward edge is shorter and curves inward.

   See photo at top right.

2. Zip the middle section to the fore and aft sections of the canopy. (The zippers are double-pull, two-way.)

   See photo at top right.

3. When the middle section is zipped in place, unzip the bottom of the middle section about two feet on both sides, so only about three feet at the top of the middle section is closed. See photo at bottom right. This allows easier access into the Pudgy from your boat or from the water. **(See special information about carrying on arm davits, below.)**

4. With preinstalled fore and aft sections in place, orally pre-inflate the two middle section tubes, tuck them down in the boat, and cover the boat with the boat cover.

Front to Front Middle and Fore Sections Matched

Middle Section Zipped Partially Open

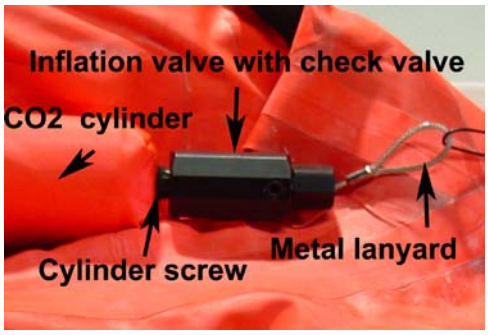
Securing the Middle Section When Carrying Pudgy on Arm Davits: In serious weather conditions or for blue water sailing, it is not advisable to carry a dinghy on davits. It is better to carry it firmly secured on deck. However, if your Portland Pudgy lifeboat is to be carried on arm davits and covered with the special Portland Pudgy boat cover made for use with davits, you adjust the middle section differently.

With arm davits, you **do not** unzip the middle section upwards on both sides as explained in step C-3 above. Instead:

1. Unzip the middle section on the port or starboard side, so that it is zipped closed only about a foot on the far side.
2. Orally pre-inflate the middle section tubes.
3. Tuck the loose part of the middle section to the zippered side. Fore and aft sections of the canopy can be pushed out of the way to allow the lifting lines to clear the fore and aft sections of the canopy fabric.
4. Leave the fore and aft sections loose, with the armed CO2 cylinders in place.

Also see *9. Boat Cover* for more information about pre-setting the Portland Pudgy lifeboat when using arm davits.

Step D. Attach Pull-Cord with Three-Inch Ball and Velcro Tag to Lanyard of CO2 Inflation Valve



When you have finished steps A-C, and the Pudgy is set where you intend to carry it (in other words, where there is no danger of accidental inflation), you can clip the pull-cord with large three-inch ball onto the metal lanyard on each inflation valve.

Secure the one-inch x two-inch (2.54 cm x 5.08 cm) Velcro tag of the ball's pull-cord to the Velcro near the elbow (base) of the support tube. This will keep it secured, to prevent accidental inflation.

Note: When storing the pre-set Pudgy lifeboat upside down on deck or on chocks, make sure that the Pudgy is not resting on the CO2 cylinders or valves.

Step E. Cover the Canopy and Pudgy with Boat Cover

When pre-setting the canopy, you must cover the Pudgy lifeboat with the Portland Pudgy boat cover. Otherwise, the canopy fabric will blow around, which could cause accidental inflation.

Fit the cover over the gunwales, run the two webbing straps underneath the boat, fasten the cam-buckles, and pull snugly the buckled strap in the stern.

Important: Fasten the aft strap very tightly to prevent the cover blowing off in severe wind.

Note: You put Portland Pudgy boat covers for use with swim platform davits or arm davits in place slightly differently, but be sure that the straps (particularly the aft strap) are fastened tightly.

INFLATING AND DEFLATING THE TUBES

The following instructions explain first how to inflate and deflate the fore and aft tubes, and then the middle section tubes. You will only need to inflate the tubes when you are deploying for actual use, or when you are testing the canopy.

Inflating the Fore and Aft Sections

The fore section and the aft section have three valves each:

a. Inflation valve with wire lanyard, forming a unit with the check valve (b)

b. Check valve attached to inflation valve (a) The two valves (a and b) together inflate the tube.

c. Combination pressure release/top-off valve.

These are explained below.

Inflation valve and check valve:

Secured near one "elbow" of each tube near the CO2 cylinder sleeve, there is a valve system consisting of an inflation valve mounted on top of a check valve. The inflation valve connects to the CO2 cylinder, and should have a metal lanyard on the side. See photo, *Step D. Attach Pull-Cord with Three-Inch Ball and Velcro Tag to Lanyard of CO2 Inflation Valve,* above. When canopy is completely preset, a pull-cord with three-inch ball is clipped to this metal lanyard. When the pull-cord is yanked, the valve is fired, and the CO2 is released.

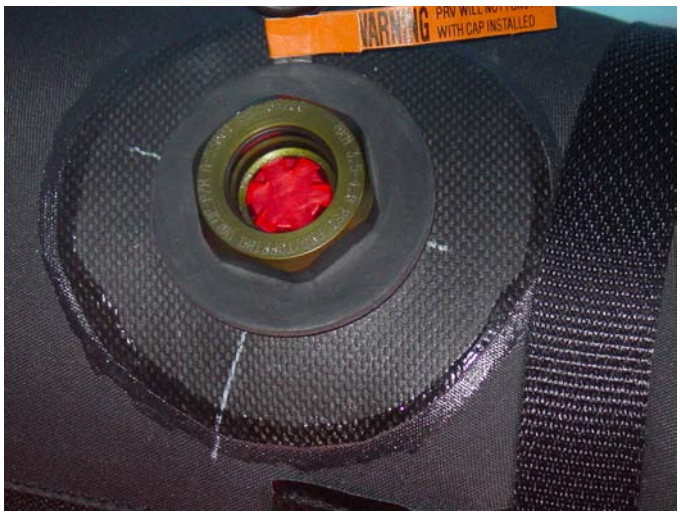
The check valve prevents deflation: when the inflation valve and/or the empty CO2 cylinder is removed, the check valve closes up automatically. See preceding instructions (*Step* B. *Secure the Fore and Aft CO2 Cylinders to the Support Tubes*, p. 6, and *Step D. Attach Pull-Cord with Three-Inch Ball and Velcro Tag to Lanyard of CO2 Inflation Valve,* above).

Note: When a support tube has been inflated with a CO2 cylinder, you can remove the cylinder and discard. It is not reusable. The CO2 inflation valve can be re-armed. Save the lanyard for re-use with a new cylinder.

Combination Pressure Release/Top-off Valve:

The valve on the port side of each support tube is a combination pressure release and top-off valve. This valve is designed to release excess pressure. You can also use this valve to manually top off the support tube with the supplied bellows pump, or to completely inflate the tube manually. See instructions below for inflating with CO2 cylinders or manually.

CAUTION: If this valve came with a rubber cap, do not secure the cap on this valve prior to inflation with the CO2 cylinder. In hot weather, this could cause the tube to burst.



Pressure relief and top-off valve

Inflating with CO2 Cylinders

Yank the pull-cord with the large three-inch ball connected to each support tube's CO2 inflation valve. This releases the CO2. The metal lanyard detaches completely from the valve. (The tubes will fill and the canopy will erect in about seventeen seconds.)

Note: The volume of the CO2 gas will vary depending on the outside temperature. If the temperature is hot, the gas will expand and will take up more room. Some of it may have to escape via the pressure release valve. If the temperature is very cold, the support tube may not fill completely, and it will need to be "topped off" manually with the hand pump supplied.

Inflating Manually

The manual bellows pump is connected by a nylon lanyard to a manual pump adapter.

1. Screw the pump adapter onto the pump (if it's not already screwed on).
2. Press the manual pump adapter into the top-off/pressure release valve on the port side (on the opposite side from the CO2 inflation valve). You may have to hold the adapter in place while pumping. An adaptor tube can be ordered from Portland Pudgy for orally inflating the tubes.
3. Pump until the tube is tautly inflated.
4. Remove the pump.

Note: It would be wise to tether the pump to the boat. You do not want to lose it.

Deflating Fore and Aft Tubes

To reduce pressure or to deflate the tube, do the following.

With your finger or blunt, non-metal probe, press in on the red button in the center of the pressure release/top-off valve and gently squeeze the tube to speed the release of gas. Do not use a hard or sharp object. You can also use the pump adaptor by itself to relieve pressure.

Note: To repack the fore and aft sections, you need to get all the gas out, and this takes patience.

CAUTION: Keep all valves clean. Make sure no grit gets in. Rinse with fresh water if necessary, and let dry.

Inflating the Middle Section Tubes

The middle section tubes are inflated orally through the small red tubes. Once inflated, the Velcro patches let you fasten the ends of the middle section tubes to the elbows of the fore and aft sections. Make sure the Velcro is well-connected.

Deflating the Middle Section Tubes

The middle tubes can be deflated by pushing in on the black valve at the end of the red tube. You can use the valve cap or your finger for this. Do not use a sharp object. You must remove all the gas in order to repack the middle section.

SECURING PORTLAND PUDGY LIFEBOAT TO MOTHER BOAT

As mentioned previously, in serious weather conditions or for blue water sailing, it is not advisable to carry a dinghy on davits. It is better to carry it on deck securely fastened down. This is because in a roll or extremely heavy weather, the Pudgy, like any lifeboat or life raft canister, could be washed overboard or off davits.

Drain Plug

Store the Portland Pudgy lifeboat with the drain plug in place, so it is ready for emergency use. This should not be a problem if you have the boat covered with a boat cover.

Emergency Painter

No matter how you carry your Portland Pudgy lifeboat, you must pre-set it tethered to the mother boat with a long painter. In an abandon ship situation, keep the Pudgy tethered to the mother boat until all personnel are aboard, and normally remain tethered, unless the mother boat is sinking, in danger of explosion, or presents some other extreme danger to personnel. The many variables in any survival situation leave this decision to the captain. The painter must be long enough to keep the lifeboat out of range of the pitching boat and away from sparks from a fire or explosion. Painter line must be marine-grade, abrasion-resistant, and UV-resistant, three-eighth-inch, 3,000-pound (1,361 kg) test. (Painter line and knife are NOT supplied. You must supply your own.) See *Emergency Supplies and Equipment to be Provided by Owner,* page 19.

Fasten the painter securely through one of the Pudgy's forward through-holes. DO NOT fasten this painter to the Pudgy's bridle (which should be used with the sea anchor). The painter should be fastened to the forward through-hole on the opposite side of the unzipped opening in the canopy. This is because the boarding ladder/fender is fastened to the side of the boat with the unzipped opening and pull cords. The painter, the boarding ladder/fender line, and the tie-down line do not all fit in the through-hole.

Fasten the other end of the painter to a through-bolted strong point on the mother boat. Keep a utility knife on your person and another fastened to the fore seat of the Pudgy so that you can quickly sever the painter if necessary.

Securing the Pre-Set Portland Pudgy Lifeboat to the Deck

The Pudgy should be securely fastened down using through-bolted stainless steel strong points on the mother boat. Use either webbing or line (either must be marine-grade, abrasion-resistant, UV-resistant, and about 3,000-pound (1,361 kg) test). Webbing should be one-inch, heavy duty, test polyester. Line should be three-eighth-inch (.95 cm) diameter. Pass the webbing or line through the built-in through holes just below the gunwales. The through holes are an intrinsic part of the boat, and cannot be broken off.

Note: There is room in the through hole for both the tie-down line or webbing (that you use to secure the Pudgy to the deck) plus another three-eighth-inch line (the boarding ladder/fender on one side and the emergency painter on the other). If you use line to secure the Pudgy to the deck, use a different color from the painter line and the boarding ladder/fender line, to avoid confusion.

When you carry the Pudgy on deck, **equip your lifelines with pelican clips**, to ease deployment of the Pudgy. When you need to deploy the Pudgy from the mother boat with the exposure canopy pre-set, it is probably best to inflate the canopy once the Pudgy is in the water, free of rigging, etc. You will have to make that decision.

If you are carrying your Pudgy upright, contact Portland Pudgy, Inc. about plans for a simple cradle. When storing upside down on chocks, cradle, or directly on deck, **make sure the Pudgy is not resting on the CO2 cylinders or valves**. Also make sure the chocks are covered with a compressible foam or similar material. This will protect the material of the canopy.

Securing the Pre-Set Portland Pudgy Lifeboat to Davits

When you carry the Pudgy lifeboat on arm davits you must pre-set the middle section differently. See special note on securing middle section when using arm davits on page 8.

Set the preset lifeboat on arm davits or swim platform davits in the usual manner.

DEPLOYING THE PUDGY WITH PRE-SET EXPOSURE CANOPY

As previously noted, you must have a clear abandon ship plan before the need to abandon ship arises. It should be in known to all crew and passengers. Have an abandon ship drill that includes the procedures detailed here.

Pudgy with inflated canopy (note sea anchor rode in photo on right)

Although it is not recommended to carry a lifeboat (or dinghy) on davits for blue water sailing or in heavy weather, in some circumstances, skippers may need to deploy the Pudgy lifeboat from davits.

The instructions for deploying the Pudgy are different in some respects depending on whether it is carried on deck, on swim platform (Weaver) davits, or on arm davits.

When you need to deploy the Pudgy from the mother boat with the exposure canopy pre-set, it is probably best to inflate the canopy once the Pudgy is in the water, free of rigging, etc. You will have to make that decision. In addition, choosing when to zip closed the middle section and how to deploy the para-anchor are matters for your judgment, based on the infinite variables in an emergency at sea. The instructions below offer guidelines only.

Note: Keep a utility knife on your person. We also recommend that you keep a utility knife fastened in the Pudgy for cutting the emergency painter once you are in the boat (only if absolutely necessary).

Deploying the Pre-Set Portland Pudgy Lifeboat

The following instructions explain how to deploy the Pudgy lifeboat, whether from deck, from arm davits, or from swim platform davits. Some of the initial procedures differ, depending on how you carry your Portland Pudgy. These initial procedures are explained below in step *1. From the Deck*, step *1. From Arm Davits*, and step *1. from Swim Platform Davits*. Steps 2-7 are essentially the same for each method of carrying the Pudgy, except where noted.

NOTE: Before deploying the Pudgy, check to be sure the Pudgy's emergency painter is secured to the Pudgy and to the mother boat. (See page 11.)

1. **FROM THE DECK:** (Note that if you carry the Pudgy on deck, your lifelines should be equipped with pelican clips, to ease deployment of the Pudgy.)
    a. Unfasten lifeline pelican clips.
    b. Unfasten or sever the webbing or line fastening the Pudgy to the deck.
    c. If your Portland Pudgy is upside down, flip it over.
    d. Remove the boat cover by squeezing the boat cover's three buckles and pulling off the cover, or if necessary, cut the straps that pass under the Pudgy, and take off the cover.
    e. Put the Pudgy into the water from deck.

1. **FROM ARM DAVITS:**
    a. Unbuckle or sever the boat cover's three straps.
    b. Leaving the primary davit lifting lines in place, remove or sever any davit harness or extra lines.
    c. Hold onto the boat cover (to pull it off) and lower the Pudgy into the water.

1. **FROM SWIM PLATFORM (WEAVER) DAVITS:**
    a. Unbuckle or sever the boat cover's three straps.
    b. As you hinge the Pudgy into the water, grab the boat cover on the high side, and pull it off the Pudgy.
    c. Separate the Pudgy from the swim platform by pulling the pins that hold the Weaver davit eyes in place, or by unsnapping the eyes from the swim platform.

2. When free of all obstructions, yank the pull-cord with large three-inch ball on both the fore and aft sections of the canopy. This will pull off the metal lanyard and fire the CO2 inflation valve. The canopy will inflate in about seventeen seconds. (Note that the empty Pudgy will tends to right itself with the canopy inflated.)

3. Enter the Pudgy. This is easiest with the canopy already inflated, but you can enter the Pudgy before inflating the exposure canopy (being careful to stay clear of the canopy tubes and fabric cover as it inflates). It is always better to enter the Pudgy from the deck of the mother boat, than from the water. See *2. Basic Boat* for more about boarding the Pudgy from the water.

4. In heavy seas, deploy the para-anchor immediately. In heavy wind and waves, this must be done with great caution. (See *6. Para-Anchor*.)

5. Tether yourself and passengers to strong attachment points in the Pudgy (optimally, using safety harnesses and safety harness/lifting eyes, otherwise, use line fastened through through-holes, or to grab-lines or front or rear seats). Do not use middle seat for attachment points; it is easily removable.

6. Zip closed the middle section. Note that if **you use arm davits** the canopy will have been preset with the middle section zipped closed only about a foot. Zip it as quickly as possible to prevent wind from catching in the fore or aft section of the canopy.

7. Middle section tubes should be inflated already. If they are not, orally inflate them and tuck each tube up on the gunwale between the fore and aft sections. Velcro and zippers will hold it in place. (These tubes should be pre-inflated if the canopy is pre-set using the boat cover.)

SETTING PARA-ANCHOR FOR USE WITH CANOPY

The parachute sea anchor (para-anchor) is an essential piece of equipment for survival at sea. It helps prevent capsize by keeping the Pudgy headed into the wind and waves. The Fiorentino para-anchor is made expressly for the Portland Pudgy and is much more rugged than typical sea anchors for life rafts. Even if you do not get the Fiorentino para-anchor, it is absolutely essential that you have a substantial sea anchor if you intend to use the Portland Pudgy as a lifeboat.

In *6. Para-Anchor*, see the section on using the sea anchor with the exposure canopy in place.

It is best if the para-anchor is pre-attached to the bridle and fastened under the front seat where it can be deployed rapidly once the Pudgy is in the water**. In heavy seas and wind, the para-anchor should be deployed immediately.**

Para-anchor stowed under bow seat.

RIGHTING PUDGY WITH INFLATED CANOPY IN PLACE

The Pudgy will not sink and if it capsizes (even without the inflated canopy in place), you will have a lot of space and air under the boat in the inverted cockpit. If you are in the Pudgy lifeboat with the inflated canopy in place and it is capsized, the inflated canopy makes for an even larger air pocket, sufficient for four people. The Pudgy is easy to right with the exposure canopy in place. Stay calm.

IMPORTANT: Stay tethered to the Pudgy.

Righting the Empty Portland Pudgy Lifeboat

The inflated canopy will add about 430 pounds (195 kg) of additional buoyancy. When empty, the Pudgy with the inflated canopy wants to right itself when capsized. When it rights, almost all the water will drain out. Any water trapped in the canopy should drain out through the slots at the "elbows" of the canopy as the boat rights. Try not to bear down with your full weight on the canopy if it is inverted. It is rugged, but *can* tear.

With the exposure canopy deployed and no personnel aboard, the Pudgy should right itself when capsized. If it does not right itself (not enough pressure in the tubes, and or wave or wind action), and you are in the water, pull down on the grooves on the bottom of the boat, or on the handholds in the keel, and it will right easily.

Righting with One or More Passengers Aboard

Make sure all access hatches are closed. Keep checking: a bump from shoulder or elbow could loosen them.

First try to allow wave action to right the boat. If it doesn't right, passengers will need to shift their weight, to let the boat right. This involves some bumping and jostling, so it may be useful to remove the middle seat. Stay low, in the bottom of the boat.

One or two people can right the Pudgy from inside by shifting their weight.

If there are three or more people in the Pudgy, and neither wave action nor shifting weight rights the boat, one person may have to exit the boat (always staying tethered to it), and pull on the handholds in the keel to right the boat (with the help of passengers shifting their weight).

ROWING THE PUDGY WITH CANOPY PRESET

You can preset the canopy in such a way that you are able to row the boat with the forward and aft canopy sections in place. Note that although the fabric is UV-treated, it is still affected by UV rays. It is not advisable for you to leave the canopy preset without covering it. You can make your own covers to protect the fore and aft sections mounted on the boat, or else be sure to cover with a full boat cover.

Exposure canopy preset for rowing

To preset the canopy to allow rowing:

1. Detach the three-inch (7.6cm) ball cord from each inflation valve lanyard, to prevent accidental inflation.
2. Remove the middle canopy section.
3. Gather the fore and aft sections around the gunwales.
4. Secure the fore section to the forward grab lines, using the two forward web belts.
5. Secure the aft section to the aft grab lines, using the two aft web belts.

USING THE SAIL KIT WITH THE EXPOSURE CANOPY

Fully rigged Portland Pudgy proactive lifeboat

CAUTION: Use good judgment. Set up the sail kit and use it only when it is safe to do so…NOT in heavy weather. Strike the sail kit when weather starts to build.

When sailing with exposure canopy in place, keep mast in its fully-extended position, and reef sail up so that it is above exposure canopy, as in photo at right.

When sailing the Pudgy with the exposure canopy in place, you must have the middle section zipped all the way down to one side (see photo at right). This allows room for the mainsheet to move back and forth in the slot between the fore and aft sections, so you can sail from either tack.

The photo at left shows the sail kit in place with the exposure canopy. Note the reefed sail and the open middle section of canopy.

For detailed information on all aspects of using the sail kit, see *3. Sail Kit*.

Setting up the Sail Kit with the Exposure Canopy in Place

1. From inside the boat, loosen the webbing at the aft section of the canopy (see photo at right). This will allow you to first remove the sail kit and tiller from the rear access hatch (step 2), then to install the leeboards, rudder and tiller (step 5) and the traveler (step 7).
2. Remove sail kit items from storage as follows:
   a. Open the rear hatch and take the tiller from hull storage.
   b. Then take the sail kit storage bag from hull storage. (The sail kit should have been stowed with the opening of the storage bag with the yellow float ball on the cord toward the bow.)
   c. Open the interior starboard hatch to help ease the sail kit out.
   d. From the interior hatch, hold onto the long cord and float ball of the bag as you gently remove the bag from the rear hatch. Keep hold of the cord, once you have removed the bag from the hatch.
3. Replace hatches immediately.

Webbing at aft section

Removing sail kit from rear hatch

4. Inside the boat, fasten the rudder and tiller together.

CAUTION: If you drop the rudder into the water without the tiller attached, it will sink. It is wise to tether the rudder/tiller assembly to the boat before installing it. (See instructions in *3. Sail Kit.*)

5. Lifting the back of the aft tube once again, install the connected rudder/tiller assembly in place. Make sure the wire clip is installed over the top pintle. (See *3. Sail Kit.*)
6. Place the leeboards in the leeboard slots. (First be sure you are in deep enough water.) (See instructions in *3. Sail Kit.*)
7. Install traveler with loose block of mainsheet on transom. See *3. Sail Kit.*
8. Tighten down aft webbing. The traveler with loose block will be on the outside of the aft tube.
9. Inside the boat, with the middle section zipped open, take the sail kit components out of the storage bag, and assemble them on the boat. Photo at right shows traveler and rudder/tiller in place after step 9 is completed.

   For detailed information on all of the following steps, see *3. Sail Kit.*

   a. Insert the gaff into the top of the mast.
   b. Extend the mast to its full height (making sure the loops of the sail are in place on the mast).
   c. Insert the mast through the hole above the window in the fore section of the canopy (see photo at right), then through the center hole in the bow seat and then seat it into the mast step. Note that the mast assembly is not held securely until the downhaul is tied down (see step 9-i, below).
   d. Extend boom to full length. (Make sure the cords of middle block are in front of the raised push button.)
   e. Belt the tack and the clew to the boom.
   f. Make sure the outhaul at the clew is secured to the jamb cleat on the boom.
   g. Snap the yoke of the boom to the mast.
   h. Slide the boom with the attached sail up to reefing position. Tie the boom in position with the reef lines (supplied by owner).
   i. From above the fore section of the canopy, take the downhaul at its full length and feed it down through the hole for the mast. From inside the forward section of canopy, pull the downhaul line down snugly, and tie it either to the forward seat or underneath the seat and around mast. This will hold the entire sail assembly in place in the boat.

Traveler in position, outside canopy tube

Mast inserted in fore section of canopy

Middle section unzipped for sailing

EXPOSURE CANOPY MAINTENANCE

It is crucial that you check all your safety equipment regularly. The following points are important for proper maintenance of your exposure canopy.

- Check exposure canopy valves for corrosion and replace if necessary.
- Check your exposure canopy inflation system at least once a year by inflating the tubes manually or by using CO2 cylinders. Either method is effective, but of course using the CO2 cylinders is faster. You can order new CO2 cylinders from Portland Pudgy, Inc. Note that CO2 cylinders can be used only once.
- The CO2 cylinders have a shelf life of seven years.
- Rinse the canopy thoroughly with fresh water if it was exposed to salt water.
- Do not store the canopy wet. Allow it to dry thoroughly before storing it in the dry stuff sacks.
- Before storing, check for any mildew or mold. (There should be none if the canopy has been kept dry when stored.) If there is mold or mildew, clean with a mold/mildew remover, rinse thoroughly with fresh water, and let dry completely.
- Dust well with stone talc (obtainable from diving stores or life raft packing operations) before folding up for storage. (See *Stowing the Exposure Canopy*, below.)

Be very careful to avoid puncturing or tearing the canopy when you store it, whether in the side walls of the Pudgy, or anywhere else.

STOWING THE EXPOSURE CANOPY

Each canopy section has its own dry bag. The instructions below show the procedure for stowing the fore section. The procedures for stowing the aft and middle sections are essentially the same.

1. **IMPORTANT:** If the automatic inflation valves are armed, remove the clip of the pull-cord with large three-inch ball from each metal lanyard. Keep the Velcro tag of the pull-cord attached to the canopy elbow (see photo).
2. Once tubes are deflated, you need to get all the gas out. (See page 10.)
3. When the tubes are completely deflated and each canopy section is clean and dry, dust each section with talc. You can obtain the correct kind of talc (powdered stone) from a scuba equipment store or life raft packing operation.
4. Roll up each section up as long and tight as possible and put it in its dry bag. See photos at right.

   When rolling fore and aft sections, ensure CO2 cylinder is positioned in the roll lengthwise, so the bundle will fit into the stuff sack and through access hatch. The fore and aft sections should be rolled in a cylinder shape about twenty-eight inches (.71m) long and about five inches (13m) in diameter.

Fore section, tubes deflated

Fore section, first fold

Note: Dry bags will be stowed through the port access hatch in the rear of the cockpit. (NOT the exterior transom hatch.)

CAUTION: If you have an electrical system, be very careful not to jam the canopy section in its dry bag against the electrical system components inside the walls of the Pudgy.

Check to make sure there are no sharp screw points or other sharp objects in your storage compartments. If there are sharp screws, cap them with a short piece of plastic tubing or nylon acorn nuts so that the point is covered.

CAUTION: IMPORTANT. DO NOT unzip the zippers of the support tubes. In doing so, it is very easy to pinch and perforate the polyurethane inner tube inside. These zippers are to be used ONLY for replacing the polyurethane inner tubes.

Fore section, third fold, next to dry bag

Fore section, rolled up and ready to put in dry bag

EMERGENCY SUPPLIES AND EQUIPMENT TO BE PROVIDED BY OWNER

Several pieces of safety equipment must be supplied by the owner. You can store all of the items listed below within the side walls of the Portland Pudgy, through the access hatches. These items are:

- **Ditch bag** containing provisions, medications and first aid supplies, extra glasses, documents, inspirational reading, fishing gear, weather protection, knife, signal mirror and whistle, flares, water maker, thermal blankets, etc.

  Portland Pudgy, Inc. agrees with the author of the website, "Equipped to Survive," who emphasizes that it's the captain's responsibility to assemble his or her own ditch bag according to his or her "own priorities, capabilities, and resources." Please research this carefully and put together a water-tight ditch bag to stow in the interior of the side walls (forward starboard hatch is best). There is room in the side walls of boat for more than one ditch bag and extra provisions.

  See "Equipped to Survive" website at http://www.equipped.com/abndonship.htm for detailed information about ditch bags.

- **Sea anchor.** This is absolutely essential when using the Portland Pudgy as a lifeboat. You can get a Fiorentino para-anchor from Portland Pudgy, Inc. The high quality, rugged Fiorentino para-anchor is made expressly for use with the Portland Pudgy. See *5. Para-Anchor*.

- **Painter** for attaching the Pudgy to the mother boat. Please supply your own. According to Federal Regulation III/38.3.2, the length of a *life raft* painter "shall be not less than 10 meters (33 feet) **plus** the life raft's maximum stowage height, or 15 meters (49 feet), whichever is greater." This means a minimum of about 82 feet (25m). Remember that you must stay out of the way of the pitching vessel and out of range of sparks and intense heat. Painter line must be marine-grade, abrasion-resistant, and UV-resistant, three-eighth-inch, 3,000-pound (1,361 kg) test. Federal regulations state that the painter "must be inherently resistant, or

treated to be resistant, to deterioration from sunlight and salt spray, and resistant to absorption and wicking of water."

- **Personal flotation devices.** Please supply your own.
- **Strobe light, EPIRB, and other electrical equipment.** You must supply your own. Portland Pudgy, Inc. can install an electrical system in your Portland Pudgy. The electrical system illuminates the built-in, standard compass, an LED navigation light, and an LED reading light. An outlet lets you run any small devices that work on a 12-volt battery, and it lets you recharge the battery. You can also get an optional solar panel for charging the battery. For more information see *7. Electrical System*.
- **Safety harness.** You can have Portland Pudgy, Inc. install special safety harness attachment points (also used for lifting the Pudgy onto davits). If you do not have these special attachment points installed, please use strong points in the Pudgy, such as the through holes in the hull, or the holes in aft and forward seats. (Do NOT use the middle seat as an attachment point: it is removable.) You must supply safety harness(es) for you and your crew.
- **Boarding ladder.** You can purchase a boarding ladder/fender from Portland Pudgy, Inc. See *9. Ladder/Fender*.
- **Rainwater catchment receptacle.** The outside of the exposure canopy's aft section has a rainwater catchment device ("V" shaped piping with an attached tube and a twist open/twist closed valve that opens inside the boat). However, you must supply a receptacle for the rainwater. Use a receptacle you can stow through an access hatch.
- **Bailing bucket and sponge.** Please supply your own. Use a bucket that can be stored through an access hatch.
- **Reefing lines for sail**. Please supply your own.
- **Tube to allow oral inflation of canopy tubes**. Please supply your own.

EXPOSURE CANOPY INDEX

abandon ship plan, 2

arm davits

using exposure canopy with, 8, 9

bailing bucket and sponge, 20

boarding ladder, 20

boat cover

to prevent accidental inflation, 9

buoyancy of Portland Pudgy

with and without exposure canopy, 1

capsize, 14

CAUTION

accidental inflation, preventing, 7

cover pre-set canopy, 5

electrical system and canopy storage, 18

inner tubes, 18

lanyard on inflation valve, 7

maintain valves, 11

rudder will sink if dropped, 17

using sail kit, 16

valve cap and hot weather, 10

CO2 cylinders

replacing, 18

securing in sleeves, 7

securing to exposure canopy, 6

shelf life, 18

use of, 9

deploying lifeboat

from arm davits, 13

from deck, 13

from swim platform davits, 13

ditch bag, 19

electrical system, 20

emergency painter, 11

EPIRB, 20

exposure canopy

check valve, 9

components, 3

deflating fore and aft tubes, 10

deflating middle section tubes, 11

fore and aft sections, description, 3

fore and aft sections, pre-setting, 6

inflating fore and aft sections, 9

inflating manually, 10

inflating middle section tubes, 11

inflating with CO2, 10

inflation valve, 9

middle section, description, 4

middle section, unzipped for sailing, 16

middle section,pre-setting, 8

middle section,pre-setting for use with davits, 8

pre-setting, 5

pressure relief/top-off valve, 10

pull cord, 9

righting the Pudgy with, 14

securing fore and aft CO2 cylinders, 6

stowing, 18

using with para-anchor, 14

using with sail kit, 16

valves, 9

inflation valve, 7

maintenance, 18

middle seat

removable, 1, 20

oral inflation tube, 20

painter, 11, 19

para-anchor, 19

setting, 14

pelican clips (on lifelines), 12

personal flotation devices, 20

rainwater catchment, 4, 20

reefing lines for sail, 20

safety equipment provided by owner, 19

safety harness, 20

attachment points, 20

safety information, general, 2

sea anchor, 19

securing Portland Pudgy lifeboat to mother boat, 11

securing to davits, 12

securing to deck, 11

stowing the exposure canopy, 18

strobe (not supplied), 20

valves

maintenance, 18

When sailing with exposure canopy in place, 16