

“THE ULTIMATE INFLATABLE”

The Patten Company (www.pattencompany.com) has been manufacturing inflatable life rafts, combat and rescue boats for governmental agencies for more than 60 years. These relationships evolved into what many consider to be the finest inflatable boat ever manufactured. From this experience we now bring to the public the patented semi-rigid, thru the floor entry dive boat.

We refer to it as “the ultimate inflatable” because it exceeds other inflatable boats on the market in both:

CONSTRUCTION and PERFORMANCE

CONSTRUCTION:

Standard Inflatable Boats

Most inflatable boats are manufactured from either PVC or Hypalon™. PVC has the advantage that it can be thermo bonded (welded together) to give you better seams on air chambers. However PVC breaks down in the sun (UV degradation) and these seams begin to separate fairly rapidly. Hypalon™ air chamber seams are sealed with adhesives. Hypalon™ usually withstands the UV degradation longer than PVC but glued seams are inferior to thermo bonding so the lifespan is only slightly better. Both products suffer from what we refer to as the “plasticizer” effect. Plasticizers are compounds that are added to plastic materials to keep them soft so they will not dry out and crack when exposed to the sun. The problem with the plasticizers used in PVC and Hypalon™ inflatable boats is that when they are exposed to the sun (UV rays) and heat they begin to migrate to the surface of the material (a condition that is accelerated in tropical environments). When too high a concentration of plasticizer reaches the surface, the bond between the two surfaces (whether welded or glued) separates. Once this separation begins, repairing the seams only works for a short period of time.

If you have any experience with inflatable boats you have seen this effect.

Patten Company

The Patten Company has long been aware of the problems with PVC and Hypalon™. In 1997 Patten formed an alliance with the Seaman Corporation (www.seamancorp.com) to utilize technology they had developed for coated fabrics used in commercial roofing. Seaman commercial roofing membranes are thermo bonded and need to last at least 30 years when exposed to the sun and elements. The Seaman Company (working with Dupont) has been installing coated fabric roofs utilizing Dupont’s Elvaloy™ copolymer since 1979. 99+% of Seaman Company FiberTite™ roofing membranes using Elvaloy™ are still in service. For more information see www.fibertite.com, click on competitive comparison at the top of the page, then –FiberTite vs. PVC

September 17, 2007

The Patten Company has been using Seaman's 4140 double coated Elvaloy™ fabric for manufacturing combat and rescue inflatable boats since 1997. All boats manufactured with this fabric have thermo bonded seams on all air chambers. To our knowledge no boats have been taken out of service due to failure of a welded seam. I personally have owned one for 7 years and expect it to last many more years. The boat is kept uncovered in Florida waters (the bottom is painted with Hydrocoat). It still has its soft feel, the air chambers are all intact and the color has not faded.

[Seaman's 4140 fabric is designed to take the sun and heat of the tropics.](#)

PERFORMANCE:

Standard Inflatable Boats

Most inflatable boats fall into two categories. They are either all inflatable or they are what is now called a "rigid inflatable" or RIB. RIBS have a fiberglass hull with inflatable tubes (or collar) surrounding the hull. Generally RIBS are considered to ride smoother and do not flex as much (either bow to stern or side to side) because of their rigid hull.

Whether a true inflatable or RIB, current inflatable boats have similar performance problems.

First is the fact that (at best) their ride can be classified as bumpy or harsh as the waves become larger. Granted RIBS ride better than most other standard inflatable boats because they are based on a monohull, but the V design is not deep enough to really smooth out the ride.

Second is that the major brands of inflatable boats only have one tube that separates the passengers from the water. Most of the tubes in boats less than 20 feet in length are only 12 to 14 inches above the water line. Probably the biggest complaint that I hear from inflatable boat owners is how "wet" the passengers get. It never ceases to amaze me when I look at seating layouts for these boats that they count a seat close to the bow in their seating capacity. Maybe it is just me, but I thought one of the purposes of a boat was to transport passengers across water without getting wet.

Patten Company

A number of years ago the Patten Company was asked by the US Government to design light weight inflatable boats that could be used by multiple branches of the armed services. The requirements were that they needed to be durable, fast, carry 6 to 10 people, collapse for easy shipment, be stable in rough seas, and, oh by the way, the Navy would like to deploy and recover divers in a stealth manner. In other words, no splashing.

In designing life rafts for the government Patten discovered two very important principles that they use in their inflatable boats. First, "stacked tubes" provided a more stable life raft in rough seas (less likely to flex or twist and capsize) than a single tube and "stacked tubes" kept the occupants dryer (staying dry in cold rough seas meant less hypothermia problems).

●

Using these principals Patten started their design process

First, light weight and collapsibility. Inflatables are inherently light weight and collapsible so that was not a problem.

Second, speed and stability in rough seas. It was decided that the best platform for the boat would be a catamaran. Catamaran designs are stable, handle rough seas well, and since they have less drag you need less HP to obtain higher speeds. Less HP also meant lighter motors, thus less total boat weight. And, oh by the way, a catamaran design meant that the floor of the boat was above the water line. Put a zippered hatch in the bow of the boat and you had a stealth entry point into an out of the water. The Navy was now happy.

[At this point you may want to refer to page 3 of our brochure and look at the “Stern View” drawing.](#)

Patten now had the concept for the boat. All they had to do was take the technology they learned from “stacked tubes” and add it to a catamaran. By bonding two sets of stacked tubes and two sets of bottom flotation tubes to a one piece fiberglass transom you had a catamaran style inflatable that had excellent structural stability (minimal “flexing” bow to stern and “twisting” side to side), was extremely stable in rough seas, and since you had over 27” of freeboard on the sides, it was a very dry boat for the passengers. An added plus was that stacked tubes could be smaller in diameter than most inflatable tubes. This gave you almost twice the interior space as compared to standard inflatable boats.

The design was fine tuned over a period of about 6 years. In 1997 the durability aspects were addressed by changing fabric to the Seaman’s 4140 Elvaloy.™

Patten Dive Boat, “the ultimate inflatable”

- Durable boat design that has been tested under extreme conditions by military and rescue units
- Competitively priced boat manufactured in the US using Mil Spec materials
- Not a “me too” product. Unique design that is engineered for open water use
- Shallow water boat. Draws 6 inches of water and is easy to beach.
- Roomy, dry boat (50” inside beam, 27” freeboard, 54” bow storage area before passenger compartment)
- Light weight boat that most cars can tow (boat, motor, trailer weigh less than 1500 pounds)
- 6 separate air chambers for safety
- Custom designed interiors
- Collapsible design for compact shipment or storage during winter or hurricanes
- More than a dinghy, it’s a boat