

Duo Dinghy Design Comments March 2014

I've built and owned a number of my Crayfish dinghies. Despite being a 30year old design, it's a great 8ft plywood yacht tender and still selling well. However, now that we have a powerboat (the Skoota 28 powercat) as our main cruising boat, I wanted to have a dinghy that sailed better, one that I would enjoy sailing when we were anchored. So I have spent some time developing a new design, the 10ft Duo.

I grew up sailing a pram bowed boat (the Poole AB) so know from personal experience that a stem (ie pointed) bow would be faster and more seakindly. Furthermore a longer boat makes a better rowing boat - it tracks better and is easier to row. Obviously the longer the boat, the heavier it is, but I still wanted a boat that would be easy to lift on board and to carry, not drag, up a beach. It had to be safe and seaworthy for two people (or three at a pinch) plus have sufficient built-in buoyancy to support the crew if swamped.

Inflatables and RIBs are popular as tenders, in part because they don't scratch a yacht's hull when coming alongside. They are also very stable and are easy for swimmers or divers to re-board, while at the same time the tubes help keep the boat drier when motoring.

So I decided that Duo should be a "sort of" RIB when in rowboat mode. Cheap inflatable boat rollers are clipped to the outer hull sides. They add lots of reserve buoyancy, yet keep the cockpit clear - just like a RIB. Obviously they can still be easily removed and used as rollers if necessary. And they certainly will be unclipped when sailing.

Unfortunately a RIB doesn't make a very good sailing boat, and some find conventional small dinghies uncomfortable to sail and prefer to have a seat to sit on, not wet floorboards. So in sailing mode Duo has slot-in foam filled "wings," or hull extensions. Such wings have been used for years in International Moths, 49ers and other high performance dinghies, as well as on beach cats like the Hobie 17 and 18, but rarely on small boats.

So Duo ended up as two boats in one. The detachable, inflatable collars meant I could make the boat narrow on the waterline, as that makes the boat lighter and faster, especially when rowing or motoring with a 2hp outboard. Yet it would remain safe, stable, dry and buoyant. Then, in sailing mode, with the collars removed, the wings add the stability needed to have a fast, fun and safe boat.

Duo has a simple unstayed 2 piece mast, which stows on the boat for transport without overhanging, and also makes it possible to rig while in the water alongside the "mothership." A mainsail set well forward keeps the cockpit large and uncluttered. It also puts the main thwart further forward, which means the crew weight doesn't drag the transom when rowing. The hull is not a true planing hull, (after all you cannot plane when rowing!) but due to its light weight and narrow hull, it should still have good performance.

A prerequisite had to be that the boat was simple, quick and cheap to build. It also had to be durable. I have found from bitter experience that a fabric dinghy does not last long when "out there doing it." So I designed Duo to be built in hardchine plywood. Fortunately this is also the lightest building material for a boat this size. There are lots of single sheet plywood boats around, but they are all too small for what I wanted. So I decided to draw a two sheet boat - hence the name. And as you can see, there isn't much scrap ply left!

I also set myself an arbitrary two day build time. OK, let's say 20hrs, so probably a three day actual time, to allow for glue to cure. That meant I needed to simplify every stage of construction.

For example, even though the hull has a pronounced sheer (which helps keep the boat dry), the gunwales are actually straight on the ply sheet, so you only need to mark and cut a curve along the keel line. A V-shaped transom reduces drag compared to a flat bottomed boat, especially at low speeds. But the V is not the whole length of the hull as that adds weight, extra building setup time and more glass taping. Fortunately I only had to compromise the hull slightly to get all the panels for the rowing version (but including the daggerboard case and buoyancy compartments fore and aft) from two sheets.

As well as a high bow, I also drew a high stern to take an outboard. If it were too low then the transom could go underwater when working on the engine or even starting it. The outboard (or an electric motor) is offset (to port if right handed) making it easy to start and control. One final item not seen on small dinghies, but common on racing boats is an opening transom flap, so no bailing after a capsize or a swamping.

Many people build an overweight boat "because it's stronger," but it's also heavier and in fact, unnecessarily strong. The extra weight means it's usually dragged, not carried, up a beach, it needs a bigger rig and generally is too much of a lump to be fun to sail. I've built 14ft racing dinghies in 4mm ply, while my 15ft trimaran has a 4mm mainhull and 3mm outriggers. So using 4mm ply for a 10ft dinghy will not cause problems. A bonus is that cutting out 4mm ply takes half the time of 9mm, which speeds construction. And, as 4mm ply only weighs 6kgs a sheet, the whole boat will weigh under 20kgs, making it very easy for one person to lift and carry.

Keep checking "Latest News" on www.sailingcatamarans.com for building and launch pictures.

Full plans and construction manual will cost USD40 and are currently being drawn up, while the prototype will be launched in May. Even when using epoxy glue and okoume plywood hull materials cost should be under USD150.