



THE INGRID 38

DESIGN HISTORY

The "Ingrid" is a William Atkin adaptation of the famous Colin Archer "Redningskoite" boats.

Double-ended boats are descendants of the Viking ships. In the late 19th Century, Colin Archer, a naval architect living in Norway, achieved considerable fame for his refinement of double-ended sailboats. His designs won world recognition for their heavy-weather characteristics.

In 1934, William Atkin, an American naval architect, took the classic lines of the "Redningskoites" and produced several sizes of this lovely vessel. Ingrid is the 38' model and varies only slightly from the original Archer design. For example, Atkin gave the Ingrid hull a finer entry for better performance.

THE SEMI-COMPLETE BOAT

Blue Water Boats builds the Ingrid only to the semi-complete stage for two good reasons:

- (1) Our buyers want to control the quality and strength of every part of the boat.
- (2) We can concentrate all of our attention, knowledge and skills to the structural integrity of the boat.

The semi-complete boat contains these major structural components installed by us:

Hull
Bulkheads
Diesel Engine
Rudder
Deck and Cabin Top
Ballast
Tanks
Interior Plywood

In addition, we supply wood spars, stainless steel work for chainplates and bowsprit fittings, tillers and other miscellaneous fittings.

If you feel that your safety and comfort at sea depends on a vessel built to these criteria, then we have the boat for you.

PHILOSOPHY

Blue Water Boats builds the Ingrid for people who want to sail the ocean. While not all Ingrid owners plan to take their boats on ocean passages immediately, they have the assurance that their Ingrid is ready when they are.

The Ingrid differs from many other ocean sailboats in that her design permits handling with only one or two persons — as opposed to requiring a large crew. The boat is easily single-handed. She will deliver a softer, more stable ride making the trip not only exciting — but restful and comfortable as well. Strength and safety are primary in her construction.

SAILING CHARACTERISTICS

The Ingrid is designed with one purpose — to provide a safe and comfortable ocean journey to her crew. Ingrid is, however, a very sprightly boat in her element.

Ingrid's full keel keeps her directionally stable resisting the pressures of waves and wind to twist her. If the sails are balanced, the course will remain true even without a hand on the helm.

The bow has a fine entry. When Ingrid comes down off a wave crest into a trough there is no tooth-jarring "bang"! Instead, with a gentle "whooshing" sound, the sea acts like a giant shock absorber and stops the downward motion — (like catching an egg). Even the forward berth is comfortable at sea!

Ample flotation in both the bow and stern quarters keeps her ends dry. They lift easily out of troughs. Ballast in the Ingrid is spread out from extreme stern position to the bobstay in the bow. This long moment of force acts like a pole, rising and falling on a horizontal plane (as opposed to the pitching motion so common in the fin-keel sailboats).

CAN I REALLY FINISH THE BOAT MYSELF?

Let's look at the track record. Out of the first 60 hulls, three were resold by the original owner without being completed (or really, much of anything done). All of the hulls are now in the water sailing or being finished. None that we know of are lying dormant.

This record of completion is meaningful to financial institutions when loans are sought to build the Ingrid.

Further, previous experience of the buyer seems to have little effect on the outcome. Ingrid buyers for example, have been doctors (7), boat yard employees (4), professors (3), business persons (8), machinists (4), and believe it or not — a young lady in academic work wintertimes and a fisherwoman in the summertime, took delivery of one of our prettiest Ingrids.

While previous experience seems to expedite the work a bit faster, novices will study, look and learn — then do. The end result isn't much different.

HULL CONSTRUCTION

Mold — a female mold is used. Fiberglass lamination is laid up inside the mold in one part.

A word about fiberglass strength — Fiberglass is available in three basic forms: chopped-strand mat, cloth, and woven roving. The most commonly used method of high-production boat shops is chopped-strand mat blown with a "chopper gun." This material is rolled out with a roller and often has a layer of cloth laid over the outside surface.

Blue Water Boats Method — The strongest method of fiberglass construction in use today is the laying of woven roving in the mold in multiple layers, depending on the strength required, and saturating each layer with resin. Instead of rolling out the air bubbles, rubber squeegees are used and the excess resin is squeezed out of the roving. This requires extra work but is considered superior because of the high glass-to-resin ratio (50% or above) giving maximum strength to the laminate. Blue Water Boats has always insisted on this method of lamination.

DECK CONSTRUCTION

Ingrid deck construction varies from hull construction in both materials and method. End-grain balsa core is laid between laminations of fiberglass, adding stiffness to the deck. When walked on, deflection or "give" is imperceptible. More layers of mat are used in this lamination to hold more resin and to add the stiffness. Nine layers of glass are used, in addition to the $\frac{3}{4}$ " balsa core.

DECK-TO-HULL JOINT

Deck-to-hull connections make the difference between pleasant dry interiors and a constantly wet boat at sea. Nearly every book about ocean passages dwells on this aspect of construction.

Blue Water Boats mates a 6" up-turned lip on the deck against a 6" bulwark on the hull. We will glass this connection underneath with a mat and three roving, 12" wide if you wish. Or you can do it yourself. Then when the joint is filled and covered up by cap rails and bulwark boards, it is the most leak-resistant joint available in glass boats today.

BULKHEADS

Bulkheads used by Blue Water Boats are 1" thick Royal Marine Fir plywood, free of voids. Engineers feel $\frac{1}{2}$ " bulkheads are adequate, $\frac{3}{4}$ " are more than ample. Our 1" size is typical of the "overbuilt" characteristics of the Ingrid.

Bulkheads are installed on "glass legs" with the bulkhead standing slightly off the hull sides. This prevents the possibility of "hard spots" in the hull sides.

Plywood is treated prior to glassing to gain maximum penetration of the resin. This assures the best chance of a lifetime installation — free of delamination.

ENGINE

We recommend a true marine diesel from 10 to 40 h.p. with a hand-start capability for the Ingrid. The simpler, heavier, and slower-turning — the better.

Volvo's MD11C (25 h.p.) or the MD17C (36 h.p.) are most often installed by us. SABB (the heavy Norwegian) is also a superb engine and in addition comes with a variable-pitch propeller.

10 h.p. will drive the Ingrid at hull speed (6 $\frac{1}{2}$ to 7 knots) in flat water. 25 h.p. will get you through 5-6 foot head seas and 36 h.p. will make it through 7 foot waves.

Both the above engines are sea-water cooled, hand or electric started, and are elegantly simple.

SPECIFIC

Length on deck _____
LWL _____
LOA (w/sprit, rudder) _____
Beam _____
Draft _____
Ballast _____
Displacement _____
Rig _____ Ketch or Cu _____
Mast height off deck: Main (ke) _____
Mizzen _____

SAIL AREA

Main _____
Mizzen _____
Jib _____
Staysail _____
Genoa (130%) _____

Twin Trade-winders (Jibs) _____

Rated Sail Area _____
Actual Upwind Sail Area _____

True Sail Area _____

RIGGING

After considerable watching and waiting, rigging that consist of 1 x 19 stainless wire a system uses epoxy-poured sockets; torture system. Best of all, can be assembled easily contains a heavy cable cutter that you may credit.

BALLAST

Buyers always ask us if lead isn't superior it sits lower in the keel and will provide air tanks.

But what's really in their mind when they center of gravity doesn't make the Ingrid imperceptibly that we question the extra center of gravity that may change only $\frac{1}{2}$ inch or less.

We still think steel does the job just fine. It pay the extra for lead — then that's your

CATIONS

37'8"
32'0"
47'0"
11'4"
5'8"
8,000 lbs.
26,000 lbs.
ter, Marconi and full head sail ch) 49'6"
33'10"

303 sq. ft.
135 sq. ft.
322 sq. ft.
127 sq. ft.
556 sq. ft. (optional)
322 sq. ft. each (optional)
848 sq. ft.
1,008 sq. ft. (130% Genoa)
887 sq. ft. (Genoa not included)

we have decided to offer kits for standing Castlok rigging hardware. The Castlok tested as good or better than any other by the owner at any location. Our kit keep as a ship's tool or return to us for

or ballast materials. It is, in the sense that 20% additional capacity in your sole

sk, is whether or not the lowering of the ffer? It undoubtedly does — but so st (around \$2,000 extra) for a center of s.

you want extra tankage badly enough to cision.

RUDDER

We wouldn't build a rudder until we could build it strong enough to hold 13 tons of boat that slipped back on her moorings — at least hold it for awhile. Ours is now built with a 2" marine plywood core with a mat and 7 rovings around that — same as hull topsides. We're not satisfied yet — but it is far stronger than most.

COMPLETE INTERIOR PLYWOOD

So many buyers have asked us to rough in the interior plywood and then glass it to the hullsides for them, that we have decided to add this feature. The glass work is superb. Wood-to-wood joints are fastened with cleats, bronze screws and plastic resin glue. Facing pieces are not glued so they can be removed to cut out floors and drawers.

Of course, the plywood is AA Marine grade. It is strong.

GLASS HULL TO DECK (AND INTERIOR PLYWOOD)

Inside the hull-deck joint, we use a mat and three layers of 24-oz. roving. On the bulkhead-deck joints, the same except 18-oz. roving is used. Ditto for the plywood interior pieces.

It is admittedly a big job. We use four men inside for two days. Big fans ventilate the hull. And when we are done we have a giant honeycomb structure. We doubt that this job is even done in most production boats but it is important for an ocean boat.

SPARS

Either aluminum or wood spars are fine for the Ingrid. If you choose aluminum, there are a number of systems and manufacturers to choose from. Aluminum theoretically requires no maintenance and is lighter weight. These are pluses.

Wood spars on the other hand have a few advantages worth considering:

- (1) they are repairable anywhere in the world.
- (2) they slow the boat's motion considerably because of the additional moment of inertia. A big gain in comfort at sea.
- (3) steps can be easily fastened which don't weaken the spar. This makes going to the top an easier job at sea.
- (4) modern urethane paints provide a good ten-year life.
- (5) all hardware for mast-tops, spreaders, etc., can be furnished.

STAINLESS STEEL WORK

We provide the chainplates and bowsprit fittings in Type 316 stainless. It is polished and passivated, meaning that it is less likely to tarnish or rust than most stainless pieces. They are not cheap, but worth it if you plan to use stainless in these places.

TANKS

Building integral tanks in boats has come in for criticism in current writings. Problems stem from faulty workmanship or materials allowing sea water to enter diesel tanks — or conversely, diesel seeps through dry glass strands and causes odor in the rest of the boat.

Either condition is prevented by a layer of resin-rich mat and a layer of gel coat covering the *inside* of the tank. (Mat and gel coat are better fluid blockage than is woven roving or cloth.) We install double of each of these layers and use our best workmanship in tanks. They won't leak.



Jerry Husted

WHAT WILL THE BOAT BE WORTH?

Only six Ingrids have been resold that we know of so far (Blue Water Ingrids, that is). From \$47,000 (not typical) to \$85,000. Within that range, the glass-decked Ingrids seem to be moving upwards from \$58,000 to \$65,000 typically.

We expect that this figure will escalate fairly rapidly. A \$75,000 sale wouldn't surprise us.

WHAT WILL THE FINISHED BOAT COST?

Again — some observations. While we will assist you in buying equipment at our cost, we have noted that Ingrid owners tend to buy the finest equipment available. Often this is grades better than on production boats.

So while the savings in labor and equipment commission are real — the Ingrid will in no way end up a cheap or bargain boat for most owners.

We have seen several Ingrids finished for less than \$30,000. These are the real enterprisers — scroungers and builders who usually start with the bare hull. And spend a lot of time.

Most, though, will cost \$45,000 to \$60,000 for everything they buy from us and equipment. And it can run higher. It still requires good management to keep the overall cost from running away.

We stand ready to advise you on each system of the boat — providing alternatives and known costs. This will greatly improve your chances of staying on budget.

WHAT ABOUT THE EQUIPMENT NEEDED?

We will assist you in purchasing the supplies and equipment you'll need at boat-builder's prices.

This purchasing is done through several excellent Seattle suppliers and most Ingrids leaving the area are loaded with cases of equipment.

A few years ago if you mentioned to a banker that you were buying a "kit" boat, he envisioned a pile of plywood in the weeds of someone's backyard. Success rates were low — and on the other hand, so were the purchase prices of the kits. So financing wasn't often needed.

The semi-complete ocean sailboat is a different story. Many are now financed by banks and credit unions. But the banker needs some education on the "state of the art" so to speak. To get this, we invite him to call us or our Seattle bankers and review the experience they've had. Just let us know if we can help.

Minimum terms seem to be 25% down and 7 years, but this is changing fast.

One further thing to consider. Equipment prices usually escalate faster than interest charges, so it is a sound idea to make a list of equipment needed to complete the boat — at least to some stage. Then when you are discussing the project with your banker, you might include the equipment amount. Several buyers have done this already, and it makes sense from the purchasing point of view — both in avoiding escalating prices and discounts available in large quantity orders.

IS FINANCING POSSIBLE?

"Spreading the ballast fore and aft in the boat and glassing over provides a double-bottom boat. It's a wonder every builder doesn't do this."

"Sometimes it seems the sea sends a giant medicine ball into the side of your boat. This makes bulkhead installation critical."



"We believe that a necessary ingredient to building a sea boat is to have a picture of a wall of green water firmly in mind."



"It wasn't until we felt that we could build a rudder that might hold 13 tons of boat drifting backward — that we finally felt secure in offering a rudder for the Ingrid."

"I can't promise you an inexpensive boat, but of one thing I am certain — long after the boat is built and paid for, you will be glad you selected a Blue Water Ingrid."

"You can count on us to recommend the simplest systems and equipment. Short-handed passages demand that most everything works."



"Since we don't concern ourselves with the final finishing, we can concentrate entirely on structural strength."

Blue Water Boats was organized in 1971 to build Ingrid hulls. In 1973 it was incorporated and Jerry Husted purchased his former partner's share and now is corporation owner and president.

A new factory was built in July of 1975 and is located in a lovely rural setting near Woodinville, a small suburb north of Seattle.



Perry Scott (shop foreman and assistant manager) and Husted run a small, friendly boatyard in the old tradition of a handshake, trust and pride of workmanship. There are several other people employed by them.

Visitors are welcome anytime — (best to call first).

BLUE WATER BOATS, INC.

Builders of the heavy-weather Ingrid 38' in fiberglass

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