Hirundo 750

study plans

www.modernwoodenboat.com

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Hirundo 750 main features

Overall lenght		7,70 mt
Hull lenght		7,50 mt
Waterline lenght		7,40 mt
Maximum Beam		2,49 mt
Design draft (keel up/keel down)		0,50/1,80 mt
Ballast		400 kg
Design displacement		1600 kg
Maximum displacement		2000 kg
Engine*		
outoboard		5-10 hp
Gasoline tank		15 lt
Sail plan	See further description	
Trailerable		Yes
Interiors		
Cabin		1
Berths		4+1
Toilet		1
Fresh Water tank		40-60 lt
crew	4-7	
CE** labeling	B5/C7	

*: a small inboard diesel/electric engine (10-15 HP) can be fitted with minor modifications on plans

**: it's intended as a possible CE Class labeling

building plans can be purchased here http://www.nautikit.com/detail.asp?PRODUCT_ID=701.075 , detail if you prefer them in imperial or metric system , CNC files for control numeric cut are available as an optional

You may follow the building of a Hirundo 750 at www.barbamasu.com

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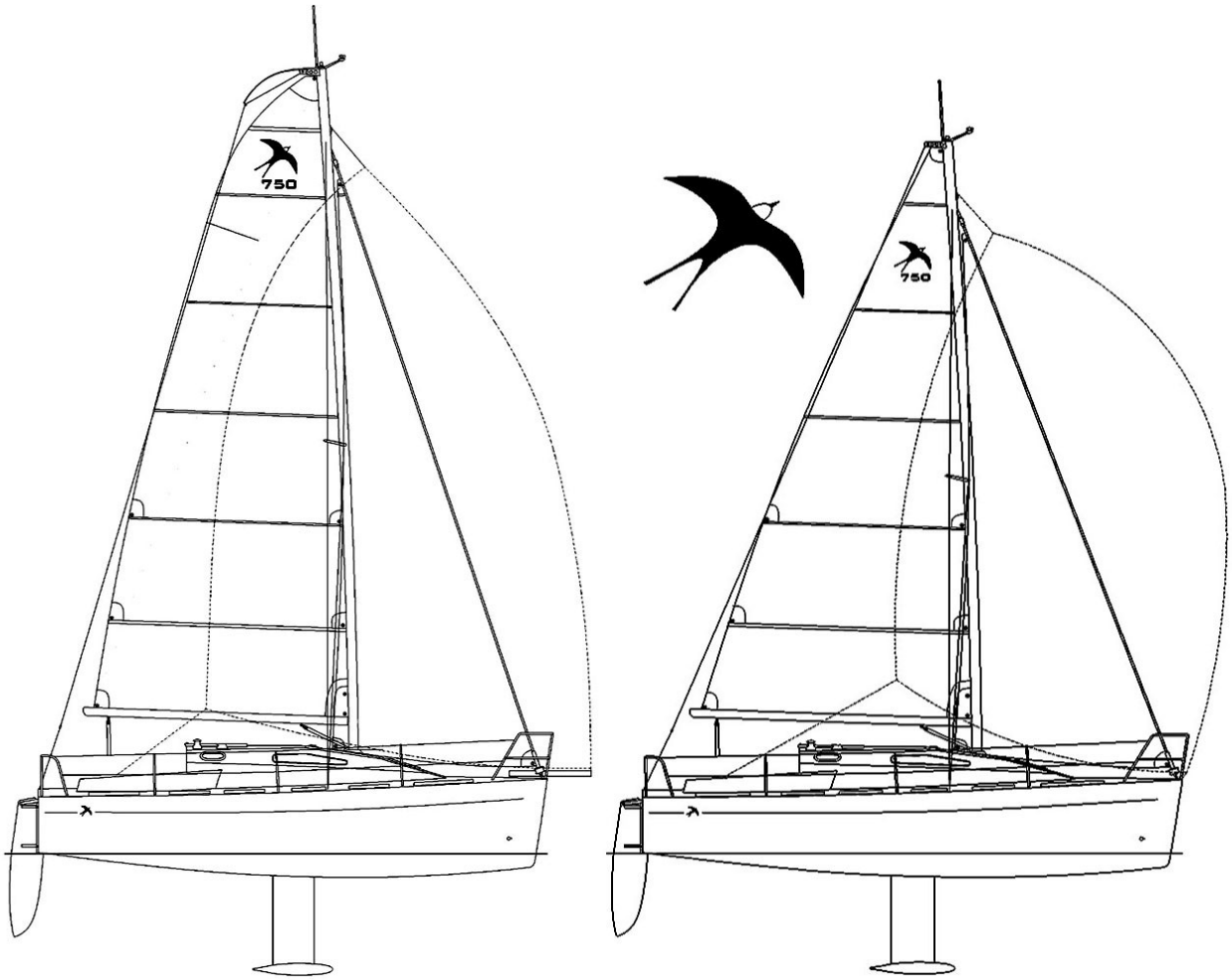
Sailplan

mast minimum requirements:
untapered alluminium alloy mast, 7/8 fractional rig, 1 set of approx. 10 °swept spreaders, 3 internal halyards + boom topping or boom kicker , jib furler
Ixx= 95 cm4
Iyy= 150 cm4

REGATTA SAILPLAN	CRUISE SAILPLAN
PROJECTED SAIL AREAS	PROJECTED SAIL AREAS
-MAINSAIL 23.4 M2	-MAINSAIL 18.1 M2
- 105% J JIB 12.5 M2	- 105% J JIB 11.6 M2
-GENNAKER/MPS 36 M2	-GENNAKER/MPS 30 M2



Building system

Hirundo 750 has to be built in solid wood and marine grade plywood glued and laminated with epoxy resin with the "radius chine" system; let's see briefly what it means:
basically as "radius chine" states itself, the hull is a chined hull with the chine rounded to fair the side and bottom panels; this means that you can build up to the 70% of the hull surfaces (sides and bottom) with flat plywood panels, speeding up the planking phase, the remaining 30% (the radiused area) will be built with a double layer of thin plywood strips that can be easily bent and glued; the planking is screwed and glued on the hull's structure, which is made by plywood bulkheads and transom, solid wood stringers and keel backbone; these elements are the first to be set on a cheap wood scaffold ; cockpit, cabin and deck surfaces are also built with "stitch and glue " system in plywood panels glued and screwed to bulkhead and stringers; the building is suited for a beginner in boat building with a minimum experience in wood working and a basic suite of tools; all the structural joints are in epoxy resin, and stiffened by glass fabric strips where required, the fairing and sanding works are kept to a minimum level since most of surfaces are made by panels which have faired surfaces by themselves; all the wood surfaces will be coated with layers of liquid resin and then painted, giving the boat a level of required maintenance similar to a fiberglass boat . Keel has to be built with welded steel plates and ballast is made by two halves of lead poured in a mold.

Bills of materials for hull building

plywood panels (marine grade, okumè or mahogany):

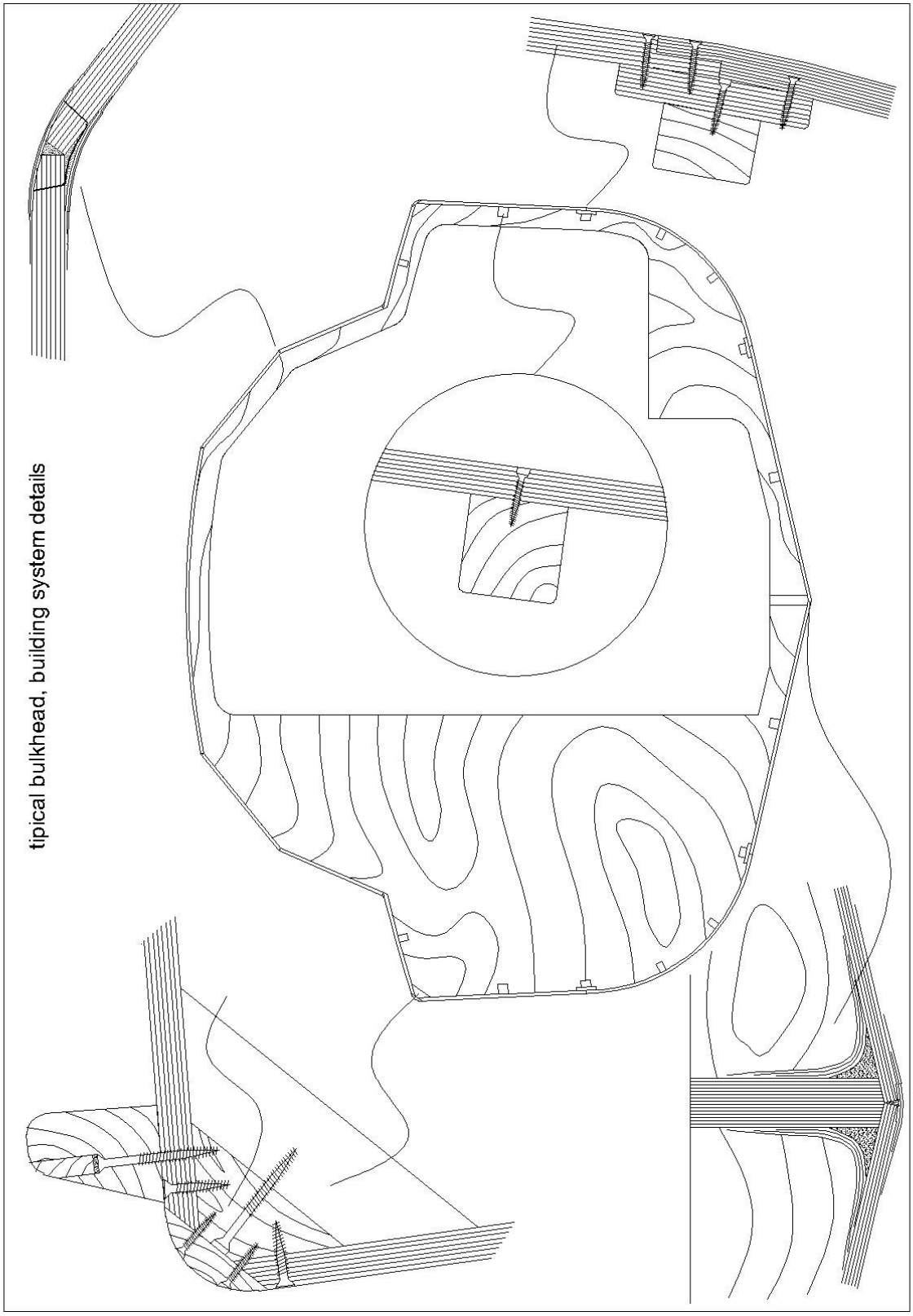
- 5 sheets , size 250 x 150 cm , thickness 12 mm (bulkheads , floors, secondary reinforcements)
- 1 sheet , size 250 x 150 cm , thickness 20 mm (transom, other small parts)
- 24 sheets , size 250 x 150 cm , thickness 10 mm (keel backbone, hull planking sides and bottom, interiors joinery, cabin, deck, cockpit, other parts)
- 7 sheets , size 250 x 150 cm , thickness 5 mm (hull planking: radiused area)

solid wood and other stuffs:

- 75 kg epoxy resin
- epoxy additives (microspheres, silica etc.)
- biaxial glass fabric 500 g/m2 : approx. 30 kg
- chopped strand mat glass 300 g/m2 : approx. 8 kg (keel case lamination)
- epoxy primers, paints and varnishes
- solid wood battens (mahogany, first choice fir, ash, or other essences):

- section 30 x 30 mm : 40 linear meters
- section 20 x 30 mm : 84 linear meters
- section 60 x30 mm : 17 linear meters
- section 15 x 15 mm : 7 linear meters
- section 40 x 10 mm : 17 linear meters
- section 70 x10 mm: 1,5 linear meters
- board section 30 x 150 mm (beams) : 8 boards, lenght 100-120 cm

- AISI 316 stainless steel parts , bolts, washers and nuts for chainplates and other fittings



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Deck gear layout

Index:

-A: ss steel commercial bow roller (pay attention to purchase one that doesn' interfere with forestay and jib furler)

-B: forestay chainplate

-C: mooring fairlead

-D: ss steel or alloy cleat for mooring, 15 cm or bigger

-E: circular hatch , 40 cm approx diameter

-F: halyards and reefing point mast step blocks; it's useful to have a mast step with holes fitted for this blocks

-G: three sheaves organizers

-H: UFO type fan self-feeded by fotovoltaic micropanel

-I: shrouds chainplates

-J: plexiglass windows on coachroof, 10 mm thickness

-K: hatches on coachroof sides, 35 x 20 cm approx dimensions

-L: padeye and stand-up block for jib sheet point

-M: stopper on coachroof (2 set of 3 stoppers , suited for 8 mm ropes)

-N: coachroof winches; size 8 not self tailing, or size 16 self tailing

-O: jib furler

-P: swivel cleat base for mainsheet (it's better to fit it on a 20 mm high wood block to increase maneuverability)

-Q: telescopic ruddder tiller

-R: jib furler control line: lead to S single camcleat on deck via fairleads or small blocks fitted on stanchions

-S: single stopper for jib furler control line

-T: padeye for retracted bowsprit

-U: padeye for pulled out bowsprit

-V: drain fon anchor locker (one each side)

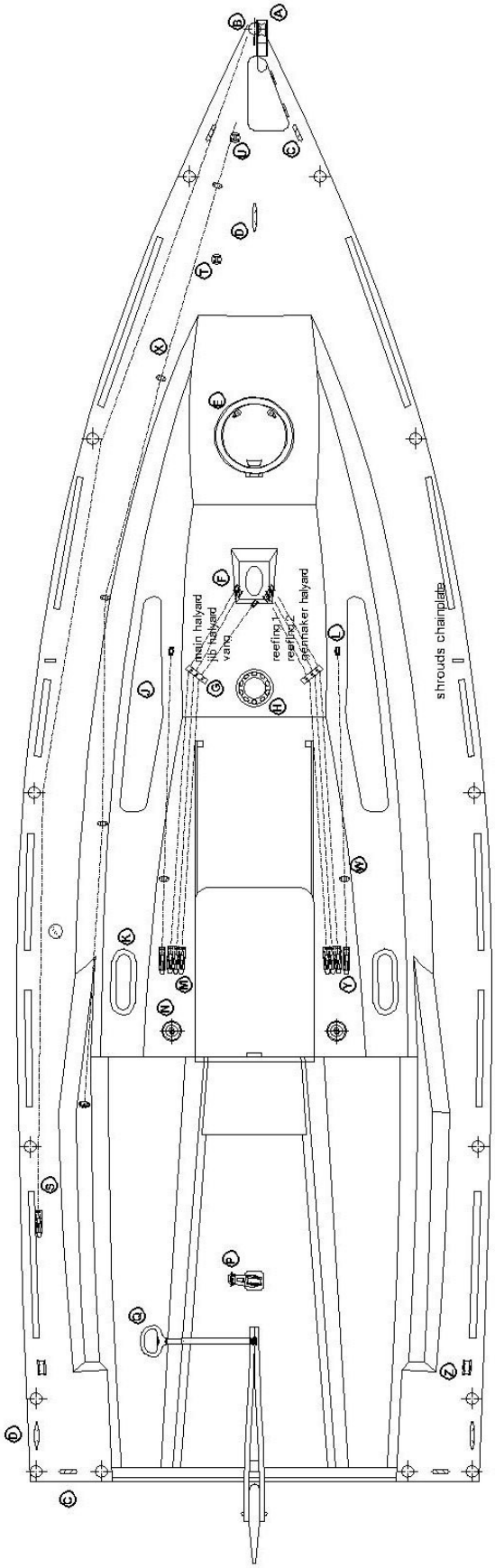
-X: 6:1 vang purchase, on stopper

-Y: single stopper (or camcleat) for jib sheet

-W: fairlead metal lined for jib furler line

-Z: padeye + ratchet block for gennaker sheet (youmay avoid the padeye on deck with a rsturdy ss stell ring welded on pulpit)

for commercial specifications of deck gear check proper drawing (text booklet)



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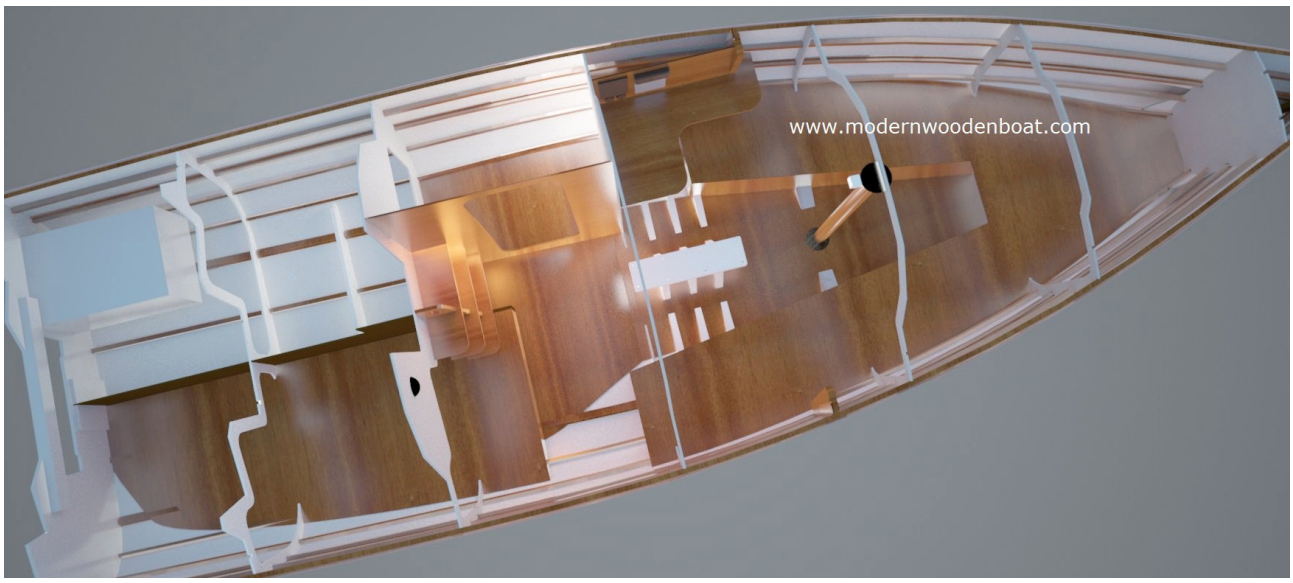
Interiors:

Interiors are made by a single roomy cabin, with a double V-berth on the bow, a dining area and a separate toilette room; the dining area can be used as a two extra berths (one standard size and the second one 1,60 long for a child) ; another double berth is under the cockpit behind the companionway stairs ; a little charting area is on port side, with electric wiring panel, VHF radio and a small cartographic GPS ; you can fit a small galley with a stove in the same area if required; all the berths panel are removable to use the undernath volumes as lockers. Light is provided by the two big plexiglass panels on cabin sides and by the hatch on the cabin roof; maximum internal height is approx. 1,75 meters ; most of the interiors are non structural , so they can be changed and rearranged to fit the builder needs



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