

Boat and small-craft builders

Stability you can see before she floats

Hydrostatics from your own offset table, GM drawn on the midship section, slack tanks charged as they really are, and laminate schedules turned into weight – inside the complete ERP.

GM = KB + BM – KG

Drawn to scale on the section

Slack tanks

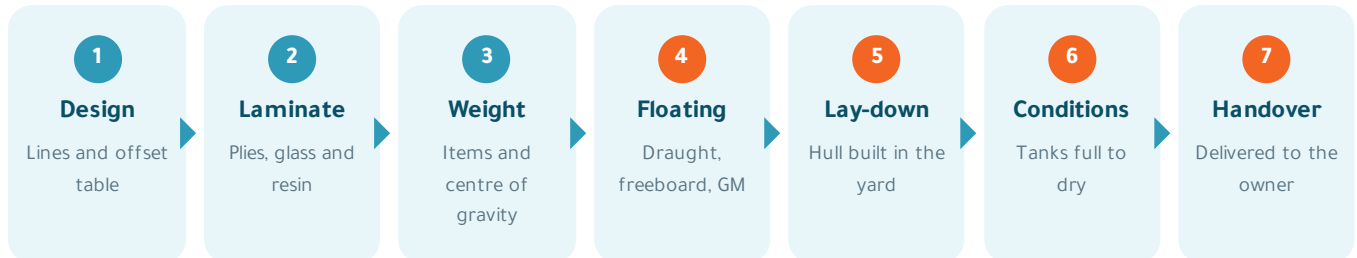
Free surface at its true breadth

Laminate schedules

Weight, thickness, glass %

A boat rests on water – not on something you count

A boat is held up by the water it pushes aside, so the draught is solved for, not added up. VLUERP follows each hull from its design and laminate to every loading condition at sea.



Hydrostatics from your lines

Volume, KB, BM and TPC integrated from the real offset table – checked against shapes that can be worked by hand.



Stability on a drawing

The midship section with K, B, G and M to scale and the GM gap as a coloured bar: algebra made obvious.



The slack-tank trap

Free surface depends on the breadth of the liquid, not its depth – so a tank costs the same at 5% as at 95%.



Laminate is weight

Every schedule gives cured weight, thickness and glass fraction, and shows what extra plies do to KG.

0.888

m GM leaving harbour

1/4

surface left, 1 baffle

26%

heavier: all-mat laminate

9 mm

fresh vs sea water draught

Floated, then judged – on the real hull

The draught is found where displacement equals weight, then GM is built from KB, BM and KG – for every loading condition, not just the day of launch.



Floating the hull

- The draught is searched for where displacement equals weight – there is no closed formula, so the system bisects.
- Hydrostatics by Simpson's first rule over your offset table; an even number of stations is refused, never trimmed.
- Verified on a box barge and a vee prism worked by hand: KB, BM, TPC and block coefficient all match.
- Freeboard is moulded depth less draught, with the fresh-water check (1.000 vs 1.025) – **9 mm** on the example launch.



Stability you can see

- $GM = KB + BM - KG$, drawn on the midship section with the GM gap as a coloured bar.
- Slack tanks are hatched at their true breadth and charged at $i\rho/\Delta$ – the same at 5% as at 95% full.
- Loading conditions scale the tank weights with the fill, so burning fuel shows the stability it costs.
- GZ is refused past 15° rather than extrapolated – beyond that it needs cross curves, and a guess always flatters.



She is refused before she touches the water

A fishing launch leaves harbour with a GM of **0.888 m** and reaches **0.100 m** at sea against a yard minimum of 0.350 – turning negative halfway through the passage, because burning fuel removes the weight but leaves the free surface exactly where it was.

Baffles

One baffle leaves a quarter of the free surface: GM goes from 0.100 to 0.656 m. Two leave a ninth.

Two GMs

The yard shows GM solid and GM at sea, and lists every hull under the minimum.

Heavy items

Sorted by effect on KG – the longest lever above G first, not the heaviest item.

Where the weight comes from – ply by ply

The laminate schedule is where a boat's weight is decided, so adding a ply to stiffen a panel shows up as the stability change it really is.



Laminate schedules

- Plies by glass and resin g/m² give cured weight, thickness and glass fraction by weight.
- Density is calculated exactly from the glass and resin fractions, not taken from a rule of thumb.
- Compared at equal glass weight, all-mat comes out **26%** heavier and **32%** thicker for the same strength.



Weight where it sits

- Shell area from the design turns each schedule into weight on the hull.
- Extra laminate low on the shell can lower KG; the same weight on the topsides raises it – both shown side by side.
- Each item's mass and position build the centre of gravity, with the same engine that weighs vehicles.

Checked against shapes worked by hand

Quantity	Shape	Result
Volume	12 × 4 × 2 m box barge at 1 m draught	48 m³
KB	Same box barge	0.500 m
BM	Same box barge	1.3333 m
TPC	Same box barge	0.492 t/cm
KB	Vee prism of the same box	1.3333 m (two thirds)
Block coefficient	Box barge · vee prism	1 · 0.5

Every hydrostatic figure is tested against shapes that can be computed longhand – never against the code's own output.

Every screen in the module – and what is on it

Read off the running application – the panels, columns and figures that are actually there.

4 screens
36 functions

01 Yard

Every hull Why two GMs Under the minimum GM Losing GM to slack tanks Design
Weight Draught Freeboard GM solid

02 Hulls

Lay down a hull For Design Shell State Items Weight GM at sea
Laid down

03 Designs

New design Kind Length Beam Depth Offsets Shell area m² Hulls
Create

04 Laminates

Why glass fraction matters New schedule Plies Glass g/m² Resin g/m² Cured g/m²
Thickness mm Glass by weight Create

Not a separate program – a complete business system

The trade module sits on top of a complete ERP: everything it does lands directly in the accounts, the stores and the reports – no double entry.



Accounting

Editable chart of accounts, automatic entries from every transaction, VAT and financial statements.



Financial dimensions

Cost centres, departments, business lines and sites – with statements per factory.



Inventory

Warehouses and bins, batches and serials, moving average, FIFO or standard cost.



Purchasing & sales

RFQs, purchase orders and receipts, quotations, invoices and ageing.



Maintenance & assets

Equipment register, preventive maintenance, work orders and depreciation.



Access & language

Roles and rights per module, audit trail, full Arabic and English interface.

Naval-architecture methods built in

$GM=KB+BM-KG$

Metacentric height, drawn on the section

Simpson 1st rule

Hydrostatics from the offset table

$FSC = i\rho/\Delta$

Free-surface loss from slack tanks

$GZ \leq 15^\circ$

Righting lever, no extrapolation

$\rho 1.025 / 1.000$

Sea and fresh water density

These are the calculations the module performs, each tested against shapes worked by hand. Design approval stays with your naval architect.

See your own hull **afloat**

Book a session and we will load one of your designs – its offsets and laminate schedule – and walk through its stability with you, condition by condition.

Request a demo

Website

www.vluerp.com

Demo request

www.vluerp.com/#demo

Email

hello@vluerp.com

- 1 Yard:** every hull with draught, freeboard, GM solid and GM at sea.
- 2 Midship section:** K, B, G and M to scale, with the slack tanks hatched.
- 3 Conditions:** burn the fuel down and watch GM fall – then add a baffle.
- 4 Laminates:** compare two schedules at equal glass weight.

Switched on from Add-ons with a free seven-day trial, and it runs on the same general ledger.