

October 2013 1.

Atalanta

Preservation - Reinstatement

Sailing pleasure vessels, until the early 1800's were generally based on proven commercial types, fishing vessels, skiffs, dories etc. All tempered by the Tonnage rules of the day. Sporting based competition flushed out development money, rapidly bringing forward experimental thinking. C Bailey's Rogue and Logan's Rona were typical of these early types.

It amazes me just how quickly these overseas developments spread to the Colonies. Surface mail via Cape of Good Hope etc. Nat Herrisoff's Gloriana obviously inspired Logan's etc. The (Little) Thelma was a conservative shift in the Bailey development.

Atalanta would have felt this imported influence but also a little conservative, and she also wore the limited draught, fortunately suggesting more beam. The triple skin construction system must also have been a feature in her basically simple form. It didn't take long to firm up the bilges to great advantage. The magazine 'Field and Stream' had something to do with Rona. And just when Edward's Britannia showed up? As much of this shift in sailing yacht philosophy, a transition, should be retained in Atalanta's reworking.

She has suffered throughout the past 70 or so years from patchy and unsympathetic "improvements".

This largely bought about by rather amateuristic interpretations of magazine articles.

People (the race) are bigger now than 120 years ago, both taller and, generally, heavier. This has to be considered in any rebuilding project, especially if



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the results are to be efficient, useful and beautiful (William Morris!) Recovering the elegance with a worthy performance and inbuilt durability should be the overall aim.

So, to uncover the true Atalanta.

The arrangements on deck are most unergonomic(?) clumsy. Coamings, carpenter's hatches etc. Consider the cockpit at 45° heel! Much of her stability, eg. sail carrying power is spent on heavy toe rail and other deck structures. Imagine the aft end when the deck awash, it can happen, one ton of water? The house is far removed from (Bailey's model). This would be one of the areas for discussion/s. There may have to be a compromise, considering the 21st century figure. Basically workable headroom below decks. Full headroom would be a dream. A careful rethink/reversion to near the original with a serious consideration to weight distribution should be the overall rule.

There are, say ten areas or units, that could be treated as nonoverlapping items. One need not impede progress in another. With careful consideration to all the above, reverting to the centre-board arrangement could be quite practical and possible. Reducing the comparatively clumsy deck structures to nicer proportions and being careful with the rig could produce a useful stability range. Basically lightening the rig and other inappropriate accumulations would allow for a better ballast ratio and not a great shift or even an



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Improvement to K.G. Her ballast ratio now is circ .42
I see the divisions, not necessarily in order as —

Rudder. Floors and mast step. Keel-Ballast. Deck and
margins, inc Capping. House. Cockpit and Matches. Counter
and stem scroll. Spars and Rigging. C Bd. Deck Hardware

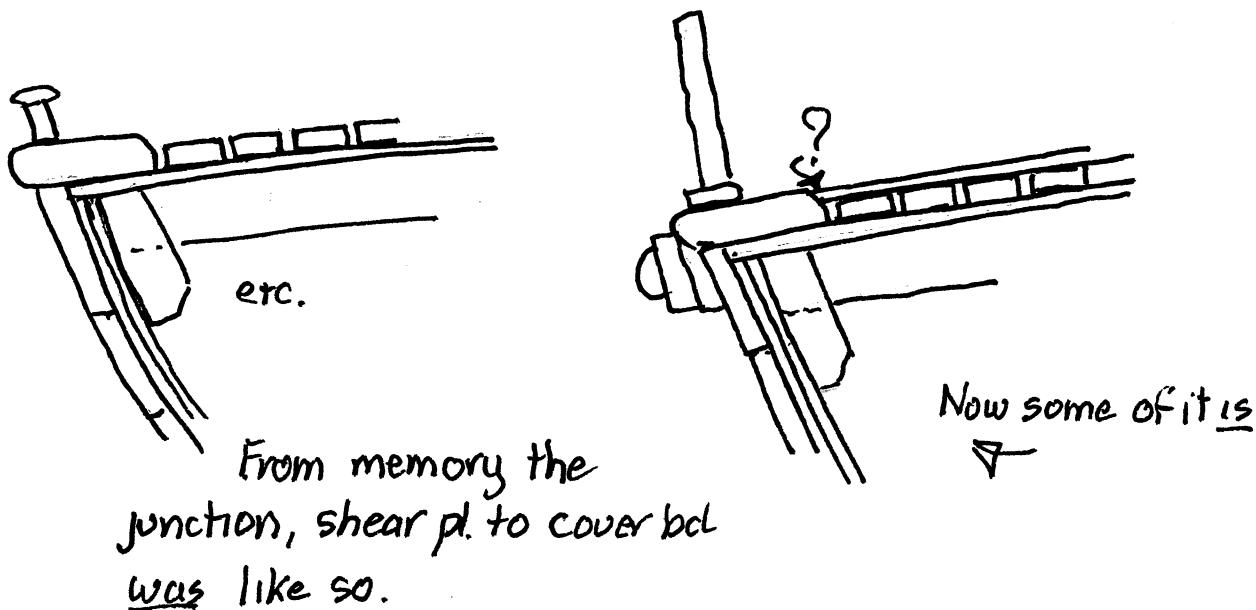
A rundown of the principle strains put on a ballasted
sailing yacht forms the basis for arranging her structure,
within the limitations of available materials of course.
The modified gaff cutter, like Atalanta was born with, is
comparitively gentle compared with the long masthead
forstay opposed by a standing tuned up backstay fitted
with a headsail requiring big forces to sheet. The max.
Being flattened out in a monumental gust exercises the
weather shrouds, the hull fabric through to the ballast
keel. Reverting to Atalanta's original rig should be
the objective. Perhaps with small adjustments to
accomodate the few items that history and science have
proven appropriate.

In Atalanta's case these forces are distributed by the
weather chainplates to the diagonal planking which in
turn fan them out quite nicely to the keel. The diags only,
should not rely on their attachment to the keel. This loading
is gathered up by the floor's connection to the diags and
to a lesser extent, the planking. The floors transfer all
this to the ballast by bolting. More about this later. Most
of the righting or opposing force is generated by the
ballast keel.

The other side of this righting couple is the mast in
compression. →

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These two forces are endeavouring to straiten out the bilge curve. (Not much trouble for Rona!) A substantial bulkhead is the simple way to retain the bilge form. There are others, that depend on the desired below decks arrangements. Partial Bhs. and bracketing (vines) etc.



The rub rail does nothing for performance, strength or beauty. It appears that there has been a fillet skillfully worked onto the shear strake for some distance from aft immediately below the cover board. It can do no harm.

Using the moulded edge of the cover board as a belting is a bit chancey! This fillet will help a little and I would be inclined to leave it in place. Even filling the underside with an epoxy filler as far forward as practical.

There is not a great area of planked deck so a complete bareing with necessary repairs as required should not take too many hours. The seam widths may be too great in proportion to depth to caulk satisfactorily but a putty/white lead mixture and a good paint job

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could be satisfactory. It is 2013 now, There may even be satisfactory fillers available. Ones that will stay adhering to both sides and can be painted over.

Presuming that a bowsprit will be fitted means that the forward hatch needs be located further aft. (where it used to be) She had a nice Teak hatch with a bronze star central and a screw down latch. (I could make this). The aft thrust of the bowsprit could be taken up by deck mounted knees or a bollard. This can be a quite heavily loaded area as there is the jib luff tension and sheeting, even some of the main sheet's effort is all loaded onto the whiskers and bobstay.

The existing toe? rail isn't too much of a luxury. It would retain a lot of water and would wriggle with clumsy docking and not too convenient when heeled. And it adds weight. It may provide useful material for other work. Just how it is fixed down?

Photos show an attractive tapering rail from bowsprit height to run parallel from about midships - aft.. The cockpit and its coaming are clumsy unergonomic and unpoetic. These need looking at in conjunction with the house.

The ply? overlay is really just more weight on deck. Fibre-glassed decks on older wooden vessels have doubtful results. The glass skin stops water coming in but also prevents dampness leaving via the wooden deck as vapour. Many decks have rotted under the glass layer.



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In conventional planked wooden hulls there is a gradient of moisture through the planking. Although this began circa 1895/6 it would re start once RHy is refloated. A constant moisture content is the aim. With constant saturating and drying, the wood cells tend to tire, get lazy and break down. The caulking process tends to contain the width of the plank and limits the degree of saturation, eg. if one squeezes a sponge and dunks it still squeezed it does not take up as much water as when it is released under water. On well built hulls with comparatively narrow planks related to their thickness and with adequate framing and fastening this absorption is greatly reduced and they stay smooth and tight. This all depending on the wood specie also. Not so much on the paint film. Relying solely on the particular wood specie is a little unfair. RHy's planks are comparatively wide proportionally to thickness (original). So we can expect a degree of moisture always present through her bottom planking (Kauri is marvelous). This mostly propelled by capillary attraction but also by the water pressure difference. This moisture has to be controlled by ventilation. Although it starts off with a salt content by the time it condenses under the deck it is pure. No preservative element, eg salt. This is the major argument against fibre glassing wooden decks on older vessels. Especially those that only receive intermittent use.

The deck has two major functions. Something to walk on and keep the water out, and to retain the vessels plan shape (deck outline). It is like the top flange of a girder or the lid on a shoe box. In RHy's case this is a little unfortunate. She has developed an obvious twist in her hull. To correct this some deck has to be removed. Then the whole thing gets messy.

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The ideal approach would be direct. It would be time and expense efficient. I cannot see a practical piecemeal way. The expense aspect would entail having all the required material on hand, machined to the required dimensions and some units prefabricated and prefitted. All best done under cover (of course) with good light.

It appears that the deck frame is largely extant. Although photos suggest that the side decks widened forward.

The carlines could be blocked out without too much skill and effort. It is also probable that much of the diagonal decking is reusable. Some decking also.

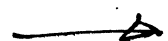
The mechanics of the diagonals may have caused the twist. Removal and refixing after unwinding should stabilize the vessel's plan shape.

Present day barbed bronze nails must be better than smooth copper. The diags are probably 8mm to 30mm nails. The effectiveness of nails is applied two ways, the clamping effect and sheer resistance. Likewise with screws. Screws are probably better in most situations but just more nails should compensate!

Realigning the hull should not be too difficult. See sketch/s ①. The steel cradle could be the key tool.

Because of the fundamentally triangular shape forward being largely self bracing I expect that the twist is all aft of the foredeck.

My drawing No 2 sighted together with the suggested sail plan shows a proposal for a new coachroof. The traditional way to construct these affairs is to bend a plank around the carline and drill for through bolts requiring a



a-degree of confidence, luck and thickness. A suggestion is to glue laminate from, say 3 layers of 9 mm wood (Kauri). The inner and outer to be continuous and the mid one to be stopped at regular intervals, with a small gap at bolt centres. All to be assembled over a mould (caul). After scribing down to the deck surface and the top faired off to an acceptable profile the bolt holes then drilled down the gaps in the centre lamination. Advantages.. much less risk of the embarrassment of a breakthrough the side.

The required curve of the sides in the laminating process. The whole could be constructed from random stock.

Stresses built in by bending - say 32 mm plank tends to kink at the bolt holes and port lights (21st century glue and stress free laminating). Edge bolting is by far the best method for fixing coamings. Combined with the carline and stiffened by both the side deck and the rim of the house top we have an effective girder. Another system that was often used that enabled using lighter coamings is to screw fasten them to the carlines and often bent right around the front of the house and back the other side. Locked great. There are at least two examples in Wgn. Two yachts that I know of, The Queen Charlotte and the Argo left no trace. They had this arrangement. Taking this small deviation from the era a little further -

I suggest cold moulding the house canopy from say 4 layers of 5 mm Ply, no beams. The smooth overhead is worth another 150 mm of headroom. The original was quite likely stock kauri matched lining under canvas. See details. sketch/detail ②. Future minders may revert to beams and T.G.V. (When the ply rots?)

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Floors. The laminated floors appear to be professionally made, probably in place. Considering the alignment of forces outlined on page 3 suggests that they need some assistance. The windward arm of each floor would be in tension. This would tend to try and straighten them.

We are considering parts of Tons/each. Those with only a bolt in the centre could bend between bolt and plank. This would reflect on the garboard seam.

I believe (?) that it is important that the top of the floors be stiffened and a bolt (say 12mm copper or 10.5 bronze) be fitted as far outboard as practical, see sketch (3)

This would mean some excavation in the keel side or the deadwood below to access the nut. If the ship reverts to centre board then these bolts could be fitted at that time. Once again the metal in the bolts has a much higher potential than the wood so appropriate washers are required.

The stiffener/packer, Jarrah by choice, would also carry the sole.

Adequate limbering does not appear to be a simple matter. The keel top is probably parallel to the LWL because of the initial aim to limit draught. There is a chink that possibly can be exploited at the plank/keel intersection.

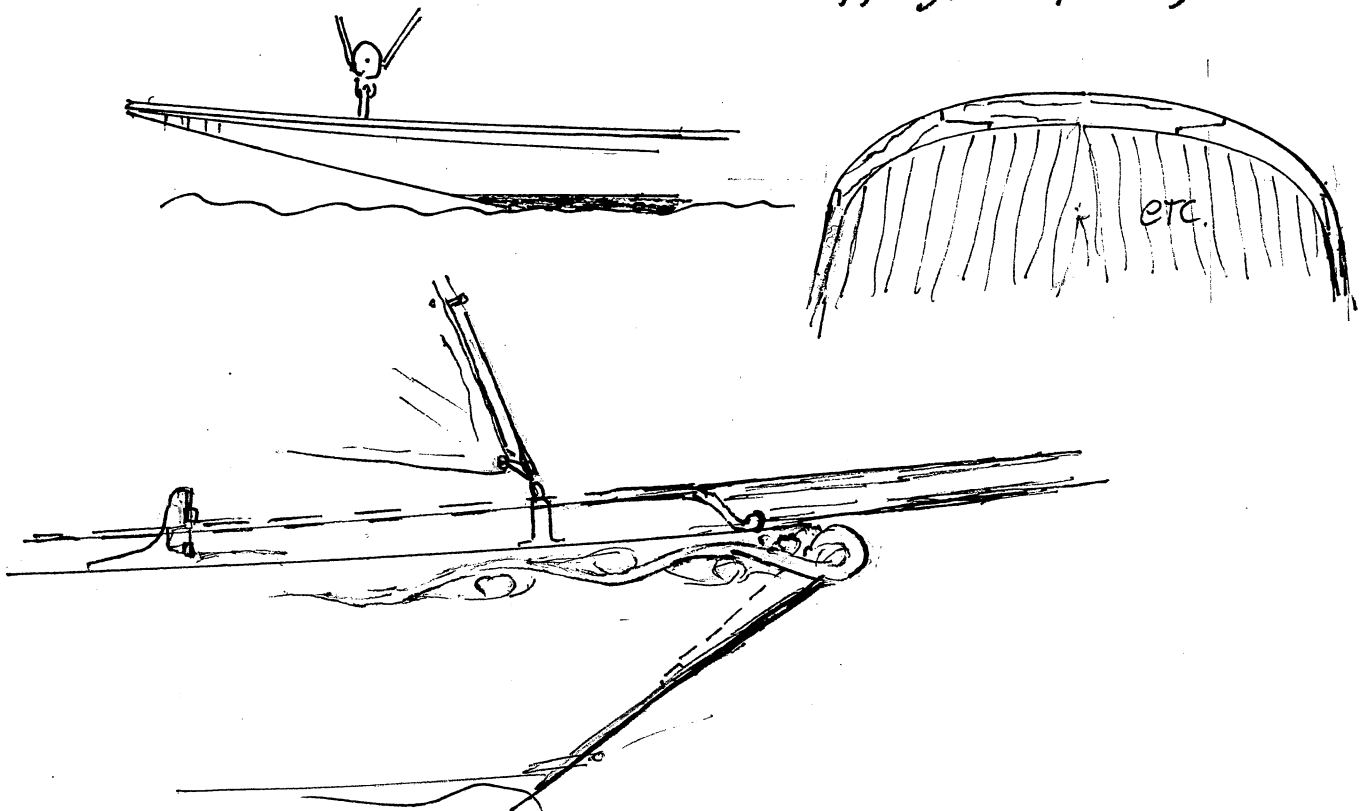
Otherwise some burrowing under the floors near the \angle . Hopefully there is some drag to the keel top. It may be possible to assess this while on the land. Eg. comparing the underside of the keel with the paint line.

Stem head ornamentation (for want of a better name), can happen at almost any time. Photos suggest it is all below shear plank. There may still be some trace in the plank. There appears to be a convenient scarf.



scarf/ near the top of the stem, and with luck, all forward of the plank rebate. The alignment of the toe rail and capping, the top of the bowsprit and its alignment, all form part of this potentially graceful feature.

Counter reinstatement.. This could consist of vertical laminations of chunks of Kauri. Much like the stem head just mentioned, it forms a part of the vessel's appearance. Basically it is shaped as a continuation of the after body rise. There will be considerable advantage if this work is undertaken with the main deck make over. Continuing the deck plank over the buildup of the hull profile will ensure the alignment, aid weather integrity and bring it into the hull, rather than a tack on. Photos suggest that the deck sweeps up to meet the line of the top of the rail. It is difficult to see whether the cap continues around the rim of the counter. In other examples it does and widens into graceful extensions of the capping, completing the hull.



The rig shown on drawing, sheet 3, is probably quite conservative. It is well understood that structures that are frequently stressed to near max need more maintenance than those that are comfortable with their job. I do not expect that this high stressed situation will occur too often but the future is a long time.

There is magazine reference to Atalanta winning the Anniversary Day race 1916. This was attributed by the writer to her "ballooner". A photo of this race shows a rather full staysail. Perhaps this is what was referred to. If so, its effectiveness fits current thinking.

The effectiveness of the topsail jackyard does not match current thought! Who would lace a spar up the leach of their mainsail or headsails? Sheeting the topsail to the gaff peak is about the best that can be done. The bigger topsails that those folks used would press the yacht harder increasing the leewash & noise. If every one did it, good fun. Aspect ratio / luff length is the major criterion for any sail..

I have shown the gaff laid back principally to allow for a useful topsail (luff length in relatively clear air.).

Fitting the centre board gives an opportunity to tidy up her keel/floor bolting arrangements. And due to the reduced wetted surface, more speed in nice weather. Like wise re working the deck and structures as one operation would allow for less compromises and be more labour efficient than a piecemeal approach. All best done in lock up shelter. It all adds up to M.E.T. Money, Enthusiasm, Time.

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Sketch detail (2).

Scale 1/2

Moulded Lam Plys.
4x5mm

FG 2?

Cast Bronze Escutcheon
Nom 32x5. Note (1)

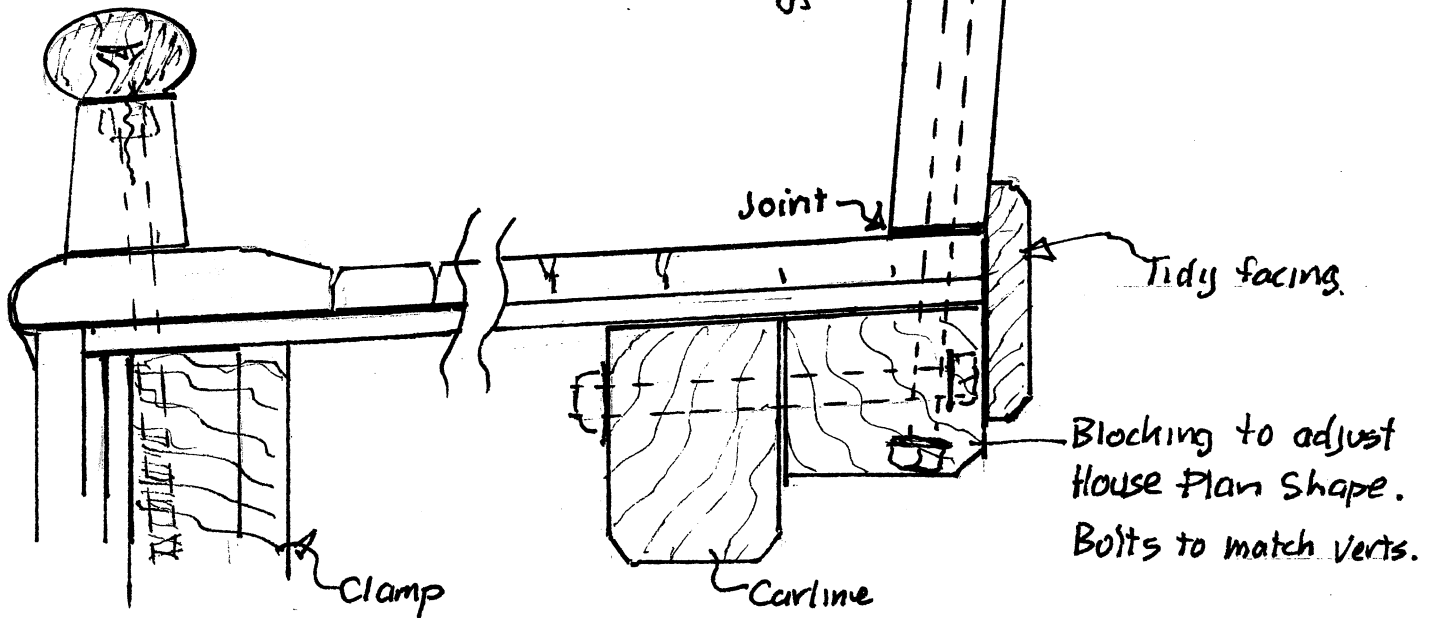
6mm Tapered
Plate

White?

Coaming Fabricated
9+9+9. - 9+8+9
8+8+8 - 8+9+8
Kauri?

Stronger colour than
above.

8 or 9mm Bolts
QT Nom 400CTOL
Note (2)



Note 2/1 Have the cast escutcheon on hand before marking out the cut out and the glass prepared. Things shrink!

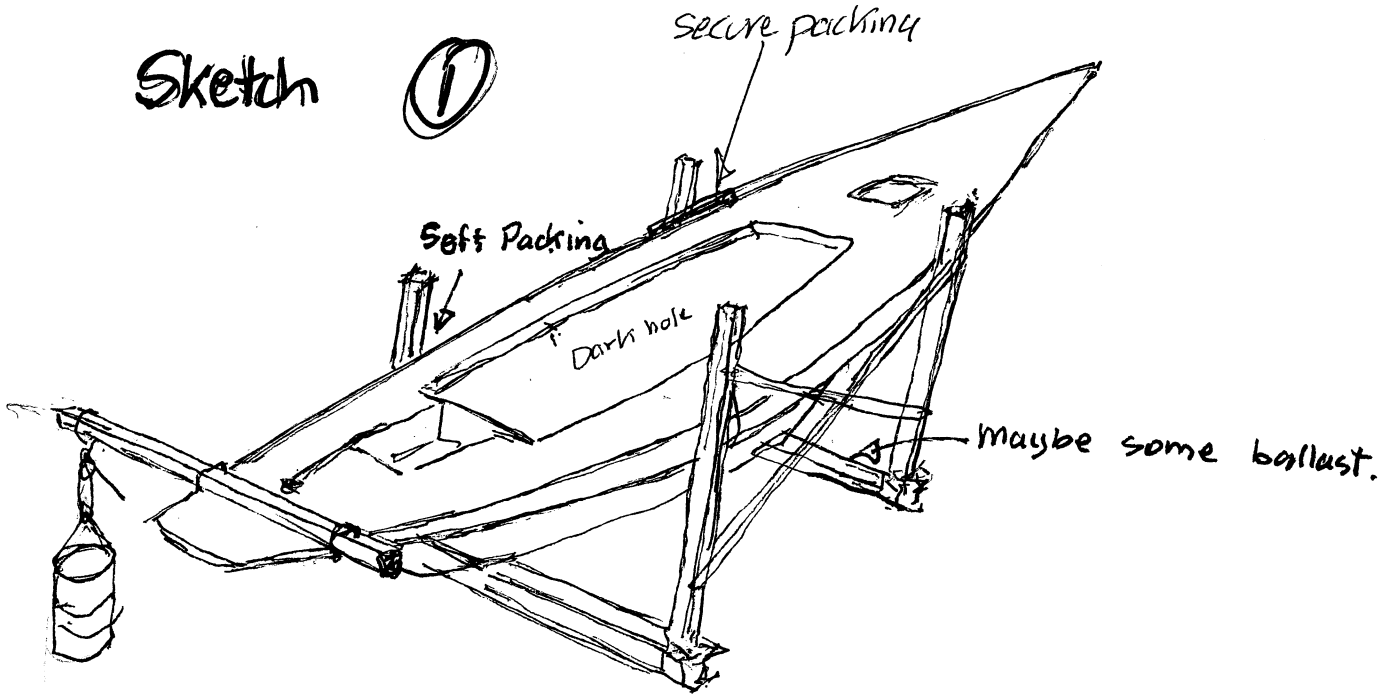
2/2 Bolt diam is not vital. Copper or Bronze preferred stainless is not fool proof. Generally the metals are so superior to the wood that the quality of the washer becomes as important as the chosen metal. (Crushing)

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N.T.S.

Sketch

①



Sketch

③

