


The Schooner Raja Laut

By Ywan Georges Carraz





Boat names have long been a subject of quayside conversations and often the stories behind a particular name are pretty interesting too - some are personal, some historical, and some are just humorous. And so for our story on the history and construction of the *Raja Laut*, we can think of no better place to start than to talk about what is behind the name “Raja Laut”.

The name *Raja Laut* actually means “King of the Seas” in Malay, and was chosen in homage to the Malay Archipelago - the history, the people, the cultures. Within Asia, strategically located between East and West, with its geography of thousands of islands, and a rich bounty in spices, the Malay Archipelago was a major seafaring region with flourishing entrepôts, cities and kingdoms, attracting traders from all over the world.

“Raja”, itself a derivation of the Hindustani for king, was an honorific title used in ancient times from Srivijaya to Malacca, Makassar to Ambon. The type of vessel, the name, and the whole region really captured our imagination.

This is partly thanks to Joseph Conrad’s novels, in which one envisions the schooner carrying adventurers and traders through this extraordinary and exotic East.

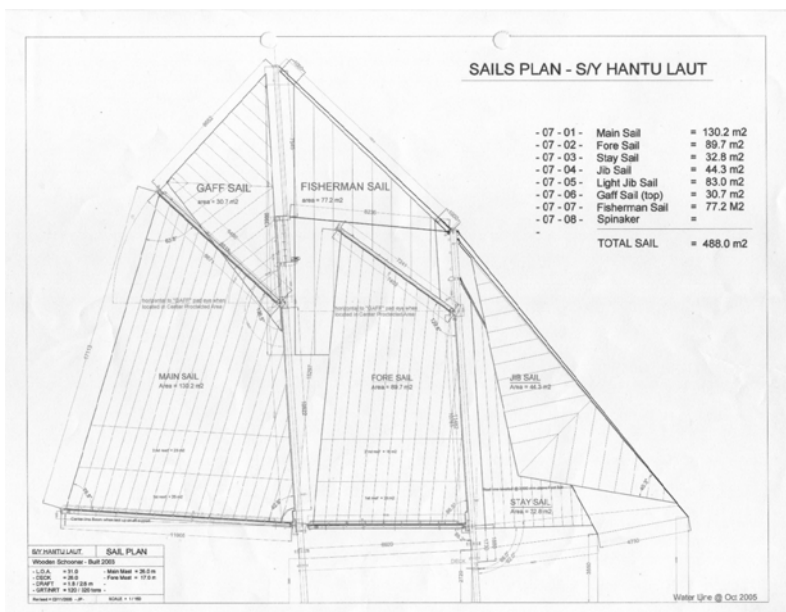
There is also the portrait, in the Sarawak museum, of James Brooke’s schooner “The Royalist”, which has a very similar design to *Raja Laut* and which young Brooke had purchased in England and then sailed across the world to explore what was then known as the Malay Archipelago.

In the late 19th Century Conrad sailed extensively through the Archipelago as a mate aboard the British Merchant Navy steamer *Vidar* and it was the intensity and richness of these experiences that provided the writer with much material for his novels. It was also during this time that a young Conrad came across a real life *Raja Laut* in the form of Captain William Lingard, who was then a well-known figure in Singapore and throughout the Archipelago, where he had sailed his own ships and cargoes and amassed a considerable fortune.

Legend has it that on one of Lingard’s numerous voyages to Borneo he fought a large fleet of Bugis pirates (the most feared and skilled seafarers of the region), rescuing a surrounded Dutch man-of-war. His bravery on this occasion earned him the thanks of the King of Holland and he was made a Knight in the Order of the Netherlands Lion. Locally, he acquired the unofficial title “Raja Laut” bestowed by the Sultan of Gunung Tabor, and was known by this sobriquet among the Malays.

Nearly one-hundred-and-fifty years later another *Raja Laut* is launched on the shores of Borneo, commissioned by a Malaysian company, designed and built by a multinational team of European and Asian boat builders, carpenters and shipwrights. East meets West, once again, in the Malay Archipelago... except that today the region abounds with holidaymakers hungering for eco-treasures rather than spices, for new adventures with a new *Raja Laut*...

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The Nature of Wood

Once the idea of building a boat is in your mind, probably one of the first thoughts that one obsesses over (obsession is pretty standard when it comes to boatbuilding) is “what material do we want for the hull?” After all, the hull is more than just the “foundations” of a boat – it’s the foundation, and the floor, and the walls.

And while boats can be built out of almost anything (one chap famously created a boat from recycled plastic bottles), the fact remains that boat building

materials were not all created equal.

Mother Nature - not easily outdone by man - has created the supreme materials for boat building. It’s called wood! Wood is *the* material to use for a classic/traditional schooner, and not just because its traditional: more importantly wood is great to live with and on – it feels heavy, solid and safe, and as most sailors will tell you, no other material can beat the feel and ambiance of a wooden boat, especially a carvel-built one. These are romantic reasons, but there are genuinely good, practical reasons for choosing wood:

1. Wood is high in tensile strength, durable, workable and combines stiffness with light weight in a way that is more structurally efficient than just about any other material, including high-tech laminates. Mechanically and physically it’s simply right for boats and that is why we have been building ships out of wood since the beginning and continue to do so today.

2. Steel or aluminium hulls are strong, have

many advantages, and are the better materials for certain vessels, but they carry little charm and lots of vibrations. In the long term steel will corrode and aluminium will oxidize and plenty of maintenance and care is still required.

3. Fibreglass is less maintenance and when first invented people thought it might be the “miracle” material. Unfortunately they were wrong. A fibreglass hull weakens over time, water penetrates the layers by osmosis, spider cracks form over the glass, on impact with a harder material it will shatter, it is difficult to repair and unpleasant to work with.

4. With the right type of wood and proper maintenance the well built wooden boat actually lasts longer than its fibreglass counterparts. In part this is because wood is able to absorb and release water so a wooden boat will actually get less condensation and dampness in it than a fibreglass one. Furthermore, thanks today’s technology wooden boats are less maintenance-intensive than they used to be, while regardless of technology, a fibreglass boat will deteriorate persistently with age and there is little that can be done to prevent that.

5. A longer life span is just one of the reasons that also makes a well-built wooden boat the more environmentally-friendly choice. Today’s consumer culture uses wood in products with no lifespan: cheap furniture that lasts for a few years before seeing the rubbish tip. A well maintained wooden boat lasts for decades. Time enough to renew the resource. Furthermore, other materials used for building boats, steel or aluminium for example, are not renewable resources and, unlike fibreglass, wood is biodegradable so that a sunken or disposed of wooden boat is not as damaging to the environment.

The spirit of *Raja Laut* prevails in Borneo and, as luck would have it, so are some of the world’s best hardwoods. The availability of the exceptional “Borneo Ironwood” (species name: *Eusideroxylon Zwageri*), known locally as Belian or Kayu Ulin, made the choice of wood easy. Belian is one of the worlds hardest and heaviest woods: harder, heavier and more durable than Teak, Ebony, Mahogany or Iroko, and one of the most exceptionally naturally durable hardwood species in existence.

In the Australian Standards report on Timber Preservation and Durability (AS 5604 – 2005), Belian achieved the highest durability ratings out of all the woods studied (including Burmese Teak). In the same report Belian was given a “marine-borer-resistance” life expectancy of 60+ years in southern waters. This resistance estimate is for untreated/unprotected timber, and we understood that with proper maintenance a well-built Belian hull could last for 100 years.

Other wood used in the construction include:

Deck: Burmese Teak. Undoubtedly, the world's most valuable and versatile hardwood, it has properties which make it the only wood that is ideally suited for the construction of the wooden deck of a boat.

Deckhouse & Interior: Selangan Batu. Selangan Batu comes from the family of Dipterocarpaceae with a given botanical name of Shorea spp. Other known given names are Tekam, Kowan Darob and Balau. It has excellent durability and is usually used for exterior construction, marine and wharfs, even piling, and boat hull construction.

Interior Floors: Merbau. Merbau wood comes from the tree with botanical name Intsia Bijuga. The tree grows in the lowland tropical rainforest near the mangrove swamps, rivers or floodplains. Merbau is a very durable and termite-resistant wood which makes it a highly sought after material for flooring and other usage.



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Building the Hull

In terms of the method of construction itself, wooden boatbuilding tradition strongly favours carvel planking in which a smooth hull is formed by wooden planks attached to a frame.

This is true both in the West and in the East, but in the Malay Archipelago there is one twist – here the Bugis boat builders have been building their carvel boats for centuries by putting the planking in first, prior to the frames (much as with a clinker built boat except with the planks placed edge to edge). Using these methods, Belian wood, and plans of traditional wooden schooners from America and France, we built the strongest hull possible.

Each of the Belian pieces used to create the *Raja Laut*'s hull structure – the planking, frames and stringers - was carefully selected for only the longest pieces, defect-free and quarter sawn.

Then the thickness of the planking, the size and spacing of the frames, the stringers, the quality of the workmanship, the symmetry of construction, and strength of the stainless steel fastenings, all contributing to create an exceptionally strong and durable hull.

- ▼ The keel is 30cm x 35cm x 22meters in one seamless piece
- ▼ The keelson is 20cm x 20cm
- ▼ The planking thickness is 7cm at the bottom hull and 6cm at the turn of the bilge and 5cm for the topsides
- ▼ The internal stringers extend from keelson to deck, are 20cm x 7cm and spaced at 17cm interval
- ▼ The wood for the frames was specifically selected to fit the curvature of the hull.
- ▼ Each frame is construed of 2 pieces, each 15cm thick by 10cm wide, bolted together with a minimum of 50 cm overlap where joined
- ▼ The stem is formed by a 30cm x 30cm solid piece of Belian, supported by a timber knee off the stem that has a rake of 62 degrees
- ▼ The sprit is boxed with a stainless steel band at the stem
- ▼ All fastenings and bolts are 304 stainless steel

The Rig

The gaff topsail schooner rig was chosen for its simplicity and practicality in handling. The gaff topsail was also a rig typical of the "South Sea" trading schooners of the late 19th Century – probably the most famous example of which is the schooner Pato, built by Joshua Slocum in the Philippines. As with *Raja Laut*, these schooners had no gaff sail on the foremast, which made them easier to sail, and had shortened bowsprits for ease of coming alongside wharfs.



Another factor to consider is speed, and while Raja Laut is an antique design, built with the hardest and heaviest hardwoods, in reality she sails at a top speed of 11 knots and with her 300Hp Yanmar marine engine will reach speeds of 10 knots at 1850rpm.



A Modern Classic

While we set out to build a classic schooner, to follow in the footsteps of Brooke and Conrad, *Raja Laut* is also a modern sailboat for private charters and luxury expeditions which stands up to the exacting demands of charter. Therefore well thought out engineering, practicality, safety and comfort are important features throughout the design.

The most important factor in the design is the stability. Calculations made by Peter Bosgraaf, our naval architect from Amsterdam, and stability experiments carried out afloat indicate a positive stability of 92 degrees, which means that the ship will right itself even if it is heeled completely on its side. This is well in excess of most commercial vessels.

Another factor to consider is speed, and while *Raja Laut* is an antique design, built with the hardest and heaviest hardwoods, in reality she sails at a top speed of 11 knots and with her 300Hp Yanmar marine engine will reach speeds of 10 knots at 1850rpm, or 8 knots when run under a more economical power (1600rpm with fuel consumption of approx 24 litres/hour). This is coupled with a 7000 litre fuel capacity that gives *Raja Laut* a range of approx 2500 nautical miles on motor alone – more than sufficient for long range cruising.

Inside, the classic feel of a rich timber interior accompanies 6 beautiful cabins, each with ensuite bathrooms, air-conditioning, and all the comforts you can expect of a modern luxury yacht: hot showers, electric toilets, fresh water by reverse osmosis, satellite navigation, internet and sat phone, scuba diving facilities, tenders and toys. Everything you need for an idyllic cruising holiday in Asia. 🇮🇩

(Mr Carraz is the Managing Director of Borneo Tall Ships, which manages *Raja Laut*).

For any enquiries about bookings, or for more information please contact info@rajalaut.com

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