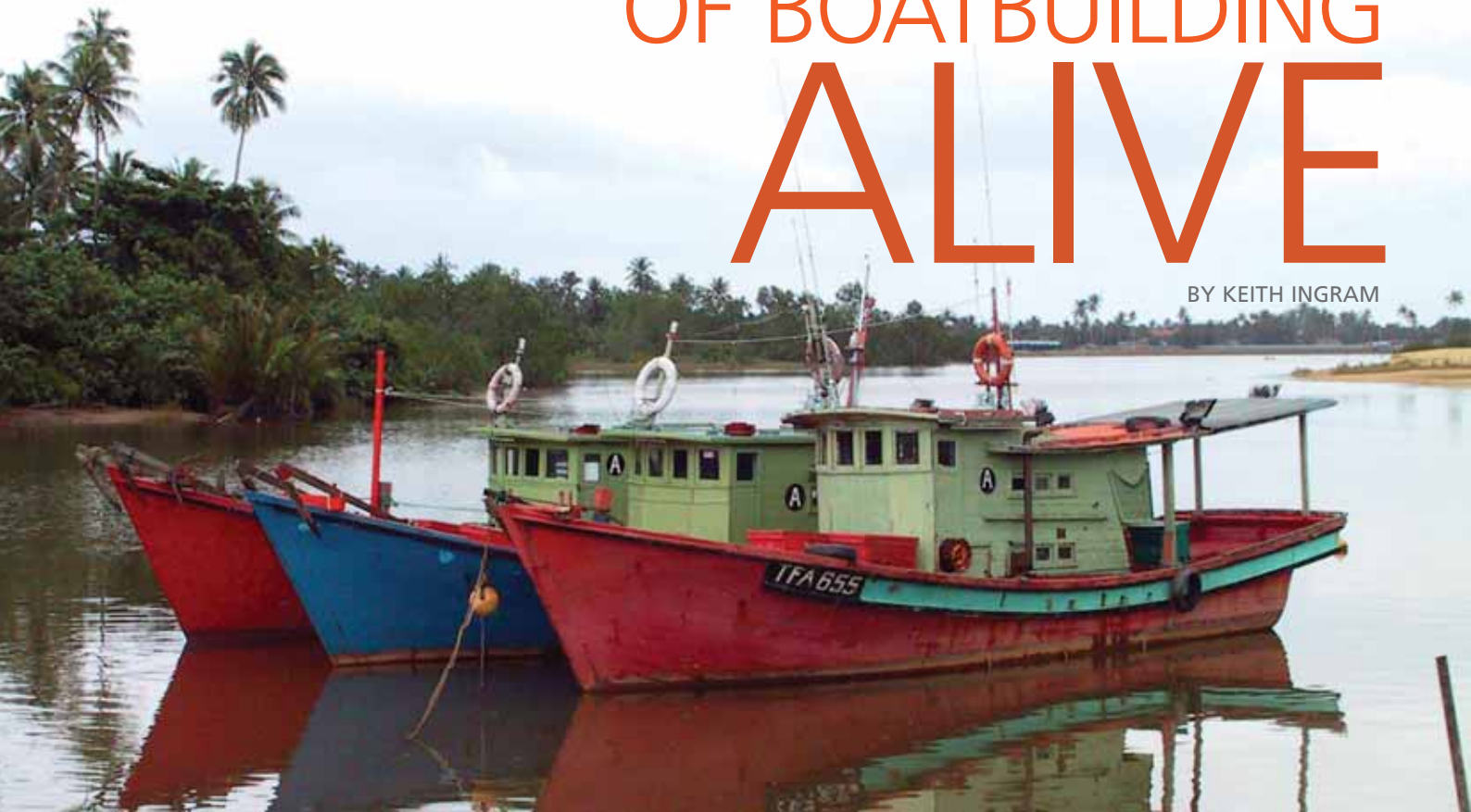


KEEPING THE TRADITION OF BOATBUILDING ALIVE

BY KEITH INGRAM



On a visit to Terengganu, Malaysia in November for the second Monsoon Cup, I took the opportunity to retrace my steps from the previous year and visit one of the few traditional boatbuilding yards where the hulls are constructed using local hardwood and dowels, instead of nails.

The yard, situated on Duyong Island, was busy, and during my last year I chanced upon Christoph Swoboda from Germany, who was in the middle of a major project to build a 70m Pinis-type of sailing junk.

The ancestors of the Malays once settled the whole of the southeast archipelago, where they ventured far to the east, to the furthest Polynesian islands and to the west to Africa (Madagascar). These are areas where their descendants still live today.

The tradition of building wooden boats in modern Malaysia reaches far back in time. Whether for overseas trade, fishing, piracy or travelling up the many rivers, they developed a special design for each purpose. With Malacca becoming the main trading centre for the spices arriving from the Molucca Islands of Indonesia, the Malay Peninsula turned into a melting pot of seafaring trading nationalities. Indians, Chinese, Arabs, Indonesians, Vietnamese, Thai, Burmese, Europeans and others all arrived in their distinctive craft, inspiring the Malay shipbuilding industry.

On the eastern coast of the peninsula, where the River Terengganu meets the sea, right in the river mouth, lies the small island of Duyong Island. The Japanese navy rediscovered the boatbuilders of Terengganu during the Second World War. According to a well known Duyong shipwright, the late Hadschi



Ali bin Ngah, “They chopped some heads...” and forced the craftsmen and fishing folk of Terengganu to build wooden minesweepers.

With modern boatbuilding ways spreading, the unequalled boatbuilding techniques still practised today in Palau Duyong are endangered, and much of this ancient art of building wooden boats by bending the timber and butt jointing with dowels and bark is vanishing, and with it the loss of a great nautical tradition of the Malay nation.

For this reason Swoboda has sought funding from the German and Malay governments to keep the tradition alive.

Duyong Island is now accessible by both boat and road. While there are many cars and twice as many scooters, locals often



1. The keel is prepared for the first planks
2. Timber stacked for drying
3. Calking bark
4. Blow torches heat the timber
5. The hull comes together
6. Making dowels by hand

choose to travel by water, where the riverboats charge a nominal fee of 50 cents (about 20 New Zealand cents) to go anywhere.

Traditional boatbuilding is still thriving on the island, as Pakcik Haji Abdullah and his highly skilled craftsmen continue to build these sturdy, seaworthy boats for the Marang fishing fleet. Amazingly, the boats are built entirely from memory, without the use of plans. Not only is he well known in Malaysia, Pakcik even has orders from foreign sailing enthusiasts who have heard about his skills within the international sailing community.

However, he laments over how difficult it is now to build a good, sturdy boat, due to the disappearing jungles of Terengganu. In the early days of his career, he could stroll into the nearby jungle, pick the largest chengal tree (a hardwood timber also known as ironwood) that was most suitable for building the hull, and cut it down without a second thought. Chengal is an indigenous wood that only grows between the fifth and eighth latitudes of the Malay Peninsula.

Much of the nearby primary jungle is now gone, and if there are any chengal trees left, they are protected. So the timber must come in from further afield, and at RM8000 per tonne, it's a heavy price to pay for timber that when freshly cut is heavier than water and known as a "sinker".

Yet Pakcik continues his work, meticulously applying the finishing touches to the beautifully handcrafted vessels, ready to hand them over to the owner, where each boat will continue his legacy as Terengganu's finest boatbuilder. Besides Haji Abdullah there are only about 20 master craftsmen left in the country, and five of them are on Pulau Duyong.

The chengal is a slow-growing hardwood deciduous tree that can reach a height of about 65m. (By comparison, New Zealand's

biggest kauri tree, Tane Mahuta, is 51.5m tall). With a breaking strength several times that of oak, both radially and horizontally, chengal is highly flexible, making it an ideal boatbuilding material for bending planks. Like teak, it contains preservative compounds that protect the heartwood, and even under exposed conditions the timber can last for about 100 years.

Termite worms cannot chew it, and when freshly cut it is known as a "sinker" being heavier than water. The Malays traditionally use this timber for house and boat construction. You can spot century-old houses next to termite mounds all over the countryside.

Only the teredo worm, an unscrupulous marine borer and scourge of tropical waters, can attack this timber, and therefore it still requires the protection of antifouling paint. A ban on the export of chengal has been introduced, and it has become a rare sight outside of national reserves. Fully cured, chengal can no longer be bent. Before starting a boatbuilding project, the logs have to be milled, then the planks placed in the bright sun to dry for one year. Then construction must begin.

The yard had grown since our previous visit, as there were now four boats under construction, with Swoboda's large junk nearing completion. The best part of the hull of a traditional 72ft (22m) Malay fishing boat was also under construction, and two traditional Terengganu gondola-style riverboats were present.

No other boatbuilders in the world use fire to bend their planks and then join them using ironwood dowels made on the job from scraps. Using fire is a slow process, as the heating is done with care. Modern methods have now started using LPG blowtorches but this practice, while quicker, is frowned upon by the old masters because it stresses the timber too much ▶




ABOVE: A fishing boat hull under construction
LEFT: A traditional river boat takes shape


and the timber won't rest, they say.

Once they are bent, each plank fits snugly to its mate, and the dowel holes are drilled and the dowels fitted. Before the plank is driven home the plank is caulked using one or two millimetres of kulit gelum, a type of bark that will keep the boat dry for almost its entire life.

By using this type of construction the hull is made on its own casting, hence the need to rely on the boatbuilder's eye for the final hull lines. Frames and deck beams are fitted later as the vessel grows and takes on a name and a soul of her own. Bronze screws and bolts are used for all the other fastenings throughout the vessel. A modern diesel engine is fitted to drive the iron spinnaker below.



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The *Naga Pelangi II*, which means *Rainbow Dragon* in Malay, will be a traditional Malay junk of 21m over the deck, built following the lines of a classic Pinis, although Swoboda required the lateral plan (underwater design) to be slightly modified.

Contrary to the standard Terengganu junk, *Naga Pelangi II* will not be a sailing freighter, but a pleasure craft to take passengers on sailing experiences in the South China Sea. So more emphasis has been given on her sailing ability and less on achieving a maximum loading capacity. It is hoped that the *Naga Pelangi II* will be used as a training ship based mainly in Malaysia for junk sailing, for commercial filming, as a comfortable home for scientists in maritime explorations as well as a sailing and diving charter vessel. But this seaworthy junk will be able to operate all the waters from Madagascar in the Indian Ocean up to Palau and beyond into the Pacific Ocean.

To keep the inside of the hull clear, a 10 tonne ballast keel, cast from lead, was bolted under the dead wood and shaped in a way that was not distracting to the eye or water movement and blended as part of the keel.

We pick up the story from Ulli Swoboda: The project was started in spring of 2003 with the buying and stacking of the construction timber. The trees needed for masts, bowsprit and spars were felled as well and prepared. The Malays call these trees "Chengal kampung" or "Chengal Pasir," because this variety (*Hopea odorata*) grows right in their villages, in the sandy soil near water, so it is not as hard and heavy as the jungle chengal.

Following an old custom, the prepared masts and spars were placed in the river for a year to prevent them from cracking while seasoning in the shade later. Building began in the spring of 2004 with the keel being laid, and the *Naga Pelangi II* is expected to be completed some time in 2007.

As we looked around, the hull was complete and the engineering in place. There is still a lot to do inside, but much of the final fitout of the cabins, crew's quarters, galley and saloon will happen once she is afloat. This in itself is a challenge, as due to her size, the channel needs to be dredged, and the monsoon floods are a key factor in moving the ship from the shed to the water.

Swoboda was becoming anxious about the dredging, as this is part of a government programme for the area, so he is hoping he will not miss the monsoon floods.

Once in the water and the final fit out is completed with the masts stepped and her sails rigged, the *Nagi Pelangi II* will make an imposing traditional sight on the South China Sea. ⚓