



The World of Amaya: Unleashing the Karakoa

Artist Raoul Castro's depiction of what a 16th century karakoa might have looked like. **Source:** William Henry Scott GMA-7's new "epikserye" *Amaya* is about a woman who transcends the limitations of a pre-Hispanic Central Visayan society and makes the transition from princess to slave to warrior. While most of the show focuses on the major characters and the social positions they occupy, special attention has also been given to the series' production design, particularly the reproduction of the traditional warship called the *karakoa* —a Filipino boat built without nails but was three times faster than a Spanish galleon.

The karakoa is a traditional plank-built boat fitted with the necessary accoutrements for the se raiding (*mangayaw*) of rival settlements for booty, slaves, and the occasional bride. Similar to the korakora of Indonesia, the karakoa – and other pre-Hispanic Filipino plank-built vessels – belongs to a tradition of marine architecture dating back to the 3rd century BCE, spanning from Scandinavia to the South Pacific.

Most celebrated Visayan vessel

Compared to the Spanish galleon, the karakoa may come across as somewhat primitive. But in Philippine waters, a flotilla of galleons was no match for a fleet of native warships built for speed and maneuverability in shallow coastal waters.

In his book *Barangay: Sixteenth Century Philippine Culture and Society*, historian William Henry Scott describes the karakoa as the most celebrated Visayan vessel:

“...(A) sleek, double-ended cruiser with an elevated fighting deck amidships, and catwalks mounted on the outrigger supports to seat as many as six banks of paddlers. They displayed tall staffs of brilliant plumage fore and aft as a sign of victory, called *sombol* on the prow, *tongol* on the stern.”

A more detailed description appears in Scott's monograph, "Boat-building and Seamanship in Classic Philippine Society," which heavily references the *Historias de las Islas e Indios de las Bisayas*, written in 1668 by Fr. Francisco Alcina, a master shipwright who keenly observed Visayan shipbuilding techniques. Alcina expressed great admiration for the efficiency of the vessels crafted by native shipwrights

Assembled without nails

The karakoa hull is usually built using stakes hewn out of one piece of wood, a considerable feat of craftsmanship, given that some vessels measure almost 25 meters long.

The karakoa was built without nails, using a system of pegs and ropes. **Source: William Henry Scott** The hull's curved shape requires that the planks be hand-carved. Nails are not used in joining each plank, as they are prone to rusting and rotting surrounding wood. Instead, strakes are connected by wooden dowels enforced by lugs lashed with hemp bindings.

A plank-built hull offers more flexibility than a solid, rigid hull, and also redistributes the underwater pressure, while rattan lashings are easily tightened or replaced without inflicting damage on the planks. Tripod masts are erected instead of a rigid tall mast to safely shift pressures with the hull's movement.

The quarter rudders, large steering oars, can be raised almost instantly to avoid underwater obstructions. The outriggers, on the other hand, have their ends slanted upward to prevent rolling, increase water resistance, and adding buoyancy; it also serves as the boat's "carrying" handles for the crew to lift when going ashore.

Faster than a Spanish galleon

The vessel has a low freeboard and shallow draft, making it less susceptible to the swift currents of interisland passages and channels. This also allows the paddles (*bugsey*) to reach the waves. Paddles provide rowers with direct control of depth, length, and frequency of stroke—all of which help increase the vessel's best speed of 12 to 15 knots, almost triple the speed of a galleon.

Even the double-ends serve a purpose: maneuverability. Shift the helm to the other end, and have the paddlers turn in their seats, and the karakoa speeds off to the opposite direction. A schematic diagram of the karakoa. **Source: William Henry Scott**

That said, the karakoa is not without its disadvantages. Its relatively lightweight, flexible hull and lack of central rudder makes it easily blown sideways on a smooth sea, and impeded by a choppy one, hence making raiding a seasonal venture.

An average karakoa crew numbers a hundred individuals, only a quarter of which are deployed to man the fighting deck. Dr. Neil Santillan, series consultant and history professor at University of the Philippines-Diliman, notes that the karakoa crew reflects the social stratification of the settlement. "The *ulipon* (indentured servants or slaves) serve as rowers, the *timawa* (free warrior class) hold the *bangkaw* (spear), and the *datu* (chieftain) leads."

Amaya: Prepped for primetime

Construction of Amaya's karakoa was headed by the series' production designer Rodel Cruz. Over 50 shipwrights from Olongapo City were contracted to build the boat, a process that took over two and a half months and cost almost a million pesos. While a team of History professors from the University of the Philippines was consulted to ensure that the production design closely adhered to historical accounts, some modern conveniences had to be incorporated.

Instead of constructing a hull plank by plank, the shipwrights refurbished a pre-existing hull to look like a karakoa, while a team of artists worked on the aesthetic details. It is also equipped with a hidden engine to facilitate the boat's movement, traditionally propelled by a crew of 100 or more paddlers. The result is a wholly seaworthy vessel ready to sail into the testy waters of primetime television. — **TJD, GMA News**

Boating for Beginners: a guide to karakoa construction

Karakoa construction begins with a keel – the beam around which the boat hull is built – made out of barayong or tugas redwood. Hewn primarily from a single trunk, the keel is extended on both ends by a meter of the same wood material, and continues into decorative serpent-like carvings at both prow and stern.

This is followed by the carving and installation of the dokot and lonor, the two outermost strakes at each end of the keel. These planks' flare and curvature (lubag) determines the hull's contour and, consequently, the completed vessel's speed.

Additional planks are installed, six or more boards per side, depending on the boat's size. Lawaan, a species of tropical cedar now commonly called Philippine Mahogany, is the preferred material. These are held together by dowels made of manghe, bahe, or brazilwood spaced twenty centimetres apart. These planks are carved with tambuko, lugs bored with holes for fiber lashings.

The hull is dried out and elevated for two months to prevent termite infestation. The planks are disassembled, with the broken pegs removed and replaced, and re-assembled in a complex three-pronged procedure called sugi (matching), os-os (tightening), and pamota (closing). In sugi, the planks are tooled and stuffed to ensure that they "fit" well. Os-os involves securing the hull with rattan lines fastened to logs laid across the gunwales. Wedges are driven into the logs to tighten the lines. This is followed by pamota, which entail driving ipil pegs into the planks for further secure the planks. When all pegs are in place, the os-os equipment is removed, resulting in planks so tightly joined, it looks as if the hull was hewn out of a single piece of wood.

The hull is completed with the insertion of thwarts and ribs that are lashed on the tambukos with rattan or palm fibers.

When the hull is finished, construction can begin on the karakoa's superstructure, beginning with the outriggers. Four or more batangan (crossbeams), extending at least a meter beyond the gunwale, are lashed to the thwarts. Outrigger supports called tadik lie in a horizontal S-shaped configuration are attached to the batangan, the inner arm fastened nearer the hull, and the outer arm holding the bamboo floats (kates) at water level. The kates are distanced at least two meters from the hull, extend within three meters of prow and stern, and are raised slightly forward to lessen water

resistance. Batangans carry the daramba, bamboo seating for the paddlers, and the three cane-decked platform called burulan.

The two outer burulans are called pagguray, and serve as fighting platforms. The middle platform serves as a deck for the rigging crew and any important personages onboard.

The karakoa carries two or three bamboo tripod masts with a large rectangular sail made of woven gaong, buri, or nipa fiber. The masts can be taken down to reduce wind resistance.

(adapted from Boat-building and Seamanship in Classic Philippine Society by William Henry Scott)

Ref.: <http://ph.news.yahoo.com/world-amaya-unleashing-karakoa-114106250.html>