The Iron Wreck of Eagle Island

In December 2021, the Chagos Remote Ocean Voyager Expedition (C-Rove) discovered a shipwreck off the west coast of Eagle Island.

By Bridget Buxton (University of Rhode Island), Caroline Durville, Gary Philbrick, John and Casper Potter (Norwegian University of Science and Technology)

The OceanGate Foundation Chagos Remote Ocean Voyager Expedition (C-Rove) was inspired by a theory that ancient Greek and Roman navigators were utilising the southern monsoon route across the central Indian Ocean to trade between Asia and Sub-Saharan Africa. The best evidence for open-water trade routes is a shipwreck, but when your potential search area is an entire ocean, the best place to target is islands along the route. In this case, the best islands were in the British Indian Ocean Territory: the Chagos Archipelago. And when even that search area is far too big, you have to turn to… rats!

Since rats are the ultimate shipwreck survivors, the presence of rats on any remote island is sure evidence of human seafaring. Recently developed techniques of genetic analysis of modern rat populations can even reveal their geographic origin and approximate arrival date. For all these reasons, the C-Rove team sailed out in December 2021 on a mission to recover rat tail samples from all the major atolls of the archipelago except Diego Garcia. Our research vessel for six weeks was the 18-metre sailing yacht *Jocara*, owned and crewed by the Potter family of Trondheim, Norway. The expedition was a success: samples were collected from all the target islands, and *Jocara* proved to be the perfect ambassador for oceanography's environmental 'retro-revolution' of returning to seafaring's wind-powered roots.

While analysis of the Chagos rats at the Munshi-South Lab (Fordham University, New York) is already yielding interesting results to be shared in future publications, an unexpected discovery on the 2021-22 expedition warrants a preliminary note. A secondary objective of C-Rove was to test the viability of *Jocara* as a research platform for remote ocean maritime archaeological survey. This question anticipated our rat results: if the rat DNA showed that the islands were part of an ancient maritime trade route, how would we go about detecting possible ancient shipwrecks?

The best approach seemed to be a magnetic survey to detect the tell-tale signature of iron anchors or other debris that might indicate a long-lost shipwreck. Magnetometers are often large, require careful setup, considerable power, and a stable metal-free environment. They are normally towed behind large engine-powered vessels with advanced navigation for following survey patterns. We decided to experiment with our Marine Magnetics Explorer magnetometer tied to the underside of a plastic kayak towed by *Jocara*'s dinghy, where the equipment was run from a GPS-enabled laptop and a car battery. A benefit of this system was its ability to be towed safely over shallow coral reefs without causing damage.

The first test of this novel deployment method off the west coast of Eagle Island was meant to be just a proof-of-concept exercise, but within 10 minutes the magnetometer discovered a shipwreck!

Our methods were vindicated by this discovery, but we still must give credit where it's due: we knew there was something to be found near Eagle Island thanks to the colourful memoirs of Mauritius-based Catholic Friar, Roger Dussercle (1902-1975), who was a regular visitor to the islands in the 1920s and 1930s. Dussercle was the original source for three of the four Eagle Island entries on a shipwreck list compiled by Nigel Wenban-Smith for his 2016 book: *Chagos: A History* (co-authored by Marina D. Carter), and kindly shared with our team[1].

From this list, we knew the western side of Eagle Island would be a good place to look for wreckage – or at least anchors, as the fate of the SV *Saint-Louis* (the only Eagle Island wreck on the list associated with a specific location) confirmed that despite the obvious risks, it was sometimes used as an anchorage.

The wreckage our magnetometer found appeared to be from a large turn-of-the century iron-hulled vessel with a debris field of 50-60 square metres.

Photo: Setting up the magnetic survey

Photo: The kayak with the magnetometer underneath

Photo: The Eagle Island wreck