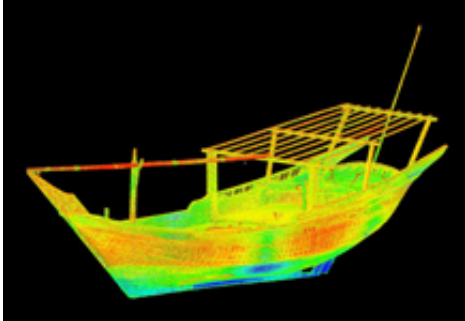


## 3-D laser scanning of dhows in Doha

March 18 2013

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3-D laser scan of a dhow.

A unique collection of traditional seagoing boats in Doha, Qatar has been recorded for posterity using a 3D scanning process.

A team from the University of Exeter surveyed 14 vessels from the National Museum of Qatar's collection of traditional dhows (boats) using a laser scanner to produce a highly accurate three-dimensional record of each craft.

The aim of the project is to produce digital [3D models](#) of each of the dhows, together with more traditional naval and orthographic drawings, for conservation, research and public education purposes. The project team included two maritime archaeologists Dr John P Cooper from the University of Exeter and Dr Chiara Zazzaro from the University of Naples working with mines engineer Dr Andy Wetherelt, also from the University of Exeter.

Prior to this the maritime archaeologists worked for several years recording traditional boats in the southern Red sea and Gulf region of Aden region using conventional surveying methods based on tape measures. The [MARES project](#) was developed at the University of Exeter's Institute of Arab and Islamic Studies, focusing on the history and origin of the traditional wooden vessels and their construction. In this project the maritime archaeologists have been able to join forces with Dr Wetherelt, enabling them to incorporate cutting-edge laser-survey technologies to the process of recording maritime heritage.

The team worked at the [National Museum of Qatar](#)'s boatyard in Doha port for a month, recording vessels using a Leica HDS 6000 [Laser scanner](#). Such scanners use a moving laser beam to survey with great speed and accuracy any object placed before them. In addition to scanning the boats, the team is also using precisely calibrated digital photography to photograph the boats from the same vantage points as the scans. This will allow them to combine the scans and photographs to produce realistic [digital models](#) of each of the dhows.

Dr Cooper said:"It is hugely important to produce a digital record of the boats for the purpose of conservation and recording. In the past the builders, even of the biggest and most complex dhows, built these vessels without relying on a single drawing. Their mental agility and planning skills were phenomenal. It's great that we can now explore this level of expertise using modern technology.

To be able to communicate this fascinating heritage to a wider audience using 3D laser scanning is exciting. We can now achieve this goal."

The team completed 300 scans of the dhows by the end of the fieldwork phase. They have now started a post-processing phase of the collected data to have completed 3D models of dhows by the end of August.

Commenting on the importance of this project for the National Museum of Qatar, Deputy Director Faisal Al-Hitmi said: "Our continuously growing dhow collection is considered one of the most important collections of traditional Arab and Indian Ocean boats in the world. It represents an important record of a disappearing heritage in the region."

He added: "The 3D models that will result from this project will have multiple applications, including museum display, digital archives, and public education, and will become a lasting record of the collection."

Provided by University of Exeter

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