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Measurement of the U.S.S. Monitor Propeller Using Structured Light and Coherent Laser Radar Scanning Technologies

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ABSTRACT

Measurement of the U.S.S. Monitor Propeller Using Structured Light and Coherent Laser Radar Scanning Technologies

This presentation and technical paper describes the scanning and processing of data for the recovered propeller of the United States Navy Warship U.S.S. Monitor. The propeller, designed by inventor John Ericsson, was recovered in 1998, processed in a preservation tank for six years and now on display at The Mariner's Museum at Newport-News, Virginia where it was scanned in place. Two different measurement technologies were employed to meet the goal of high accuracy and high resolution. The Coherent Laser Radar system was used to scan the overall propeller surfaces at a resolution of 3 millimeters. A Structured Light Scanner was then employed to scan at resolutions down to 12 microns to capture details such as surface factures and graffiti etched on one of the blades. The point clouds were then merged to generate an accurate model for dimensional and hydrodynamic analysis. This presentation provides detail and highlights of the scanning and data analysis activity

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