

HMS Victory restoration aided by Pointtools computerised 3D models

Highly accurate computer-generated 3D models are being used to help the restoration of HMS Victory - the oldest commissioned Naval vessel in the world and Nelson's flagship. Pointtools 'point cloud' software was used to process millions of highly accurate laser measurements following a laser scan survey by Deri Jones & Associates and Geospatial Survey Solutions (DJA/GSS). Processed to produce accurate 3D models of the hull, the scans recorded details of original features such as planking butts, iron eyes and rigging straps. The 3D models will support ongoing restoration of the vessel allowing for accurate reconstruction and relocation of fittings or planking.

Working overnight to avoid disruption to visitors to the popular Portsmouth based attraction DJA/GSS completed seventeen high resolution scans, each containing 40 million measurements. Utilising laser scanners from both Faro and Trimble each scan was located using a total station to a control network of targets to ensure the recorded measurements could be aligned to existing data. The scanned data was processed to compile both the short and long range data with the total station measurements before being filtered and cleaned to ensure that only the required data was left in the point model.

Pointtools point cloud processing software was then used as the foundation to create the highly accurate elevation models of the Port and Starboard hull sides as well as producing 3D coordinates for over 430 key points across the historic vessel's hull. This record of existing structures and features will allow for the accurate reconstruction and relocation of fittings or planking, enabling fast checking of refitted components.

"Pointtools software is an essential component in complex projects such as this," commented Deri Jones of DJA/GSS. "Using Pointtools we can import large volumes of laser scanned data – regularly in excess of 300 million points – into our modelling software. Pointtools also gives us powerful tools to efficiently model in both 2D and 3D and excellent options for client deliverables including high resolution images and animations while the free viewer makes it easy for our clients to make full use of the collected data."

Pointtools provides a range of high performance point cloud – the millions of 3D measurements usually collected by laser scanning devices – software including solutions for processing, visualisation, drawing and modelling. "In addition to the advanced functionality offered by the software which is intuitive and easy to learn, Pointtools the company provides excellent technical backup with fast resolution of problems and a constant stream of new ideas. The software also provides excellent value for money essential for a small company in the current economic climate," concluded Jones.

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Note to editors:

Pointtools is an independent technology company focussed on developing state of the art software solutions to maximise the potential of point cloud data – the millions of 3D measurements usually collected by laser scanning devices. With applications in a wide range of markets including design, manufacturing, construction, engineering, heritage and surveying to name but a few the Pointtools software portfolio includes the market leading manufacturer independent point cloud visualisation and presentation solution.

The Pointtools product suite includes *Pointtools Edit*, *Pointtools View Pro*, *Pointtools 4 Rhino*, *Pointtools Model* and *Pointtools Vortex* API – recently selected by Bentley as the engine for their portfolio of solutions including Bentley MicroStation.