



Modern Coach Bolts Aid HMS Victory Restoration

Project Overview:

Technifast were chosen as a supplier to WL West & Sons to support their involvement with a restoration project aboard one of the world's most iconic ships, HMS Victory.

Launched in 1765, Nelson's flagship is undergoing the biggest restoration programme in her history following guidelines set out in the National Historic Ships UK (NHSUK) Publication 'Conserving Historic Vessels'.

Current efforts focus on the development of a new support system and preventing the water damage. All of these measures are of critical importance and are very time and resource-intensive. Technifast were approached by woodworking company, W L West & Sons Ltd [Est 1865] who were already involved with the project making some repairs to Victory's beam ends. The Oak Specialists need a reliable, cost-effective fastener manufacturer able to produce modern coach bolts which were bespoke that had minimal impact upon historic material, to aid the repair and restoration.

The Challenge:

Sourcing the new coach bolts was not an easy task, as the machining capabilities and product design for the HMS Victory bolts was incredibly specialist. Technifast were one of a number of precision engineering companies approached – and this initial enquiry piqued the interest of Managing Director Louis Speed and Senior Engineer John Garner, both of whom are specialists in the manufacture of stainless steel components.

After an extensive process, which involved Louis and John spending time exploring HMS Victory's decks and a period of consultation with W L West & Sons Ltd to refine the design of the bolts, Technifast were approved by W L West & Sons Ltd.

"From the outset, we knew we were working with a like-minded team, who were both keen to solve problems, and offer a custom fit fixing solution to what had occurred over years of water ingress. Stabilising parts of the ships super structure to the frame was imperative. After Remedial Oak repairs the use of custom made fixings ensure the ship is ready for the next one hundred years," commented Simon Smith of W L West & Sons.

How Technifast Helped:

Technifast are underway with the manufacture of the stainless steel components for the replacement fixings into the Robinson Brackets and Beam End Chocks on the Lower and Orlop Gun Decks and the Stern Hold Area.

At 750mm in length and with a 32mm diameter and an unravelled thread length of 2.3m the replacement bolts are by far the largest physical project Technifast has undertaken.

The production of the bolts was not without its challenges. Technifast invested in new machinery to produce the bolts and undertook extensive R&D to ensure that the technical challenges involved with producing a bolt of such extreme size and shape could be met within the required timescales.



Coach Bolts Manufactured By Technifast



Nelson's Great Cabin, HMS Victory



The Spot Where Nelson Died, HMS Victory



The Shortest Coach Bolt For HMS Victory

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John Garner explains the process. *"The modern bolts are produced from marine grade 316 stainless steel. With the high cost of the raw material and bespoke tooling, coupled with the sheer size and weight of the parts, we opted for a more delicate approach of multiple machining operations and slow feed rates. We found it much more economical to approach the production this way as it minimised the risk of tool failure which would result in large amounts of wastage."*

"By periodically switching the tools around we managed to obtain maximum use from them. On this occasion we found, in contrast to the industry's usual obsession with fast cycle times, that opting for a very slow cycle time was actually more cost effective for us, and gave us the added peace of mind that each part was produced to the correct specification," concludes John.

The first batch of bolts has been delivered to Portsmouth Historic Dockyard and has been positioned into the HMS Victory's beams.

"This is a very exciting project for Technifast, we are delighted that our components will form part of the HMS Victory story and help to preserve this historical vessel for future generations," comments Technifast Managing Director, Louis Speed.

"We have every reason to use Technifast again, their attention to detail is second to none, in our view they are world class and can compete at the very highest level, we are looking forward to the next project together," adds Simon.

About Technifast:

Technifast is an established supplier and manufacturer of specialist engineering fasteners and components. Our large portfolio of precision fasteners spans pins, dowels, spacers, inserts and keys.

Technifast's manufacturing division is dedicated to producing small and complex turned parts, using CNC machines to obtain high precision and an excellent surface finish.



The Poop Deck On HMS Victory



Beams Ready For The Coach Bolts



Fitting The Coach Bolts



Find out more about WL West & Sons online:
www.wlwest.co.uk

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