



Jules Hudson

COUNTRY ESCAPE

A Welshman's contribution to the Mulberry Harbours, legendary feats of British engineering, helped secure the Allied victory in the Second World War, says Jules

Last month, the Imperial War Museum at Duxford revealed its latest exhibit. To the casual observer it's nothing more than a short steel bridge made of elliptical girders, but it is the only example of its kind in the UK. Eighty feet long and 10 feet wide, this modest bridge is known as a 'Whale' and, along with hundreds of similar examples, it once formed part of a vast artificial harbour known by its code name, 'Mulberry'. Designed and built in utmost secrecy at a handful of sites around Britain's coastline, thousands of Mulberry's components were towed across the channel to Normandy to play a vital role in the biggest military operation in history, D-Day.

The story of the Mulberry Harbours has become the stuff of engineering legend. Following the disastrous attempt to capture the French port of Dieppe in 1942, Allied planners realised no invasion of occupied Europe could be achieved without first securing a viable port that could sustain the assaulting force. This wasn't lost on the Germans either, who so heavily fortified the French coast with gun emplacements and other obstacles that Hitler boasted of his 'Atlantic Wall' protecting 'Fortress Europe'. Existing ports and harbours were rendered virtually impregnable from direct assault, while plans were made to demolish them at the touch of a button should they look like being captured.

The need for some sort of artificial harbour was famously identified by Churchill in a memo in 1942. The lessons of Dieppe were raw and, ever a man for detail, he lost no time in calling for innovative solutions. The call was answered by several engineers, amongst them a Welshman, Hugh Jorys Hughes.

The technical challenge was enormous. Mulberry would need to be the size of Dover, yet be portable and robust, and capable of unloading thousands of men and vehicles 24hrs a day, regardless of weather and tide. What's more, following the Quebec Conference of August 1943, there would need to be two of them, Mulberry 'A' for the Americans and Mulberry 'B' for the British and Canadians, and they'd have to be built in Britain despite huge shortages of men, material and time.

Hughes focused on how to connect the pierheads and distant jetties to the shore. A North-Walian and a keen sailor, he finally got the go-ahead to trial his ideas in the then relatively peaceful

surroundings of Conwy Morfa, a piece of coastline he knew well. Assembling a thousand men, he set to work creating a prototype roadway based upon huge floating concrete barges or 'Hippos'. Each one supported an elaborate steel structure called a 'Croc' that would link with its neighbour to form a roadway stretching at least a mile off shore. The concrete barges would be towed across the channel then carefully sunk in position. By April 1943 his prototypes were towed out of Conwy Estuary up to the Solway Firth for evaluation. Hughes' efforts were up against two other schemes: the 'Swiss Roll', floating timber planks held together with steel cable that could be rolled out to connect the piers to the beach; and another designed by a Major Alan Beckett based on a floating roadway of inter-connected steel bridges supported by small concrete pontoons. Initial tests suggested Hughes' designs would do well, but a storm in Rigg Bay's testing area not only wrecked the 'Swiss Roll', it also dislodged Hughes' Hippos. Beckett's solution was found to be the best and went into production. The resulting spans became the Whales, and a staggering 10 miles of them were built in record time ready for D-Day.

Hughes' concept had been a good one, and many of the lessons learnt from his Hippos were incorporated into the Phoenix breakwaters that would eventually help protect the artificial anchorage. What's more, his continued efforts also established Conwy Morfa as a key construction site. Mulberry's contribution to the success of the Allied invasion was critical, and it took the enemy completely by surprise. During his trial at Nuremberg, Hitler's architect and minister for armaments, Albert Speer, said of them: "To construct our defences we had in two years used some 13 million cubic metres of concrete and 1½ million tons of steel. A fortnight after the Normandy Landings, this costly effort was brought to nothing because of an idea of simple genius". It was a fitting epitaph to Hughes, his fellow engineers and those who built the Mulberrys against the clock and against the odds. 🍷

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