

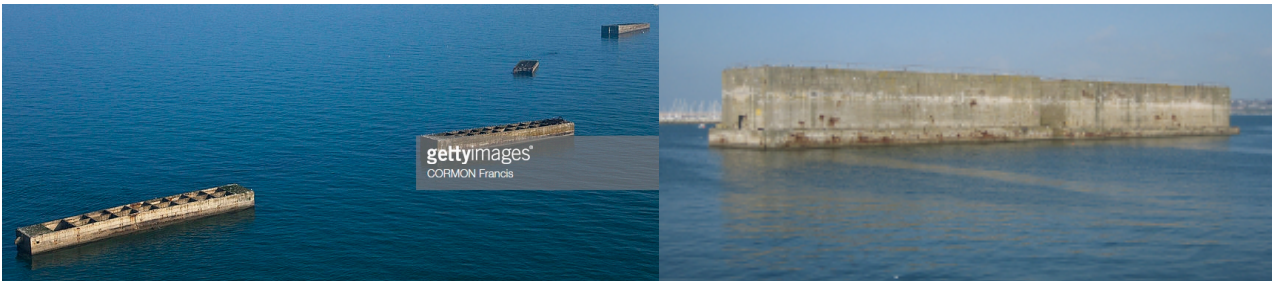
Phoenix Caisson in Kent Designated - Part of the Mulberry Floating Harbour Used in the D-Day Landings

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The Phoenix caisson, a rare and poignant reminder of the Mulberry 'floating' Harbour which played a major role in the success of the D-Day landings in June 1944, has been scheduled by the Department for Culture, Media and Sport on the advice of English Heritage. It has been added to the National Heritage List for England as an Ancient Scheduled Monument.



The Phoenix caisson was built in 1943-4 as a floatable breakwater component of the Mulberry Harbour which was considered to be a major technological and engineering achievement. It was effectively a mobile port facility, designed to sink or float as necessary, and was used by the Allies to land troops and arms at Normandy as part of Operation Overlord.



The two caissons that were left in Portland today provide shelter for ships moored on the west side of Queen's Pier. They were designated as listed buildings in 1997.

Veronica Fiorato, Designation Team Leader for English Heritage in the South said: "The Phoenix caisson is a tangible reminder of Operation Overlord and its vital contribution to British and world

history. It has stayed exactly where it was parked during the Second World War and survives in very good condition, having lost only its anti-aircraft gun mounting."

The solution, in the eyes of Winston Churchill and several senior planners, was to take a port with them. **A floating harbour** that could be transported directly to France, and assembled off the beaches would ensure that sufficient facilities were in place to land large quantities of heavy equipment to supply the British, Canadian and American armies.

The Telegraph

Home Video News World Sport Bu By [Patrick Sawyer](#) 12:00PM BST 03 Jun 2014

The Phoenix caissons were built in 1943-4 as floatable breakwaters to be used in conjunction with the Mulberry Harbours – the mobile ports which did so much to allow the Allies to unload cargo onto the Normandy beaches to supply and equip the British, American and Canadian troops fighting the German forces.

<https://www.youtube.com/watch?v=jsVc2PBO6Wg>



The Mulberry harbour assembled on Omaha Beach at Saint Laurent-Sur Mer was for use by the American invasion forces. **Mulberry "A" (American) was not securely anchored to the sea bed, resulting in such severe damage during the Channel storms** of late June 1944 that it was considered to be irreparable and its further assembly ceased. It was commanded by August Dayton Clark. He died of pneumonia age 90 on 15-08-1999 at Northern Westchester Hospital in Mount Kisco, N.Y..

Mulberry "B" (British) was the harbour assembled on Gold Beach at Arromanches for use by the British and Canadian invasion forces. The harbour was unofficially named "Port Winston" and was decommissioned six months after D-Day as allied forces were able to use the recently captured port of Antwerp to offload troops and supplies.

Both harbours were almost fully functional when on 19 June **a large north-east storm at Force 6 to 8** blew into Normandy and devastated the Mulberry harbour at Omaha Beach. The harbours had been designed with summer weather conditions in mind but this was the worst storm to hit the Normandy coast in 40 years.

The destruction at Omaha was so bad that the entire harbour was deemed irreparable. 21 of the 28 Phoenix caisson were completely destroyed and the Bombardons were cast adrift and the roadways and piers smashed.

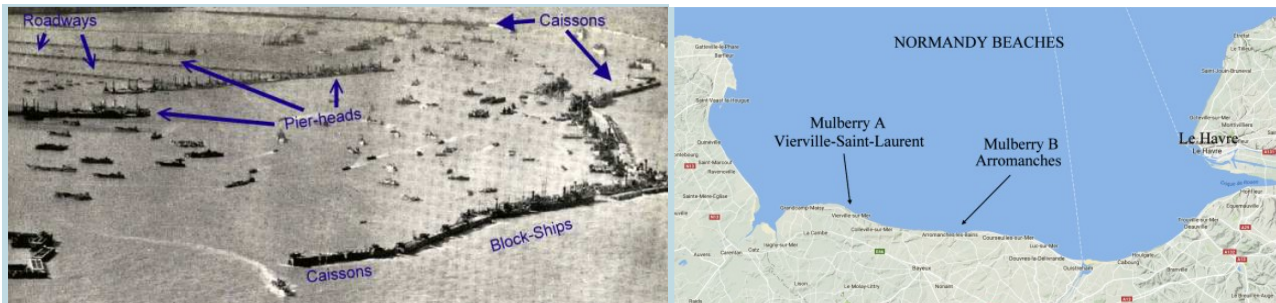
At Arromanches, the Mulberry there was more protected, and although damaged it remained intact. This surviving Mulberry "B" came to be known as Port Winston. While the harbour at Omaha was destroyed sooner than expected, Port Winston saw heavy use for eight months, despite being designed to last only three months.

The concrete caissons, known under the code name of Phoenix, **were designed like ships**, because they would be subjected to similar wave action and would require the same stability as ships in calm or stormy seas. Design was as near box-like as the conditions would permit, but to obtain the lowest towing resistance they were provided with swim ends, not unlike Thames barges.

The Royal Engineers built a complete Mulberry Harbour out of 600,000 tons of concrete between 33 jetties, and had 10 mi (16 km) of floating roadways to land men and vehicles on the beach.

Although the concept appeared simple, the execution was complex and required the skills of many engineers to put the harbors in place. That the entire project took **only eight months to complete** was signal testimony to the capacity of British industry, already stretched to the limit by four years of war.

Port Winston is commonly upheld as one of the best examples of military engineering. Its remains are still visible today from the beaches at Arromanches.



Phoenixes - 146 concrete caissons, 60 metres long, 18 metres high and 15 metres wide, making up **9.5 kilometres of** the breakwater.