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EMBARKATION HARDS UK



Even as battle raged in the skies over Britain in 1940, Winston Churchill was planning the invasion of Europe. When the United States entered the war after Pearl Harbour in 1941, Churchill persuaded Roosevelt to work with him. At the Casablanca Conference in January 1943, Roosevelt committed the United States to Operation Overlord – allied invasion of occupied north-western Europe - planned for 1944, an idea developed further at the Trident Conference in May.

To invade Europe from the sea required a huge flotilla of 7,000 vessels including 4,000 landing craft and 130 warships to land personnel and their equipment on the beaches. These personnel also needed to be resupplied. It was clear that to assemble such a huge force new, embarkation points needed to be constructed around the south and east coast of Britain.

In October 1941, Churchill summoned Lord Louis Mountbatten back to England from his command of HMS *Illustrious* in USA “by the fastest possible means” to meet him at Chequers. Mountbatten was appointed Combined Operations Adviser. Six months later, in April 1942, he was appointed Chief of Combined Operations and promoted to acting rank of Vice-Admiral, Lieutenant-General, and Air Marshal. The form of operation was “combined” in the sense that it placed equal demands upon all three arms of the services. His tasks were: firstly, to take charge of Combined Operations; secondly, develop a programme of Commando raids; and lastly, to prepare for the reinvasion of Europe. Combined Operations were to plan for offensive raids when much of the military was on the defensive.

A seaborne invasion would require a huge number of landing craft to ferry soldiers onto the beaches. These would require special “hards” over which they could be loaded and unloaded. In May 1942, Mountbatten ordered the construction of special hards around Britain’s south and east coasts. By March 1943, 68 such hards had been built. They were designed to load two types of landing craft, Landing Craft Tank (LCT) and Landing Ship Tank (LST). The cost was shared between the Admiralty and the War Office.

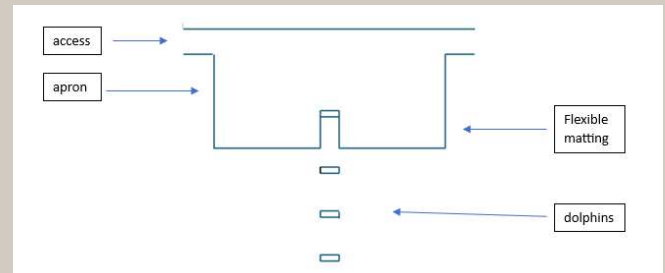
From 9th June, 1942, reconnaissance groups looked for suitable sites; beach defence sector commanders being warned in advance. Sites earmarked by grid reference subsequently received more detailed ground surveys. Construction took place in two phases. Phase 1 along the south coast. Phase 2 included the east coast. All 68 embarkation hards were to be complete by 31 March 1943.

There were two types of embarkation hard. A smaller one for Landing Craft Tank (LCT), usually 4-berth. A larger one for Landing Ship Tank (LST), between 1 and 4 berths.

Each hard required the following:

- a concrete weightbearing access road
- a concrete apron above the high-water mark
- pre-cast concrete beach hardening mats – “chocolate blocks” - in the intertidal area to enable loading of ships at all states of the tide
- Wood and steel “dolphins” for securing vessels during loading
- Accommodation, fuel supplies, and mains electricity

The hard aprons were generally built first, often in parallel with associated access road linking to the public highway. The public roads had been assessed for the ability to carry huge volumes of traffic that would be required. The hards were quite simple structures, constructed in similar ways and conforming to a limited design pattern.



“Dolphins” made of wood and steel, located in the water, acted like hand rails to guide the landing craft onto the beach. Flat bottomed landing craft were not easily manoeuvred in the best of conditions but once moored alongside the dolphin would be aligned to make loading and unloading more efficient. These dolphins formed the basis of a central jetty extended from the shoreline to beyond the low water mark. This allowed vessels to tie-up alongside for loading and unloading as well as re-fuelling. Large steel fair-leads (bollards) were situated to the sides of each hard for tying up.

Woolverstone hard. N.K. showing apron, intertidal matting and dolphins



The rectangular, reinforced concrete apron was, in general, around 8in (244cm) thick and around 200ft (60.9m) wide with a depth to suit the local topography. The surface sloped slightly downwards towards the water at an angle of around 10%. The system of flexible concrete matting, blocks 5in (152cm) thick, hinged with steel hooks at the joins, were hung from a lip formed along the edge of the apron.

