

New Vanguard

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Swimming Shermans

Sherman DD amphibious tank of World War II



David Fletcher • Illustrated by Tony Bryan

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SWIMMING SHERMANS: SHERMAN DD AMPHIBIOUS TANK OF WORLD WAR II

INTRODUCTION

Most tank-producing nations had toyed with the concept of amphibious tanks in the years between the wars, and these appeared in two distinct forms. Either you had the conventional tank, made to float by the addition of buoyant attachments, or you had a tank designed from the drawing board to swim, which could simply drive into the water and sail away.

Problems and solutions

The former had the advantage that once the tank emerged from the water it could shed its flotation gear and roll into action like any other tank, with the same degree of firepower, protection and mobility. There were two serious drawbacks, however. In the first place the buoyancy aids were so bulky that they had to be carried around by transport and fitted, not without considerable effort, to the tank just before it took on its amphibious role. The location for this work had to be secure from enemy interference, but not so far from the water that the tank would need to travel any distance since it was quite likely to damage itself in the process. Inevitably these fixtures made the tank a lot wider, so the risk of damage against trees, buildings and other obstacles was very real and, if seaborne operations were

contemplated, it would be too wide to pass through the bow section of a landing craft. In addition some other temporary modification was required to enable the tank to propel itself in the water; this could be anything from paddles bolted to the tracks, an outboard motor or some alteration to the transmission that provided conventional propeller drive.



With the turret of a Covenant tank just visible above the bulwarks, a prototype of the 17-ton Lighter makes its way carefully from ship to shore in Portsmouth Harbour. The helmsman is in the housing at the back with the outboard drive in an extension at the rear.



Another Covenanter, here fitted with a pair of floats, prepares to take the plunge into Fareham Harbour. Notice how the long-range fuel tank, normally carried at the back of the Covenanter, has been transferred to the port-side float.

The purpose-built amphibious tank was not so wide, since the hull itself was a significant part of the buoyancy factor and the drivetrain had been adapted at the design stage to incorporate a propeller and rudder. The drawback in this case was that thick armour was incompatible with buoyancy. Consequently, such tanks were vulnerable out of the water and, since they were invariably small vehicles, they could not carry much in the way of firepower and so their role on land was limited. Not only that, but, being small, they lacked freeboard and could only function safely on calm, inland waters.

Although one true amphibious tank was being tested in Britain shortly before the Second World War, much of the effort was concentrated upon making regular tanks float. This was done primarily at the Experimental Bridging Establishment at Christchurch in Hampshire and concerned Light Tanks Mark V and VI along with the two new cruiser tanks Covenanter and Crusader (see *New Vanguard* No. 14).

In all cases making the vehicles amphibious involved fitting pontoons, as floats, to each side of the tank, with all the problems already mentioned. The only alternative was a small vessel known as the 17-ton Lighter.

The curious Lighter, looking like an enlarged shoebox fitted with an outboard motor, had been designed for use with a type of vessel known as a Landing Ship Stern Chute that was, in fact, a modified train ferry. The idea was to carry as many of the little Lighters as possible so that, on arrival off an invasion beach, one tank would be lifted into each Lighter and the combination launched down the vessel's stern chute to chug ashore. Thus each tank had its own means of amphibious transport but, once ashore, was ready to fight as a conventional tank. Trials were carried out in Portsmouth Harbour in the summer of 1941 but, according to a report published after the war, went no further due to the development of larger, tank-carrying landing craft. However, it is worth noting that work on the prototype Duplex Drive tank was going forward at the same time and this may also have had a bearing on the decision to drop the Lighter.

DESIGN AND DEVELOPMENT

Nicholas Straussler

Born in 1891, Nicholas Straussler settled in Britain shortly before the Second World War. He already enjoyed a reputation as an innovative automotive engineer in his native Hungary, but by forming links with firms such as Alvis Ltd in Coventry and the armaments manufacturer Vickers he found more potential business in Britain. For the former he designed a range of armoured cars and for the latter, in the main, various attachments and accessories for tanks. Straussler's innovative streak could get out of hand, particularly with automotive projects that were not always practical. When it came to amphibious tanks, however, he could at least see the wood for the trees.

In a note written in 1945 Straussler claims that after examining various types of buoyant tanks he reached the conclusion that it made more sense to apply flotation equipment to standard designs. Thus, in cooperation with Vickers-Armstrong he developed a range of collapsible floats that could be used to create pontoon bridges and rafts or, attached to each side of a light tank, keep it afloat. The War Office was sufficiently interested to test this equipment and various light tanks were modified for trials, sometimes with the addition of an outboard motor. They appear to have worked well enough, but Straussler had visions of invasion beaches cluttered up with discarded floats after a landing, and duly turned his attention elsewhere.

One has to be cautious when dealing with recollections, particularly when the subject was amassing evidence for a Royal Commission that might result in a substantial reward, and Straussler's suggestion that he realized the limitations of his floats and cast about for an alternative as early as

1934 does seem a bit surprising. If true he was way ahead of the War Office, who persisted with the float idea well into the Second World War.



The prototype Tetrarch DD prior to its first swim in Langstone Harbour. The marine drive equipment can be seen at the back; notice how the propeller, which is controlled by the line that vanishes over the screen on the right, faces forwards.