

A Virtual Tribute to the Crew of Her Majesty's Submarine A7

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The University of Birmingham's HIT Team has been invited to take part in a unique maritime heritage project, part of which involves the virtual recreation of one of Britain's earliest submarines – a vessel and its crew that, sadly, met an untimely end 100 years ago off the Cornish coast.

On 16 January 1914, just a few months before the beginning of World War I, HMS A7, one of the first submarines designed in Britain for the Royal Navy, was taking part in simulated torpedo attacks against her Depot Ship HMS Onyx and the maintenance/supply tender HMS Pygmy in Whitsand Bay to the west of Plymouth. Built by Vickers Sons and Maxim Ltd at Barrow-in-Furness and launched in 1905, the A7 was a coastal patrol submarine powered by a single shaft/single screw, 16-cylinder, 600 horsepower Wolseley petrol engine whilst on the surface and a 150 horsepower electric motor whilst submerged.

Just after 11:00 on 16 January, 1914, and commanded by Lt. Gilbert Welman, the A7 began her simulated attack on the Pigmy. However, after diving, nothing more was seen of the boat. Over an hour after the exercise started, crew members of the Pigmy saw bubbles on the surface, suggesting that the submarine was attempting to blow water from her ballast tanks in an attempt to rise (the lack of adequate reserve buoyancy was noted as one of the A

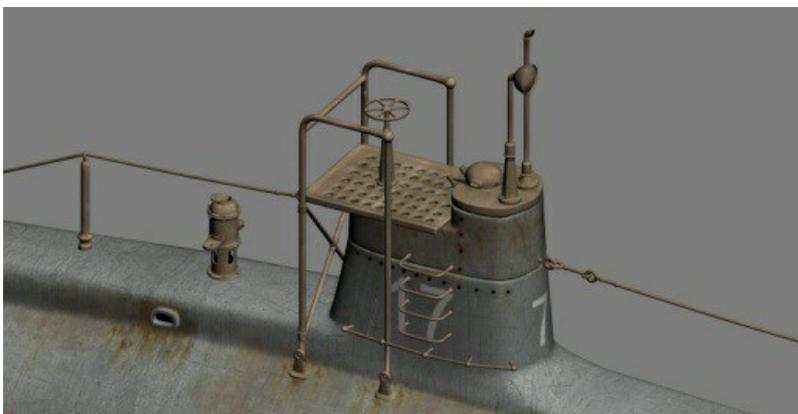
class's major design shortcomings). The location was marked with a buoy before the Pigmy returned to Devonport to report the incident. Unfortunately, there was only enough air in the submarine for six hours and, tragically, all 11 crew members perished. Despite numerous salvage attempts over the following month, the A7 refused to move and so it was decided to leave her where she lay, in about 135ft of water. In 2001, she was declared as a "Controlled Sites" under the British Government's Protection of Military Remains Act 1986 (Designation of Vessels and Controlled Sites), which means that diving on her is prohibited without special permission from the MoD.



The reason for the A7's demise has eluded maritime and naval historians for a century. It is still not understood what problems the vessel experienced during her final dive and attack run. Even more baffling is the fact that, when finally reached by divers six days after her loss, she was discovered on the seabed at an unusual bow-up angle of around 30° with her stern embedded in over 20ft of soft clay. Today, her stern is still embedded, but sonar surveys suggest that she is no longer at such an extreme angle. Instead, her bow is raised slightly upwards and her hull is listing to port by approximately 10°. The aft 13ft or so of the A7's hull, the propeller, hydroplanes and rudder still appear to be buried.

Based on the HIT Team's track record in Virtual Reality and games-based simulation, especially with recent successes in the Digital Heritage and maritime arenas, Promare, a public charity established in 2001 to promote marine research and exploration, approached Prof. Bob Stone with a request for help to recreate the A7 and her wreck site as a Virtual Reality scenario with educational content. The history of the vessel and its loss has received scant attention over the years, both in historical and educational records, locally and nationally.

Early research has been undertaken by HIT Team's Director, Prof. Bob Stone, and a range of impressive 3D assets have resulted from extra-mural efforts by one of his PhD students, Hossein Moghimi, who has developed a unique and impressive underwater scenario, complete with accurate diving effects. Prof. Stone commented, "With the HIT Team's track record in Virtual Maritime Heritage, not to mention our history of delivering simulated environments to support safety training for present-day submarines, it is a privilege to have been selected by Promare to develop an educational and awareness simulation tool, exploiting what will be the most up-to-date information on an important piece of British maritime history". He continued, "The A7 project is just the first of a number of exciting opportunities we have in the pipeline over the next two years that will demonstrate how we can use Virtual Reality to bring long-forgotten aspects of our Country's important maritime heritage back into the public's awareness".



The story featured in the [Plymouth Herald](http://www.plymouthherald.co.uk/Virtual-tribute-remember-crew-submarine-sank-near/story-20466516-detail/story.html) (<http://www.plymouthherald.co.uk/Virtual-tribute-remember-crew-submarine-sank-near/story-20466516-detail/story.html>).