



Archaeological Divers Association – Project Highball (July 2010) Press Release

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“We are looking for a black golf ball, in an area the size of two football fields.

However, the fields are covered in brown cricket balls and we are doing it at night with the lights turned off”.

Dr Iain Murray (17.07.2010) The day of the Highball Discovery

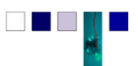
A team of technical divers from the Archaeological Divers Association, a division of Underwater Science Ltd, working with project convenor Dr Iain Murray from Dundee University, have discovered at least eight of the famed bouncing bombs named ‘Highball’ designed by Sir Barnes Wallis in 1943 for the primary role of destroying the German battleship *Tirpitz*. The Highball offered a number of advantages including its range compared to a torpedo; safety in allowing the attacking plane to turn away quickly after its drop; faster travel increased its sighting accuracy; the bouncing design allowing it to leap over anti-torpedo nets; detonation would be under the ship where there was less armour. All in all, the design of the Highball was a turning point in the 2nd World War and its design was planned to be extremely effective against the battleship. As well as shipping, several other potential targets were also identified for the RAF crews chosen to fly these secret missions, and a special squadron was formed to deliver the Highball by Mosquito aircraft, RAF Squadron 618.

Highball was not the only operation mounted against the *Tirpitz*, and a fleet of midget submarines, known as X-craft were also developed and trained to attack the vessel. Their first deployment was Operation Source in September 1943, an attempt to neutralise the heavy German warships based in Northern Norway. Six X-Craft were used, but only two successfully laid charges under the German battleship *Tirpitz*; the rest were lost, scuttled or returned to base. The *Tirpitz* was badly damaged and out of action until April 1944.

This unique discovery was made in a remote area of Loch Striven, on the west coast of Scotland in waters in excess of 35msw (114ft), following two years of desktop planning and research to pinpoint the location of the test site. The area is now believed to be part of a larger site of specific historic interest that also includes at least one Admiralty anchor used by the test vessel *Courbet*, which the Highballs were dropped against, as well as remains of unknown metal works that could be part of secret trials of the *X-1 Midget Submarines* or *Chariot Underwater Vehicles* as used by the Special Operations Executive (SOE) during World War 2.

The project idea was developed while Dr Murray was completing research for his book, “Bouncing-Bomb Man: The Science of Sir Barnes Wallis”, and discussed the possibility of diving the test area with Ted Crosbie from Underwater Science Ltd. Slowly a plan was formed to complete an initial reconnaissance project to search for the drop site and endless hours of research was then conducted into the possible location of the Highballs as well as the requirements for deep technical diving in the frigid waters of the Scottish Loch.

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In May 2010, a pre-project dive was conducted in Loch Striven to examine bottom composition and visibility and from that point the project was given the go ahead in July as planned. Divers who had completed underwater archaeological training with the Archaeological Divers Association and who had the required skills for operating at the planned depths were then selected and the team of five divers headed into the waters to start their initial reconnaissance search on the 13th July 2010. The dive team consisted of: Ted Crosbie (Dive Supervisor), Phil Grigg, Rob Cromey-Hawke, Jez Armitage and Lindsay Brown and diving continued until Saturday 17th July 2010.

In total, 12 dives were made in the loch ranging from 30msw to 60msw using specialist breathing mixes to combat the effects of nitrogen narcosis and prolonged decompression requirements, to allow the divers to safely search for the Highball Bouncing Bombs. The team also used a Remotely Operated Vehicle (ROV) donated by Sheerwater Marine Services Ltd and logistical support was provided by the Professional Diving Academy in Dunoon. All boat diving operations were conducted with the indefatigable support of Richard Home, a local fisherman (W151 Ashleigh M).

Plans are now underway to complete an additional two-week survey, “*Project 8-ball*” at the beginning of September (2010) using state of the art electronic closed circuit rebreathers; thus allowing additional time on the seabed to map the entire site for insertion into the Historic Environment Record for both Scotland and Great Britain. Team members will be using high definition photography and videography; photomosaics and three dimensional site recording software. Upon completion of an holistic survey of the site, including its environmental impact, there are additional future plans to recover some of the Highballs for conservation and restoration and placement at Brooklands Museum in Surrey as there are currently no living records from the Loch Striven test site.

The project, in the majority, was funded by the parent company, Underwater Science Ltd and received additional funds from the Maersk Shipping Company and BAE Systems Ltd, which originally built and filled the Highballs. The project was supported by Peter Blacker, who owns the Glen Striven Estate adjacent to where the Highballs were found, as well as the Barnes Wallis Trust. Diving support services were provided by Phil Grigg Technical Diving.

There are some HD video clips for media purposes, which are available for download at:

Clip 1: (Anchor and Diver)

This 44 second clip shows the ROV and Rob diving near the Admiralty anchor that was found standing 3 metres proud of the seabed in 30msw. The sheer size of the chain link can be seen, with each link being approximately 40cm in length. Video captured by Phil Grigg.

<http://dl.dropbox.com/u/4591923/Highball%20Press%20Release/1.Anchor%26Diver.wmv>

Clip 2: (Highball)

This 27 second clip shows Rob diving over the 3rd Highball found along the anchor chain at a depth of 35msw. Video captured by Phil Grigg.

<http://dl.dropbox.com/u/4591923/Highball%20Press%20Release/2.Highball.wmv>

All further enquiries and additional details can be obtained from:

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