Icelandic Coast Guard identifies WW2 British oiler utilizing a Gavia AUV

Recently a Gavia Autonomous Underwater Vehicle (AUV) was successfully employed by the Icelandic Coast Guard (ICG) to positively identify a contact that was observed during previous Coast Guard operations.

Figure 1 Icelandic Coast Guard using a Gavia AUV

During fall of 2009, the Icelandic Coast Guard conducted routine bathymetric surveys in an area that in November of 1944 had seen two ships, the British oiler SS Shirvan and the Icelandic steamship Godafoss sunk by the German submarine U- 300. The results of these surveys revealed an anomaly that was ship like in shape and that had roughly the same length as the SS Shirvan .This aroused suspicions amongst the ICG that this may potentially be the wreck of the Shirvan.

Figure 2 Image of 1200 kHz Marine Sonic Side Scan Sonar from Gavia AUV and a wartime image of the 125m long Shirvan

During August of 2010 a mission was conducted by the Icelandic Coast Guard with the cooperation of the University of Iceland, utilizing a Gavia vehicle to investigate the target using a range of acoustic sensors including a high frequency side scan and a swath bathymetry system. Once in the vicinity of the target, the Gavia vehicle was deployed from one of ICG cutter Tyr's small boats and quickly revealed that the potential target was indeed a ship rather than a geographic feature after an initial side scan survey ran at greater than normal altitudes designed to chart hazards such as any fishing nets and masts.
Further dives by the Gavia vehicle on the same day gathered considerable data from both the 600 kHz and the higher frequency 1200 kHz Side Scan. A 500 kHz Gavia mounted GeoSwath system from GeoAcoustics, provided detailed bathymetry of the wreck and surrounding area.

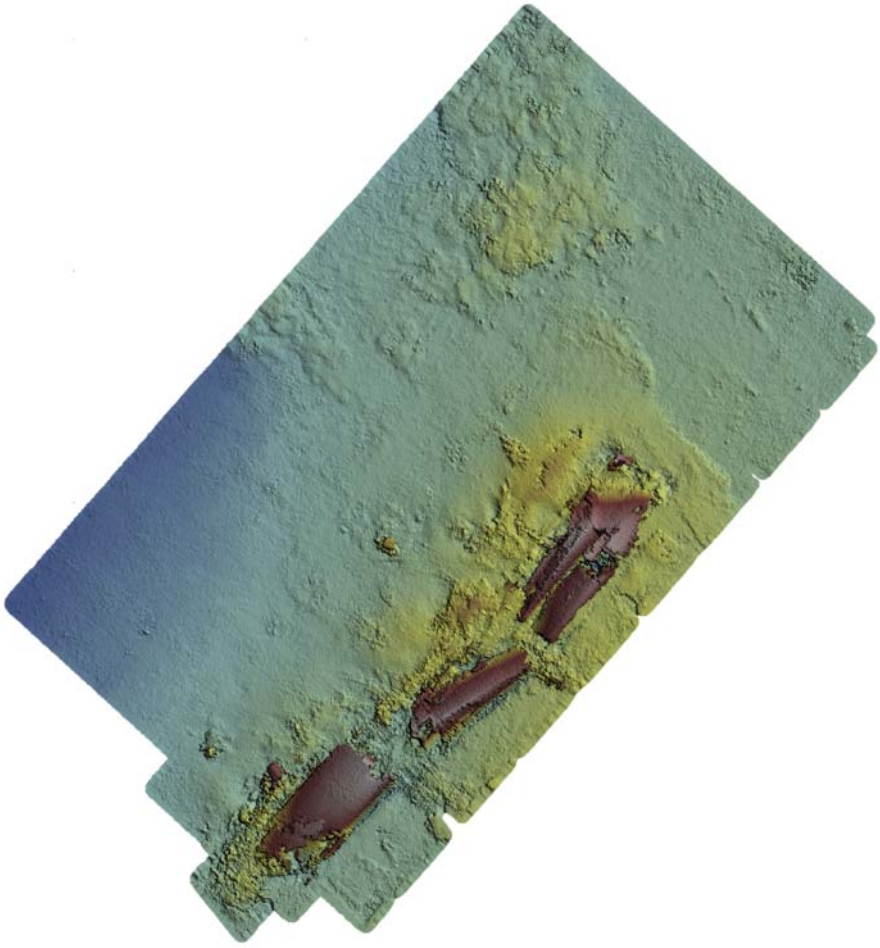
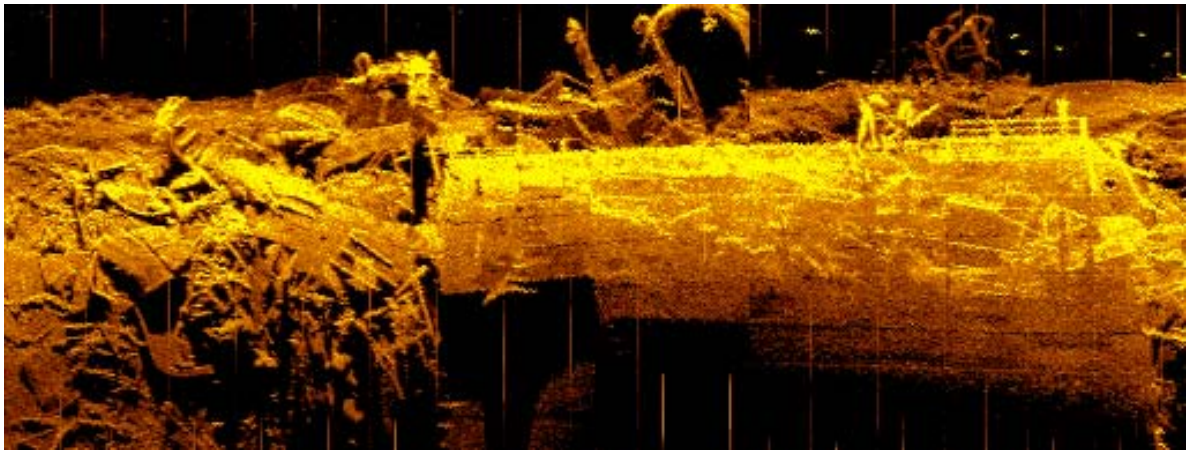


Figure 3 500 KhZ GeoSwath image of wreck

The Shirvan was hit by two torpedoes and burned for 24 hours before sinking which resulted in considerable damage to the wreck. It was found to be broken into three sections, with signs of considerable deterioration of the hull, allowing some interior structures to be seen. Despite the damage, the detailed high-frequency sonar imagery meant it was possible to identify the wreck based on several identifiable features, particularly in the better-preserved aft most section.



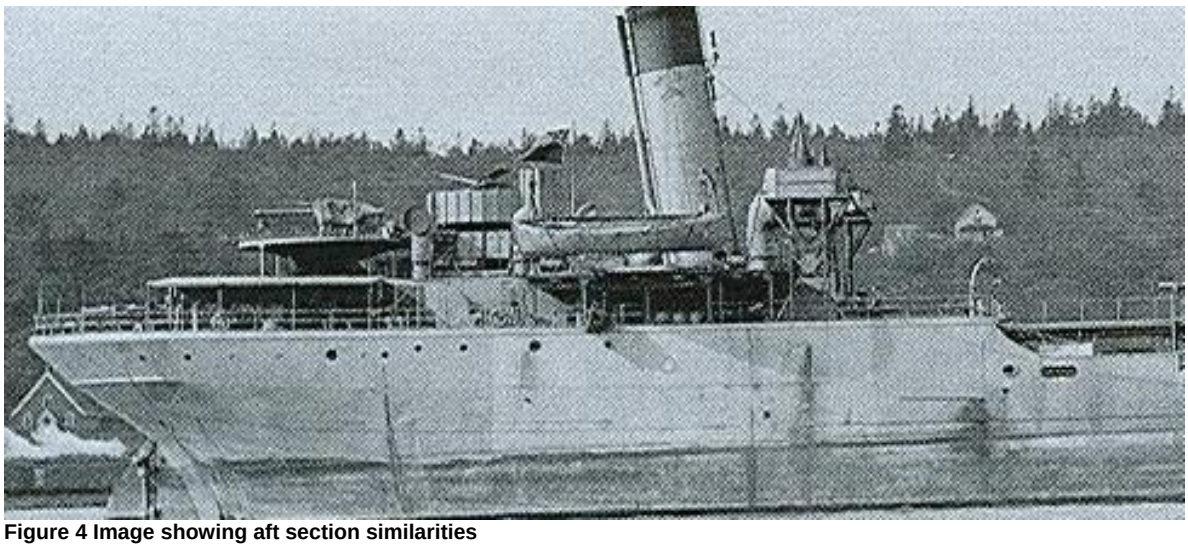


Figure 4 Image showing aft section similarities

According to shipping manifests, the Shirvan was carrying a full load of oil or gasoline when she sank, and thus it was feared that if the 6000 ton vessel was intact, there could potentially be a significant environmental issue associated with the leaking fuel. Utilizing the data from the Gavia AUV the Icelandic Coast Guard was able to determine that due to the condition of the wreck it is highly unlikely any significant quantities of gasoline remain onboard.

According to Captain Halldór Nellet, Chief of Operations of the Icelandic Coast Guard, “The Gavia AUV proved to be an invaluable asset to us during this operation to identify the contact that was earlier discovered. Within 20 minutes of the initial dive we had ascertained that this contact was a ship, and data gathered from subsequent dives helped us to positively identify it as the SS Shirvan and to alleviate our concerns about the potential ramifications of a wreck with a full load of oil so close to our coast,.”

The finding of the Shirvan is historically significant, as the exact location where the Shirvan went down has until now been unknown and the Icelandic Goðafoss was lost in the same attack after she defied orders and stopped to rescue the British sailors on the Shirvan. This action resulted in a significant loss of life amongst both the crew of Godafoss and the rescued crewmen from the Shirvan, To date, despite numerous attempts, the wreck of the Godafoss remains undiscovered. However, locating the wreck of the Godafoss may not be imminent as the stricken Shirvan drifted for roughly 24 hours after the attacks on the two vessels.