



### LW3 The Epic of the World War II (WWII) Italian Submarine *Macallè* and the Death of Carlo Acefalo: How Forensic Science Brought a Soldier's Remains Back Home

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**Learning Overview:** After attending this presentation, attendees will have a better understanding of the potential and the ethical implications of the forensic anthropological approach on historical cases.

**Impact on the Forensic Science Community:** This presentation will impact the forensic science community by providing an example of an investigation to recover, identify, and bring back to his home country the remains of a WWII soldier.

In June 1940, the Italian submarine *Macallè* left berth at the naval base in Massawa to hunt for British ships in the Red Sea. Soon after the boat's air conditioning was turned on, a deadly invisible gas, methyl chloride, began leaking throughout the hull. At 02.35 a.m. on June 15, the incapacitated crew led the submarine to collide with the reef of Barra Musa Kebir, a small island 65 nautical miles southeast of Port Sudan. *Macallè* remained trapped between the corals for nearly a day, allowing the crew of 45 men to make it ashore.

The captain sent three men in the submarine dinghy for help in Italian-controlled Eritrea, approximately 200 miles away. With an improvised sail made with shirts and bedsheets, the trio crossed miles of sand bars and marshy coasts; after six days, they were spotted by Italian coastal troops and were able to report the wreck of *Macallè*. Meantime, conditions on the small desert island were steadily deteriorating. The lack of food and water was further weakening the men already poisoned by the methyl chloride. The crew tried without success to distill water and the few fish and birds they were able to catch were insufficient to keep them all alive.

At approximately 3.00 p.m. on June 19, the young Chief Torpedoman, Carlo Acefalo, died of poisoning and starvation and was buried by his comrades under a few inches of sand.

Nearly a week after the sinking of the submarine, the sound of a plane's engine was heard. The joy of an expected rescue was soon tempered when the survivors realized it was a British Royal Air Force aircraft that dropped a note instructing the crew to prepare to be taken to Port Sudan on a Royal Navy vessel. However, a few minutes later, another plane was heard, an Italian one that assured the men that a friendly submarine was on its way to save the castaways. Submarine *Guglielmotti* rescued the crew of *Macallè* just hours before the arrival of British forces, who found only the grave of Carlo Acefalo and the diary of one of the soldiers.

That diary, as well as documents of the "Special Commission of Inquiry into the loss of the *Macallè*", have been used by an Italian-Argentine team to plan a survey in Barra Musa Kebir in October 2014. The underwater photography expedition found metal debris of the sunken submarine 55-60 meters deep in the sea around the island. In addition, on the island, possible clues of Acefalo's grave were found: a circle of stones and rusty fragments. The metal pieces apparently belonged to a Davis auto-respirator, an underwater escape device used by Italian submariners.

After more extensive archival research led to the location of Acefalo's relatives and families of other crew members who provided additional documents, a new scientific expedition was organized in October 2017 with the support of the Sudanese government. The forensic archeological excavation of the burial site was conducted for three days under very difficult environmental conditions. The remains appeared extremely fragmented and damaged due to the characteristics of the grave and the intense heat of the sand under which they had rested for more than 70 years. However, the forensic anthropological examination, as well as the analysis of contextual information and the comparison with historical data, allowed a positive identification of Carlo Acefalo.

The remains of the Italian soldier were turned over to the Sudanese authorities in a ceremony held at Port Sudan on October 9, then consigned to the Italian Ambassador on April 18, 2018, for the final journey home, where Carlo will be buried next to his mother, who died in 1978 awaiting his return.

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#### Forensic Anthropology, WWII Soldiers, Human Identification