

TIGHAR TRACKS

November 2010

Review & Update



After twenty-two years of rigorous research and ten grueling expeditions, TIGHAR has brought new understanding to an iconic American mystery. Our unwavering determination to follow the trail of evidence in the face of countless dead ends and disappointments has won international respect and recognition, exemplified most recently in the Discovery Channel two-hour special *Finding Amelia*.

Before we go over the latest results from the analysis of this year's expedition, let's quickly review why we did what we did.

WHERE TO FIND AMELIA?

- ❖ In July 1937, Amelia Earhart and Fred Noonan disappeared on a flight from Lae, New Guinea to Howland Island.
- ❖ Multiple lines of historical evidence suggest that the missing flight landed at Gardner Island (now Nikumaroro), an uninhabited atoll 350 nautical miles southeast of Howland.
- ❖ In 1940, the partial skeleton of a castaway was found on Gardner Island.
- ❖ The bones were subsequently lost, but modern forensic analysis of measurements taken at the time suggest that the skeleton was that of a white female of roughly Earhart's height.
- ❖ The remains of a man's shoe, a woman's shoe, and a box that had once contained a sextant were found with the bones but later lost. Numbers



reported to have been on the box match a type of sextant Fred Noonan is known to have used.

- ❖ In 2001 and 2007 TIGHAR conducted archaeological investigations of a site on the island that matches the description of where the castaway's remains were found. We call it the Seven Site after a nearby natural coral formation in the shape of the numeral seven.
- ❖ As with most archaeological sites, artifacts and features found at the Seven Site date from several different times and types of activity. Everyone who was there – whether it be castaway(s) trying to survive, Gilbertese colonists planting coconuts, Coast Guardsmen from the Loran station doing some target shooting, and even our own earlier expedition teams – left their own puzzle pieces behind. The trick is in figuring out which pieces go with which puzzle.

We may never have a complete picture of everything that has happened at the Seven Site but the questions we most want to answer are:

- ❖ How much of what we're finding was left behind by the castaway(s)?
- ❖ What do those things tell us about how, and how long, the castaway(s) survived?

And the biggest question:

- ❖ Were Amelia Earhart and Fred Noonan the castaways of Gardner Island?

Our work at the site in 2001 and 2007 confirmed the presence of features and artifacts that are consistent with castaway behavior – bird and fish bones



among deposits of charcoal and ash that appear to describe catch-as-catch-can meals caught and cooked by someone who was not a Pacific Islander; giant clams that had been opened like a New England oyster, the empty shells laid out as if to collect rain water; pre-war American bottles with melted bottoms that had once stood in a fire as if to boil drinking water.

Some of the artifacts found were gender-specific. Two pieces of thin plate glass with distinctive beveled edges fit together and match the mirror of an American 1930s-vintage makeup compact. Small pieces of red material test out to be chemically consistent with early 20th century cosmetic. (Earhart is known to have carried a compact on her travels.) Remnants of the contents of a small bottle made in New Jersey in 1933 test as lanolin and oil (hand lotion?). Part of a broken pocket knife came from the same type of knife – a bone handled, double-bladed jack knife – listed in an Army inventory of Earhart’s Electra made after the accident in Hawaii that ended her first world flight attempt.

Although nothing found at the Seven Site could be shown to have an unmistakable connection to Earhart or Noonan, there was more than enough to justify a more thorough examination of the site, especially considering the possibilities offered by recent advances in DNA research. The plan for the 2010 expedition therefore included an intense archeological excavation of the area where previous work suggested the castaway(s) had lived and died.

WHERE TO FIND THE ELECTRA?



Independent of the archaeological work at the Seven Site is the question of what became of the airplane. An exhaustive scientific analysis of radio distress

calls heard for several days after the disappearance shows beyond reasonable doubt that the plane was on land and on its wheels during that time. By the time Navy search planes flew over the island a week after the disappearance the radio calls had stopped and no airplane was seen. The flight leader did, however, report seeing “signs of recent habitation” on an island that had been officially uninhabited since 1892. Numerous witness accounts by later settlers and a 1953 aerial photo that shows what appears to be a debris field of light colored metal on the reef surface led us to theorize that Earhart had landed the Electra on a smooth and level section of the reef at the western end of the island that dries at low tide. We reasoned that rising tides and surf could have moved the plane seaward until it became hung up on the reef

edge and beaten apart by the breaking waves. If that is what happened, the wreckage of the plane should be in the deep water off the edge of the reef.

In 1999, former Nikumaroro resident Emily Sikuli marked a spot on a map where she saw wreckage in 1940 or '41 that her father told her was the remains of an airplane. Earlier this year, forensic imaging specialist Jeff Glickman of Photek discovered unexplained man-made debris on the reef edge in an October 1937 photo of the island’s western shoreline – in the same spot Emily marked eleven years ago.

With good reason to believe that the wreckage of the Electra lies somewhere on the reef slope off the west end of the island, we included an underwater search down to a depth of 300 meters (1,100 feet) in the planning for the 2010 expedition.

