

What Happened to Amelia Earhart? The Case for Nikumaroro

Aviation pioneer Amelia Earhart and her navigator, Fred Noonan, disappeared over the Pacific on July 2nd 1937. TIGHAR hypothesizes that they landed and died on *Nikumaroro*, then called Gardner Island, an uninhabited island in what is now the Republic of Kiribati. Detailed documentation of our basis for the Nikumaroro Hypothesis is found in two books published by TIGHAR members¹, and on TIGHAR's worldwide web site². We have prepared this short paper to summarize the reasons we believe we are right about Earhart's fate. Here they are:

1. In the last radio transmission that all authorities agree came from Earhart, she said she was flying "on the line 157 337" – this is generally understood to be what is known as a "line of position," a navigational line oriented 337° (NNW) and 157° (SSE). The strength of the transmission indicated that she was relatively close to Howland Island at that time. She was not understood to say which direction she was flying on the line but U.S. Navy experts, Earhart's husband George Putnam, and her technical advisor Paul Mantz all agreed that the flight probably proceeded southeastward in the hope of reaching land³. Such a line passing through Howland Island also passes within visual range of Nikumaroro.
2. Nikumaroro is much easier to see from the air than Howland Island; it is bigger, tree-covered, and has a brilliant aquamarine lagoon⁴.
3. After her disappearance, over 180 radio messages were received by stations around the Pacific and elsewhere, most of them by professional radio operators, some of them in a voice identified as Earhart's by operators who had heard her in past transmissions. When the U.S. Navy's extensive search didn't reveal anything, the Navy decided they were all mistakes or hoaxes. If even one of these messages was really from Earhart, she had to be on land with a fairly intact airplane capable of generating power for the radio⁵.

¹ *Amelia Earhart's Shoes*, by T. F. King, Karen Burns, Randall Jacobson and Kenton Spading; AltaMira Press 2004 (<http://www.altamirapress.com/Catalog/SingleBook.shtml?command=Search&db=^DB/CATALOG.db&eqSKUdata=0759101310>) and *Finding Amelia*, by Ric Gillespie; Naval Institute Press 2007 (<http://www.findingamelia.com/>)

² www.tighar.org

³ See *Finding Amelia* pp 127-8.

⁴ See for yourself. Have Google Earth fly you to 0° 48' 21" N latitude, 176° 37' W longitude to view Howland Island, then to 4° 40' 30" S latitude, 174° 31' W longitude to view Nikumaroro

⁵ See *Finding Amelia*, pp. 180-194.

4. Radio stations at Wake Island, Midway Island, and Hawaii took radio direction finding (RDF) bearings on six of the transmissions. Four of these bearings crossed in the vicinity of Nikumaroro⁶.
5. The only radio (other than, perhaps, Earhart's) documented as having been in the Phoenix Islands was in the possession of John William Jones, a coconut plantation supervisor on Hull (now Orona) Island, about 150 miles east of Nikumaroro. Jones' radio is reliably reported to have been out of order between early June and late August of 1937⁷.
6. TIGHAR analysis of the whole body of radio messages indicates only two plausible explanations for them. Either an extremely well-informed hoaxter with an undocumented radio was on one of the western Phoenix Islands imitating Earhart's voice, or Earhart was there⁸.
7. Search plane crews from *USS Colorado*, flying over Nikumaroro seven days after the disappearance, reported "signs of recent habitation" but, believing the island to be inhabited, concluded that they were not related to Earhart, so the *Colorado* did not land a search party⁹. The island had not been officially inhabited since 1892.
8. British colonial officers who visited Nikumaroro in October of 1937 to see whether the island could be colonized said they saw evidence suggesting an "overnight bivouac" (camp)¹⁰.
9. Residents of the colony established on Nikumaroro in December of 1938, which lasted until 1963, report aircraft wreckage on the northwestern reef flat and in the lagoon. A US Navy pilot who visited the island during World War II reported local residents using aircraft control cable as a fishing line, which they said came from a plane wreck that had been on the island when they came¹¹.
10. TIGHAR has recovered a number of pieces of aircraft wreckage from the remains of the colonial village on Nikumaroro; these appear to have been brought to the village to use in fabricating handicrafts. Some of these are from a B-24, probably one that crashed on Canton Island, some 230 miles to the northeast (people from Nikumaroro worked on Canton after World War II). Other pieces, including aluminum fragments and fragments of plexiglass, do not appear to match a B-24 but are consistent with a Lockheed Electra like Earhart's¹².
11. In 1991, TIGHAR recovered parts of two shoes on Nikumaroro, identified by footwear specialists as a woman's shoe and a man's shoe. The former was identified as a "Blucher-style oxford" dating to the 1930s. Earhart wore such shoes on her flight, though the only example that can be

⁶ See *Finding Amelia*, p. 164.

⁷ See *Finding Amelia*, p. 210.

⁸ See *Finding Amelia*, pp. 116, 135, 157-9.

⁹ See *Finding Amelia*, p. 206.

¹⁰ See *Earhart's Shoes*, p. 137.

¹¹ See *Earhart's Shoes*, pp. 117, 182-86, 267-71.

¹² See *Earhart's Shoes*, pp. 110-39, 157, 188-93, 362-7

measured in photographs appears to have been smaller than the one found by TIGHAR¹³. Earhart is recorded to have had at least two pairs of footgear on the plane, probably including a pair of hiking boots¹⁴.

12. In 1940, thirteen bones of a human skeleton were found on the SE end of the island next to the remains of a campfire with bird and turtle bones. Nearby the remains of a woman's shoe and a man's shoe were found, together with a sextant box and some small corks on chains. The bones were examined by two medical doctors. One said the bones came from an elderly Polynesian, the other said they were from an adult male of European or mixed race. The bone measurements taken by the second doctor have been analyzed by modern forensic anthropologists, whose studies indicate that they may more likely be those of a woman of European ethnic background, about 5'5" to 5'9" in height. Earhart would have fit this description. The bones have been lost¹⁵.
13. The sextant box – which has also been lost – is recorded as having had two numbers on it: 1542 and 3500. Recent research has shown that during World War I, the U.S. Navy acquired a large number of nautical sextants, some of which were converted for aviation use. Known sextants acquired by the Navy from the Brandis Instrument Company carried serial numbers ranging from 3227 to 5760, and were assigned Navy numbers 845 through 4705; these numbers were stamped into the boxes as well as the instruments themselves. The numbers on the Nikumaroro sextant box thus suggest that it held a Brandis instrument owned for a time by the U.S. Navy.
14. The second number on the box – 3500 – is also close to the number 3547, which is written on a sextant box held by the Museum of Naval Aviation in Pensacola, Florida and is documented to have belonged to Fred Noonan¹⁶. Fred Noonan is known to have used a nautical sextant as a back up and a photograph of the navigation room aboard a Pan Am clipper shows a box for a Brandis sextant. One of Noonan's jobs in the 1930s was as a navigator trainer and a photograph of one his students shows a Brandis sextant.
15. In 1946 the late Floyd Kilts, a U.S. Coast Guardsman on duty on Nikumaroro, was told about the bones discovery by a local resident. Other Coast Guardsmen purchased wooden boxes built by the residents, with inlaid pieces of aircraft aluminum¹⁷.
16. TIGHAR has identified a site on the southeast end of the island (the Seven Site) that closely matches the description given in British colonial records of the bones discovery site. Here we have found the remains of several cooking fires containing bird, fish, and turtle bones. There are also two clusters of giant clam (*Tridacna* sp.) shells on the site, apparently brought there so their meat could be consumed. Many of the clams in one cluster appear to have been opened by

¹³ See *Earhart's Shoes*, pp. 125-134

¹⁴ See http://www.tighar.org/Projects/Earhart/Bulletins/31_ShoeFetish2/31_ShoeFetish2.html

¹⁵ See *Earhart's Shoes*, pp. 206-48

¹⁶ See *Earhart's Shoes*, pp. 230-34

¹⁷ See *Earhart's Shoes*, pp. 54-6, 226.

someone who tried to pry them open on the hinge side (as eastern U.S. oysters and some clams are opened); others have been opened by smashing them with rocks¹⁸. Fishbones from the remains of cooking fires on the site suggest that whoever camped there was unselectively catching mostly rather small reef and lagoon fish, cooking them on the coals, and disposing of their bones in the fires; none of this behavior is consistent with fishing and fish preparation by indigenous Pacific islanders¹⁹.

17. Finally, we have found a variety of artifacts at the Seven Site. Some of these are clearly of colonial or Coast Guard origin, but others are not²⁰. Among the artifacts recovered from the site in 2007 are:

- a. a broken bottle made by the Owens Illinois Glass company in New Jersey in 1933 containing traces of a substance containing oil and lanolin, probably either a skin cream or hair dressing;
- b. two broken, partially melted bottles identified as dating to before World War II, found in the remains of a cooking fire where it appears they may have been used in attempts to boil water;
- c. two small pieces of thin beveled glass that match the mirror of a known 1930s vintage American woman's compact.
- d. three small fragments of red material chemically identified as probable cosmetic rouge;
- e. the pull and slider from a size 06, "auto-lok" Talon brand zipper manufactured in the U.S. sometime between 1933 and 1936.

Earhart is known to have carried a compact which, if it was like others of the period, would have contained rouge. U.S. Coast Guardsmen, island colonists, and British colonial officials are unlikely to have had such items.

¹⁸ See *Earhart's Shoes*, pp. 349-51

¹⁹ See http://www.tighar.org/Projects/Earhart/NikuV/Analysis_and_Reports/Faunals/NikuVanalysisfaunals.html

²⁰ See *Earhart's Shoes*, pp. 333-51