

TIGHAR TRACKS

August 2007

Niku V Preliminary Report

A button, a zipper, a snap – are they all that’s left of a pair of pants?

Two pieces of what was once a small rectangle of very thin glass with beveled edges – is this a woman’s compact mirror?

A broken pocket knife – was this a castaway’s tool for prying open clams?

The bottom of a small, broken bottle – what was in the bottle?



Two more broken bottles found among charcoal, animal bones, and a length of heavy wire twisted as if it was used to hold something. The bottom of one of the bottles is melted – was someone trying to boil water over a cooking fire?

Numbered “bearing sleeves” of a type once used by aircraft manufacturers, including Lockheed – could they be from Earhart’s Electra?

These are just a few of the questions we’ll be trying to answer in the coming months.

The Niku V expedition has returned. If you followed the expedition’s progress via the daily updates on the TIGHAR website or the Associated Press coverage, you know that we had many adventures and made a number of potentially important discoveries. You also know that we did not find any human remains for DNA matching or aircraft parts that were immediately identifiable as coming from Earhart’s Electra. Does that mean no “smoking gun” proof that Earhart and Noonan landed, lived, and died on Nikumaroro? That jury is still out, but in terms of artifacts found, imagery acquired, and data collected this was the most successful TIGHAR expedition to date.



The Village

In the abandoned village, a wide swath of jungle from the Radio Shack to the Rest House was cleared and meticulously inspected. This involved the collection and removal of thousands of fallen coconuts – a monumental task carried out with the invaluable help of members of the ship’s Fijian crew. A much larger surrounding area was also systematically swept with metal detectors. The site of the Carpenter’s Shop was cleared and archaeologically excavated, yielding a wide assortment of machine parts, some of which bear numbers identifying them as being of a type used in aircraft. We also found another radio connector of the same type we found there in 1996. They’re of a type which first appeared circa 1936 and are of American design and manufacture. These connectors were a common pre-war form of coaxial fitting and were used in period avionics equipment. They were often used with Bendix equipment such as Earhart’s radio direction finder.



Miscellaneous items found in the village. Photo by Barb Norris.

The village search did not produce further examples of the suspected “heat shield” aircraft components we found there on other visits. (see “Detective Story” at http://www.tighar.org/Projects/Earhart/Bulletins/55_HeatShields/55_DetectiveStory.html).

It’s possible that our earlier expeditions had already found everything that was once there, but that seems unlikely because our previous inspections of this particular site were very cursory. Rising sea levels and intensifying weather events associated with global warming have been

devastating to the western end of the atoll. It seems more probable that storm damage and overwash of the area since our last visit accounts for the almost complete absence of any light sheet metal in the area now.

Climate change has also had a detrimental effect on the island’s fringing reef. Warming ocean temperatures have caused coral die-off, known as “bleaching.” The corresponding decrease in the local fish population may be responsible for a noticeable increase in the aggressiveness of the resident sharks.

The Seven Site

The use of specially modified pruning loppers powered by compressed air from scuba tanks made it possible to re-clear the site which had, of course, completely grown in since 2001. With the help of chain saws and hand tools provided by Stihl Inc., the cleared area was also greatly expanded to include new terrain we had not been able to inspect on earlier expeditions. As in the village, the enthusiastic help of the *Nai’a* crew in removing the cut vegetation without dragging it over the ground to be examined was a major factor in our success. A larger cleared area meant that more of the surface could be visually checked and swept with metal detectors for buried



John Clauss uses the loppers at the Seven Site. TIGHAR photo by Ric Gillespie.

metal artifacts. In spots where interesting objects turned up, archaeological grids were put in place and the locations carefully excavated in ten-centimeter increments.



The bad news in the scaevola. Photo by Dave Mason.

Aerial photos taken in 1937 and 1938 show the Seven Site covered with shady trees. Cooled by the easterly trade winds, it was probably a pleasant spot back then. Today the trees are mostly gone and the site is covered with impenetrable brush that blocks the breeze. TIGHAR’s 2

work on the site was carried out in temperatures that routinely topped 110° F.

Trying to find bones and teeth among the coral rubble that covers the Seven Site is a bit like looking for a glass eye in a field covered with marbles. Human teeth, however, glow in the dark under ultra-violet light. (Kids! You can try this at home!) In 2001 we learned that night-time searches at the Seven Site are impractical due to crab problems. Eventually you have to sleep and the crabs consider any immobile figure to be fair game. For this expedition,



The march of the strawberry hermit crabs. Don't close your eyes... Photo by Tom King.

veteran TIGHAR team member John Clauss invented a "UV Scanner" which permitted the ground to be checked for teeth in broad daylight. Electrical power came from "solar suitcases" provided by another experienced team member, Andrew McKenna. Much of the site was scanned with the new device and it was also used in Dr. Tom King's re-excavation and further examination of the hole believed to be where the castaway's skull was initially buried in 1940. It was exhumed a few months later by the British Colonial Service officer who discovered the castaway's partial skeleton and campsite nearby. We hoped that some teeth might have remained in the "skull hole," but no luck.



John Clauss with the UV scanner. Photo by Tom King.

We were fully aware that the odds of finding unburied human remains in the Nikumaroro environment after 70 years are a bit worse than hitting a Powerball jackpot, but we had to try.

Although no human teeth or bones were found, the UV scanning system worked well and proved itself to be a valuable new tool for this kind of work. A great many non-human bones did come out of places in the ground which appear to have been cooking fires. Analysis of the bones to determine the species and number of birds, fish, turtle, and possibly rats that were cooked and presumably eaten should provide clues to the diner or diners' cultural orientation.

Perhaps most importantly, on this trip we found, mapped, and collected a number of artifacts which seem to be in the nature of personal effects. Several are known to be of civilian American origin. Some appear to compliment objects found at the site on earlier expeditions. For example, what



The button and the zipper pull.



The snap.

appears to be a non-military trouser button, found during our first visit to the site in 1996, is now joined by a Talon zipper and both ends of a small brass snap. These items together begin to suggest a pair of trousers. Further research may

confirm or deny that possibility and provide more information about date of manufacture. Similarly, on the 2001 expedition we found a piece of thin plate glass with one beveled edge and the remnants of some kind of coating on one side. This time we found another piece of glass, clearly from the same object and featuring three beveled edges and two corners. When fit together like a jigsaw puzzle they begin to look very much like a woman's compact mirror. The broken end of a pocket knife was not far from the pried-open shells of many small clams, and so on....



The glass.



The knife.

Materials identification of these and other artifacts by the Winterthur analytical laboratory here in Delaware is already underway. Knowing for sure what they're made of is the first step in identifying and dating them. Just how far we'll be able to take that process remains to be seen.

IMAGERY ACQUIRED

Photography of the island and our work there has always been a major part of each expedition, both for reasons of documentation and because Nikumaroro is a stunningly beautiful place. On this trip, the full weight of the digital revolution was brought to bear and resulted in a quantum leap in the number and quality of the images we brought back. The team members took a total of more than 10,500 digital photographs and our professional cameraman, Mark Smith, shot many hours of high-definition digital video exclusively for TIGHAR.

Another spectacularly useful new technology employed on this trip was Kite Aerial Photography (KAP). KAP experts Brooks Leffler and David Wheeler built and donated a kite-borne photography system that enabled our Aerial Recon Team to get wonderfully detailed low-altitude overhead imagery of the Seven Site and the reef near the *Norwich City* shipwreck.



John Clauss sets up the camera rig on the kite. Photo by Lonnie Schorer.

DATA COLLECTED

Through the good offices of Instrument Sales & Service here in Wilmington, Delaware, the Niku V expedition was equipped with two Sokkia SRX Robotic Total Stations for mapping the Seven Site and surveying the reef where the *Electra* is thought to have landed. The SRX represents state-of-the-art surveying technology (we came to think of it as “R2D2 on a stick”) and it enabled us to document our work with unprecedented precision.



The surveying robot. Photo by Tom King.

THE NEXT STEP

Niku V succeeded in its mission of bringing home artifacts, images, and data. Our job now is to identify and date the artifacts, process the imagery, and evaluate the data. Only then will we know to what degree these latest discoveries have moved the Earhart Project forward. What we do know is that artifact analysis, imagery processing, and data evaluation are expensive and that we’re relying on your help to make it all possible. Please use the enclosed form to make your contribution today. In appreciation, we’ll send you the “Best of Niku V” photo CD.

It’s great to be home. Thank you for your continued support.

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