

# TIGHAR TRACKS

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## So Many Projects, So Much to Report

**N**ever before in TIGHAR's twenty-three years have we had so much going on and so much to tell you about. In this *TIGHAR Tracks* we'll hit some of the high points and follow up with details in upcoming issues and on the TIGHAR website.

The generous support of TIGHAR members and sponsors, including Berwind of Philadelphia, has made it possible for us to begin the process of finding out what we found during last summer's Niku V Expedition. Analysis of artifacts collected from the abandoned village has not, so far, revealed anything that seems to be Earhart-related, but research continues. By contrast, a number of the artifacts recovered from the Seven Site at the opposite end of the island are proving to be more revealing and potentially more important than we had any idea they would be when we dug them out of the ground or picked them out of the sifting screens.

### THE COMPACT

As reported in the August 2007 *TIGHAR Tracks*, a piece of thin plate glass that matches a similar piece we found in 2001 made us suspect that we had the broken mirror from a woman's compact. Now, chemical analysis of small wafer-like pieces of red material sifted from the same location show them to be "consistent with an early twentieth-



century cosmetic." (Winterthur Analytical Lab Report 12/9/07). Pending analysis of rusted metal fragments may confirm that we also have pieces of the compact itself. Is the cosmetic we found at the Seven Site on Nikumaroro like the cosmetic in a compact once owned by Amelia Earhart and now in the Purdue University Earhart Collection? We don't know and, unfortunately, it looks like we won't be able to find out. Purdue won't let us take a pinhead-sized sample for scientific testing. However, thanks to Barbara Norris (TIGHAR #2175EC), we've been able to find



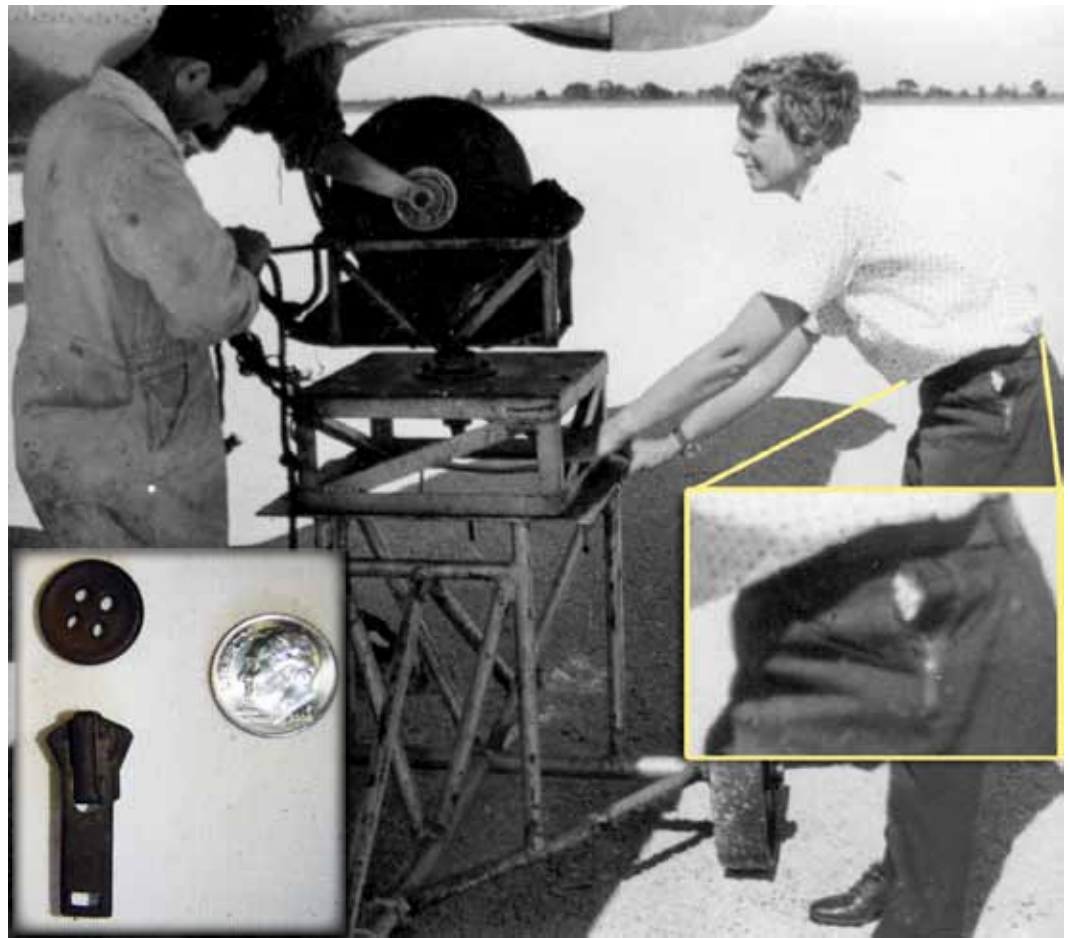
*TIGHAR Artifact 2-8-S-30, one of three fragments of red material identified as consistent with an early twentieth-century cosmetic.*

a compact of the same vintage made by the same company as the Purdue/Earhart compact and we'll test that cosmetic for similarity to the material found on the island.



## THE ZIPPER

The Talon zipper, TIGHAR Artifact 2-8-S-3, mentioned in the August 2007 *TIGHAR Tracks* is also proving to be interesting. Laboratory analysis confirmed that it's brass (Winterthur Analytical Lab Report 8/25/07) and research into the history of Talon, Inc., with the help of the Hagley Library and Archive in Wilmington, DE and the Crawford County Historical Society in Meadville, PA, suggests (but does not yet confirm) that it is a design that was in production in 1937 and is unlike zippers that were supplied to the military. If the zipper found at the Seven Site on Nikumaroro belonged to Earhart it was probably from her slacks and not from her leather jacket which had a heavier zipper with a different shaped pull. Noonan's trousers probably still had a button fly. Zipper fronts were still quite rare on men's pants in 1937. Research continues.



*Ooops! It's always a good idea to check your zipper when there are photographers around. Amelia in Miami in late May 1937 during the world flight. TIGHAR Collection.*

## BROKEN BOTTLES

Broken glass associated with four bottles was recovered from the Seven Site.

- ❖ Coding embossed on the bottom of a small, broken clear glass bottle (all we have is the bottom) shows that it was made at the Owens-Illinois plant in Bridgeton, NJ in 1933. Chemical analysis of material stuck in one corner of the bottom shows it to be comprised of lanolin and oil. This style of bottle, known as an "Imperial Oblong," came in several sizes and was used for many types of over-the-counter lotions and tonics.
- ❖ The broken and, in some cases partially melted, pieces of an amber-colored bottle were found in one of at least five "burn features" (deposits of ash, charcoal, burned fish, turtle and bird bone) at the site. New Mexico State University Alamogordo bottle expert Bill Lockhart has helped us determine that the amber glass appears to be from an American pre-war



*TIGHAR Artifact 2-8-S-2a is the bottom of a bottle of the same design, but somewhat smaller than, a vintage bottle acquired for TIGHAR by Rick Jones (TIGHAR 2751).*





*TIGHAR Artifact 2-8-S-25 is a broken bottle similar to the American pre-war returnable beer bottle pictured. Fragments: TIGHAR photo. Bottle: Courtesy Bill Lockhart.*



returnable beer bottle. The lower portions of the bottle are significantly more heat damaged than the upper portions, suggesting that the bottle once stood in the fire.

- ❖ In the same burn feature with the amber bottle were the broken and, in some cases partially melted, pieces of a smaller green-colored bottle. Rick Jones (TIGHAR 2751) found that the shape and markings on the bottle match a design patented in 1933. The bottle is of a type that was produced by Owens-Illinois for over-the-counter medications. This bottle also appears to have once stood in the fire.



Artifact 2-8-S-27 compared to Design Patent 90023 E.W. Fuerst May 30, 1933

*TIGHAR Artifact 2-8-S-27 is a broken green bottle that matches U.S Design Patent 90023.*

❖ Three fragments of a broken clear glass hexagonal bottle were found some distance from the other bottles. We haven't tackled this one yet.

These are but a few of the many artifacts being analyzed and researched. The jigsaw puzzle pieces are starting to form a picture of what happened at the Seven Site but, for the moment, we'll resist the temptation to speculate about what that picture shows.

## TIME AND TIDE

The tidal information we collected during the expedition and the detailed survey we made of the reef surface in the area where it appears the Electra was landed have allowed our tides and radio propagation expert LCDR Bob Brandenburg, USN (Ret.) (TIGHAR 2286) to reconstruct the conditions on July 2, 1937 and subsequent days with greater accuracy. This, in turn, enables us to correlate those data with the post-loss radio signals and the fuel consumption required to recharge the batteries to send them. We can then arrive at a reasonable estimate for the amount of fuel that had to be aboard when the aircraft landed. Because we already have a good handle on when the aircraft should have run out of fuel had Earhart stayed aloft, knowing how much fuel remained when she landed will tell us when she landed. Knowing when she had to have landed and knowing what the conditions on the reef were like at that time will tell us how well our hypothesis holds up.

Of course, it's silly to think that we can be down-to-the minute precise in our calculations and proving that something could have happened does not prove that it did happen. On the other hand, if something couldn't have happened, we can be pretty sure that it didn't happen.

What we're trying to do is refine our hypothesis about Earhart's disappearance to fit the growing fund of available data.

The more data we can assemble, the tighter and more credible the hypothesis will be.

The better the hypothesis, the better our chances that, in testing it, we'll find the proverbial smoking gun. ❖

*TIGHAR Artifact 2-6-S-21b and 2-8-S-41a&b are pieces of a hexagonal clear glass bottle.*



*Ric and Josh Gillespie use the Sokkia SRX Robotic Total Station to survey the reef during Niku V. TIGHAR photo by Robin Acker.*

