

PREPARATIONS FOR NIKU III



EXPEDITION MOVED TO MARCH

Ship availability, or rather the lack thereof, has meant rescheduling TIGHAR's third expedition to Nikumaroro from September of 1993 to March of 1994. We had planned to use a vessel provided by a company which holds tourism development rights for the Phoenix Group of islands (of which Nikumaroro is a part). Had that worked out it would have saved many thousands of dollars in positioning costs, but alas, their deal on the ship they planned to buy fell through and so, of course, did our charter. That puts us back to square one on our ship search.

Frustrating as the postponement is, it's not an altogether unwelcome delay. We're still getting new information from the continuing analysis of artifacts recovered on the first two trips and what we're learning will affect the way we structure and equip the next expedition. More time for further research and preparation should result in a more productive expedition.

LOOKING IN THE RIGHT PLACE

The big question is where to focus the search for the rest of the airplane? Several pieces of aircraft wreckage recovered from Nikumaroro are strongly suspected of being from the Earhart aircraft but three are of particular interest. These appear to have escaped discovery by the island's later inhabitants and were only found by TIGHAR after a severe storm had stripped a significant amount of accumulated sand and vegetation from the island's western beachfront. A section of aluminum skin (Artifact 2-2-V-1) with a length of antenna fairlead wire (Artifact 2-2-V-1/1) loosely tangled on one corner, lay in the highwater wash-up line of beachfront vegetation uprooted by the storm. The skin's once-jagged edges are polished smooth and its relatively uncorroded condition, as well as its tenuous association with the wire, suggests that it had lain buried in the sand for many years, high on the beach not far from where it was discovered in 1991. A broken piece of a bakelite radio component (Artifact 2-2-V-2) was also found, still buried, about 25m away. Although representing a variety of materials and structures, the three artifacts all appear to be associated with the area of the Electra's cabin just aft of the wing. It therefore appears warranted to consider these pieces to be part of an original debris field, an analysis of which may provide some clue to the location of the rest of the airplane.

The section of skin is clearly the product of a very localized, inside-to-outside explosive impact of a fluid, either air or water. The other artifacts show damage consistent with such an event. At present we're considering two competing hypotheses.

THE OFFSHORE HYPOTHESIS

Sometime after landing, Earhart taxied the airplane up under the trees to get it out of the sun while she sent radio distress calls. (Why not leave it out on the beach where it could be easily seen from the air? Because an aerial search was the last thing she expected.) When the Navy floatplanes from the U.S.S. *Colorado* flew over on the morning of the seventh day, the Electra was hidden in the shadows. Sometime later (days, weeks, months?) waves from a storm battered the airplane to pieces on the beach. In the process, water crashing into the fuselage through the cabin door blew out a section of the belly. We've found some of the debris from that event, but the bulk of the wreckage was swept out and over the edge of the reef and that's where we'll have to search for it. To do that we'll need sophisticated sonar and ROV technology which will enable us to look closely at relatively small objects in deep water.

THE ONSHORE HYPOTHESIS

The damage seen in the artifacts was caused by an explosion that occurred when a spark from the radio transmitter touched off fumes from the fuselage fuel tanks. The resulting fire reduced the airplane to a burned-out smudge on the beach with only the outer wing panels and pieces of the tail surviving. These were interpreted as "signs of recent habitation" and "markers" by the Navy pilots who, searching from an altitude of about 1,200 feet, also described a 60 foot tall forest as "short bushy trees." In a matter of months the beach cleaned itself, the heavier surviving components (engines, main spar, etc.) settling into the sand where they now remain deeply buried, and the lighter pieces of debris being scattered, buried or washed out to sea.

If the first hypothesis is correct we need to return to the island ready to do a very detailed (read very expensive) underwater search. If the second scenario is closer to what really happened we need to go with technology that can look deep into the beach. That, too, will be expensive. To mount an expedition capable of conclusively searching both environments would be prohibitively expensive, so the more we can do now to figure out where we need to look, the better our chances of finding what we're looking for when we get there.

