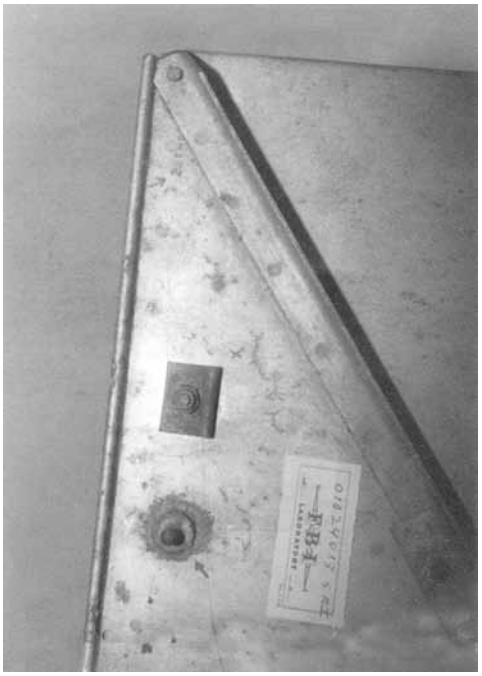
SOLVING THE CASE



TIGHAR photo by P. Thrasher

"Our job is to place the accused at the scene of the crime with hard physical evidence." *Special Agent James E. Corby, FBI Laboratories*

The Materials Analysis Unit of the FBI Laboratories in Washington, DC, has completed its examination of TIGHAR's Earhart Project Artifact 2-1. Special Agent James E. Corby, Unit Chief of what is recognized to be one of the world's finest forensic laboratories, reports "[N]othing was found which would disqualify this artifact as having come from the Earhart aircraft." In addition, several substances have been identified on the artifact which actively support the hypothesis that it is, indeed, a component of NR16020. While we hasten to make it clear that the FBI's findings do not prove that we have a piece of the long-lost Electra, we also note that, for the first time in 54 years, a complex piece of physical evidence has passed the most stringent of expert examinations.

Although quite innocuous in appearance, the bookcase turns out to have an extremely complicated array of substances detectable on its surface. To make matters worse, there identification was greatly hampered by the severity of an environment which had removed all but faint traces of what had once been there. The FBI Labs, however, by the use of spectrographic analysis, X-ray defraction, SEM (Scanning Electron Microscopy), as well as other state-of-the-art techniques, was ultimately able to sort it all out and the results tell us a great deal about what things were done to this particular navigator's bookcase, when they were done, and, to a certain extent, by whom. Here's a summary of what we now know:

- Artifact 2-1 is the top, sides and back of a Bookcase, Navigator's, Consolidated Aircraft Corp. Part No. 28F 4023 manufactured at San Diego, California, between 1936 and 1939.
- Although designed specifically for the Consolidated Model 28 flying boat, known to the U.S. Navy as the PBY Catalina, Artifact 2-1 left the manufacturer before screw-holes for installation in a PBY were drilled (and before any coating was applied).
- The bookcase then received non-standard holes and a special bracket for installation in some aircraft.
- The orientation of the restraining strap was reversed.
- A civilian, rather than military, zinc chromate primer was applied. The U.S. military, from 1930 onward, specified a zinc chromate primer with an alkyd resin binder modified with phenolic resin. While it is the FBI's conclusion that artifact 2-1 received at least some zinc chromate primer, and while "trace amounts of chemicals that are found in alkyd-type resins" [underlined in the original] were present, no trace of phenolic resin could be found.
- A top coat of paint was applied to the entire surface of the case. Remnants of this coating contain titanium dioxide (a common white pigment), and lead chromate (a yellow pigment with corrosion inhibiting properties). Although green to yellowish-green now, the original color of the paint cannot be determined with certainty because extreme environmental factors may have completely removed other pigments.
- A black stripe of residue running diagonally across the back of the case has proven to be the remains of an adhesive substance indicating that a piece of tape or other material was once glued there. The type of adhesive used was a glue based on animal products (horses to the glue factory, etc.) common in the 1930s and earlier.

So we have a civilian airplane part on an island whose well-documented history cannot account for any airplane part unless it is from the only aircraft known to have disappeared in that very area. That's very good news.