

TIGHAR TRACKS

October 2016

HOW CLOSE ARE WE?

In TIGHAR's twenty-eight years of investigating the Earhart/Noonan disappearance we have uncovered an abundance of clues to their fate from a wide variety of sources. We think we know what happened, but how close are we to conclusively solving the mystery?

It's a trick question. The great paradox of historical investigation is that there is no such thing as "conclusive" in the sense of absolute certainty. The past is gone. We cannot go there. The best we can do is gather and assess clues from which we make informed guesses. When we talk about "proof" or "smoking guns" we're really talking about clues or groups of mutually-supportive clues so convincing that we accept them as certainty.

Clues reach that level when there appears to be no rational alternative explanation for the observed phenomenon. For example, if (and when) we find the wreckage of Earhart's Electra on the reef slope at Nikumaroro it will likely be considered "smoking gun proof" that the Earhart mystery has been "conclusively" solved because there is no rational alternative explanation for how it could have gotten there.

Of course, a devotee of the Crashed and Sank theory might suggest that the aircraft just happened to sink there having floated from somewhere near Howland Island or a fan of the Japanese Capture theory might suggest that the Japanese planted it, but there are no data to support those possibilities. If the plane is there, the Nikumaroro theory will be considered "proven." We'll settle for that, but first we have to find the wreckage and searching the reef slope is expensive.

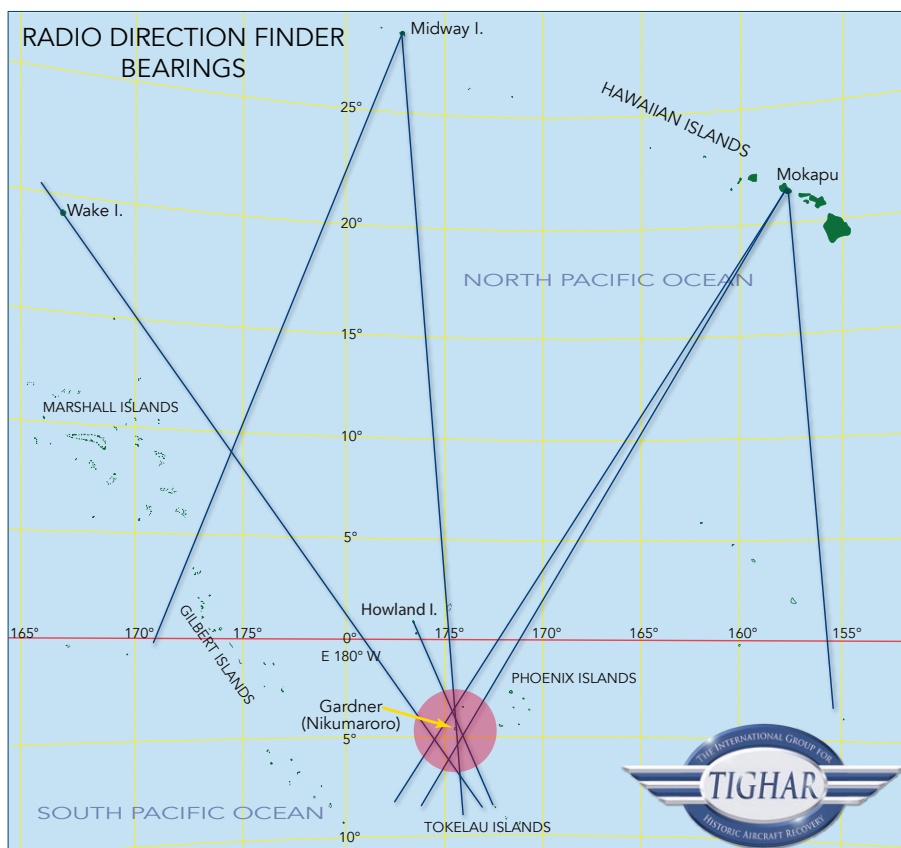
A fairer question than "How Close Are We?" is "Has TIGHAR found sufficient evidence to justify the search?" How convincing are the clues we already have? We have hundreds of historical documents, photographs, and artifacts

that have been examined and analyzed by the best forensic experts available – so many that, to stand the old saying on its head, it's easy to lose sight of the trees for the forest.

All clues are not equal. Let's review the five best clues we have uncovered.

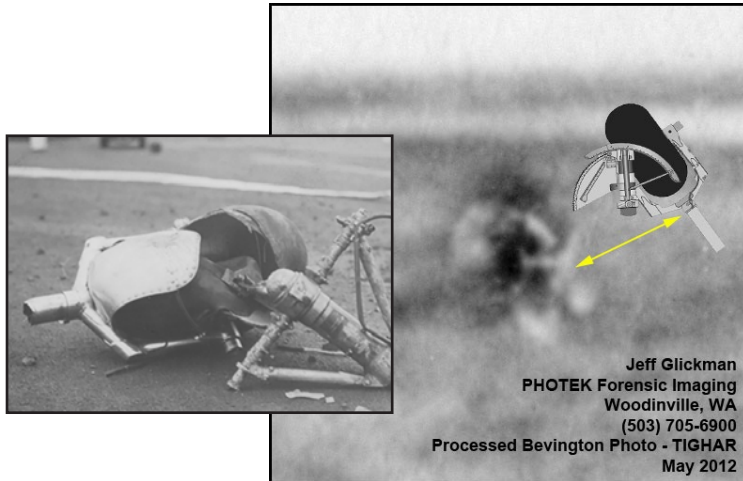
1. The Post-Loss Radio Signals

Rather than a single compelling clue, the post-loss radio signals are a body of fifty-seven independent mutually-supportive clues. They are electromagnetic phenomena, in most cases documented in contemporary written records, for which there is no rational explanation unless they were sent from the Earhart aircraft. If only one of them was a genuine transmission from NR16020, the aircraft did not crash at sea. If the directional bearings taken on the signals by Pan American Airways and the Coast Guard were accurate, the signals came from Gardner Island.



2. The Bevington Object

Forensic imaging experts, including U.S. Government photo analysts, agree that the object sticking up out of the water in an October 1937 photograph of the western reef at Gardner Island appears to be the wreckage of a Lockheed Electra landing gear. The tire, strut, and retraction mechanism failed in the same way the starboard main gear of Earhart's Electra came apart and separated from the aircraft during the accident in Hawai'i that ended her first world flight attempt.



3. The Correlation of Credible Post-Loss Signals with Water Levels on the Reef

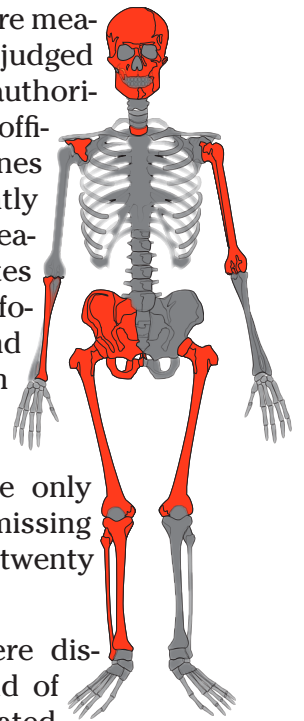
The post-loss radio signals tell us that the plane landed at Gardner Island. The Bevington Object tells us where it landed and was subsequently washed into the sea. By hindcasting the tides and surveying the reef where the plane was landed, we find that the fifty-seven credible post-loss transmissions correlate perfectly, night after night after night, with times when the water level on the reef was low enough to permit the operation of the generator-equipped engine to charge the battery upon which the transmitter relied for power.



4. The Castaway

Official British records document that the partial skeleton of a castaway and several artifacts, including part of a man's shoe, part of a woman's shoe, and a box that had once contained a sextant, were found at a campsite on the island in 1940 three years after the disappearance. Castaways are extremely rare on Pacific atolls. Initially suspected of

being Earhart's, the bones were measured by a British doctor and judged to be those of a man. British authorities did not inform American officials of the discovery. The bones and artifacts were subsequently lost, however, the bone measurements in the doctor's notes were evaluated by modern forensic anthropologists and found to be consistent with an ethnically northern European female of Earhart's height. Earhart and Noonan are the only people known to have gone missing in the Central Pacific in the twenty years prior to 1940.



The bones and artifacts were discovered at the southeast end of the atoll at a time that predated known human activity at that end of the island. Eleven men were lost in the grounding of the British freighter *SS Norwich City* at the northwestern end of the island in 1929. Four bodies washed ashore and were buried by the survivors, but seven were never accounted for and were presumed drowned or taken by sharks. One or more of the missing men could have made it to shore but were somehow unable to join the survivors before they were rescued several days later. However, the presence of a woman's shoe would seem to discount that possibility. There were no women aboard *Norwich City*.

5. The Numbers on the Sextant Box

The British discounted the sextant box as being associated with Earhart because it was for a mariner's sextant, not a bubble octant as was used in aerial celestial navigation. The British did not know that Fred Noonan always carried a mariner's sextant as a "preventer" (back-up instrument) in addition to a bubble octant. A photo of Noonan's navigation room in a Pan Am Clipper shows a bubble octant and a box for a Brandis Navy Surveying Sextant. Research into the numbers reported to have been on the sextant box found with the castaway's bones show that the instrument it once contained was a Brandis Navy Surveying Sextant.

It is worth noting that none of these seemingly unassailable clues rely on anyone's recollections or the identification of any artifact TIGHAR has found on the island. Has TIGHAR found sufficient evidence to justify the search? We think so. ♦

Finding Amelia: The True Story of the Earhart Electra

by Ric Gillespie

Chapter Three: “The Realization of a Dream ”

March 1936 — July 1936

[excerpt]

July 21, 1936 – The First Iteration

Amelia introduced her new “Flying Laboratory” to the public on July 21, 1936 at a press event at Union Air Terminal, Burbank, California. The long-range Electra Model 10E Special was supposed to have been delivered on July 1 but problems, most likely with the fuel system, delayed completion until July 19 when Bureau of Air Commerce inspector L.H. Steward approved the aircraft’s registration by Lockheed in the Experimental category as X16020. It is worth noting that July 19 was a Sunday.

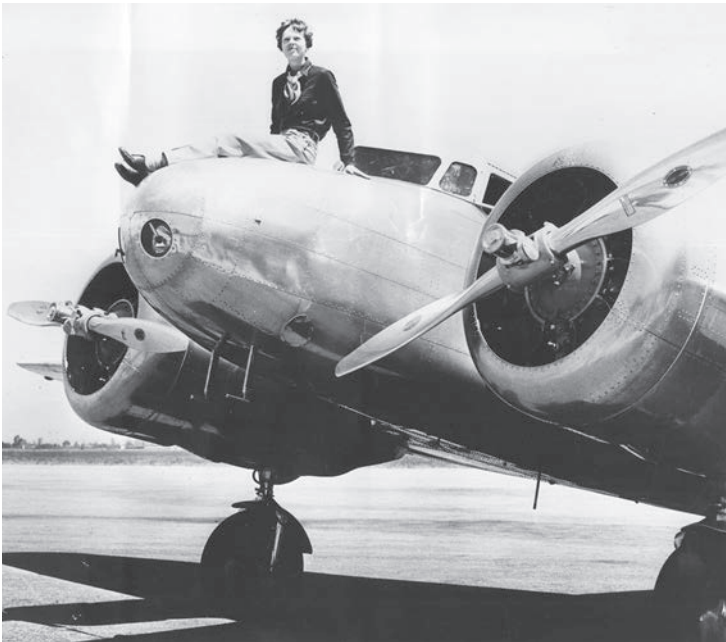
On Monday, Lockheed test pilot Elmer McLeod took the aircraft aloft for a first flight of one hour and fifty minutes making four takeoffs and landings. The next day, McLeod gave Amelia her first ride in the new airplane at the press event and photo op. They were up for two hours and ten minutes and made six takeoffs and landings. The aircraft was limited to a crew of two with no passengers permitted, but newsreel cameras filmed the takeoffs and landings.

Amelia posed for photographs and gave an interview for the newsreel:

“This new Lockheed is the realization of a dream. It comes to me through Purdue University and is a real Flying Laboratory equipped with all the latest instruments. With it, I hope to accomplish something really scientifically worthwhile for aviation. I, myself, am particularly interested in the reaction of the human being toward all aspects of flying. ... I hope the experiments will include altitude flying and also long distance work.”



Although legally registered as X16020, for the photo op the airplane carried the registration marking NR16020. This photo and below, left, courtesy of Remember Amelia, the Larry C. Inman Historical Collection on Amelia Earhart.

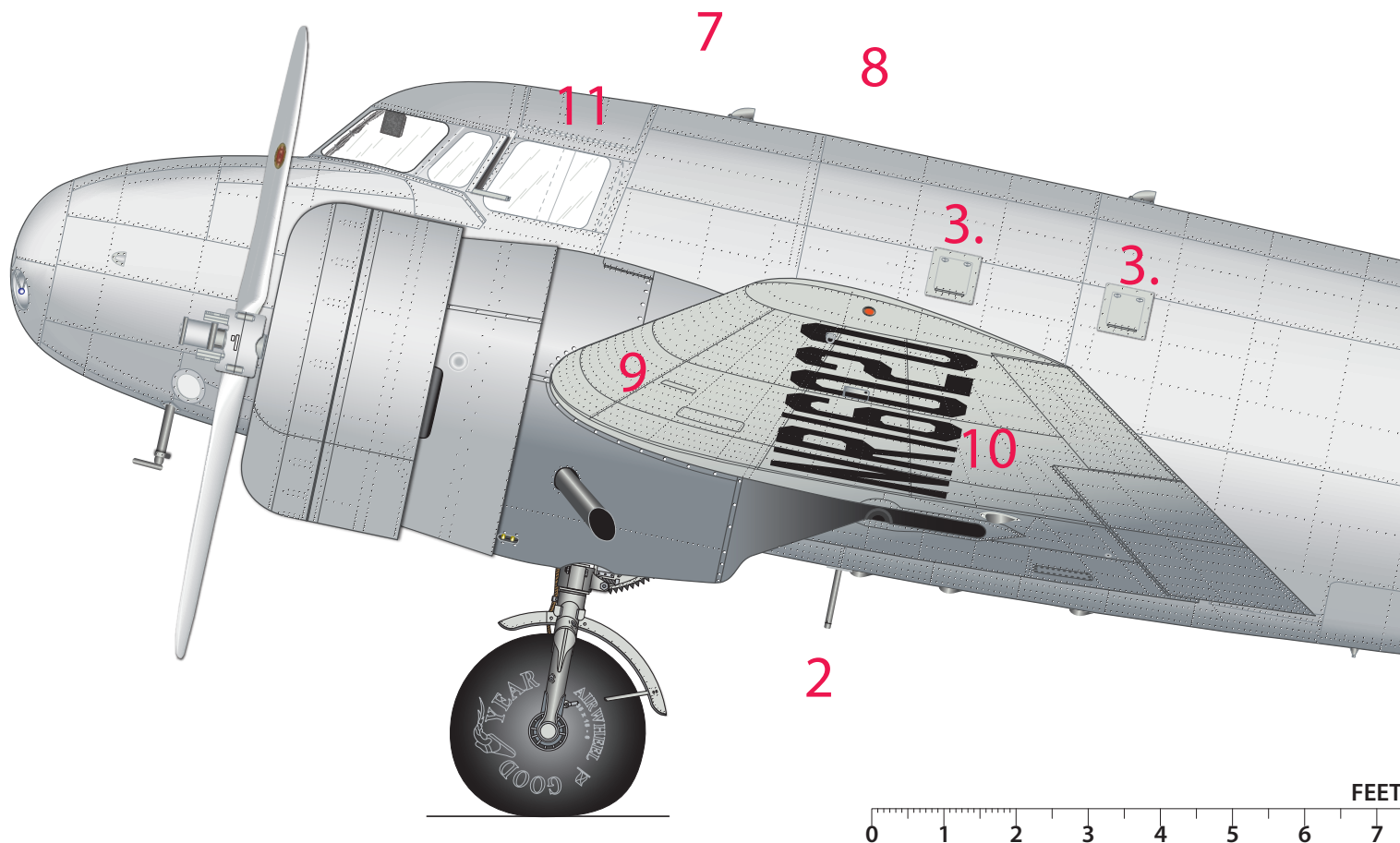
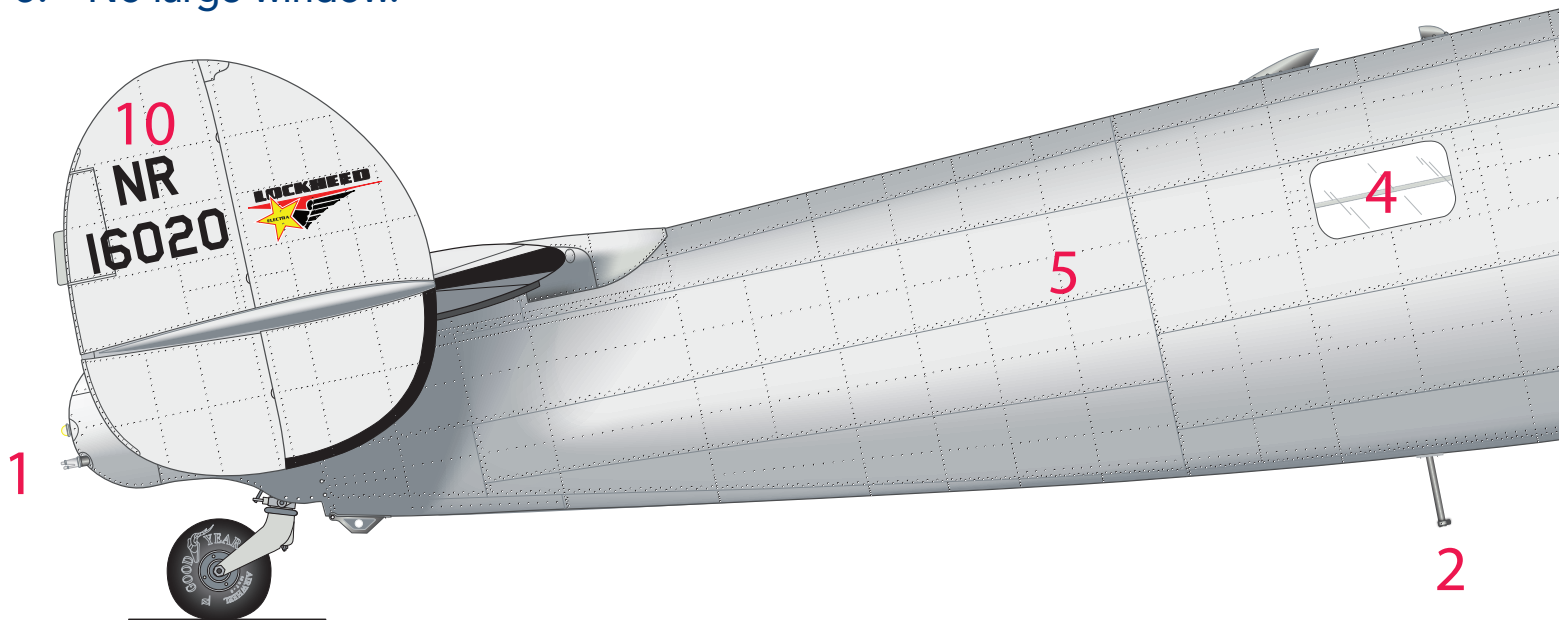


The Electra was not yet hers. Transfer of ownership from Lockheed to Earhart would not happen until Friday, July 24 (coincidentally Amelia’s thirty-ninth birthday), when Elmer McLeod and Earhart’s technical advisor, Paul Mantz, would fly the airplane to Las Vegas. Earhart had authorized Mantz to officially take delivery in her name for the symbolic sum of \$10. Delivery of new aircraft in Las Vegas was standard procedure at Lockheed to avoid California sales tax.

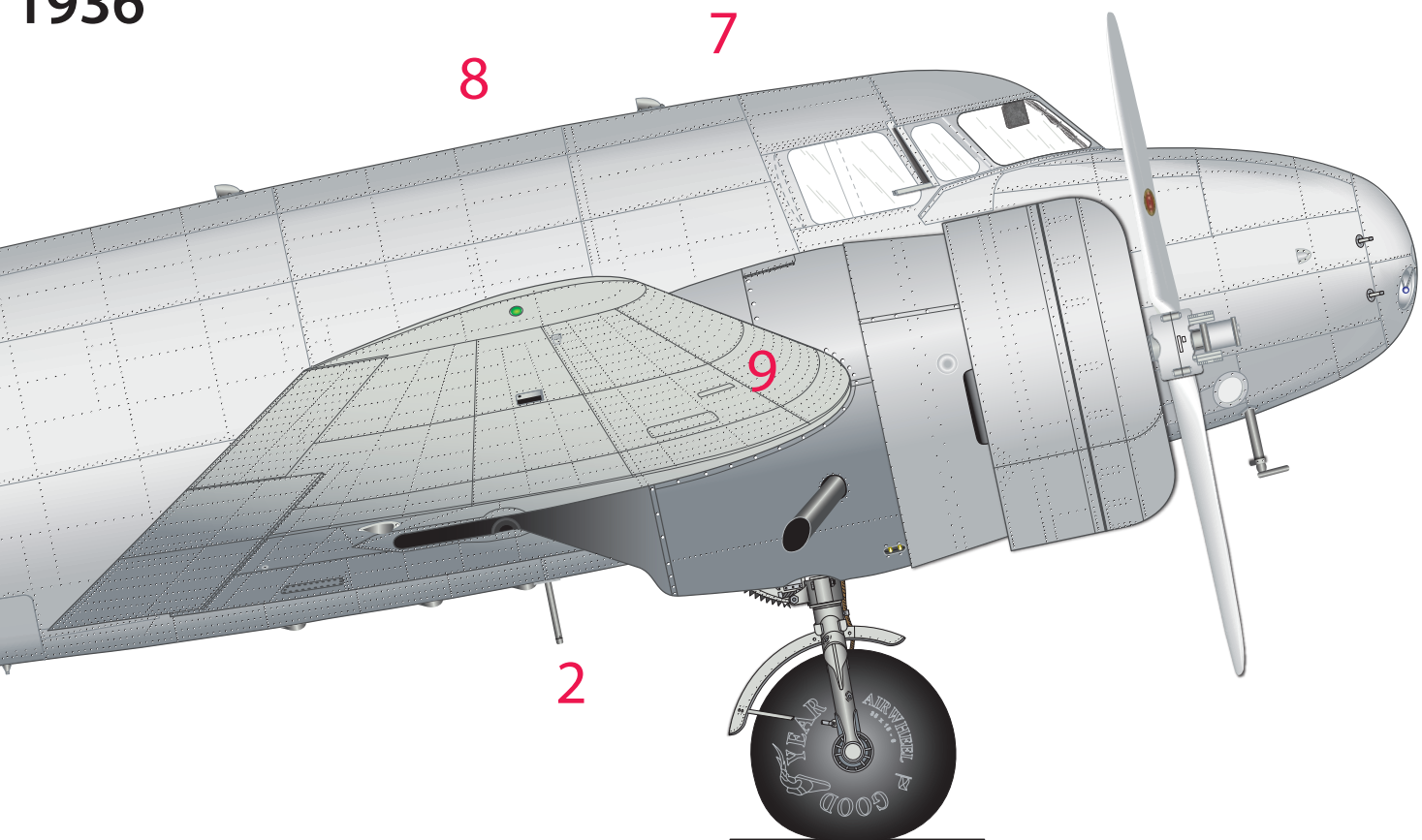
As delivered, the Model 10E Special was equipped with two 550 hp Pratt & Whitney R-1340 S3H-1 “Wasp” engines – serial numbers 6149 and 6150. The special fuel system initially featured thirteen fuel tanks with a total capacity of 1,198 U.S. gallons; oil capacity was 74 gallons. The aircraft’s empty weight was 7,340 pounds.

July 21

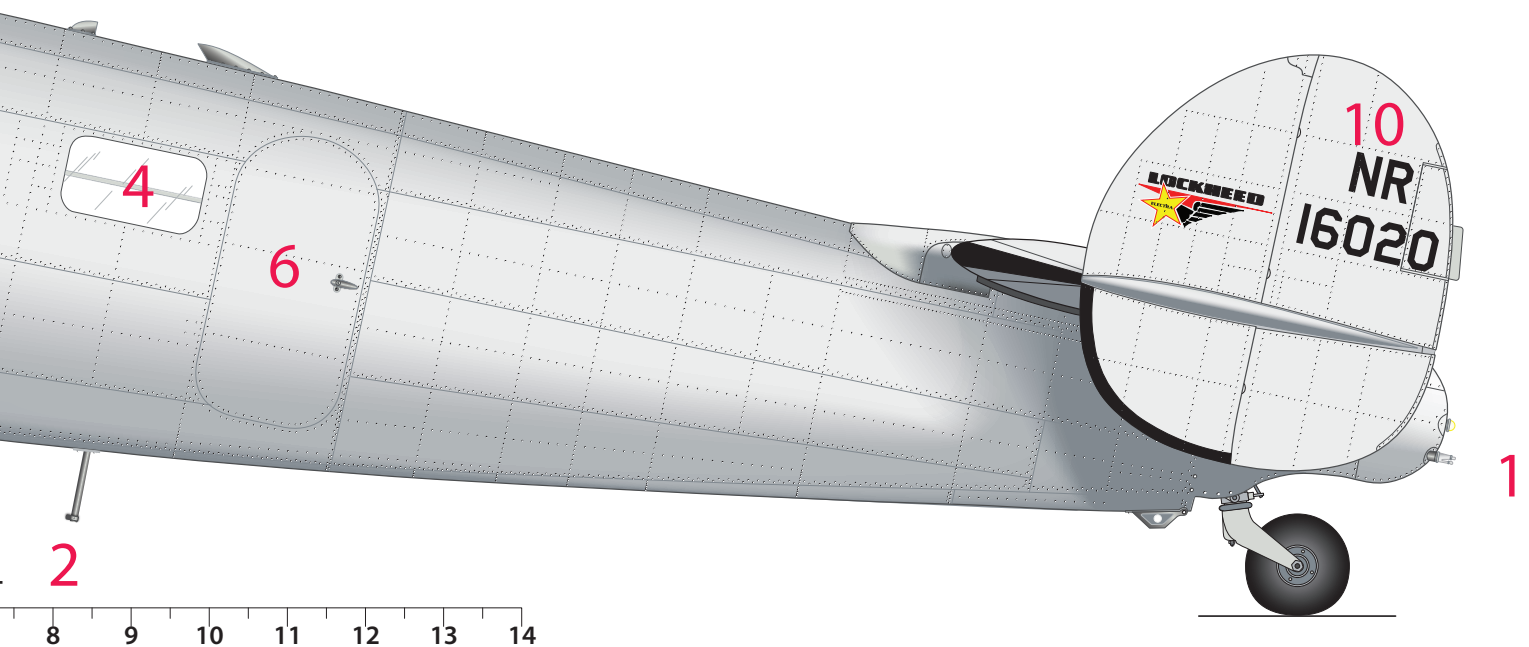
1. Tip of trailing wire antenna.
2. Masts, starboard side of belly, but no antenna wire.
3. Fueling ports.
4. Bar through cabin windows.
5. No large window.



1936



- 6. Standard cabin door, no window.
- 7. No homing device.
- 8. No dorsal antenna.
- 9. No orange paint.
- 10. Incorrect registration. Should be X16020.
- 11. Hatch hinges on outboard side. Opens out over wing.



FIRST PHOTOS



NEW RESEARCH BY TIGHAR MEMBERS on the Amelia Earhart Search Forum has identified some of the very first photos taken of Amelia Earhart and her newly completed Lockheed Electra. To be clear, these are not newly discovered photos. They're among the dozens of well-known pictures of AE posing with her airplane. What is new is an understanding of the context – when and where and under what circumstances the photos were taken. That new information permits an appreciation of what we're seeing in the photographs and explains their special poignancy.

Pinning down the location was a challenge. They show the airplane in its first iteration, as presented at the Union Air Terminal, Burbank press event on September 21, 1936, but the location is clearly not Burbank. We know that the erroneous NR16020 registration numbers were changed to X16020 before Earhart and Lockheed test pilot Elmer McLeod took the airplane to San Francisco on August 2, 1936, but McLeod's logbook implies that the only place the airplane visited in the interim was Las Vegas when it was officially delivered to Earhart on July 24. Were the photos taken at Las Vegas?

Did Earhart ride along despite her plan to let Mantz handle the delivery?

Research by Forum members established that the terrain and buildings in the background were definitely not Las Vegas in 1936 – so what was going on? How could the airplane have been somewhere it couldn't be? The answer came with the realization that the Lockheed Aircraft factory was not located at the Burbank airport until 1940. Prior to that, the Lockheed plant was half a mile down the road at Turkey Crossing (you can't make this stuff up) and had its own airstrip. An aerial photo from 1930 confirms that the hangar in the background of the photo with Amelia striding in front of the ship was at Turkey Crossing.

In the photos taken at the July 21st press event, Amelia is posed stiffly in front of and, rather ridiculously, perched on the nose of the Electra. In the Turkey Crossing photos she exhibits a relaxed exuberance and delight in her new airplane.

TIGHAR's Amelia Earhart Search Forum is a true powerhouse of research capability. Any TIGHAR member can sign up and participate. The TIGHAR membership has always been the key to our success.



FLYING OFF THE MAP

- Howland
- Baker



NEW RESEARCH MAY EXPLAIN WHY EARHART DID NOT KNOW SHE WAS ON GARDNER ISLAND.



If you're stuck on an island and you're calling for rescue, you tell everyone what island you're on – right? TIGHAR has shown that the radio distress calls heard in the days and nights following the disappearance leave no doubt that the plane had landed at some island, and yet in none of the messages did Earhart name the island, so it is equally apparent that she didn't know its name.

If you don't know the name of the island, you give the best description you can. In at least four cases, Earhart reportedly gave the latitude/longitude coordinates of her location but, unfortunately, we don't know the numbers.

- ◆ On the night of July 2, short-wave listener Mabel Larremore heard Amelia say, "the plane was down on an uncharted island. Small, uninhabited. The plane was partially on land, part in water." Amelia gave her latitude and longitude but Mabel didn't write them down.
- ◆ On July 3rd, Nina Paxton in Ashland, Kentucky, heard Earhart say she was down on or near a little island.
- ◆ On July 4, short-wave listener Dana Randolph in Rock Springs, Wyoming, heard Earhart say her "ship is on a reef southeast of Howland." She began to give her location but the signal faded away.
- ◆ On July 5, three professional operators at U.S. Navy Radio Wailupe near Honolulu copied a crudely sent, fragmented, code transmission on Earhart's frequency that included her call sign KHAQQ and gave her position as "...281 north..." The equator is 281 nautical miles north of Gardner Island.
- ◆ Also on July 5, fifteen year-old short-wave listener Betty Klenck in St. Petersburg, Florida heard Amelia give her lat/long coordinates, but the numbers she transcribed in her notebook are hopelessly garbled. Betty repeatedly heard

Earhart say something that sounded like New York City. The ship aground on the reef at Gardner Island was SS *Norwich City*.

- ◆ On July 7, Thelma Lovelace in St. John, New Brunswick, heard Earhart give her latitude and longitude. Thelma wrote them down on the inside cover of a book, but later lost the book.

How is it possible for Earhart to know the latitude and longitude of the island but not its name? It seems apparent that she did not have a chart upon which she could plot the coordinates. We don't know, and we'll never know, what charts Noonan used to plot the flight's course and progress from Lae, New Guinea to Howland Island, but TIGHAR researchers have confirmed that there were Hydrographic Office charts of the southwest Pacific that covered the route and included the islands of the Phoenix Group. It may be that Noonan had cut a strip-chart from a larger map (a common Pan American practice) and had not included the Phoenix Group.

The other possibility is that he used a published chart that covered the route to Howland but did not extend far enough to the south to include the Phoenix Group. Was there such a chart?

Yes. The chart chosen by the 14th Naval District at Pearl Harbor to manage the Earhart search ends at 2°30' South of the Equator. Gardner is at 4°40' South. When the officers managing the search realized that radio bearings taken by Pan American and the Coast Guard appeared to cross below the bottom of the map, they hand-drew additional latitude and longitude lines and, referencing other sources, hand-plotted the position of McKean and Gardner Islands.

The original chart, reproduced below, is in the National Archives, San Bruno, CA collection. It is rich with notations that



Over the Top



In early September, TIGHAR's coffers were critically low. To keep the organization going and continue the search for major sponsorship of next summer's Niku IX expedition, we set a goal to raise \$20,000 by October 15th. As we always do, we turned to you, the members of TIGHAR for help and, as always, you came through.

As of October 15 the campaign had raised \$25,833, 29% over the goal.

Is this a great organization or what? With the money you donated we've been able to:

- Build a lively TIGHAR Facebook presence reaching tens of thousands and implement a fundraiser there that has contributed \$1,620 and recruited many new TIGHAR members.
- Launch a direct-mail membership solicitation to 6,000 individuals who fit the demographic profile of TIGHAR's current members: bright, well-educated, successful people who are interested in history and aviation.
- With the invaluable help of TIGHAR's on-line Amelia Earhart Search Forum, continue research and writing toward the publication of *Finding Amelia - The True Story of the Earhart Electra*.
- Maintain a vigorous search for Niku IX sponsorship. In early November, Ric Gillespie and Niku IX Sponsor Team Member L. DeWayne Cecil, Ph.D., will make presentations to prospective sponsors in the San Francisco Bay area.

Your generosity and dedication make it possible for us to keep TIGHAR flying at full power. Please keep the support coming.

Click **HERE** to donate to Niku IX on the TIGHAR website. Or you can print this flyer, fill it out, and send it to us.



My Donation To Niku IX:

Name on Card

Billing Address

City State Zip Country

Card # Expiration Date CVC

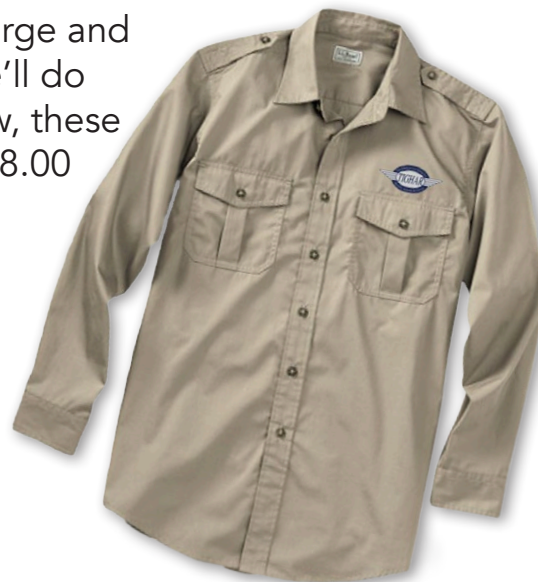
Amount Charged: US\$

Signature

Or send a check to TIGHAR · 2366 Hickory Hill Rd · Oxford, PA · 19363 · USA

JUST A FEW LEFT

We have five TIGHAR Field Shirts in stock: one man's X-Large and four men's Large – all long sleeve, all regular (not Tall). We'll do another order in the near future but if you want a shirt now, these are available. Just let us know. The price is \$110.00 plus \$8.00 shipping.



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INVENTORY OVERHAUL

Check the on-line TIGHAR Store. We're refreshing the inventory of TIGHAR swag. Historically popular items will remain but many dated items will go on sale at ridiculous discounts. **TIGHAR Store.**

WHAT CAN WE DO FOR YOU?

Is there a wearable or other item you'd like to see in the TIGHAR Store? We're looking for ideas for new items. If you have a suggestion please let us know. **Email us!**

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