

*At the time of her world flight in 1937, Amelia Earhart was one of the best-known women in America. She is still considered by many to be the most famous woman pilot of all time.*



# THE ENDURING AMELIA EARHART MYSTERY: Could Unidentified Radio Signals Provide New Clues?

By Eric Beheim

**O**n the morning of July 2, 1937 the U.S. Coast Guard cutter *Itasca* was stationed off Howland Island, a tiny speck in the Pacific, midway between Lae, New Guinea and Hawaii. Beginning at about 2:45 a.m. that day, the *Itasca's* radio room had been receiving messages from an inbound airplane that had taken off from Lae the previous morning. On board were Amelia Earhart Putnam and her navigator Fred Noonan, engaged in an around-the-world flight that had begun in Oakland, California on May 20<sup>th</sup>.

## Last Confirmed Transmission

In order to accommodate the cruising range of her plane, a Lockheed twin-engine Electra that had been specially modified for long distance flying, Earhart had planned her World Flight as a series of "legs," each requiring 20 hours or less of flying time. When flown at its most economical cruising speed of 150 mph, the *Electra* could stay aloft for more than twenty-four hours. By limiting each flight to no more than 20 hours, Earhart would always maintain an emergency fuel reserve of at least four hours.

Flying the distance between New Guinea and Hawaii was clearly beyond the *Electra's* fuel capacity, but by good fortune, the United

States had recently colonized three small, desolate islands near the equator that were ideally located for use as a mid-point refueling stop. Largely to accommodate Earhart, several of her highly-placed friends in the United States government

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had arranged for a small airfield to be hastily built on Howland, one of the three islands. There, she would be able to land, refuel, and rest before continuing on to Hawaii. Earhart's Washington friends had also arranged for the Coast Guard to order the *Itasca* to proceed from the West Coast of the United States to Howland to provide radio support and act as "plane guard" when she arrived.

The 2,500-mile flight from Lae to Howland was the longest and most difficult leg of the entire journey and would require Fred Noonan to navigate over open water to an island that was only 1.5 by 0.7 miles across and with no prominent landmarks. However, while serving as lead navigator for Pan American Airways in 1935-36, he had helped to develop procedures for navigating the famous Pan Am "Clippers" vast distances to small Pacific island destinations.

For the Howland flight, his plan was to use celestial navigation to keep the flight on course until it was within range of the *Itasca*. Then, the plane and the ship would use their radio direction finding equipment to locate one another and determine the specific course needed to reach Howland safely.

As the Earhart flight arrived in the vicinity of Howland Island, serious problems began to arise. *Itasca's* attempts to call Earhart and establish two-way voice communications were not successful and, since neither Earhart nor Noonan were proficient in Morse code, they were not able to understand the messages that *Itasca* was sending to them in code. Even more serious, the *Itasca* was unable to obtain bearings from Earhart's radio transmissions.

At 7:42 a.m. local time Earhart radioed: "KHAQQ [her plane's call letters] calling *Itasca* we must be on you but cannot see you, but gas is running low, been unable to reach you by radio, we are flying at 1000 feet."

Then at 8:00 a.m.: "KHAQQ calling *Itasca* we received your signals [a series of A's sent in code] but unable to get a minimum. Please take bearing on us and answer 3105 [Earhart's night time frequency] with voice."

Again *Itasca* tried to take a bearing on Earhart's transmission and failed. And then at 8:43 a.m.: "KHAQQ to *Itasca* we are on the line 157 337 will repeat message, we will repeat this

on [her daylight frequency] 6210 KCs wait." A minute or so later she added, "We are running on line north and south."

This message, received some twenty hours and thirteen minutes after Earhart had taken off from Lae, is the last one that can be confirmed as having come from the World Flight.

After repeated and unsuccessful attempts to establish contact with Earhart, the *Itasca* got underway at 10:40 a.m. local time to begin search and rescue operations. Although no one knew for certain where Earhart's plane was, the *Itasca's* captain, Commander Warner K. Thompson, believed that she had passed to the north and west of Howland and had missed the island in the glare of the rising sun. It was also believed that, if the plane was down at sea, its large and now empty tanks would allow it to float almost indefinitely. The *Itasca* set a course for the northwest and proceeded at top speed.

In her last transmission, the only indication that Earhart had given as to her intentions was that she on a line 157 337. This meant that she was either flying on a heading of 157 degrees or its reciprocal 337 degrees. If Earhart had been north of Howland Island and was steering a course of 337, there was nothing ahead of her but open ocean for thousands of miles. However, if she had been south of Howland and was steering a course of 157, she was within a few hours flying time of the Phoenix Islands, a cluster of small, mostly uninhabited islands under British authority.

The two islands closest to this 157 course were McKean and Gardner. Both were uninhabited and neither had a landing field. Gardner Island, however, was surrounded by a smooth, flat coral reef that, in an emergency, could be used to make a forced landing.

## The Navy Becomes Involved

When news was received in San Francisco that Earhart had not reached Howland and might be down at sea, the Navy's Hydrographic Office there broadcast an "all ships" alert, requesting that any ship in the vicinity of Howland listen for voice transmissions on either 3105, 6210 or 500 kc.