

DECLASSIFIED  
 800040008  
 NARS, Date 12/19/93  
 By [signature]

66

WAR DEPARTMENT  
 OFFICE OF THE CHIEF OF STAFF  
 WASHINGTON, D. C.

*CofS*

*This report is interesting.  
 The Ady Gen should show  
 us to the Cf of Air Corps<sup>9th</sup>  
 later to the Bureau of  
 Air Commerce.*

*RHE 8/20/37*

*[Handwritten signature]*

WAR DEPARTMENT  
 OFFICE OF THE CHIEF OF STAFF  
 WASHINGTON, D. C.

*8/20/37*

*TAG*

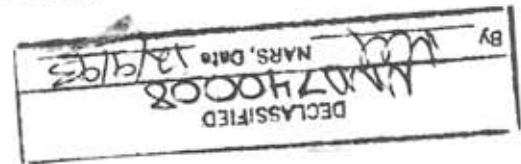
*Please see the attached  
 slip which has been noted  
 by the CofS which suggests  
 spec. action re this  
 report.*

*RHE  
 Rec p*

10 Received A. G. C. AUG 28 1937

*100-200-101 (10-20-37)*

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E.O. 11652, SEC. 5(a) and 5(D) or (E)  
NND 74008  
By [signature] NARS, Date 3/1/77

AG 370.22/2

1st Ind.

HEADQUARTERS HAWAIIAN DEPARTMENT, Fort Shafter, T. H. August 6, 1937.  
To The Adjutant General, Washington, D. C.

This is an excellent and comprehensive report and it is forwarded to the War Department as it contains much useful information.

For the Commanding General:

16 Received A. G. O. AUG 16 1937

1 Incl.

(Chart of ITASCA search for Earhart Plane 6-18 July 1937).

*Earhart*

Subject: Expedition to the American Equatorial Island in connection with the Amelia Earhart flight.

AG 580.81 (7-27-37)\*  
(Misc.) F

2nd Ind.

mh

War Department, A.G.O., August 30, 1937 - To the Chief of the Air Corps.

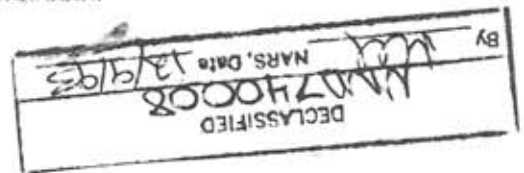
For notation and return to this office.

By order of the Secretary of War:

*[Signature]*  
Adjutant General.

1 Incl.,  
no change.

AIR CORPS AUG 31 1937



LUKE FIELD, T.H.  
July 27, 1937

EX-11650, Ser. 357 and 358 of (4)  
NND 740008  
By [signature] NARS, Date 3/1/27

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Subject: Expedition to the American Equatorial Island in connection with the Amelia Earhart flight.

To: The Commanding General, Hawaiian Department, Fort Shafter, T. H.

The following is an account of a visit to the American Equatorial and Gilbert Islands and resulting search for the Amelia Earhart airplane.

Islands visited:

Howland (United States)	Lat. 0 49'N; Long. 176 43'W.
Baker ( " " )	Lat. 0 13'N; Long. 176 33'W.
Arorai ( England )	Lat. 2 41'S; Long. 176 54'E.
Tanana ( " )	Lat. 2 30'S; Long. 175 58'E.
Tarawa ( " )	Lat. 1 20'N; Long. 173 03'E.

Other Islands in the Gilbert group where natives were questioned:

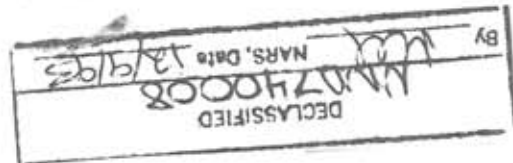
Kuria (England)
Aranuka ( " )
Apamama ( " )

The purpose of the expedition was to replace food supplies and colonists on Howland, Baker and Jarvis Islands. In addition the U. S. Coast Guard Cutter ITASCA was to be the base ship for Amelia Earhart's flight to Howland Island. Specifically, the ITASCA was to act as radio station furnishing weather data, radio communications and radio beacon for the airplane to "home on". A smoke screen was to be laid as an additional aid in sighting the Island. At night searchlights were to replace the smoke screen. A direction finding loop as standard equipment on the ship could be used to obtain radio bearings on the airplane. The ONTARIO and SWAN were to act as plane guards midway between Lae and Honolulu respectively.

On June 15, 1937 I received orders from Headquarters, Hawaiian Department detailing myself and three enlisted men (Air Corps) to accompany the ITASCA. I was to act as Military Observer and in particular to take charge of handling the Amelia Earhart Airplane at Howland Island. This included servicing, mechanical repairs, technical details, organization of the land crash crew and supervision of the landing field in regard to marking unsafe areas and erection of wind socks.

Personnel was furnished by the Army, Navy and Coast Guard and consisted as follows:

*[Handwritten signature and scribbles]*



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LUKE FIELD, T.H. Expedition to the American Equator. 1 Islands in connection with the Amelia Earhart flight.

Mr. Richard B. Black, Department of Interior--Leader  
 Capt. Alexander M Neilson, Army (Engineers)--Observer  
 1st. Lieut. Daniel A. Cooper, Army (Air Corps)--Observer  
 Air Corps representative  
 Staff Sgt. Floyd W. Thacker, Army (Air Corps)--Airplane  
 mechanic  
 Staff Sgt. Anton Hanson, Army (Air Corps)--Photographer  
 Sgt. James L. Story, Army (Air Corps)--Armanent  
 1st. Sgt. Joseph J. Knopping, Army (Engineers)--Guest  
 (AMM1c) C. G. Taylor, Navy--Airplane mechanic  
 (AMM2c) K. A. Perry, Navy--Airplane mechanic (helper)  
 First class R. D. Woodall, Navy--Photographer  
 Hawaiian Colonist replacements  
 Associated Press representative  
 United Press representative  
 U. S. Coast Guard crew of ITASCA

The proposed route was Howland, Baker, Jarvis and Fanning.  
 Due to the failure of the Earhart flight and resulting search the route was Howland, Baker, Howland, Arorai, Tanana, Tarawa and other Islands of the Gilbert group, Howland Island and return to Honolulu.

The ITASCA sailed at 4:00 p.m. June 18, 1937 and after an uneventful trip we sighted Howland at 9:00 p.m., June 23. Howland is a kidney shaped barred desert island about twenty feet high, two miles long (N & S) and half mile wide (E & W). There is no anchorage or fresh water and the island is infested with numerous large birds, rats and hermit crabs. The birds number approximately 10,000 Frigates, 8,000 Booby and 14,000 Terns. The Frigates and Boobies are the size of large buzzards while the Terns are the size of young pigeons.

The following day supplies were landed while I inspected the airport, erected the wind socks and marked off the runways with red cloth. Numerous birds were forcibly removed from the runways so that an airplane could make a reasonably safe landing.

The next day we went to Baker Island, 30 miles Southeast of Howland and unloaded supplies. The bird, rat and crab situation here was quite similar to that at Howland. While Baker Island is better situated as to runway length,--one and a half miles in any direction--the island being almost solid coral would necessitate endless blasting and coupled with the lack of fresh water, no anchorage and difficulty in landing supplies through high surf, it should be discarded as an airport site unless a very large sum was available for construction purposes.

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 E.O. 11652, Sec. 3(a) and 5(D) or (E)  
 NND 4008  
 By CAZ MARS, Date 3/1/77



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LUKE FIELD, T.H. Expedition to the American Equatorial Islands in connection with the Amelia Earhart flight.

The commercial value of Howland and Baker lies in the fact that these islands are the only United States possessions on a Honolulu--New Guinea--Australia landplane route.

In my opinion there is very little military value in Howland or Baker Islands except as an airport that could be used as a base for aerial operations against Mandated Islands to the West (1,000 miles or less).

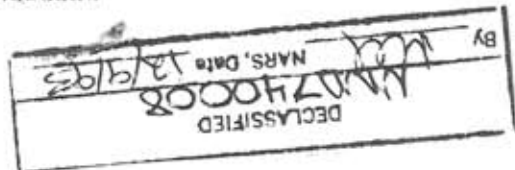
Having completed our business on Baker we returned to Howland. The next six days were spent in repairing the worn-out tractor and laying a strip of crushed coral 50 feet wide and 200 feet long on the West end of the East-West runway. This end of the runway was of loose sand and in my opinion not safe for an airplane. This increased the usable length of this runway to 2250 feet. The usable length of the North-South runway was 4100 feet and the Northeast-Southwest runway 2600 feet. Labor was furnished by the Hawaiian boys and Army personnel.

During this period we had almost no news from Amelia Earhart in regard to her take off, except for a false start. She had been notified of runway conditions and that everything was in readiness at Howland. In the meantime, the crew of the ITASCA caught sharks and barracuda which are plentiful, this being a good fishing locality.

Late in the afternoon of July 1 we received word that Amelia Earhart had taken off at 10:00 a.m. Lae time, that day. The ONTARIO on station midway between Lae and Howland did not hear or contact her by radio and it wasn't until 0345 that the ITASCA heard her on 3105 K.C. I estimated her time of arrival at 0630 to 1000 with the best guess being 0730-0800. Accordingly all shore parties took station at dawn. Shore parties consisted of Mr. Black, Lt. Commander Baker of the ITASCA, Captain Neilson, myself, mechanics, photographers, newspaper men, land crash detail from the ITASCA armed with fire extinguishers etc. and a surf detail. Off shore the ITASCA furnished a smoke screen. When Amelia Earhart failed to arrive by 0900 all hands except a radio operator and several colonists returned to the ship and at 1000 started out in search to the North of the Island.

Study of the attached extract from the radio log and remarks in the summary indicated that the most probable area to search was to the North and accordingly we searched this area covering a strip about 14 miles wide as we went. Since Amelia Earhart at no time had given us her position and the Pacific Ocean being very large, the search was just about hopeless. A Navy flying boat from Pearl Harbor was turned back 500 miles short of Howland due to bad weather and a few days later the Navy took charge of the search. During this time we ran down various false radio clues given by amateur radio operators. While the COLORADO searched the Phoenix group we searched to the West of this group and later on while the LEXINGTON searched

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E.O. 11652, Sec. 3(E) and 5(2) or (E)  
NND 24008  
By CAZ NARS, Date 3/1/77



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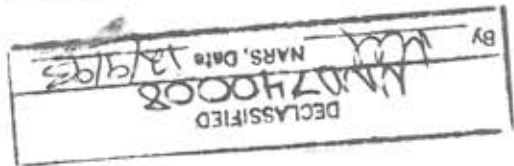
LUKE FIELD, T.H. Expedition to the American Equatorial Islands in connection with the Amelia Earhart flight.

0753. ITASCA to Earhart on 7500 K.C. and 3105 K.C. "What is your position long count". Continuous transmission on 500 K. C. for "homing".
0758. Earhart. "We received your signals but are unable to get a minimum (on her direction finder presumably on 500 K.C.). "Please take a bearing on us and answer on 3105 with voice". (very loud and too fast for accurate reception S-5)
0805. ITASCA to Earhart. Your signals received o.k. It is impractical for us to take a bearing on 3105 K.C. on your voice. Please transmit on 500 K.C. and we will take a bearing. (The operator on Howland with emergency direction finder had heard all conversation on 3105 K.C. after 0600 but was unable to take any bearings due to the general difficulty and unreliability of bearings on this frequency and due to the fact that she was on the air seven or eight seconds only. In the meantime a continuous watch on the ship direction finder (500 K.C.) had been maintained but at no time was there any transmission on this frequency.
0807. ITASCA on 3105 K.C., 500 K.C., 7500 K.C. Go ahead on 3105 K.C. so that we may take a bearing on you. It is impossible to take a bearing on 3105 K.C. please acknowledge. No answer. (The operator on Howland had just notified the ITASCA that he was unable to get a bearing on 3105 K.C.)
0843. Earhart. "We are on the line 157-337 will repeat message we are on the line 157-337. (very loud and too rapid for accurate reception S-5)
0845. Earhart. We are running on line North and South. (Very loud S-5 and far too rapid for accurate reception. Earhart sounded as if she was very excited and did not talk distinctly).
0854. ITASCA. Your signals received. Go ahead with position on 3105 K.C. or 500 K.C. No answer.

No other reception from Earhart on this frequency 3105 K.C. or 500 K.C. although a continuous watch was maintained for several weeks. Numerous false reports were received from amateurs radio operators. These were thoroughly investigated. Doubtful radio bearings on a carrier wave by P.A.A. at Honolulu and Wake and by the direction finder on Howland were received. The point of intersection was carefully searched by the COLORADO (near Carandolet Reef) without result. It will be noted it was later proven that the Earhart plane could not transmit while in the water.

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E.O. 11652, Sec. 3(E) and 5(D) or (F)  
By NND 24008  
By 602 NARS, Date 3/11/77





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LUKE FIELD, T.H. Expedition to the American Equatorial Islands in connection with the Amelia Earhart flight.

to the North and West of Howland we searched the Gilbert group. In the meantime the SWAN searched various areas. In every case all intercepted messages by radio amateurs proved false as did radio bearings on a carrier wave made by P.A.A. from Wake and Honolulu and at Howland Island.

Having exhausted all means and being out of fuel the search was abandoned on July 18, 1937, and after picking up the radio operator who was left on Howland we returned to Honolulu.

- 0345. ----"Will listen on hour and half hour on 3105"---(very faint S-1).
- 0400. ITASCA to Earhart. Transmitted weather data on 3105 K.C.
- 0430. ITASCA to Earhart. Transmitted weather data on 3105 K.C.
- 0453. ----"Partly cloudy"----(very faint S-1)
- 0500. ITASCA to Earhart. Transmitted weather data and asked position.
- 0530. ITASCA to Earhart. Transmitted weather data and asked position.
- 0600. ----"About 200 miles out"----(fair volume S-3)
- 0605. ITASCA to Earhart. Transmitted weather data.
- 0630. ITASCA to Earhart. Transmitted weather data and asked position.
- 0646. ----"About 100 miles out"----(good volume S-4)
- 0700. ITASCA to Earhart. Transmitted weather data and maintained schedule on 500 K.C. for "homing".
- 0715. ITASCA to Earhart. Cannot take bearing on 3105 please send on 500 K.C. or do you wish to take bearing on us. No answer. Having broadcast on 500 K.C. resumed.
- 0730. ITASCA to Earhart. Transmitted weather data and asked position. Having broadcast on 500 K.C. continued.
- 0741. Earhart. "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 1,000 feet, (very loud S-5).
- 0750. Earhart. "We are circling but cannot hear you. Go ahead on 7500 with a long count either now or on the scheduled time or half hour". (very loud and spoken very rapidly S-5).

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E.O. 11652, Sec. 3(E) and 5(D) or (E)  
MM 74008  
By 72 NARS, Date 3/1/72



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LUKE FIELD, T.H. Expedition to the American Equatorial Islands in  
Connection with the Amelia Earhart flight.

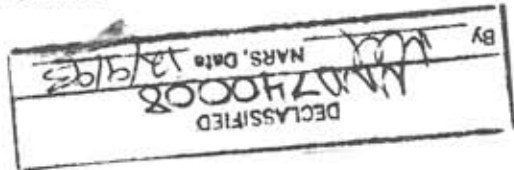
SUMMARY:

1. There was no relief pilot, radio operator or relief navigator carried in the airplane.
2. Personal contact between airplane crew was not possible.
3. Radio operation. (Miss Earhart was radio operator and pilot).
  - (a) Earhart was not fully experienced in use of radio when used over long distances and at no time did she request technical advice from the ITASCA on radio matters.
  - (b) Earhart used voice instead of key thus cutting down radio range approximately 1/3 the possible range considering the power of her set.
  - (c) Earhart apparently inexperienced in correct operation of direction finder reporting that she heard ITASCA but couldn't get a null. (In all probability the null was in a direction different from which she expected and she therefore discontinued it). She previously notified the ITASCA that her direction range was 200 K.C.-1500 K.C.
  - (d) Earhart asked the ITASCA to take a radio bearing on her on 3105 K.C. after being informed by radiogram prior to flight and also by radio during the flight that the ITASCA could not accomplish this due to lack of suitable calibrated equipment on that frequency but that the ITASCA could take bearings on 500 K.C. (ships D.F. equipment). Earhart had previously informed the ITASCA that she could transmit on 500 K.C. if necessary. It is true that an airplane direction finder capable of working 3105 K.C. had been borrowed from the Navy just prior to sailing. This was set up on Howland mainly as a standby in case the ship's direction finder on 500 K.C. should go out. However the direction finder on Howland had not been calibrated and as a result its readings could not be depended upon. A qualified radio operator controlled this direction finder throughout the entire flight but while he could hear her, he could not get any radio bearings on 3105 K.C. largely due to the fact that she only left her set on for brief periods of approximately 8 or 10 seconds. Ordinarily a set must be left on for several minutes while bearings are being taken. Radio bearings using frequencies above 1500 K. C.

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E.O. 14176, Sec. 1.4(c) and 1.5(c)  
By CAZ NARS, Date 12/17/77

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LUKE FIELD, T.H. Expedition to the American Equatorial Islands in connection with the Amelia Earhart flight.

are in general unreliable especially in the early morning (night effect) and at any distance beyond the optical path of short wave. In this case when she was flying at 1000 feet--per her message over radio--the approximate optical range would be 40 miles or less.

(e) At no time did Amelia Earhart acknowledge any of our messages or requests for her position although we were heard all over the Pacific on 3105 K.C., 7500 K.C. and 500 K.C. Either she was unfamiliar with the radio equipment or her receiver was out.

(f) Her signal strength was as follows:

0345-----very faint-----S-1

0443-----faint-----S-2

0600-----fair-----S-3

0646-----good-----S-4

0741-----very loud-----S-5

0750-----very loud-----S-5

0758-----very loud-----S-5

0843-----very loud-----S-5

The radio operator reported that from 0741 on, her signal strength was at a maximum, and judging from her volume, she was practically over Howland. All this seems to indicate that she passed close to Howland, probably within 50 miles.

4. Gasoline supply was estimated to last 24 hours with a possibility of lasting 30 hours. Judging from her last message at 0843 that she ran out of gas shortly thereafter as there were no more messages, her gasoline supply lasted approximately 21 hours--taking into account 1000 take off at Lae and allowing 2 hours zone time difference between Lae and Howland. Judging that her estimated time of arrival at Howland to be 0735 and the end of her gas supply at 0900 gives a gasoline safety factor of only 1 hour 25 minutes or approximately 7%.

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LUKE FIELD, T.H. Expedition the American Equatorial Islands in connection with the Amelia Earhart flight.

Note that 20% gas reserve is usually required. Running her engines at a higher R.P.M. than is ordinary or poor mixture control would account for increased gasoline consumption.

5. Navigation:

- (a) The airplane was not sighted or heard by the ONTARIO on station midway between Lae and Howland.
- (b) No position reports were given at any time.
- (c) Weather and radio reports indicate possibility of high overcast making star sights impossible over major portion of the route.
- (d) The airplane was not heard passing over the Gilbert Islands. However, it was about 3 or 4 a.m. and very probably at 10,000 feet and thus could easily have passed over these islands without being heard.
- (e) The airplane was not heard on either Howland or Baker Island (30 miles SE of Howland).
- (f) No relief navigator was provided thus increasing the possibility of human error especially after 21 hours of continuous navigation.

6. Pilot:

There was no relief pilot thus increasing the possibility of pilot error (flying off course) and error in radio direction finding and radio operation, particularly after 21 hours continuous flying. It is true that the airplane was equipped with an automatic pilot but even then this instrument must be continually checked and reset at intervals not longer than 10 to 15 minutes.

7. Weather:

The weather forecast was based merely on opinion, since sufficient data was unavailable for an accurate prediction, and was made by a competent Navy Aerologist. Miss Earhart asked several times for a weather forecast along this route and the Aerologist at Pearl Harbor was unable to comply due to lack of sufficient data for an accurate prediction. Consequently he gave her a prediction which was based merely on his opinion of probable weather conditions in that area and could not be considered reliable.

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NARS, Date 3/11/97



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LUKE FIELD, T.H. Expedition to the American Equatorial Islands in connection with the Amelia Earhart flight.

After a careful consideration of all facts at my disposal and making due allowances for the following:

1. Noonan's reputation as an Aerial Navigator. He instructed all Pan American Airline Navigators on the Trans Pacific run and navigated on all the P.A.A. pioneer trips in the Pacific.
2. The loudness of radio signals.
3. That the airplane was not sighted nor did it sight Baker Island (30 miles SE of Howland).
4. That a line of position (157-337) was given--presumably through or near Howland.
5. That weather conditions at Howland were:

Clear and unlimited.

Scattered clouds with occasional local light rain.

Visibility generally 25 miles or more.

Cloud conditions to the North and West of Howland would prevent seeing the island from a distance greater than 10 miles unless under the clouds or very high above them.

Cloud conditions to the East and South would permit seeing Howland 20 or more miles at almost any altitude.

The sun bore East making Howland or the smoke screen very difficult to see from the West.

6. That the pilot most probably flew from the left hand seat and thus would have a poor field of view to the right. That the navigator had limited vision due to a wing under him.
7. That the last radio message stated "we are running on line North and South" presumably North and South generally on the line of position 337-157

it is my opinion that the Earhart plane missed Howland Island within 50 and probably 30 miles to the North and that the airplane went down most probably within 180 miles of Howland to the Northwest and that wreckage or boat if still floating will



LUKE FIELD, T. H. Expedition to the American Equatorial Islands in connection with the Amelia Earhart flight.

drift to the Gilbert Islands, due to wind and current, arriving in that locality around August.

RECOMMENDATIONS:

1. That no more flights of this nature be permitted.
2. That only flights backed by U.S. Army, Navy or Airlines similar to Pan American Airlines with competent personnel and adequate equipment be made to Howland Island.
3. That Howland Island be completed as a permanent airport or abandoned. The four Hawaiian residents have neither the equipment, engineering ability, nor the time necessary for the proper completion or maintenance of this project.

*Daniel A. Cooper*  
 DANIEL A. COOPER,  
 1st. Lieutenant, Air Corps

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 NND 74008  
 By *car* NARS, Date *3/1/77*