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on Howland.

Brig. Gen. D. G. Fournet



Luke Field, T. H.  
April 10, 1937.

SUBJECT: Expedition to the American Equitorial Islands.

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

The following is an account of a visit to the American Equitorial Islands. Islands visited:

Howland (U.S.)	Lat. 0	49' N.	Long. 176	43' W.
Baker (U.S.)	Lat. 0	13' N.	Long. 176	33' W.
Jarvis (U.S.)	Lat. 0	23' S.	Long. 160	02' W.
Fanning (England)	Lat. 4	10' N.	Long. 159	W.
Palmyra (U.S.)	Lat. 5	30' N.	Long. 162	40' W.

On March 8, 1937, I received orders from Headquarters Hawaiian Department detailing me to accompany the U.S. Coast Guard Cutter "Shoshone" on a cruise to the American Equitorial Islands as a military observer on detached service status.

The purpose of the expedition was to replace several colonists on Howland, Baker and Jarvis Islands, remove Mr. Campbell, Department of Commerce, and W.P.A. workers from Howland, and replenish supplies of food and water on the islands. In addition, the cutter "Shoshone" was to be the base ship for Amelia Earhart's flight to Howland Island. The "Shoshone" was to act as radio station furnishing weather data, radio communications, for the airplane to 'home on'. A smoke screen was to be laid as an additional aid for the airplane to 'home on'. At night searchlights were to replace the smoke screen. A direction finding loop as standard equipment on the ship was to be used to obtain radio bearings on the airplane.

The expedition was organized under Mr. Richard B. Black, Department of Interior, and aided by the Coast Guard, Department of Commerce, U.S. Army and Navy. Personnel and duties as follows:

Mr. Richard B. Black, Department - Leader.  
Mr. Robert Campbell, Bureau of Air Commerce - In charge of  
Constructing runways on Howland Island.  
Capt. H. A. Meyer, Infantry, U. S. Army - Expedition Adviser  
and Liaison Officer (in charge Army group).  
1st Lieut. Daniel A. Cooper, Air Corps, U. S. Army - Observer.  
In charge airplane refueling and repairs.

Expedition to the American Equatorial Islands, Cont'd. April 10, 1937.

Lieut. A. E. True, U. S. Navy- Aerologist.  
Staff Sgt. Anton Hanson, Air Corps - Photographer.  
Staff Sgt. Floyd W. Thacker, Air Corps - Aviation Mechanic.  
Sgt. Austin Collins, Infantry - Administrative charge of expedition personnel.  
Sgt. Carl Summers, Infantry - Charge of Army equipment.  
Sgt. Wm. W. Crawford, Infantry - Stenographer, representative of Mr. Putnam.  
Corporal Ralph C. Wilson, Engineers - Charge of Expedition supplies.  
R. R. Metzger, Chief M.M., U.S. Navy - Aviation mechanic.  
A. J. Carrol, U. S. N., -Photographer.  
F. W. Schaler, Aviation M.M., U. S. Navy - Aviation mechanic.  
F. W. Hense, U. S. Navy - Aerographer.  
V. M. Clarke, U. S. N., - Assistant Aerographer.  
Mr. V. M. Culver - United Press Correspondent.  
Mr. Arundel H. Keane - Associated Press Correspondent.  
Four Hawaiian replacements for Howland, Baker and Jarvis Islands.  
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Officers and crew of U.S.C.G. cutter "Shoshone".

The route traversed was Howland, Baker, return to Howland until the Amelia Earhart flight was cancelled, Jarvis, Fanning and Palmyra Islands.

On March 9, 1937, I reported aboard the "Shoshone" and found the ship officers very courteous. We sailed at 7:00 A.M., March 10, 1937. For two days the sea was quite rough, resulting in mild seasickness for the non-nautical members of the expedition. It was necessary to lash dining room chairs to the tables to prevent upsetting due to ship's motion. Balloon soundings could only be carried out when the sea calmed. In the meantime, everyone relaxed and donned suitable clothes for the tropics, the usual uniform being shorts, sun helmets and dark glasses. During the voyage Capt. H. A. Meyer kept everyone amused with his tall stories about the South Seas, including his method of whistling crabs out of their shells, Frigate birds robbing Booby birds of their fish, fish stories, bird stories, size of coconut crabs, etc. Everyone expressed extreme doubt but Capt. Meyer subsequently proved each story, much to our surprise. During the entire voyage I practised navigation, having secured an octant for that purpose from the Air Corps. This practical training, after having recently completed a course in Navigation at the University of Hawaii, greatly increased confidence in my ability to navigate.

HOWLAND ISLAND: - 1900 land miles from Honolulu -

Howland Island appeared early on March 15, 1937, and turned out to be a low kidney-shaped desert island surrounded by coral reef. It is one and one-half miles long, 2800 feet wide and 20 feet high, being quite similar to Luke Field in size and shape, but with the prevailing wind blowing across the island instead of lengthwise. No anchorage was available at this island or at Baker or Jarvis and it was necessary for the



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"Shoshone" to cruise around constantly. Strong ocean currents make these equatorial islands dangerous to shipping. Landing was accomplished by going thru the breakers in a surfboat and great credit must be paid to the sailors of the "Shoshone" for their skill in this respect. Supplies were beached only with great difficulty, the drums of gasoline being the hardest problem as they had to be floated in thru the surf.

The colonists and W.P.A. workers on Howland appeared to be in good health and spirits. The airport on this island was inspected by myself and believing it to be safe for flying for the average skilled pilot I radioed General Yount to that effect. A loaded Martin bomber (B-12A) could operate from the field provided the pilot exercises normal good judgement and technique. As the prevailing wind (16 m.p.h.) is along the East-West runway, which is 2400 feet long, 200 feet on the West end being sand and slightly soft, information was requested as to Miss Earhart's take-off run in Honolulu. The North-East South-West runway is approximately 2900 feet long, 250 feet on the South-west end being sandy and soft. The North-South runway is approximately one and one-fourth miles long with one-eighth mile on each end unsuited for landing due to small gullies. Excepting for the sand areas mentioned the runway surface is of broken rolled coral making a good hard surface capable of carrying the weight of a heavily loaded airplane. With grading equipment an additional 300 feet could be added to the East-West runway by making a small cut and fill on the beach at the west end. Further examination disclosed that the thousands of birds would be a great hazard to airplanes in flight. The birds are roughly of three general types, Frigate birds being the size of a large buzzard, Booby birds equally large and Terns the size of small pigeons. A conservative estimate being at least 10,000 Frigate birds, 10,000 Booby birds and 15,000 Terns. These birds apparently have no flocking instinct and it is doubtful if an airplane would be successful in herding them away from the island. By the use of shotguns, TNT and clubs most of the bird colonies were driven to the north end of the island. This would enable an airplane to make a reasonably safe landing on the runways. A solution to the bird problem would be to exterminate the Booby birds with clubs at night. The Frigate birds being unable to fish for themselves, and there being no more Booby birds to rob of their fish, would either starve or depart for other islands. The Terns would probably have to be destroyed with clubs at night and guns in the daytime. It might also be possible to chase these birds to Baker Island 37 miles away by the use of explosives and further molesting. Numerous hermit crabs and rats constitute a serious problem in sanitation. At night rats swarm everywhere, therefore rat-proof buildings seem to be the only solution to this problem.

Since 50 percent of the supplies and gasoline had been landed when word was received that Miss Earhart had been delayed another day it was decided to visit Baker Island, 37 miles away, and unload supplies for that island. During the night the "Shoshone" drifted onto the reef

at Howland and it was necessary to wait four (4) hours for a high tide to float her again. Fortunately, the tide was low at the time and good seamanship saved the ship from material damage or possible loss.

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birds greatly resemble buzzards and look about as as appetizing. The next day we learned that Miss Earhart's airplane was damaged and the flight definitely off so the gasoline, oil and fuel servicing pumps were stored on the island for future use. Instructions were also issued to the colonists on the island to add the finishing touches to the runways in the corm of crushed coral and more rolling. For the short time that he was on the island Mr. Campbell is to be commended for the amount of runway construction accomplished.

Having completed all business on Howland we sailed due east to Jarvis Island. During the jaunt to Jarvis, Davy Jones, King Neptune's scribe, boarded the ship and issued subpoenas to all pollywogs to appear before Neptunus Rex for judgement. The "Shoshone" was due to enter South latitude the following day. During the evening the Captain, a shellback, apprehended the Navigator, a pollywog, plotting a course to cross line prior to the specified time. This resulted in the Navigator being placed in home-made stocks for safekeeping. The following day as the "Shoshone" entered South latitude, Neptunus Rex with family and accompanied by a royal court consisting of the devil, Royal Surgeon, priest, prosecuting attorney, Royal Cop, et al, proceeded to try pollywogs, all of whom were found guilty of various offenses. This resulted in receiving the attentions of the Royal Doctor, Royal Barber, etc. The following morning March 22, 1937, Jarvis Island was sighted.

#### JARVIS ISLAND:

Jarvis appeared as a desert island similar to Howland and Baker with the usual rats, hermit crabs and innumerable birds. The island is nearly square and saucer shaped, the edges being about 30 feet high and the center about 10 feet above sea level. As with Howland and Baker no anchorage is available, the reef dropping off into deep water. This island is, however a fine natural airport and landings in its present condition could be made without much danger. As an airport, runways at least a mile long could be constructed for any wind direction with very little trouble, only a little grading and surfacing being necessary. Landings are made thru a tricky narrow channel blasted thru the reef on the lee of the island. Evidences of the guano shipping days are found in an old tramway, cisterns, an old iron tank, a wooden tower and several graves. On the south side of the island the wreck of the "Amaranth", a four masted sailing ship, is broken up on the reef. The "Amaranth" was wrecked in 1913 while carrying a cargo of coal from Australia to San Francisco. All business being completed we sailed that afternoon to Fanning Island to deliver a quantity of mail. On Fanning Island is located a British cable station with a colony of about 20 whites, several natives and a constabulary consisting of a Comissioner and six Gilbert Island natives in uniforms.

#### FANNING ISLAND:

Fanning Island appeared on March 24, 1937. It is a coral atoll twelve miles long and two and one-half miles across, the center being a



lagoon. Vegetation consisting of coconut and palm trees. The cable station employees appeared to be Australians and were very hospitable to us during the few hours we were ashore. This island has excellent seaplane possibilities and my general impression was that something of that nature is now going on although it was impossible for me to get accurate information on the subject. A land airport was constructed mainly for Kinsford-Smith on his last Pacific flight and from conversation I gathered that it was classified only as an emergency field. However it would be possible to construct a reasonably satisfactory airport for land planes on this island. Anchorage for ships is available and supplies are easily landed. Rainwater is collected for drinking purposes. That afternoon we sailed for Palmyra Island which is an American possession.

#### PALMYRA ISLAND:

We arrived at Palmyra March 25, 1937. This coral atoll consists of some fifty little islands surrounding a lagoon. It is about five miles long and two miles wide. The islands are thriving with coconut trees, coconut crabs and hermit crabs. A few Booby and Frigate birds and quite a few white love birds inhabit these islands. The love birds are beautiful and very curious, flying a foot or two over one's head and observing every move. At present there are no human inhabitants although an abandoned hut was found on one of the islands. There is no fresh water on the islands. Ship anchorage is available and with a little dredging and filling a harbor, seaplane base and landplane base are possible. During low tide land planes could land on the hard packed corral sands which are of considerable area. Due to Palmyra and Fanning Islands being where two ocean currents meet considerable rainfall results. Leaving Palmyra in the afternoon we arrived in Honolulu at noon March 29, 1937.

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-Australian landplane route. Baker can be eliminated because of difficulties in landing supplies, there being practically no lee to the island. Airport possibilities on Howland are definitely inferior to those on Baker but supplies can be landed as there is a fairly good sheltered side for landing operations. Should Howland become desirable commercially the East-west runway should be extended from 2400 to a total of 2700 feet and oiled. The present runways are reasonably safe for landings by competent pilots only.

The commercial value of Jarvis lies in excellent landing and refueling base possibilities, being halfway between Honolulu and Samoa on the New Zealand run. Landing of supplies is accomplished fairly easily and this could be improved by a little blasting in the present channel thru the reef. On neither Howland, Baker or Jarvis Islands are seaplane operations possible and no anchorage is available for ships. All supplies must, now, and most probably in the future, be ferried ashore in small boats. There is no fresh water on these islands and rainfall is insufficient. Flying conditions about these islands is generally excellent. A radio station with direction

finding equipment would be an absolute necessity for aerial operation from any of these islands.

Palmyra and Kingman reef are good possibilities as seaplane re-fueling points on the New Zealand route but are generally overcast and rainy, being near the junction of two ocean currents which tend to produce rainy weather.

Christmas Island would be the ideal set-up for both land plane and seaplane bases on the New Zealand run, the island being a coral atoll about thirty miles long and twelve miles wide with large lagoons. Anchorage for ships is available and it is just below the bad weather belt near Palmyra. It is doubtful if fresh water is available but it is very probable that in an emergency, rainwater would be sufficient for a small garrison. At present the ownership of Christmas is disputed by the United States and England. From conversation gathered at the cable station at Fanning, the British have set up a small radio station on Christmas Island.

For tactical purposes the United States should acquire Christmas Island as a landplane and seaplane base. This would extend the general Alaska-Honolulu frontier to the south making an enemy attack on the United States around the south of Honolulu a virtual impossibility. This would force an enemy to first capture the Hawaiian Islands before any operations against the mainland could be carried out. A temporary landplane base on Howland would be useful as a threat to any enemy to the west or south-west. It might be noted that possible enemy airbases in the Marshall Islands are less than 1000 miles distant from Howland. An airport on Jarvis would be useful as an emergency field and radio direction finding station on airplane missions to the south and south-west, assuming the airplanes operated from Christmas Island as a base.

RECOMMENDATIONS:

1. That the United States obtain clear title to Christmas Island in return for quit claim on Fanning Island. At present ownership of both islands is disputed by the United States and England.
2. That a land and seaplane base be established on Christmas Island to complete the general Alaska-Honolulu defense line.
3. That temporary landplane bases be established on Howland and Baker Islands for use as a potential threat to any would-be enemy to the west or south-west.
4. That no further development take place on Baker Island or Palmyra Islands.
5. That a weather bureau and radio station with direction finding equipment be established at Kingman Reef. It is understood that Kingman Reef furnishes a breakwater large enough to harbor the entire United States fleet in addition to being large enough for a seaplane base.



Expedition to the American Equatorial Islands, Cont'd.      April 10, 1937.

6. That Howland Island Airport be further improved before being used as an airport or that only a competent pilot be authorized to make landings there. In this connection it is also recommended that all birds on Howland Island be driven away or destroyed as a menace to aerial navigation.

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

*Copy #1*



Xmas ②

Lake Field, T. H.  
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Jarvis appeared as a desert island similar to Howland and Baker with the usual rats, hermit crabs and innumerable birds. The island is nearly square and saucer shaped, the edges being about 30 feet high and the center about 10 feet above sea level. As with Howland and Baker no anchorage is available, the reef dropping off into deep water. This island is, however a fine natural airport and landings in its present condition could be made without much danger. As an airport, runways at least a mile long could be constructed for any wind direction with very little trouble, only a little grading and surfacing being necessary. Landings are made thru a tricky narrow channel blasted thru the reef on the lee of the island. Evidences of the guano shipping days are found in an old tramway, cisterns, an old iron tank, a wooden tower and several graves. On the south side of the island the wreck of the "Amaranth", a four masted sailing ship, is broken up on the reef. The "Amaranth" was wrecked in 1913 while carrying a cargo of coal from Australia to San Francisco. All business being completed we sailed that afternoon to Fanning Island to deliver a quantity of mail. On Fanning Island is located a British cable station with a colony of about 20 whites, several natives and a constabulary consisting of a Commissioner and six Gilbert Island natives in uniforms.

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Fanning Island appeared on March 24, 1937. It is a coral atoll twelve miles long and two and one-half miles across, the center being a



lagoon. Vegetation consisting of coconut and palm trees. The cable station employees appeared to be Australians and were very hospitable to us during the few hours we were ashore. This island has excellent seaplane possibilities and my general impression was that something of that nature is now going on although it was impossible for me to get accurate information on the subject. A land airport was constructed mainly for Kinsford-Smith on his last Pacific flight and from conversation I gathered that it was classified only as an emergency field. However it would be possible to construct a reasonably satisfactory airport for land planes on this island. Anchorage for ships is available and supplies are easily landed. Rainwater is collected for drinking purposes. That afternoon we sailed for Palmyra Island which is an American possession.

#### PALMYRA ISLAND:

We arrived at Palmyra March 26, 1937. This coral atoll consists of some fifty little islands surrounding a lagoon. It is about five miles long and two miles wide. The islands are thriving with coconut trees, coconut crabs and hermit crabs. A few Booby and Frigate birds and quite a few white love birds inhabit these islands. The love birds are beautiful and very curious, flying a foot or two over one's head and observing every move. At present there are no human inhabitants although an abandoned hut was found on one of the islands. There is no fresh water on the islands. Ship anchorage is available and with a little dredging and filling a harbor, seaplane base and landplane base are possible. During low tide land planes could land on the hard packed corral sands which are of considerable area. Due to Palmyra and Fanning Islands being where two ocean currents meet considerable rainfall results. Leaving Palmyra in the afternoon we arrived in Honolulu at noon March 29, 1937.

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-Australian landplane route. Baker can be eliminated because of difficulties in landing supplies, there being practically no lee to the island. Airport possibilities on Howland are definitely inferior to those on Baker but supplies can be landed as there is a fairly good sheltered side for landing operations. Should Howland become desirable commercially the East-west runway should be extended from 2400 to a total of 2700 feet and oiled. The present runways are reasonably safe for landings by competent pilots only.

The commercial value of Jarvis lies in excellent landing and refueling base possibilities, being halfway between Honolulu and Samoa on the New Zealand run. Landing of supplies is accomplished fairly easily and this could be improved by a little blasting in the present channel thru the reef. On neither Howland, Baker or Jarvis Islands are seaplane operations possible and no anchorage is available for ships. All supplies must, now, and most probably in the future, be ferried ashore in small boats. There is no fresh water on these islands and rainfall is insufficient. Flying conditions about these islands is generally excellent. A radio station with direction

finding equipment would be an absolute necessity for aerial operation from any of these islands.

Palmyra and Kingman reef are good possibilities as seaplane refueling points on the New Zealand route but are generally overcast and rainy, being near the junction of two ocean currents which tend to produce rainy weather.

Christmas Island would be the ideal set-up for both land plane and seaplane bases on the New Zealand run, the island being a coral atoll about thirty miles long and twelve miles wide with large lagoons. Anchorage for ships is available and it is just below the bad weather belt near Palmyra. It is doubtful if fresh water is available but it is very probable that in an emergency, rainwater would be sufficient for a small garrison. At present the ownership of Christmas is disputed by the United States and England. From conversation gathered at the cable station at Fanning, the British have set up a small radio station on Christmas Island.

For tactical purposes the United States should acquire Christmas Island as a landplane and seaplane base. This would extend the general Alaska-Honolulu frontier to the south making an enemy attack on the United States around the south of Honolulu a virtual impossibility. This would force an enemy to first capture the Hawaiian Islands before any operations against the mainland could be carried out. A temporary landplane base on Howland would be useful as a threat to any enemy to the west or south-west. It might be noted that possible enemy airbases in the Marshall Islands are less than 1000 miles distant from Howland. An airport on Jarvis would be useful as an emergency field and radio direction finding station on airplane missions to the south and south-west, assuming the airplanes operated from Christmas Island as a base.

RECOMMENDATIONS:

1. That the United States obtain clear title to Christmas Island in return for quit claim on Fanning Island. At present ownership of both islands is disputed by the United States and England.
2. That a land and seaplane base be established on Christmas Island to complete the general Alaska-Honolulu defense line.
3. That temporary landplane bases be established on Howland and Baker Islands for use as a potential threat to any would-be enemy to the west or south-west.
4. That no further development take place on Baker Island or Palmyra Islands.
5. That a weather bureau and radio station with direction finding equipment be established at Kingman Reef. It is understood that Kingman Reef furnishes a breakwater large enough to harbor the entire United States fleet in addition to being large enough for a seaplane base.



Expedition to the American Equatorial Islands, Cont'd.      April 10, 1937.

6. That Howland Island Airport be further improved before being used as an airport or that only a competent pilot be authorized to make landings there. In this connection it is also recommended that all birds on Howland Island be driven away or destroyed as a menace to aerial navigation.

*Copy # 3*

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



Lake Field, T. H.  
April 10, 1937.

**SUBJECT:** Expedition to the American Equatorial Islands.

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

The following is an account of a visit to the American Equatorial Islands. Islands visited:

Howland (U.S.)	Lat. 0	49' N.	Long. 176	45' W.
Baker (U.S.)	Lat. 0	13' N.	Long. 176	53' W.
Jarvis (U.S.)	Lat. 0	23' S.	Long. 160	02' W.
Fanning (England)	Lat. 4	10' N.	Long. 160	W.
Palmyra (U.S.)	Lat. 5	30' N.	Long. 162	40' W.

On March 8, 1937, I received orders from Headquarters Hawaiian Department detailing me to accompany the U.S. Coast Guard Cutter "Shoshone" on a cruise to the American Equatorial Islands as a military observer on detached service status.

The purpose of the expedition was to replace several colonists on Howland, Baker and Jarvis Islands, remove Mr. Campbell, Department of Commerce, and W.P.A. workers from Howland, and replenish supplies of food and water on the islands. In addition, the cutter "Shoshone" was to be the base ship for Amelia Earhart's flight to Howland Island. The "Shoshone" was to act as radio station furnishing weather data, radio communications, for the airplane to 'home on'. A smoke screen was to be laid as an additional aid for the airplane to 'home on'. At night searchlights were to replace the smoke screen. A direction finding loop as standard equipment on the ship was to be used to obtain radio bearings on the airplane.

The expedition was organized under Mr. Richard B. Black, Department of Interior, and aided by the Coast Guard, Department of Commerce, U.S. Army and Navy. Personnel and duties as follows:

Mr. Richard B. Black, Department - Leader.  
Mr. Robert Campbell, Bureau of Air Commerce - In charge of  
Constructing runways on Howland Island.  
Capt. H. A. Meyer, Infantry, U. S. Army - Expedition Advisor  
and Liaison Officer (in charge Army group).  
1st Lieut. Daniel A. Cooper, Air Corps, U. S. Army - Observer.  
In charge airplane refueling and repairs.



Expedition to the American Equatorial Islands, Cont'd. April 10, 1937.

Lieut. L. E. True, U. S. Navy- Aerologist.  
Staff Sgt. Anton Hanson, Air Corps - Photographer.  
Staff Sgt. Floyd W. Thacker, Air Corps - Aviation Mechanic.  
Sgt. Austin Collins, Infantry - Administrative charge of expedition personnel.  
Sgt. Carl Summers, Infantry - Charge of Army equipment.  
Sgt. Wm. F. Crawford, Infantry - Stenographer, representative of Mr. Putnam.  
Corporal Ralph C. Wilson, Engineers - Charge of Expedition supplies.  
R. H. Metzger, Chief M.M., U.S. Navy - Aviation mechanic.  
A. J. Carroll, U. S. N.,-Photographer.  
F. W. Schaler, Aviation M.M., U. S. Navy - Aviation mechanic.  
F. W. Hense, U. S. Navy - Aerographer.  
V. M. Clarke, U. S. N., - Assistant Aerographer.  
Mr. V. M. Culver - United Press Correspondent.  
Mr. Arundel H. Keane - Associated Press Correspondent.  
Four Hawaiian replacements for Howland, Baker and Jarvis Islands.  
Seven W.P.A. workers returning from Howland.  
Officers and crew of U.S.C.G. cutter "Shoshone".

The route traversed was Howland, Baker, return to Howland until the Amelia Earhart flight was cancelled, Jarvis, Fanning and Palmyra Islands.

On March 9, 1937, I reported aboard the "Shoshone" and found the ship officers very courteous. We sailed at 7:00 A.M., March 10, 1937. For two days the sea was quite rough, resulting in mild seasickness for the non-nautical members of the expedition. It was necessary to lash dining room chairs to the tables to prevent upsetting due to ship's motion. Balloon soundings could only be carried out when the sea calmed. In the meantime, everyone relaxed and donned suitable clothes for the tropics, the usual uniform being shorts, sun helmets and dark glasses. During the voyage Capt. H. A. Meyer kept everyone amused with his tall stories about the South Seas, including his method of whistling crabs out of their shells, Frigate birds robbing Booby birds of their fish, fish stories, bird stories, size of coconut crabs, etc. Everyone expressed extreme doubt but Capt. Meyer subsequently proved each story, much to our surprise. During the entire voyage I practised navigation, having secured an octant for that purpose from the Air Corps. This practical training, after having recently completed a course in Navigation at the University of Hawaii, greatly increased confidence in my ability to navigate.

HOWLAND ISLAND: - 1900 land miles from Honolulu -

Howland Island appeared early on March 15, 1937, and turned out to be a low kidney-shaped desert island surrounded by coral reef. It is one and one-half miles long, 2800 feet wide and 20 feet high, being quite similar to Laysan Island in size and shape, but with the prevailing wind blowing across the island instead of lengthwise. No anchorage was available at this island or at Baker or Jarvis and it was necessary for the

Expedition to the American Equatorial Islands, Cont'd. April 10, 1937.

"Shoshone" to cruise around constantly. Strong ocean currents make these equatorial islands dangerous to shipping. Landing was accomplished by going thru the breakers in a surfboat and great credit must be paid to the sailors of the "Shoshone" for their skill in this respect. Supplies were beached only with great difficulty, the drums of gasoline being the hardest problem as they had to be floated in thru the surf.

The colonists and W.F.A. workers on Howland appeared to be in good health and spirits. The airport on this island was inspected by myself and believing it to be safe for flying for the average skilled pilot I radioed General Yount to that effect. A loaded Martin bomber (B-12A) could operate from the field provided the pilot exercises normal good judgment and technique. As the prevailing wind (16 m.p.h.) is along the East-West runway, which is 2400 feet long, 200 feet on the West end being sand and slightly soft, information was requested as to Miss Earhart's take-off run in Honolulu. The North-East South-West runway is approximately 2900 feet long, 250 feet on the South-west end being sandy and soft. The North-South runway is approximately one and one-fourth miles long with one-eighth mile on each end unsuited for landing due to small gullies. Excepting for the sand areas mentioned the runway surface is of broken rolled coral making a good hard surface capable of carrying the weight of a heavily loaded airplane. With grading equipment an additional 500 feet could be added to the East-West runway by making a small cut and fill on the beach at the west end. Further examination disclosed that the thousands of birds would be a great hazard to airplanes in flight. The birds are roughly of three general types, Frigate birds being the size of a large buzzard, Booby birds equally large and Terns the size of small pigeons. A conservative estimate being at least 10,000 Frigate birds, 10,000 Booby birds and 15,000 Terns. These birds apparently have no flocking instinct and it is doubtful if an airplane would be successful in herding them away from the island. By the use of shotguns, TNT and clubs most of the bird colonies were driven to the north end of the island. This would enable an airplane to make a reasonably safe landing on the runways. A solution to the bird problem would be to exterminate the Booby birds with clubs at night. The Frigate birds being unable to fish for themselves, and there being no more Booby birds to rob of their fish, would either starve or depart for other islands. The Terns would probably have to be destroyed with clubs at night and guns in the daytime. It might also be possible to chase these birds to Baker Island 37 miles away by the use of explosives and further molesting. Numerous hermit crabs and rats constitute a serious problem in sanitation. At night rats swarm everywhere, therefore rat-proof buildings seem to be the only solution to this problem.

Since 50 percent of the supplies and gasoline had been landed when word was received that Miss Earhart had been delayed another day it was decided to visit Baker Island, 37 miles away, and unload supplies for that island. During the night the "Shoshone" drifted onto the reef



Expedition to the American Territorial Islands, Contd. April 10, 1937.

at Howland and it was necessary to wait four (4) hours for a high tide to float her again. Fortunately, the tide was low at the time and good seamanship saved the ship from material damage or possible loss.

BAKER ISLAND:

Baker Island was sighted about 9:00 A.M., March 16, 1937, and was the same appearance and type as Howland. The camp on Howland, Baker, and Jarvis Islands is located in the highest place on the lee side, which is about 20 to 30 feet above sea level. Baker Island is nearly square with roughly one and one-half miles to a side. Some grading and blasting would be necessary to build an airport here. However the problem of landing supplies thru the surf on this island is so hazardous it seems inadvisable to make an airport here. By a stroke of good luck all supplies were landed prior to night and the ship prepared to drift off shore until daylight for the return trip to Howland. Birds, rats and hermit crabs abound on this island in the same numbers as at Howland.

During the night the "Shoshone" drifted out of sight of Baker. The morning star fix proved to be worthless due to a new Quartermaster on the ship changing the back watch of the navigator without notifying the Navigator of the change in time. In addition the declination of the sun made sight for latitude impossible. Following a suggestion from Capt. Meyer, that next time a Booby bird be used for its homing instinct and the ship set its course with that of the Booby. Capt. Finlay of the "Shoshone" plotted our position using his experience with ocean currents and we finally managed to sight Howland about 3:30 P.M., March 17, 1937. This merely illustrates the navigation problem as applied to an airplane and demonstrates the absolute necessity of a direction finding station and good radio station either on Howland or on a ship near there, especially for accurate and positive safety to airplanes landing on Howland. These islands are only visible nine(9) miles from the bridge of a ship.

HOWLAND ISLAND:

Arriving at Howland the remainder of supplies were landed while I marked off dangerous areas on the ends of each runway. This was done with red flags laid on the ground. In addition it was necessary to remove numerous survey stakes from the runways. Two windsocks were set up to indicate wind direction. For a possible dusk or night landing, preparations were made to outline the runways by cans filled with burning gasoline and oil. Two large acetylene construction lights were also available as flood lights. In order to guard against fire following a bad landing or take-off a crew equipped with fire extinguishers was to be stationed near the center of the field. Arrangements were also made for surf boats to be stationed in the water off the end of the runways. Pending the take-off of Miss Farhart, several pieces of road building equipment were completely disassembled and ferried to the "Shoshone" for return to Honolulu. This was accomplished with difficulty. During all this time I remained on shore, but learning of a further delay in the take-off schedule, I returned aboard the ship after seeing the Chinese camp cook preparing a supper of Frigate birds. These

birds greatly resemble buzzards and look about as as appetizing. The next day we learned that Miss Harhart's airplane was damaged and the flight definitely off so the gasoline, oil and fuel servicing pumps were stored on the island for future use. Instructions were also issued to the colonists on the island to add the finishing touches to the runways in the form of crushed coral and more rolling. For the short time that he was on the island Mr. Campbell is to be commended for the amount of runway construction accomplished.

Having completed all business on Howland we sailed due east to Jarvis Island. During the jaunt to Jarvis, Davy Jones, King Neptune's scribe, boarded the ship and issued subpoenas to all pollywogs to appear before Neptune Rex for judgement. The "Shoshone" was due to enter South latitude the following day. During the evening the Captain, a shellback, apprehended the Navigator, a pollywog, plotting a course to cross line prior to the specified time. This resulted in the Navigator being placed in home-made stocks for safekeeping. The following day as the "Shoshone" entered South latitude, Neptune Rex with family and accompanied by a royal court consisting of the devil, Royal Surgeon, priest, prosecuting attorney, Royal Cop, et al, proceeded to try pollywogs, all of whom were found guilty of various offenses. This resulted in receiving the attentions of the Royal Doctor, Royal Barber, etc. The following morning March 22, 1937, Jarvis Island was sighted.

#### JARVIS ISLAND:

Jarvis appeared as a desert island similar to Howland and Baker with the usual rats, hermit crabs and innumerable birds. The island is nearly square and annular shaped, the edges being about 30 feet high and the center about 10 feet above sea level. As with Howland and Baker no anchorage is available, the reef dropping off into deep water. This island is, however a fine natural airport and landings in its present condition could be made without much danger. As an airport, runways at least a mile long could be constructed for any wind direction with very little trouble, only a little grading and surfacing being necessary. Landings are made thru a tricky narrow channel blasted thru the reef on the lee of the island. Evidence of the guano shipping days are found in an old tramway, cisterns, an old iron tank, a wooden tower and several graves. On the south side of the island the wreck of the "Amaranth", a four masted sailing ship, is broken up on the reef. The "Amaranth" was wrecked in 1913 while carrying a cargo of coal from Australia to San Francisco. All business being completed we sailed that afternoon to Fanning Island to deliver a quantity of mail. On Fanning Island is located a British cable station with a colony of about 20 whites, several natives and a constabulary consisting of a Commissioner and six Gilbert Island natives in uniforms.

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lagoon. Vegetation consisting of coconut and palm trees. The cable station employees appeared to be Australians and were very hospitable to us during the few hours we were ashore. This island has excellent seaplane possibilities and my general impression was that something of that nature is now going on although it was impossible for me to get accurate information on the subject. A land airport was constructed mainly for Kinsford-Smith on his last Pacific flight and from conversation I gathered that it was classified only as an emergency field. However it would be possible to construct a reasonably satisfactory airport for land planes on this island. Anchorage for ships is available and supplies are easily landed. Rainwater is collected for drinking purposes. That afternoon we sailed for Palmyra Island which is an American possession.

#### PALMYRA ISLAND

We arrived at Palmyra March 26, 1937. This coral atoll consists of some fifty little islands surrounding a lagoon. It is about five miles long and two miles wide. The islands are thriving with coconut trees, coconut crabs and hermit crabs. A few Booby and Frigate birds and quite a few white love birds inhabit these islands. The love birds are beautiful and very curious, flying a foot or two over one's head and observing every move. At present there are no human inhabitants although an abandoned hut was found on one of the islands. There is no fresh water on the islands. Ship anchorage is available and with a little dredging and filling a harbor, seaplane base and landplane base are possible. During low tide land planes could land on the hard packed coral sands which are of considerable area. Due to Palmyra and Fanning Islands being where two ocean currents meet considerable rainfall results. Leaving Palmyra in the afternoon we arrived in Honolulu at noon March 29, 1937.

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-Australian landplane route. Baker can be eliminated because of difficulties in landing supplies, there being practically no lee to the island. Airport possibilities on Howland are definitely inferior to those on Baker but supplies can be landed as there is a fairly good sheltered side for landing operations. Should Howland become desirable commercially the East-west runway should be extended from 2400 to a total of 2700 feet and oiled. The present runways are reasonably safe for landings by competent pilots only.

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RECOMMENDATIONS:

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Expedition to the American Equatorial Islands, Cont'd. April 10, 1937.

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

Copy #3



Howland Island,  
March 15, 1937,  
Lat. 00° - 49' N. Long. 176° - 43' W.

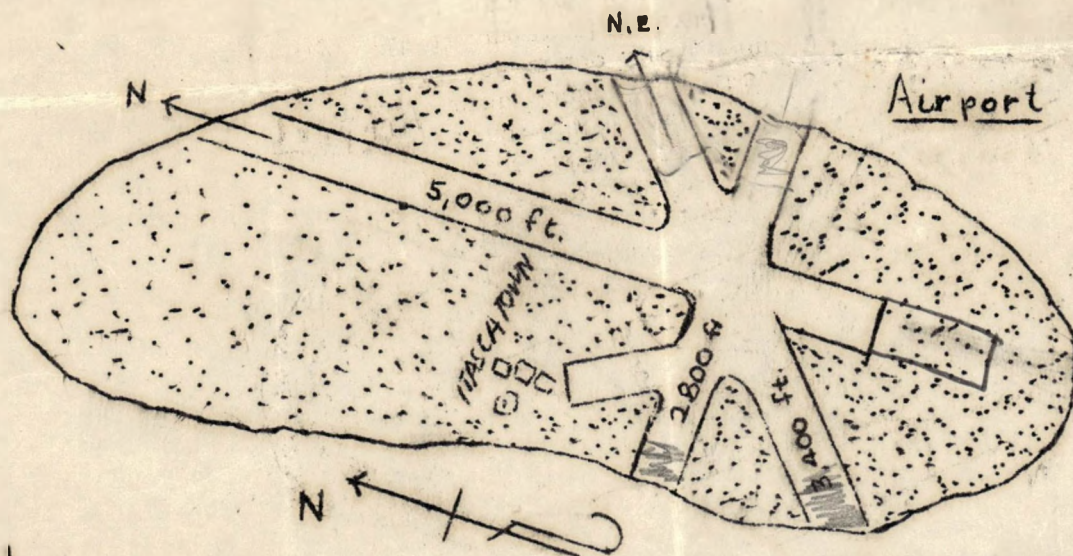
Howland Island is shaped somewhat like a kidney bean. It is approximately one and 6/10 mile long and about 1/2 mile wide. It ranges in height from 17 to 20 feet. It was first reported by Captain George E. Netcher of New Bedford in 1842 and formally possessed for the American Government by Captain John Papy of the Hawaiian Schooner Liholiho. Until about 1879 it was extensively exploited by the Americans for its rich Guano deposits. It was re-populated by the U.S.C. G.C. ITASCA in April, 1935 and since then been occupied by 4 Hawaiian youths almost continuously. It is under the administration of Richard B. Black, Dept. of the Interior and an air port has been constructed under the direction of Robert L. Campbell, Dept. of Commerce. The Coast Guard, Army and Navy have all cooperated with these two agencies in recent development, Coast Guard visiting the island quarterly with water and supplies. This is the ninth expedition.

The island is a flat coral formation with sand and coral beaches and fringed on all sides with a flat platform reef. Water surrounding the island and the reef abound in all forms of tropical fish. Strong ocean currents sweep by the island at several points. No anchorage is available and landings are made through the surf by running a line from a station boat to the beach. Rainfall is very light and fresh water must be imported. A strange phenomenon is interesting in this regard: Rain squalls approaching the island separate into two parts just before reaching it and often rain may be seen falling in the ocean all around the island while none falls there. This is apparently caused by a column of heated air rising from a white hot sand or the island.

Vegetation is extremely limited and with the exception of stunted and nearly leafless growths of Kou trees there are none on the island other than those planted by these expeditions during the past few months.

Thousands of tropical sea birds, principally Booby, Frigate, and Tern; nest on the island. The only animals to be found are thousands of rats and mice. Two reptiles are in evidence, the Gecko lizard and Snake-Eyed Skink. Both of these are harmless.

There is some evidence of early south sea islander occupation: Excavations, one several hundred feet long; remains of low flat mounds, probably the foundation of floors; and several foot paths have been found. In 1862 there were discovered fragments of a canoe, pieces of bamboo, a blue bead and the remains of a hut. A human skeleton was also found but it crumbled at touch.





1. JARVIS.

(a). Characteristics: Jarvis Island ( $0^{\circ} 23' S.$ ,  $160^{\circ} 02' W.$ ) is supposed to have been discovered by Captain Brown of the English Ship "Eliza Francis" in 1821. It was surveyed by officers of the U.S.S. "St. Mary" in 1857; again by the U.S.S. "Whippoorwill" in 1884; and it was annexed to Great Britain in 1889. Guano was removed during the 70's and 80's, so much so that when, in 1906, it was leased to the Pacific Phosphate Co. of London and Melbourne, it was found that the best guano had already been taken. In 1913 the barkentine "Amaranth" of San Francisco went aground on the south beach, where its poop is still to be seen.

This island, lying about 400 miles south and east of Palmyra, is of sand and coral formation; 1.9 miles east and west by a little over a mile north and south, and with an area of 1.66 square miles. It is saucer-shaped, with a beach rim enclosing a basin. The outer beaches are rather steep, composed of sand, or or sandstone slabs or shingle. About 40% of the rim exceeds 20 feet in height, and less than 25% is lower than 15 feet. At its lowest point the basin is but a few feet above sea level, and much of it is rich in guano from the droppings of myriads of sea birds. Around the shore is a narrow fringing reef, off which the slope drops abruptly to great depth.

Landing is made fairly easy by a break which was apparently blasted in the reef, near a four-sided wooden beacon, 25 feet high, on the west side. Near here are evidences of former occupation of the island: foundations of three or four houses, a brick-lined cistern, a large tank, a rusty windlass, a pile of bricks, the bed of a guano tram line leading to diggings near the center of the island, and a few graves. - Extract from the Itasca Scientific News, Mar. 27, 1935, edited by E.H.Bryan, Jr., Curator of Collections, Bishop Museum.





HOWLAND ISLAND      LOOKING EAST





HOWLAND ISLAND      LOOKING EAST





HOWLAND ISLAND





HOWLAND ISLAND





WEST END of  
EAST WEST RUNWAY

Prevailing Wind from East

HOWLAND ISLAND