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TO : C. L. TYLER, Manager, SFOO, Albuquerque **DATE:** 25 September 1952
FROM : P. W. SPAIN, Field Manager, Eniwetok Field Office *Repair*
SUBJECT: PRELIMINARY RECONNAISSANCE OF BIKINI ATOLL

SYMBOL: REC - 624

~~THE NATIONAL SECURITY AGENCY HAS BEEN ADVISED THAT THIS DOCUMENT CONTAINS SECURITY INFORMATION IN SUCH A MANNER TO AN UNAUTHORIZED PERSON IS PROHIBITED BY LAW.~~

On September 18 and 19, 1952 the following persons undertook a reconnaissance of Bikini Atoll: P. W. Spain; Brig. Gen. Walter W. Wise, CTG 132.4; H. H. Lewis, AEC Resident Engineer; Comdr. Joseph Hall, J-3, JTF 132; Harry Allen, LASL; Roy Stone, photographer, LASL, and the following Holmes & Narver personnel: Claude Coray, Bob Carl, Sam Howell, David Narver, Leighton Hammond and John Paolozzi.

The trip was made by a special PBM flight and during the time spent at Bikini Atoll, we were supported by IST 836 under the command of Lt. Marvin Walker, USN.

Upon arriving at the Atoll, a tour of the entire Atoll was made by air and Mr. Stone took photographs of each island. These photographs have been transmitted separately to the Eniwetok Field Office, Albuquerque.

During the afternoon of September 18th, a ground reconnaissance of Bikini Island was made. Because of the heavy jungle growth on this island, it was impossible to gain access to the interior except for one primitive road which runs from the lagoon side to the ocean side in the south central portion of the island. However, this island does have satisfactory sources of aggregate, can be landed on by IST and can have an airstrip constructed up to about 4,000 feet in length.

On September 19th the entire party spent the day until about 4:00 PM in reconnoitering group of islands from Enirikku to Airukijji. The chain of islands from Eninman to Airukijji are quite suitable for a Mike type experiment including the use of approximately 3000 yards of either helium box or co-axial cable. *The* reef between these islands is entirely dry at low tide and the islands have sufficient land area to permit borrowing and fill for the causeways. It was determined that an airstrip of 4,500 feet long suitable for C-54 aircraft could be located either on Eninman-Reere Islands or on Airukiraru-Airukijji Islands. Later study of the most suitable location

RG 326 US-ATOMIC ENERGY COMMISSION

Location ALCO

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Folder PLBL (NTS, Eniwetok)

BIKINI - F4-53

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Preliminary Reconnaissance of Bikini Atoll (Continued):

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indicates that the latter location would be the best. In connection with the airstrip, there is attached hereto a copy of a report made by Brig. Gen. Wise which states the requirements for an airstrip. For your information Gen. Wise's report indicates that no more airstrip length is needed for a C-54 than for a C-47. All of these islands are also heavily jungled but it appears that the soil on the islands contains a high percentage of hard boulders and gravel which will furnish an excellent source of aggregate. It was further determined that an IST landing should be established on Reere Island with little difficulty, but that the best location for the camp in order to allow flexibility for location of the zero point would be in the east central portion of Eninman Island. ||

As to possible alternate locations in the Atoll for a Mike type experiment, it appears that Bikini Island and the two small islands immediately to the south would be most suitable insofar as the economy of construction is concerned. However, the northwesterly group of islands which include Namu Islands could be made to serve for such an experiment. The northern group of islands in which Aomoen is included contains very scanty land area and it would be a considerable problem to obtain enough fill in this location for causeways. Should it be determined after IVY that the long run of either helium box or co-axial cable could be dispensed with, the latter group of islands could be used and it may also be possible to use Enyu Island as an experimental site.

The party returned to Eniwetok on the evening of September 19th.

In subsequent conferences with the Commander, JTF 132 and Commander, TG 132.1, it was agreed that construction would proceed beginning about October 1st on the Eninman-Airukiraru-Airukijji group of islands. The initial work will consist of a campsite, airstrip, marine landing facilities and causeways. More detail on this matter is given in my letter to Holmes & Narver, MC-162, dated 24 September 1952, Subj: Additional Scope of Work; Bikini Atoll - Contract AT-(29-2)20, a copy of which has been forwarded to you. |||

FWS:ctj

- cc: CJTF 132
- CTG 132.1
- H & N, Losa
- H & N, PPG
- F. W. Hohner
- Chronol & Central

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Visit to Bikini Atoll

General Clarkson

Deputy for Air

20 Sept 1952

1. In accordance with your expressed desires, I accompanied Mr. Paul Spain, AEC Field Manager, and party on a survey trip to Bikini which consumed the greater portion of September 18 and 19.

2. My activity during this visit was to advise Mr. Spain and party with respect to minimum airstrip requirements to accommodate C-47B and C-54G (R5-D, Navy designation) type of aircraft. This was in furtherance of your views that only one camp for conducting Operation CASTLE should be constructed on Bikini. Also, foremost in my mind was the decision by the Atomic Energy Commission on 12 September which approved in principle the use of Bikini and authorized the initial survey plus austerity and simplicity in facilities.

3. The following is substantially the advice I gave to Mr. Spain and party in order that they might proceed with their preliminary discussion and planning:

(a) That a coral strip of 4,500 feet length by 150 feet width, aligned as near as possible with the prevailing winds and with zero approaches, would be adequate for the landing and take-off of C-54G (R5-D, Navy designation) and C-47B aircraft whose gross weight did not exceed 60,000 pounds and 31,000 pounds respectively.

(b) I further stated that a clearance of 125 feet from the usable edge of the runway to the nearest obstruction would be the minimum requirement and that the runway should not be aligned from the prevailing winds to exceed 20°, pointing out that every knot of headwind for take-off and landing purposes was equal to approximately 50 feet of runway surface.

(c) In addition, warm-up facilities for approximately 6 aircraft would be necessary. The warm-up apron should be finished with some sort of paving.

4. It is realized that the above airstrip requirements are far short of those specified for airbase criteria expressed in Air Force publications. However, for aircraft not exceeding the gross weights indicated above, they are well within the limitations expressed in the appropriate Handbook of Operating Instructions for the two types of aircraft involved, provided that the runway surface is firm and not subject to becoming slippery when wet. If this condition were to exist, then considerably more runway length would be required for the landing roll in view of ineffective braking action. It is my feeling that the C-54Gs and the R5-Ds utilizing the strip at Bikini in the main will depart from Johnston Island as the

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last stop. Therefore, they should gross in the neighborhood of 55,000 pounds upon arrival at Bikini, assuming that the take-off gross would be 72,000 pounds which is maximum for MATS operated C-54G and R5-D aircraft. As a matter of information to you, the empty weight for the C-54G aircraft is 38,656 pounds. Its maximum fuel capacity is 3,540 gallons; its span is 117.5 feet; its length is 93.4 feet; its height, 27.5 feet.

From a layman's point of view it appears to me that the runway criteria set forth above is possible in at least two locations of the "Alpha" Group identified in the Holmes & Narver "Report on Auxiliary Proving Ground in the Marshall Islands for the Atomic Energy Commission," dated 1 August 1952.

/w/ Walter W. Wise, Jr.
WALTER W. WISE, JR.
Brig. General, USAF
Deputy for Air

cc: Mr. Paul Spain

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