

ARMY PEARL HARBOR BOARD EXHIBIT No. 58

[SECRET]

REPORT
ON THE ESTABLISHMENT OF AN AWS
IN HAWAII

Prepared by Signal Office Central Pacific Base Command 31 August 1944

[1] TABLE OF CONTENTS

SECTION I

INITIAL PHASE (15 DECEMBER 1939 TO 25 MAY 1941)

1. Original War Department Directive.
2. Appointment of Board of Officers for AWS Planning.
3. Activities of original AWS Board.
4. Initial Hawaiian Department action upon receipt of W. D. approval.
5. AWS plan for HD (Result of Board Report & WD Decision).

SECTION II

DETAILS OF ACTION TAKEN IN INITIAL PHASE

1. AWS Construction.
 - a. Information.
 - b. Funds.
 - c. Construction.
 - d. Arrival of equipment.
2. Status of AWS Equipment. (Monthly Reports).
3. Signal Communication projects submitted to War Department.
4. Mt. Kaala, Oahu. (SCR-271).
 - a. Negotiation with C. G. Schofield Barracks.
 - b. Signal Communication.
 - c. Action in HD.
5. Kokee, Kauai. (SCR-271-A).
 - a. Negotiations with T. H.
 - b. Action in HD.
6. Haleakala, Maui. (SCR-271).
 - a. Negotiations with the D of I.
 - b. Negotiations with the WD.
 - c. Action in HD.
7. Information Center.
8. Nuuanu Pali, Oahu.
9. Manawahua, Oahu.
10. Mauna Loa, Hawaii.
11. Kauai Mobile Station.
13. Maui Mobile Station.

[2] SECTION III

SECOND PHASE (28 MAY 1941-DECEMBER 1941)

1. Priority and Delivery Schedule of Detectors for the Hawaiian Department.
2. Board Changes.
3. Action Taken on the New Detector Allotment Schedule.
4. Preliminary Report Submitted to War Department on Revised AWS Projects.
5. Revised HD AWS Project.
6. Safeguarding AWS Stations.

SECTION IV

DETAILS OF ACTION TAKEN IN SECOND PHASE

1. Additional correspondence regarding project (second Phase).
2. Pahoa, Hawaii.
3. Opana, Oahu.
4. Manawahua, Oahu (Fixed).
5. Makapuu, Oahu (Changed to Ulupau Head Early in 1941).
6. Kahuku Ranch, Hawaii.

SECTION V

INSTALLATION AND USE OF FIRST SIX SCR-270-B MOBILE UNITS

1. General.
2. Original Station Locations.
3. Establishments of Temporary Information Center.
4. Tests prior to December 7, 1941.
5. AWS Activities on December 7, 1941.

[3] SECTION I—INITIAL PHASE (15 DECEMBER 1939 TO 28 MAY 1941)

1. *Original War Department Directive*

The plan of the War Department to establish Aircraft Warning Service in the Hawaiian Islands was first indicated in a letter dated December 15, 1939, by the Secretary of War to the Commanding General Hawaiian Department. This letter outlined the basic principles involved, and suggested the following eight aircraft detector station locations, based on a map study made by the Office of the Chief Signal Officer:

Detector Stations No.	Located on	Geographical Designation	Elevation in feet
1.....	Niihau.....	Kaao.....	1018
2.....	Kauai.....	Wekiu.....	3255
3.....	Oahu.....	Puu Kauweeweole.....	1000
4.....	Oahu.....	Tantalus.....	2018
5.....	Kahoolawe.....	Puu Moiwai.....	1161
6.....	Mauui.....	Kalhuakala.....	2450
7.....	Hawaii.....	Puu Ohobia.....	5523
8.....	Hawaii.....	Kane Nulo.....	3282

The letter further directed that a plan for the establishment of an AWS in the Hawaiian Department be submitted to the War Department not later than 1 May 1940. Inclosure #1 to this report shows the original War Department directive.

2. *Appointment of a Board of Officers for AWS Planning*

a. On receipt of the above letter from the WD the C/S, Hawaiian Department, directed a board of officers be formed. (See Inclosure #2.) In a letter dated 15 January 1940 Headquarters Hawaiian Department formed the Board of Officers. It consisted of the following members:

Colonel G. L. Van Deusen, Signal Corps, President

Lt. Colonel John H. Lindt, OAC Member

Lt. Colonel William E. Lynd, (Major), A. C. 18th Pursuit Group, Member

Capt. R. J. Fleming, Jr., C. E., Asst. Dept Engr, Member

Recorder, without vote, a Signal Corps Officer on duty at Dept. Hq. to be designated by the Dept. Signal Officer

b. The board was directed to prepare a plan for an Aircraft Warning Service for the Hawaiian Department and to be submitted to Headquarters Hawaiian Department not later than 1 April 1940. (See Inclosure #3.)

[4] 3. *Activities of Original AWS Board*

a. The AWS Board held its first meeting 18 January 1940. Details of the activities of the board between that date and 19 March 1940 are contained in the Preliminary Board Report which was submitted 15 March 1940 by the Signal Officer to the Chief of Staff, Hawaiian Department. (See Inclosure #4.)

b. The final report of the Board of Officers together with the letter of transmittal to the War Department, dated 17 April 1940 is shown in Inclosure #5.

The installation of one fixed and seven mobile stations was recommended to the WD as follows :

Group Priority	Priority Within Group	Island	Location	Type
I.....	1.....	Oahu.....	Mt Kaala.....	Fixed SCR-271.
	2.....	Kauai.....	Vicinity of Kokee.....	Mobile SCR-270.
	3.....	Maui.....	Haleakala.....	Mobile SCR-270.
	4.....	Oahu.....	Hickam Field.....	Intel. Ctr.
	5.....	Oahu.....	Nuanu Pali.....	Mobile SCR-270.
	6.....	Oahu.....	Manawahua.....	Mobile SCR-270.
	7.....	Hawaii.....	Mauna Loa.....	Mobile SCR-270.
II.....	1.....	Kauai.....	Note: A.....	Mobile.
	2.....	Maui.....	Note: A.....	Mobile.

NOTE: A. To be used as an auxiliary station in another location while the Group I station on the same island is operating, and as a substitute in the event of failure of the Group "I" station.

c. The project as outlined in the report mentioned in (b) above was approved by the War Department in the 4th Indorsement dated 27 June 1940 to the above mentioned letter with the following exceptions:

(1) Consideration be given to the establishment of the Information Center at Aliamau rather than Hickam Field.

(2) Station at Kokee Kauai approved as a *fixed* instead of a mobile station.

(3) Station at Haleakala, Maui approved as a *fixed* instead of a mobile station. The War Department advised that \$1,400,975 was included in the FY 1941 appropriation for the establishment of an Aircraft Warning Service in the Hawaiian Department. Approximately \$580,000 of this amount was immediately available for expenditure for engineer construction and other purposes in the Hawaiian Islands.

[5] 4. *Hawaiian Department Action Upon Receipt of WD Approval* (See Inclosure #6).

a. The Adjutant General's Office Hawaiian Department notification of War Department approval to the Signal Office, 9 July 1940. The Signal Office notified the C/S, 10 July 1940, that the plan recommended by the Department Commander had been approved by WD with minor changes. The Department Engineer was next notified of the project approval and in an indorsement dated 13 July 1940 he indicated:

(1) District Engineer was ready to proceed as soon as the funds were received.

(2) Surveys were being initiated on the Kaala cableway and station by troop labor of the Third Engineers.

(3) Selection of location of information center is necessary before estimating cost of the center can start.

In a letter dated 13 July 1940, Headquarters Hawaiian Department, Department Engineer informed the Chief of Engineers, Washington, D. C. the action taken on the Aircraft Warning Service, Hawaiian Islands. In the 1st Indorsement to this letter, the Chief of Engineers indicates funds in the amount of \$50,000 to initiate construction of Aircraft Warning Service were transmitted to the Hawaiian Department by letter of 24 July 1940.

5. *AWS Plan for HD. (Result of Board Report and WD Decision).*

The Aircraft Warning Service will consist of a net of eight stations three of which are fixed stations and five mobile. North and west limits on the net are determined by the stations on the island of Kauai and the South and East limits of the net by the stations on Hawaii.

Type	Station Location	Purpose
Fixed (271)	Kokee, Kauai	Primary station.
Fixed (271)	Mt Kaala, Oahu	Primary station.
Fixed (271)	Haleakala, Maui	Primary station.
Mobile (270)	Puu Manawahua, Oahu	Relieve Kaala station of the necessity of continual search.
Mobile (270)	Nuuanu Pali, Oahu	Coverage of dead space between Kaala and Haleakala stations.
Mobile (270)	Mauna Loa, Hawaii	Extends coverage in the South and East direction.

The remaining two mobile stations have not been assigned a primary location. They will be stationed on Kauai and Maui to relieve the fixed stations on these islands from continually searching in a portion of their fields. The Information Center will be located at Aliamano. (See Incl #7.)

[1] SECTION II—DETAILS OF ACTION TAKEN IN THE INITIAL PHASE

THE FOLLOWING PARAGRAPHS, #1 AND #2 LIST INCLOSURES CHRONOLOGICALLY WHILE THE INCLOSURES IN THEMSELVES DO NOT FORM A STORY, THEY CONTAIN PERTINENT INFORMATION CLOSELY RELATED TO THE COMPLETION OF THE HD AWS PROGRAM AND ARE LISTED BELOW AS REFERENCES.

1. AWS Construction

a. Information received in HD for AWS Construction

- (1) Incl #8. 9 February 1940. Information on fixed detectors, SCR 271.
- (2) Incl #9. 5 August 1940. Information on design and construction of AWS buildings.
- (3) Incl #30. 27 August 1940. Instruction books for SCR 270 & CR 271 & SCR 268 have been forwarded to CG, HD.
- (4) Incl #10. 14 February 1941. Drawings for Oahu, Maui, Kauai & Hawaii.
- (5) Incl #11. 17 February 1941. Approved drawings for mobile Station shelters.
- (6) Incl #12. 19 August 1941. Instructions for the erection of towers and buildings used in AWS installations.
- (7) Incl #13. 8 September 1941. Instruction of erection of 36 foot tower and transmitter building.
- (8) Incl #14. 4 November 1941. Drawings for fixed detector equipment AWS.

b. Funds

- (1) Incl #15. 20 July 1940. Funds to be forwarded to District Engr to permit the initiation of Field Surveys for AWS sites.
- (2) Incl #16. 23 July 1940. Estimate of Engr cost for AWS construction.
- (3) Incl #17. 24 July 1940. District Engr receives \$50,000.00 to initiate AWS construction.
- [2] (4) Incl #18. 18 December 1940. Requesting funds in the amount of \$27,500.00 be made available to the Engrs. by the QM for the immediate construction of mobile shelters for SCR 270's—no funds at present available for the completion for this project.
- (5) Incl #19. 8 January 1941. Funds in the amount of \$130,000.00 is allotted. Money will be suballotted to Dist. Engr. \$70,000.00 is being withheld for the information center pending approval of this project by the WD.
- (6) Incl #20. 5 February 1941. Net cost estimate for AWS installations.
- (7) Incl #21. 8 February 1941. Funds for AWS.
- (8) Incl #22. 17 July 1941. Funds in the amount of \$46,000.00 are on hand for the construction of mobilization buildings, radio shelters.

c. Construction

- (1) Incl #23. 24 October 1940. Separation of detector bldg & radio communication bldg.
- (2) Incl #24. 7 November 1940. Construction of Aircraft Warning Station.
- (3) Incl #25. 28 November 1940. Misc. information on AWS construction regarding Col. Wymans trip to mainland.
- (4) Incl #26. 26 February 1941. Housing of 9th Sig Serv Co.
- (5) Incl #27. 11 April 1941. QM construction of AWS shelters.
- (6) Incl #28. 1 May 1941. Change; Engrs to construct AWS shelters.

(7) Incl #29. 23 July 1941. Early completion of AWS Kokee & Haleakala. d. *Arrival of Equipment*

(1) Incl #30. 27 August 1940. Estimated arrival of detector equipment: "Much before next June (1941)" by CSO.

(2) Incl #31. 6 February 1941. Informal letter from Col Van Deusen telling Col. Powell that detector sets (both fixed & mobile) probably will arrive the fall of 1941. This is [3] due to the higher priority assigned other defense areas.

(3) Incl #32. 17 February 1941. A letter from the Secretary of War informed the Secretary of Navy that detector equipment would be available in HD by 1 June 1941 and that it could be installed in the various stations immediately.

(4) Incl #33. 20 May 1941. HD receipt of several packages (marked for AWS) containing conduit, radio equipment & accessories.

(5) Incl #34. 2 June 1941. Action has been taken to secure additional long range detectors.

(6) Incl #35. 13 June 1941. Request for information on date portable detectors can be expected—supplies the information: *Three fixed units now here.* Answered, mobile detectors will be ready for shipment to HD during 19 July 1941. Towers and buildings for two SCR 271 & one SCR 271A have been shipped (19 July 1941).

(7) Incl #36. 21 July 1941. Information received that six fixed and six mobile detector sets will be shipped to HD from mainland by end of July 1941.

(8) Incl #37. 13 August 1941. AWS equipment is ready for shipment from states.

(9) Incl #38. 16 August 1941. 2nd Ind. "Items (fixed detectors) referred to in basic communications were delivered to Signal Property Officer, AWS, Ft. Shafter on 15 June 1941. (Note: This shipment did not include towers and buildings. See Incl #35).

2. Status of AWS Equipment (Monthly Reports)

a. In a radio dated 26 August 1941 the CSO requested monthly radio reports on the status of installation of Signal AWS equipment in the HD. These monthly reports were to cover the percentaged completion of the following items: Power, Detector, communication-radio, telephone. The following sheet lists these monthly reports in tabular form:

[4]

Percent Complete

Location	Project numbers	Overall	Power				Detector				Comm-radio				Telephone			
		16 August 41	3 Sep 41	30 Sep 41	1 Nov 41	2 Dec 41	3 Sep 41	30 Sep 41	1 Nov 41	2 Dec 41	3 Sep 41	30 Sep 41	1 Nov 41	2 Dec 41	3 Sep 41	30 Sep 41	1 Nov 41	2 Dec 41
Kokee, Kauai.....	R-1113..	0	0	0	5	5	0	0	10	0	0	0	0	0	0	0	0	10
Haleakala, W. Slope.....	R-1123..	0	0	10	10	10	0	10	10	10	0	0	0	0	0	0	0	0
Kokee, Road.....	R-1133..	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haleakala, Maui.....	R-1143..	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Information Center (Permanent).....	R-1149..	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Information Center (Temporary).....		90																
Mt. Kaala, Oahu.....	R-1155..	10	0	0	0	0	0	0	0	0	0	0	0	0	25	25	25	25
Manawahua, Oahu.....	R-1157..	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(See Incl #39 & #40.)

[5] 3. *Signal Communication Project Submitted to the War Department.*

a. *Initial discussion regarding signal communications.* On 30 July 1940 the Signal Officer HD advised the Chief Signal Officer of the signal communication requirements included in the Original Board Report, and raised the question as to whether or not the necessary radio equipment was to be procured locally. The Chief Signal Officer advised on 10 September 1940 that the radio equipment would be procured by that office, but that a complete project should be submitted to insure that all of the equipment would be furnished. (see incl 41)

b. *Project for Signal Communications.* On 17 October 1940 the Signal Officer, Hawaiian Department, furnished the Chief Signal Officer with additional details of the Signal requirements. (see incl. 42). In a reply dated 17 January 1941 the Chief Signal Officer indicated that the radio transmitters requested could be furnished, but that funds were not available to procure certain receivers and loud-speakers requested by HD. The detailed requirements at each of the sites were further outlined in the 2nd Ind. of the Signal Officer, HD to the Chief Signal Officer on 31 May 1941. (Note: Although dated 31 May, this indorsement was not mailed until about 26 June 1941. (see incl. 42). Following is a list of items included in this project and an indication of the action taken by the Chief Signal Officer in his reply 3rd ind dated 27 September 1941:

ITEM	ACTION BY OCSigo
Wire Comm.—Mt. Kaala, Oahu	Approved by separate correspondence
" " Kokee, Kauai	Approved
" " Nuuanu Pali, Oahu	Disapproved (site abandoned)
" " Haleakala, Maui	Approved
" " AWS Info Center, Oahu	Disapproved
" " Teletype	Disapproved
" " Manawahua, Oahu	Approved (no requirements)
Radio Comm.	Approved

The Chief Signal Officer disapproved the AWS Information Center and Teletype requirements because he had not been informed of War Department approval of Information Center. In reply on 17 October 1941 the Signal Officer, HD, informed the Chief Signal Officer that the Information Center was already under construction at Fort Shafter and quoted the correspondence wherein the Adjutant General has been so informed. There was no further exchange of correspondence on this point.

c. Additional information on the subject of Signal Communications is included in inclosures #43, #44 and #45.

[6] 4. *Mt. Kaala* was approved as a fixed station by 4th Ind. of WD 27 June 40 to HD ltr 17 April 1940 (see Incl #5).

a. *Negotiation with Commanding General, Schofield Barracks, T. H.*

(1) The CG Schofield Barracks was notified in letter, dated 17 July 1940, that the HD was installing, with WD approval, a radio aircraft detection station on Mt. Kaala. Further it would be necessary to install a cableway to the summit of Mt. Kaala. The route of the cableway would start near the firebreak trail making it necessary to permanently withdraw a portion of the artillery range in order to insure the cableway would not be damaged. (See Incl #46).

(2) In a 1st Ind., dated 7 August 1940, the CG Schofield Barracks, pointed out that 90% of the artillery fire is concentrated in the very area that is being requested withdrawn. The range, thus reduced for firing, would be of little value as an artillery range. The training value of the range is so great that the CG recommended that every effort be made to find a route for the cableway that would not curtail the range. (See Incl #46).

(3) The HD reply, 2nd Ind. dated 17 August 1940 and a letter dated 20 November 1940, informed CG, Schofield Barracks, that after the study of additional aerial photographs the proposed location of the lower tower terminus of the cableway had been moved west of the firebreak trail. (See Incl #46).

b. *Communication.* In a letter, dated 7 September 1940, the HD submitted to the CSO a signal project for the installation of a 11 pair-19 gauge subterranean cable to the AWS Station on Mt. Kaala. (See Incl #47).

c. *Action in HD*

(1) Preliminary survey of access road completed by 12 December 1941. (See Incl #48).

(2) Work on access road to lower terminus of cableway to start (approx.) 1 February 1941. (See Incl #49).

(3) Additional information on proposed communication building for Mt. Kaala, 31 January 1941. (See Incl #50).

ALICE ANSLEY, who resides at 938 East Edgemore Road, Los Angeles, Cali-

(4) Proposed plan of buildings for Mt. Kaala are approved, 6 March 1941. (See Incl #51).

[7] (5) Survey of access road started 4 March 1941. (See Incl #52.)

(6) Cableway equipment awarded to Interstate Equipment Corps. for a two cableway system for \$57,755.00. Completion time is a 100 calendar days. 28 April 1941 (See Incl #54).

(7) Priority of Kaala cableway changed to "I-C." 26 June 1941. (See Incl #55).

(8) 21 February 1942. Aerial Tramway will be finished in about five weeks. (See Incl #56).

d. *Kaala Abandoned As a Radar Site.* About the time the cableway was completed, the usefulness of high sites for radar purposes was questioned. This was caused mainly by the poor results obtained at the Haleakala site. Construction at Kaala was therefore given a low priority and eventually was abandoned entirely for radar. The site, however, has proven very successful for VHF Fighter Control purposes.

5. Kokee, Kauai

a. *Negotiations with T. H.*

(1) In a letter, dated 18 July 1940, General Herron, Commanding, informed the Acting Governor of Hawaii that Congress had authorized the construction of certain military installations on the Island of Kauai as a part of the nation wide defensive program. The CG further pointed out that the site on Kauai was located in the land section of Honopu, Na Pali Kona Forest Reserve. Permission was requested to enter this reserve for the purpose of executing the necessary instrumental surveys. Further cooperation was requested by the HD in transferring the necessary territorial land to the WD. (See Incl #57).

(2) The Board of Commissioners of Agriculture and Forestry, in a letter dated 23 July 1940, granted the Army permission to make surveys for the location of the site. Mr. F. H. Lacey, President of the Board, indicated this question of "turning over territorial land" to the WD would be taken up at a board meeting within a week. (See Incl #57).

[8] (3) In his acknowledging letter, dated 5 February 1941, General Herron stated that due to discrepancies between the survey and the Kauai triangulation system it would be necessary to make additional field survey in order to get an accurate description of the land desired for the site. In addition due the extensive National Defense Program it is necessary that this site be initiated without further delay. Therefore, the Army requested permission to enter the land to initiate construction of the proposed project and that upon completion of the field survey covering the boundary, the land be transferred to the control of the War Department for military purposes. (See Incl #58).

(4) The Honorable J. B. Poindexter, Governor of Hawaii granted permission 21 February 1941 for the Army to enter the government land within Na Pali Kona Forest Reserve, Island of Kauai to initiate construction of projects planned for National Defense; on completion of description and survey of the land desired for Military purposes, and executive order transferring it to the United States government will be issued. (See Incl #59).

b. *Action In HD*

(1) Reconnaissance: 26 September (See Incl #60).

(2) Plot plan station X (Detector Site).

(a) Approved: 20 March 1941 (See Incl #61).

(3) Plot plan Base Camp.

(a) Approved: 20 March 1941 (See Incl #61).

(4) Construction:

(a) 2 July 1941. Due to the shortage of local carpenters, it was necessary to employ Japanese (American Citizens) carpenters for the construction of AWS camps at Kokee. (See Incl #62.)

(b) On 30 September 1941, the District Engineer transmitted fabrication drawings for this AWS Powerhouse building for radio at station X to the Field Area at Kauai. (See Incl #63).

(c) On 22 November 1941, Signal Corps men were shipped to Kauai to install the communication cable. This project was completed 11 December 1941 (see Incl #64.)

[9] (d) 2 December 1941. Status of construction. The following is report submitted by Lt. Ralph Caceres on his trip to Kauai 3 December 1941. (See Incl #65).

1. Operating building not complete at station X.
2. Set 2 power units at station X.
3. Set 1 power unit at Base camp. The approved power units to be furnished by the Engineers were 2 diesels units for Radio Communication building at the base camp (not completed.)
4. Distribution cable is not present for lighting system. #2 cond. park way needed to make set work.
5. 100 foot tower is up.
6. Heaters are at Honolulu.
7. Water trailer at Maui.

(e) Interview with Captain Ralph Caceres on the status of construction during his trip to Kauai 3 December 1941—Capt. Caceres and Sgt. Richardson went over to Kauai:

1. Buildings are not installed—Concrete floors poured for main operating building but not for the power building.
2. Tower and turntable were up.
3. Mr. Jones in charge. Delay in putting up because of no tower plans.
4. Barracks completion—No windows.
5. The three LeRoI's were there on December 3rd.
6. The Diesels (International Generators) for base camp obtained, sometime after December 19.
7. On December 3, cable crew were installing cable between unit and base camp. M/Sgt Cleary installed cable. Cable installed by 11 December 1941 (See Incl #64).

[10] 8. Radio station on air—Mr. Nicols went over at that time—before Radar on air first part of January.

9. On 22 January full complement of 42 men.
10. February 1, 1942 mess going. Previously messing at CCC Camp.
11. February 19, 1942 Caceres and two men went over to Kauai.
12. Barracks about 40% complete.
13. Water system, non existent.
14. No water tank. No concrete construction.
15. No heating system.
16. Radar transmitter not up.
17. Power plant not up.
18. Transmitter building erected between 19 December 41, and 22 January 1942 under Lt. Caceres' supervision.

(f) 19 December 1941. Lt. Caceres sent to Kokee for period of 14 days for duty in connection with AWS (See Incl #66).

(g) 26 December 1941. Status of AWS on Kauai, (See Incl #67).

1. Operations bldg. will be completed in one or two days.
2. Radio communications building in three or four days.
3. Area Engineer instructed to equip building.
4. Diesel plants will not be delivered until February 1942. It will be necessary to use local procurement.

(5) Equipment Status: July 1941. Equipment on hand at Signal Corps area for Kokee. (See Incl #68).

- (a) 3 ea Power units.
- (b) 2 ea Gasoline storage tanks, 4,000 gallons.
- [11] (c) 1 ea SCR-271-A less tower, building and control motors.

(d) Tower and building were shipped from Ft. Monmouth during the week of 15 July 1941 (See Incl #40 & #70).

(1) Tower Installations

(a) 20 November 1943. (See Incl #69). Request for tower and details of tower foundation from CSO.

(b) (See Incl #70). Building and towers for two SCR-271 and 1 SCR-271-A will be shipped from Ft. Monmouth, week of 15 July 1941.

(c) 6 August 1941. Construction of AWS tower foundation can commence as soon as plans are received. (See Incl #70).

(d) 17 September 1941. (See Incl #72 & #98). Tower and building material shipped to Port Allen, Kauai.

6. *Haleakala*. The Haleakala Station was approved by the WD as a fixed detector in the fourth indorsement to the HD letter dated 17 April 1940. (See Incl #5).

a. *Negotiations with the National Park Service.*

(1) On receiving notification of the WD recommendations the HD sent a letter (see Incl #73) dated 18 July 1940, to Mr. Edward G. Wingate, Superintendent of the Hawaii National Park, informing him that Congress had authorized the construction of certain military installations on the island of Maui as a part of the nation wide defensive program. Further the site of the installation on Maui was to be located at the highest point of Haleakala in the National Park. The CG pointed out that the HD intended to request:

(a) Transfer to the jurisdiction of the WD of an area at the highest point of Haleakala (probably an additional area farther down the mountain near the existing road).

(b) Transfer of a right of way for a motor road from the end of the existing road to this highest point.

[12] (c) Permission to make necessary instrumental surveys of the proposed site in Haleakala National Park.

(2) Mr. Wingate in reply (See Incl #73) to General Herron on 20 July 1940 stated:

(a) Approval for the use of National Park land must come from the Department of Interior rather than Superintendent Hawaii National Park.

(b) The CG's request is being forwarded to the Director of the National Park Service.

(c) Permission is granted to make the necessary instrumental surveys, with the understanding that the natural features of the park will not be disturbed.

(3) In a letter dated 17 October 1940 Edward G. Wingate, Superintendent Hawaii National Park, requested the following information in order to properly evaluate the WD's request for transfer of National Park land:

(a) Use that the National Park land will be put.

(b) Exact location.

(c) Approximate acreage.

(d) Proposed structures.

(e) Number and location for other sites planned for island of Hawaii and Maui.

Mr. Wingate points out as in the case of the bombing range withdrawal, the Department of Interior feels that there must be available other sites outside of the park which would serve the defense needs equally well. (See Incl #74).

(4) In a letter dated 12 November 1940, Mr. Wingate, Superintendent HNPS, request that the CG consider another site on Haleakala just outside the park boundary and only 5 or 6 feet lower than the Red Hill site—location of the proposed site. (See Incl #75).

[13] (5) The CG answer (letter dated 3 January 1941) to Mr. Wingate informed him that the question of sites had been thoroughly studied with his desires in mind. The results of the study, however, indicate that to locate the station on Kokelele rather than on Red Hill would result in a very greatly decreased field of coverage for this important installation, and therefore it was deemed advisable to use Red Hill. Not only was the site on top of Haleakala Red Hill reconsidered, but also the camp site further down the mountain. After a thorough study of all possible camp sites it was decided that the best location would be one quarter mile inside the park boundary on the east of the road up the mountain. (See Incl #75.)

(6) Therefore, the HD is requesting the WD to open negotiations with the Department of Interior for permission to extend the existing road on Haleakala to Red Hill and for the withdrawal of a small area at Red Hill and an area about 40 acres for a camp site near the point where the road up the mountain crosses the park boundary. (See Incl #75.)

(7) In radio (See Incl #76) dated 10 March 1941, Mr. Wingate informed the CG that the D of I approved the use of the proposed Haleakala installation and issued a Special Use Permit. The Army would:

(a) Expand the present CCC facilities as required for the accommodation of some 40 men and two officers.

(b) Equipment shed, and Officers quarters to be constructed adjacent to present CCC location.

(c) These buildings were to remain for Park use when the Army purposes have been served.

(d) Preliminary building plans to be prepared by Army with cooperation superintendent Hawaii NP and forwarded through him for approval by Director of National Park Service.

(e) Red Hill installations to be under similar special use permit and plans approved for building handled similar to that for camp.

(f) Plans accompanying General Herron's letter, dated 3 January 1941, are approved. (See Incl #75.)

[14] (8) General Short, in letter dated 27 March 1941, submitted the formal request complete with plans, maps, to the Superintendent HNP. This formal request is for permission to install certain military equipment on Red Hill in the Haleakala section of the Hawaii National Park. It is requested that the necessary action with National Park Service and the Department of Interior for the issuance of a Special Use Permit permitting these installations on Red Hill. (See Incl #77.)

(9) In a radio the Superintendent, HNP notified the CG that the plans were approved and the special use permit covering the Red Hill location will be issued soon. (See Incl #77.)

(10) The D of I issued a special use permit effective 9 April 1941 for detector site at Red Hill on Haleakala. (See Incl #78.)

(11) The formal request for the permission to construct and operate a base camp within the Haleakala Section of the HNP was submitted to the Superintendent HNP by the CG HD in letter dated 26 April 1941. This request is for an area of approximately six acres. The request is complete with plans and maps. (See Incl #80.)

(12) In letter dated 16 May 1941, Mr. Wingate, Superintendent HNP, notified General Short that the CCC camp had been abandoned for the use of the Army. (See Incl. #81.)

(13) In letter dated 27 May 1941, General Short acknowledged Mr. Wingate's permission to use CCC camp and informed him that the WD had notified the HD of the approval of the D of I and the issuance of a "special use permit" would be forthcoming. (See Incl #81.)

(14) The D of I issued a special use permit effective 17 May 1941 for the use of the camp site specified by CG in Incl. #80. This special use permit specified certain requirements to be satisfied by the Army in compliance thereof. (See Incl #82.)

b. Negotiations with WD regarding transfer of land, National Park Service..

(1) On notification that Mr. Wingate was forwarding the HD requests to the Directors of the National Park Service, the HD prepared a letter the 27th July 1940 to TAG informing WD that the Superintendent of Hawaii National Parks was referring the question of securing sites in Haleakala, to the Department of Interior. (See Incl #84.)

[15] (2) The HD recommended that the WD open negotiations with the Department of Interior for securing the National Park land (at Heleakala, Maui and Mauna Loa, Hawaii to be used as detector sites). The WD in a radiogram dated 14 September 1940, informed the HD that the transfer of land at Haleakala and Maui and Mauna Loa for AWS stations had been discussed with the Department of Interior. (See Incl #84.)

(3) In a 4th indorsement (See Incl #84 dated 16 September 1940 to the HD letter 27 July 1940 (mentioned above)) the AG advises that careful consideration must be given the Department of Interior Policy in the study of the site in National Park for these AWS stations, and for the other installations (See Incl #2 to this letter). In a letter from the Assistant Secretary of the Interior to the Secretary of War, the Interior Department policy is stated:

(a) The Department of Interior desires to cooperate in this matter.

(b) The DI is opposed to the permanent transfer of any additional land from Hawaii National Park for military purposes, unless the exigencies of military strategy make it necessary for national defense.

(c) It is also opposed to granting authority for using any part of the park temporarily therefor, unless it has been determined, after careful studies have been made that suitable land for such purposes cannot be obtained outside of the park boundaries in a manner and time reasonably necessary to meet the problems of national defense.

(d) The temporary use of any part of Hawaii National Park by the WD would be approved by the D. I. only after the submission of plans indicating how much land is to be used and the types of roads, structures, etc., which it is proposed to construct thereon. Such plans would receive prompt consideration.

(e) Should the WD request authority to use any portion of Hawaii National Park temporarily for national defense purposes, the D. I. will

require that, when it is no longer needed, it will be placed in the same condition as when authority for such use was authorized.

[16] (4) In Par #3 of the 2nd R/S Ind., (See Incl #84) the Engineers pointed out:

(a) The preliminary board took all possible sites into consideration.

(b) Effectiveness of AWS depends upon the height at which the station is located; the summit of Haleakala is the only feasible site in Maui.

(c) The upper terminus of the truck trail on Mauna Loa is the only feasible site on Hawaii.

(d) Protracted negotiations with D. I. for fixed station site will delay the start of construction until fiscal year is over.

(e) The money for the installation of these AWS stations is all fiscal year 1941 money, and it must be spent by June 30, 1941.

(5) Based on the above reasons HD drafted another letter (See Incl #85) dated 9 October 1940 to TAG, Washington D. C. This correspondence pointed out the establishment of a mobile AW station on Haleakala is recommended for the following reasons:

(a) Best site on rim of Haleakala Crater can only be determined by field test.

(b) Limited rainfall makes local water supply impracticable.

(c) Operating personnel should not be quartered at the summit of Haleakala.

(d) The National Park Service road leading to the summit of Haleakala can be improved at reasonable cost.

(6) In the 2nd Indorsement to this letter (See Incl #85) the OCSigO advised that:

(a) Fixed station would be the most satisfactory.

(b) Decision on location of communication building should be delayed until source of water is settled.

[17] (c) No Signal Corps funds are applicable for any additional barracks and quarters for AWS, these barracks and quarters necessary for the detachments meaning the two stations on Maui must be included under the housing project of the HD;

(d) Delivery of first SCR-270 to the HD cannot be expected before middle of May, 1941.

(e) Funds for the AWS, HD expire 30 June 1941. Time does not permit service test of equipment before sites are selected.

(7) In the fourth Indorsement (See Incl. #85) A. G. O. renders WD decision:

(a) Permanent station with quarters for the operating personnel in the communication building.

(b) Requested HD reconsider recommendation and indicate by radio (See Incl #86) whether mobile station is still recommended.

(8) Action taken by HHD on receipt of WD decision for decision.

(a) In a Memo dated 4 December 1940 (See Incl #104) to District Engineer, the Department Engineer submitted the results of a discussion based on the HD Signal Officer's (Colonel C. A. Powell) trip to Maui, General Herron made the following decision:

1. Haleakala station will be fixed type. Building on summit will consist of standard detector building, and antenna tower, standard power house, and the erection of communication buildings.

2. Communications building at summit will have only accommodations for a small caretaking detachment of five men.

3. Installation will be located on Red Hill.

4. Base camp will be located farther down the slopes of Haleakala, possibly outside the park boundaries.

5. Main communications buildings for the fixed station will be located at the Base camp and remotely controlled from detector site.

6. Consideration will be given to locating Base camp outside of National Park so that it would only be necessary to withdraw a "dumbbell shaped" plot from at the summit of Red Hill.

[18] (9) The WD was notified of HD decision by Radio 1977-7th (See Incl #86).

(10) In a 5th Indorsement (See Incl #84) to TAG, dated 3 January 1941, to a HD letter 27 July the CG informs the WD on the status of negotiations with MP's re to Haleakala and Mauna Loa sites.

(a) General Herron, Commanding, points out that the D. I. policy is, "This department is opposed to the permanent transfer of any additional land from Hawaii National Park for military purposes unless the exigencies of Military strategy make it necessary for national defense." The General further stated, "In my opinion the particular land described herein is demanded by the exigencies of military strategy for national defense. The early completion of the AWS in this department is a matter of the deepest concern, not only to the Army but to the Navy. In this, Admiral Richardson personally concurred."

(11) As an answer (See Incl #89) to this 5th indorsement the WD radio dated 3 March 1941, stated that informal discussion with the officials NPS indicates D of I is opposed to permanent transfer of any additional land in Hawaii National Park but will grant special use permit for Red Hill installation as recommended by the HD. Proposed road location appears satisfactory. The proposed telephone line is satisfactory. Park service is opposed to use of forty acre tract for camp site; suggest use of CCC spur camp in same general locality. There are some facilities at CCC camp now and a special use permit would be granted including permit to construct additional buildings and facilities with understanding that such installations will remain for park use when WD need no longer exists. Building on Red Hill to be held to a minimum. All building plans will be submitted to Superintendent Hawaii National Park to be forwarded by him to the D of I.

(12) In radio reply to the WD telegram, General Short's answer contained the following pertinent facts:

(a) Fifth Indorsement (Incl #84) represented best thought of officers making study.

[19] (b) Your radio, Inclosure #89, AGMO, 3 March 1941 transmitted in the clear does not appear to appreciate the seriousness of the situation.

(c) "I have personally reviewed the Haleakala situation and find that the officers responsible for this project had already thoroughly considered all the questions raised in your radiogram."

(d) AWS detector equipment is expected in June 1941 (see par. 2b).

(e) Haleakala is second most important station in the system and construction should not be delayed any further. If building plans must be submitted to D of I for its detailed examination, the completion of the Haleakala station, which is vital both to the Army and the Navy in the present situation, will be unduly delayed.

(f) *The seriousness of the situation requires that all administrative obstacles be removed; this applies not only to the Haleakala installation but also to the entire project.*

(g) It is recommended that this project be decentralized and that CG be authorized to make final decision on design and layouts and such other details as may be required to expedite completion.

(13) In a reply (see Inclosure #89) to the HD radio the WD authorizes the CG to make final decision on design and layout and other details of constructions within the limitations of funds now available for AWS project in the HD and subject to the approval by the D of I for the Haleakala site. The radio further stated the D of I positively refuses the occupancy of forty acre tract and demands that preliminary building plans be submitted. In letter (see Inclosure #89) dated 31 March 1941 the CG points out the CCC camp is inadequate that it would cost the government more to rebuild it to satisfy the Army's requirements than to build a new camp. Secondly, the D of I mainly objected to the withdrawal from MP jurisdiction of a forty acre tract of land. Thirdly, Mr. Wingate, superintendent HNP, would recommend the use of a forty acre plot by a temporary use permit. With this in mind the HD department recommended that the WD reopen informal negotiations to find out if the Department of Interior would approve the temporary use of a forty acre plot.

(14) In a letter (see Inclosure #90) dated 6 March 1941, to General Marshall, Chief of Staff of the Army, General Short, Commanding for HD, points out the following pertinent facts in regard to AWS situation:

(a) Due to the present international situation the need for AWS is urgent.

(b) The Navy is vitally interested in the AWS project for the HD and are very concerned with the present inadequate warning service.

[20] (c) The Secretary of War advised the Secretary of Navy that the AWS equipment would be received in the HD some time in June and the stations operating shortly afterwards (see Inclosure #32).

(d) Admiral Kimmel has been assured that personnel would be trained and the stations in operation within thirty days after receipt of the equipment.

(e) Due to previous radiograms the WD does not appear aware of the seriousness of the situation.

(f) The fixed station on Haleakala is one of two most important stations in the warning net.

(g) The restrictions imposed by the D of I will delay the final completion of this station.

(h) "I believe that this matter is sufficiently important to be brought to the attention of the Secretary of War to see if permission cannot be obtained from the Secretary of the Interior to construct the Haleakala installation without the necessity of submitting details plans for consideration by the National Park Service."

(i) Defense of these islands and adequate warning for the United States Fleet is dependent upon the early completion of this Aircraft Warning Service.

(15) General Marshall, Chief of Staff of the Army, answering letter (see Inclosure #90) states:

(a) The War Department appreciates fully the necessity for the early establishment of the Aircraft Warning Service station in the Hawaiian Department. However, it will be necessary to comply with certain fixed regulations in these cases where facilities are to be established in lands pertaining to the Department of the Interior.

(b) "I have given these matters my personal attention and have conferred with officials of the National Park Service. War Department radiogram of March 12, 1941 outlines what appears to be the most practical solution at this time."

c. Action Taken in HD

(1) Reconnaissance completed:

- (a) Camp site: 9 & 10 December 1941 (see Inclosure #93)
- (b) Detector Site: 9 & 10 December 1941 (see Inclosure #93)

(2) Type of Building For Detector Site:

- (a) HD approval: By the 27 March 1941 (see Inclosure #77)
- (b) WD approval: Not required (see Inclosure #89)
- (c) D of I approval: 11 April 1941 (see Inclosures #77 & #91)

[21] (3) Type of Buildings for Base Camp:

- (a) HD approval: By the 26 April 1941 (see Inclosure #80)
- (b) WD approval: Not required (see Inclosure #89)
- (c) D of I approval: 17 May 1941 (see Inclosure #82)

(4) Plot Plan for AWS Station Bldg:

- (a) HD approval: 17 March 1941 (see Inclosure #94 and #95)
- (b) WD approval: 18 April 1941 (see Inclosure #95)
- (c) D of I approval: 8 May 1941 (see Inclosure #78)
- (d) Detector Camp Completed: Unknown

(5) Plot Plan for AWS Base Camp:

- (a) HD approval: 9 May 1941 (see Inclosure #95)
- (b) WD approval: not required (see Inclosure #89)
- (c) D of I approval: 17 May 1941 (see Inclosure #80)
- (d) Base Camp Completed: Unknown

(6) Equipment Arrives in HD for Red Hill on Haleakala, Maui

- (a) Electrical equipment: 15 June 1941 (see Inclosure #35)
- (b) Towers and Buildings: Unknown

(7) Equipment Shipped to Maui from Oahu:

- (a) Electrical Equipment: Unknown
- (b) Towers and Buildings: By the 23 September 1941 (see Incl. #98)

(8) Erection of Equipment (start):

- (a) Electrical Equipment: Unknown
- (b) Towers and Buildings: Unknown

(9) Erection of Equipment (finish)

- (a) Electrical Equipment: 15 January 1942 (approx.)
- (b) Towers and Buildings: 6 December 1941 (see Inclosure #106)

(10) Bombproof: Completed: 25 April 1942. (see Inclosure #96)

(11) Station in Operation: 15 January 1942 (approx.) This station operating about middle of January 1942.

(12) Miscellaneous Information on AWS Station Red Hill:

(a) Inclosure #83, #97. Discussion of the Water System for AWS Camp at Haleakala.

(b) Inclosure #60, #99, #105. Lt. Krancus made a trip to Maui in December 1941. The following is believed to be Lt. Krancus's report on the status of AWS at Maui. See Inclosure #105. This inclosure falls in the files just ahead of a letter dated 26 December 1941.

1. All equipment at the detector site, Red Hill, is set; wiring may start immediately.

2. The power shelter at the detector is not completed.

3. The dam (see Inclosure #83 & #97) is built; some of the water storage tanks are up and primed today, but the pipe line is only partially in for the Haleakala water supply. It is necessary for the Engineers to haul the water supply 30 miles at present.

4. The temperature runs very cold here there is a block of ice on the water barrel. At present there is no heater in use.

[22] 5. The base camp lacks power units; they are not available.

6. The splinter proof shelters is adequate.

(c) Inclosure #106. Installation of AWS equipment may start on Haleakala station. Status of equipment (26 December 1941): Power house lacks windows, water pipeline requires approximately 10 days for completion.

(d) Inclosure #107. Bombproof at the Base Camp.

7. Information Center

a. *The Selection of the Fort Shafter Site.* The original project for an AWS in the Hawaiian Department submitted on 17 April 1940 (see Inclosure #5) called for the establishment of an Information Center on Hickam Field. The War Department did not approve of this location and in their 4th Indorsement, dated 27 June 1940, of the above mentioned letter suggested that the Information Center be placed at the Department Command Post at Aliamanu. A supplementary report of the AWS Board of Officers, dated 25 July 1940, recommended the establishment of the AWS Information Center at Aliamanu, and that the exact location and details of construction be determined by the Anti-bombardment Defense Board. The Department Commander approved of this location on 31 July 1940. (see Inclosure #108). The Anti-bombardment Defense Board, however, objected to the location at Aliamanu. This caused further discussion (see Inclosure #109) with the result that a location at Fort Shafter was agreed upon by all concerned and approved by the Department Commander, 26 October 1940. This decision was not, however, immediately transmitted to the War Department for approval. It is evident from Inclosures #110, #113, #114, relating to the establishment of communications at Aliamanu that the War Department assumed that the AWS Bombproof would be at that location. On 11 January 1941, the War Department was informed of the decision to locate the AWS bombproof at Fort Shafter. (see Inclosure #113). In this connection reference is made to Inclosure #19, in which the Division Engineer at San Francisco advised the District Engineer, Honolulu, that funds in the amount of \$70,000 were being withheld, pending War Department approval of the AWS Information Center. Constructional details of the AWS bombproof were discussed by the Signal Officer, Department Engineer & District Engineer (see Inclosures #111, #112, #114). Consideration was given to submitting a formal plan to the War Department covering the AWS bombproof but it was concluded (see Inclosure #115) that in view of the authority given to the Department Commander, in War Department radiogram of 12 March 1941 (see Inclosure #89) that such action would be unnecessary. In this connection reference is made to Section II, par. 4b of this report concerning the disapproval by the Chief Signal Officer on 27 September 1941 of funds for Signal Communications for the AWS bombproof at Fort Shafter for the reason that the installation of the bombproof had not been approved by the War Department.

b. *Agreement Reached on a Combined Air Defense Command Post—Fort Shafter.* In accordance with the above mentioned discussion (see Inclosure #111, #112, #114) the District Engineer prepared plans for an AWS Information Center (see Inclosure #116). These plans were not approved by the D. C. in view of the fact that the instructions had been received from the War Department to combine the bombproof structures of the AWS C. P., the Hawaiian Air Force and C. P. of the Antiaircraft Groupment. Details of this entire situation are given in the [23] memorandum shown as Inclosure #118. On 21 June 1941 the Department Commander officially notified the District Engineer to

proceed to prepare plans for a combined Command Post. (See Inclosures #119 & #121). The final plans were submitted to the Department Commander, 14 August 1941 (See 3rd Indorsement, Inclosure #119).

c. *Information Center Equipment.* Plans for the Information Center were forwarded on 27 August 1941, by the Department Signal Officer to the Chief Signal Officer so that the necessary specialized equipment could be procured. (See Inclosures #122 & #123). On 13 December 1941 the Chief Signal Officer advised that the Mobile Information Center equipment at Drew Field, Florida was being shipped to Hawaii. (See Inclosure #124). Because of shipping difficulties this equipment did not arrive in Hawaii until 28 March 1943 (See Inclosure #127). The voluminous exchange of radiograms on this subject between the Department Signal Officer and the Chief Signal Officer and others is shown in Inclosures #124, #125, #126, #127). The transfer from the temporary Information Center (Construction described in Section V, par. 3 of this report) to the permanent Information Center was made on April 1, 1942.

8. *Nuuanu Pali, Oahu* was originally approved by WD as a mobile station in 4th Indorsement to HD letter dated 17 April 1940 (See Inclosure #5). In a later HD decision this site was abandoned and replaced by a mobile set at Makapuu, Oahu (See Inclosures #142 & #144).

9. *Manawahua, Oahu.* This mobile station was approved by WD in the 4th Indorsement to HD letter dated 17 April 1940 (See Inclosure #5). With the new allotment of detectors to HD (6 Fixed and 6 mobile see Inclosure #134) Manawahua detector station was changed to a fixed station (See Inclosure #142 & #144).

10. *Mauna Loa, Hawaii*

a. Original plans (See Inclosure #5) called for a mobile detector at the upper terminus of the 'ruck trail on the southern slopes of Mauna Loa. Action was instigated by the HD to secure land in the NP for both Haleakala and Mauna Loa sites (See Inclosures #73, #74, #75, #128, #129, & #130).

b. Additional information is contained in Inclosures #131, #132, & #133.

c. Mauna Loa site was replaced by a mobile detector at Kahuku Ranch Hawaii (See Inclosures #142 & #144.)

11. *Kauai Mobile Station.* The original plan (Inclosure #5) and the subsequent revised plan (Inclosures #142 & #144) called for a mobile stand-by detector to relieve the fixed detector from continually searching in its area. Because of the more urgent need for mobile detectors elsewhere in the Department a set was never installed at this location.

12. *Maui Mobile Station.* Same as paragraph 11 "Kauai Mobile Station."

[1] SECTION III—SECOND PHASE, 28 MAY 1941 TO DECEMBER 1941

1. *Priority & Delivery Schedule of Detectors for the Haw'n Department.*

a. In a letter 28 May 1941, received 12 June 1941, the WD indicated the Priority & Delivery Schedule for SCR-270 and SCR-271's for the HD. The schedule indicated that the HD was to receive a total of 6 fixed (271) and 6 mobile (270) Radar Sets. This was different from the previous planned schedule of detector sets. The WD had approved the installation of three fixed (271) and five mobile (270) detector sets for the HD (see Inclosure #5).

b. The letter of 28 May 1941 mentioned above indicated that the HD was scheduled to receive radar equipment in accordance with the following approximate time table:

March 1941-----	3 fixed sets (271)	6 Mobile sets (270)
June 1941-----	2 fixed sets (271)	
July 1941-----	1 fixed set (271)	
Total-----	6 fixed sets (271)	6 mobile sets (270)

c. The WD further advised that if it had not already been done, a reconnaissance should be conducted to determine detector sites. The necessary land should be acquired and the sites prepared for the detectors schedule for delivery

so that stations may be established without delay on receipt of equipment. (see Inclosure #134).

2. *Board Changes (see Inclosure #136).*

In a letter dated 10 June 1941 the Board of Officers was reorganized. The Board then consisted of the following members:

Lt. Col. Carroll A. Powell, (05742), Sig. C., President

Lt. Col. Wm. H. Murphy, (06835), Sig. C., Member

Lt. Col. Albert P. Hegenberger, (01081), Member

Major Isaac H. Ritchie, (012322), C. A. C. Member

Major Robert J. Fleming Jr., (017095), CE., Asst. Dept Engr., Member

Capt. Kenneth P. Bergquist, (019863), AC, Member

Recorder, without vote, a Sig C Officer on Duty at Dept. Hq. to be designated by Signal Officer.

3. *Action Taken in HD on the New Detector Allotment Schedule (see Incl. #137)*

a. On receipt of the above letter (Inclosure #134), the Board of Officers' Committee for selecting detector sites prepared a list of sites for the consideration of the Board of Officers at their next meeting.

b. Lt. Col. Powell, President of the Board of Officers, called a meeting of the board for 17 June 1941. This Board Meeting made a map study of the locations and decided on a time for a ground and aerial reconnaissance of the proposed sites.

[2] c. After completing the reconnaissance the Board decided the following sites were acceptable:

(1) The site, 1½ mi. west of Paho Village, Hawaii.

(2) The site, at Kilauea Point, Kauai.

(3) The site at Opana Triangulation Station, Oahu.

(4) The site at Makapuu Point, Oahu.

4. *Preliminary Report Submitted to the WD on the Revised AWS Projects for HD*

a. In a letter dated 8 July 1941, received in HD 21 July 1941, the WD indicated the basic information that was to be included in the report submitted to WD on the revised AWS project for the 6 fixed and 6 mobile aircraft detector sets (See Inclosure #135).

b. On receipt of this letter the Signal Officer, in a 1st R/S Indorsement dated 19 August 1941, requested the DEO to supply the DSO with the engineer's portion of the information requested by the WD. (See Inclosure #138.)

c. Based on Engineer's and SigO's data, a radiogram dated 13 September 1941, was drafted to the WD submitting, in advance, the sites selected and the cost estimates for the revised AWS project. (See Inclosure #139).

d. The SigO, HD, submitted the cost estimate for the Signal portion of the revised AWS project of the CSO in a radiogram dated 16 September 1941. (See Incl #140). In a radio reply, dated 22 September 1941, the CSO pointed out that the items contained in the radiogram of the 16th must have WD approval before they could be included in budget estimates. The CSO further recommended that the HD submit a letter showing complete justification for the additional detector sites and their cost estimates. (See Incl #141).

e. In a letter dated 16 September 1941 (See Incl #140), the District Engr. HD, submitted the cost estimate for the Engineer portion of the revised AWS project to the C of E. In 1st Ind. to the letter, dated 3 October 1941, the C of E recommended that the sum of \$315,200.00 from the funds available to the CSO be allotted to the C of E so that the AWS installation in the HD would proceed without delay. The CSO, in the 2d Ind. recommended that the HD submit a report on the new AWS project for the WD approval. On receipt of such approval the CSO could allot funds to the C of E to the extent available under the current appropriations. TAG in the 3d Ind. authorized the sub-allotment of necessary funds to initiate such action as may be necessary to expedite construction of the additional AWS detector stations.

3156 CONGRESSIONAL INVESTIGATION PEARL HARBOR ATTACK

f. In a letter, dated 29 September 1941, (See Inclosure #141) the Commanding General, HD, submitted the following list of detector sites for the revised AWS project:

Type	Location	Status
Fixed (271)	Mount Kaala, Oahu	Unchanged.
Fixed (271)	Haleakala, Maui	Unchanged.
Fixed (271)	Kokee, Kauai	Unchanged.
Fixed (271)	Pahoa, Hawaii	Additional Set.
Fixed (271)	Opana, Oahu	Additional Set.
Fixed (271)	Manawahua, Oahu	Additional Set.
Mobile (270)	Kokee, Kauai	Unchanged. To be used to relieve fixed station from continually searching its area.
Mobile (270)	Haleakala, Maui ¹	
Mobile (270)	Makapuu, Oahu	To replace previously approved location at Nuanuu Pali, Oahu.
Mobile (270)	Kahuku Ranch, Hawaii	To replace previously approved location at Mauna Loa, Hawaii.
Two Mobile (270)	Oahu	To be used as Mobile reserve on the island of Oahu in the event of failure of fixed station.
Information Center	Fort Shafter	No change.

¹ NOTE.—The above stations are not located at the fixed detector site but only use the fixed detector's Base Camp.

[3] g. The inclusion of the above listed additional detectors sets in the HD AWS plan necessitates the use of additional funds. The net cost estimates is summarized as follows:

Engr's Phase	\$315, 233. 00
SigC's Phase	218, 400. 00
Total Net Cost estimate	533, 633. 00

5. Revised HD AWS Project

a. The HD submitted a report, 8 October 1941, to the WD titled, "Survey of the Air Warning requirements for the HD". This report reviewed the complete AWS picture; listed the recommended changes due to additional detectors allotted to HD by the WD; summarized each detector site, touched on the Signal Communications and the information Center; and listed the additional funds required to complete this revised AWS program. (see Inclosure #142).

[4] b. The "Revised Project Covering Installation Aircraft Warning Equipment" was submitted to WD in a HD letter dated 19 December 1941. This letter, (see Inclosure #144), covered the description of the Signal portion of the revised HD AWS project. In par. 1, 2d Ind. to this letter the OCSigO mentioned that the Aircraft Warning Project for Hawaii had been approved by the Secretary of War, 28 December 1941. See Inclosure #146 for the Secretary of War's letter approving the HD revised AWS project.

c. Approval of Detector Sites.

(1) In a radio (see Inclosure #145) sent 10 November 1941, the HD explained that due to the disposition of personnel and equipment the District Engineer is advantageously situated to commence immediate development of the following sites:

- Kilauea Point
- Opana, Oahu
- Makapuu Point, Oahu
- Pahoa Village, Hawaii
- Kahuku Ranch, Hawaii

The radio referred the WD to previous HD letters, 29 September 1941 and a 1st Ind. to TAG letter 8 July 1941 (Inclosures #141 & 142 respectively) submitting these sites for approval. The HD requested that the WD radio "Immediate Radio Approval" of these sites. A search of the Signal, Engineers, and AG (HD) has as yet revealed no answer to this radiogram.

(2) In a letter (see Inclosure #146) dated 28 December 1941 the Secretary of War granted authority to CSO to sub-allot funds and take such other action necessary for the construction and installation of the AWS detector stations, Filter Centers, and Information Centers within the HD as determined by the Commanding General, HD, to be required. This constituted approval of AWS Project (see Inclosure #144) submitted by C. G. to WD.

(3) In radio dated 30 December 1941, the HD requesting additional detectors as "Recent experience demonstrated number AWS detect stations on island of

Oahu inadequate for continuous early warning". The HD further recommended that these additional radios (3 SCR-271 as indicated by inclosure #2, to this letter, Incl #146) and that the three radio sets, SCR-271, still due the department be expedited. In radio reply dated 9 January 1942, the CSO informed the HD that five more sets of this type would be shipped in January and February 1942. One radio set SCR-271-A was being prepared for immediate shipment to Hawaii result of HD radiogram 1468. The CSO further requested that the HD expedite the preparation of and forward at an early date the projects for other locations of these sets. (see Inclosure #146, see Inclosure #150 for information on shipping these sets).

6. Safeguarding AWS Stations.

a. A memorandum dated 14 December 1941, to Col. Wyman indicated that the C. G. desired to splinterproof all the vital AWS station buildings. This would include the installation of splinterproof protection around the detector house of the fixed stations and also protection of the trucks housing the equipment of the mobile stations (see Inclosure #147 & 148).

[5] b. On 20 December 1941, the DC directed that immediate action be taken to camouflage all the AWS stations. In the 2d R/S Ind. 19 January 1942, the Engineer indicated to G-4 that AWS were being camouflaged and the dummy stations would be constructed as soon as antennas are completed (See Inclosure #149).

c. Additional information is listed in inclosure 151 regarding the expediting of the AWS project.

SECTION IV—DETAILS OF ACTION TAKEN IN THE SECOND PHASE

1. Additional correspondence regarding project (second phase)

a. 30 December 1941, *Reconnaissance* for the establishment of sites for the additional detectors (see Inclosure #153).

b. Funds.

(1) Inclosure #154. Funds in the amount of \$7,785.00 are required to install commercial power service at Kokee, Kilauea, Point, Haleakala, Pahoa Village, and Kahuku Ranch (see Inclosure #154).

(2) Authorization to CG, HD to incur all the necessary obligations to meet the urgent requirements for AWS HD (see Inclosure #155).

c. Status of Construction on AWS projects (see Inclosure #156 & #158)

d. Project numbers assigned to the additional AWS sites (see Inclosure #157)

e. Shipment of Equipment for additional sites (see Inclosure #159)

2. *Pahoa, Hawaii* was approved by a letter dated 28 December 1941, from the Secretary of War to the CSO as a fixed station (see Inclosures #144 & #146)

a. Topographical survey: 15 September 1941 (see Inclosure #160 & #161)

3. *Opama, Oahu* was approved by a letter dated 28 December 1941, from the Secretary of War to the CSO as a fixed station (see Inclosures #144 & 146).

During 7 December 1941, there was a mobile detector operating at this site (see Section V, par. 2 for further discussion).

4. *Manawahua, Oahu*. This station was originally approved as a mobile detector station (see discussion under Section II, par. 10 and Inclosure #5). With the new allotment of detectors (see Inclosure #134) the HD decided on a fixed station in place of the mobile station. The HD requested early approval of this fixed station (25 November 1941) so that the Engineers could start work on the minimum requirements of the site immediately (see Inclosure #164).

a. Proposed AWS installation: Approved 27 November 1941, (see Inclosure #163)

5. *Makapuu, Oahu* was approved by a letter from the Secretary of War to the CSO date 28 December 1941 (see Inclosures #144 & #146) as a mobile detector. This was to replace the previously planned mobile site at Nuuanu Pali (see Section II, par. 9.)

[1] SECTION V—INSTALLATION AND USE OF FIRST SIX SCR-270B MOBILE UNITS

1. *General*. The first six SCR-270B Mobile Units for the Hawaiian Department were shipped from the Signal Corps Laboratories, Fort Monmouth, New Jersey, July 23, 1941 (see Inclosures #36 & #165). These sets arrived in the Hawaiian Department during the first part of August, 1941 (see Inclosure #166).

2. *Original Station Locations*. On August 15, 1941 the Department Commander approved the use of these stations at the Puu Palalii, Waianae, Kawalloa, Kaawa, Koko Head, and Fort Shafter (see Inclosure #166). Mobile sets were

installed at these locations with the exception of Puu Palalii. The set scheduled for this location was used at Schofield Barracks for training purposes until the latter part of November 1941, when it was installed at Opana, Oahu. The set was placed at Opana principally as a result of a radiogram, dated 30 October 1941, from Lt. Col. C. A. Powell, who was on temporary duty on the mainland to the acting Dept. Signal Officer Lt. Col. W. H. Murphy advising that tests be made at proposed locations. (See Inclosure #167.) During this early period the sets were used about five hours per day, six days per week (see Inclosure #168). A request was submitted by the Signal Officer on 23 August 1941, to the Engineers Officer to expedite the completion of the mobile barracks facilities. (See Inclosure #169.)

3. *Establishment of a Temporary Information Center.* The desirability of establishing a temporary Information Center for training and possible tactical purposes was realized during the early part of 1941. On May 21, 1941, a request for funds for this purpose was submitted to the Chief Signal Officer. The funds were allotted on 25 May 1941. (See Inclosure #170.) The photographs shown on Incl #171 show the status of the construction of the temporary Information Center at Bldg. #307, Fort Shafter during August 1941. In connection with the establishment of this Information Center the Department Commander dispatched a letter on 5 August 1941, to Commander-in-Chief, U. S. Pacific Fleet and to the Commandant, 14th Naval District, Pearl Harbor, requesting Navy liaison officer be assigned to the Aircraft Warning Facilities. These appointments were subsequently made by the Navy Officials (see Inclosure #172). The possibility of the use of ground observers in connection with AWS was considered at various times, but was considered impractical. Correspondence pertaining to this subject is shown in Inclosure #173.

4. *Test of Mobile Detectors Prior to December 7, 1941*

a. On the morning of 27 September 1941, a simulated raid was made on the Island of Oahu by a flight of carrier based Navy planes. This flight was first picked up at their point of orbit, supposedly near their carrier, at an azimuth of 224° and a range of 85 miles. The raid, made up of two separate waves of flights, started at 0558 and 0610½. The bogey was intercepted by the defending air force at 0616 at the azimuth 225° and a range of 26 miles. The raiding force was theoretically destroyed before an attack on Pearl Harbor could be realized. [2] The returning planes were tracked out to their carrier at 0735 where they disappeared from the radar screen. The plots of this simulated raid were made by the mobile detector at Koko Head and Waianae sites. The records of this trial raid are shown in the charts under Inclosure #175.

b. Inclosure #176, 3 November 1941. A discussion of the unusual ranges (greater than 150 miles) being obtained off of various mountains on the other islands by the several of the Mobile detectors on Oahu, was sent to the CSO for his information.

c. Inclosure #177, 4 November 1941. Discussion of the arrival of a trans-pacific flight of B-17 bombers the morning of 22 October 1941. Comparative plots were obtained from the detector at Kaawa (50 ft. elevation) and the detector at Koko Head (675 ft. elevation).

5. *AWS Activities on 7 December 1941*

a. *Operational Order.* On 27 November 1941 the acting Dept. Signal Officer received instructions from the Asst. Chief of Staff G-3 to start operating the detector stations from two hours before dawn until one hour after dawn. This order was transmitted immediately to the Commanding Officer Aircraft Warning Company. The detector stations were operating in accordance with the above schedule on 7 December 1941, (see Inclosure #178).

b. *Detector Operation on 7 December 1941.* Reference is made to Inclosure #179, which covers the official report of Lt. Col. W. H. Murphy who made a personal investigation concerning the detection of the Japanese attack.

c. *Reports to the Chief Signal Officer.* Reference is made to Inclosure #181 covering the official report of the Dept. Signal Officer to the Chief Signal Officer concerning the detection of the Japanese attack 7 December 1941.