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OPERATION

DOMINIC

APRIL - NOVEMBER 1962

RADIOLOGICAL SAFETY

ISSUED: 1 APRIL 1963

JOINT TASK FORCE EIGHT

[redacted]

RADIOLOGICAL SAFETY (OPERATION DOMINIC)

BY

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JOINT TASK FORCE EIGHT
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ADDRESS REPLY TO:
COMMANDER,
JOINT TASK FORCE EIGHT

JJC-R

1 APR 1963

SUBJECT: Operation DOMINIC Radiological Safety Report

TO: DISTRIBUTION

1. This report contains a detailed description of the radiological safety support functions during Operation DOMINIC and is forwarded for information and possible future use.

FOR THE COMMANDER

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ABSTRACT

THIS DOCUMENT IS A REPORT FROM THE CHIEF, RADSAFE BRANCH TO THE COMMANDER, JOINT TASK FORCE EIGHT COVERING RADIOLOGICAL SAFETY SUPPORT DURING OPERATION DOMINIC. IT CONTAINS A DESCRIPTION OF THE MISSION, ORGANIZATION, AND ACTIVITIES OF THE RADSAFE BRANCH AND TEMPORARY SUPPORT ELEMENTS, JOINT TASK FORCE EIGHT, DURING THE 1962 NUCLEAR TEST SERIES CONDUCTED IN THE PACIFIC OCEAN AREA. RADSAFE BRANCH, A PART OF THE J-3 DIVISION, WAS CHARGED WITH THE RESPONSIBILITY OF PROVIDING RADIOLOGICAL SAFETY SUPPORT FOR THE TASK FORCE. THE VARIOUS CHAPTERS ARE DEVOTED TO A DISCUSSION OF THE ACTIVITIES ENGAGED IN BY RADSAFE BRANCH, AND THE ORGANIZATION NECESSARY TO PROVIDE RADIOLOGICAL SAFETY SUPPORT FOR A WEAPONS TEST OPERATION OF THE MAGNITUDE OF OPERATION DOMINIC. IN CONTRAST TO PREVIOUS OPERATIONS, NO FALLOUT OF SIGNIFICANCE OCCURRED AS A RESULT OF THE AIR DROPS. SPECIAL PROBLEMS ARISING FROM THE HIGH ALTITUDE EVENTS ARE DISCUSSED.

ACKNOWLEDGEMENTS

Radsafe Branch wishes to acknowledge the cooperation and support of the following organizations. Their combined efforts were largely responsible for the success of the radiological safety operations during Operation DOMINIC:

U.S. Public Health Service, Washington, D.C.

Office of the Chief Chemical Officer, Washington, D.C.

U.S. Army Chemical Corps Radiological Unit
Dugway Proving Ground, Utah

U.S. Army Chemical Corps Training Command
Fort McClellan, Alabama

U.S. Army Chemical Corps Nuclear Defense Laboratory
Army Chemical Center, Maryland

Division of Operational Safety, AEC
Germantown, Maryland

In addition, the following individuals are to be credited with making significant contribution that materially assisted Radsafe Branch during all phases of Operation DOMINIC:

Dr. Thomas L. Shipman, Los Alamos Scientific Laboratory
Mr. Leo Chelius, Los Alamos Scientific Laboratory
Mr. George Littlejohn, Los Alamos Scientific Laboratory
Mr. William Tammany, Los Alamos Scientific Laboratory
Mr. Jayson Minkler, Lawrence Radiation Laboratory
Mr. Howard Eberline, Eberline Instrument Corporation
Mr. Floyd W. Wilcox, Reynolds Electrical and Engineering Co.

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Chapter 1

ORGANIZATION

1.1 Radsafe Branch Mission

The mission of the Radsafe Branch was to:

1. Maintain a current plot of all contaminated areas.

2. Provide necessary equipment, such as disposable clothing and radsafe survey instruments, for support of operations associated with contaminated areas or facilities.

3. Provide dosimetry services for all Joint Task Force EIGHT (hereinafter also referred to as Task Force or JTF 8) personnel and authorized visitors to include the issuance and processing of film badges and the maintenance of required exposure records.

4. Advise and assist Task Force personnel as required in the decontamination (decon) of equipment.

5. Operate a radiochemistry laboratory capable of supporting off-site radsafe monitoring stations and any other radsafe operations.

6. Provide trained personnel, as available, to assist CJTG 8.3 and CJTG 8.4 in the accomplishment of their assigned radsafe responsibilities.

1.2 Radsafe Branch Organization

The Joint Table of Distribution for Headquarters, Joint Task Force EIGHT provided for a Radiological Safety Branch consisting of the following personnel:

	CODE	GRADE	SERVICE
Chief	7330	05	Army
Radsafe Off	2075	04	Navy
Radsafe Off	1955	03	Air Force
Admin Clerk	2511	E5	Navy
Clerk Typist	7110	E4	Army

In actual practice the Radsafe Branch consisted of the following personnel:

Chief	7330	05	Army
Radsafe Off	7330	04	Army
Radsafe Off	None	03	USPHS
Admin Clerk	0000	E5	Navy

In contrast to previous operations, there was no separate task unit organization for Radsafe. Radsafe operations were managed both at the Task Force as well as Task Group level. TU 8.5.1 (H&N) radsafe personnel were utilized within the JTG 8.5 (USAEC) organization in situations affecting JTG 8.5 personnel.

1.3 Procurement of Personnel

Personnel required to accomplish the radsafe mission were obtained from all services; Army, Navy, and Air Force. Most of these were obtained from the Chemical Corps Radiological Unit (CCRU; formerly designated as the First RSSU) and assigned to the Task Force in a temporary duty status. Joint Task Group 8.4, which supplied a large number of its own radsafe personnel, received most of the CCRU personnel since a significant portion of the radsafe operation involved decontamination of aircraft and crews.

JTG 8.4 also controlled the Instrument Repair Section for maintaining radsafe instruments. Other CCRU personnel were assigned to the Radsafe Branch for direction of ground surveys associated with post-shot monitoring for potential fallout contamination. The following is a source breakdown of the total personnel obtained for support by the Chief, Radsafe Branch:

Chemical Corps Radiological Unit Dugway Proving Ground, Utah	2 Off & 20 EM
Chemical Corps Training Command Fort McClellan, Alabama	8 EM
U.S. Army Chemical Corps Nuclear Defense Laboratory, Army Chemical Center, Maryland	3 EM
DASA Field Command Sandia Base, New Mexico	1 EM
U.S. Naval School Command Treasure Island, California	3 Off & 1 EM
U.S. Naval Damage Control Training Center Philadelphia, Pennsylvania	1 Off
USNRDL, San Francisco, California	1 Civ.
Los Alamos Scientific Laboratory Los Alamos, New Mexico	1 Civ. Health Physicist 1 Civ. Laboratory Technician 1 Civ. Radsafe Specialist

These 43 personnel were apportioned to the radsafe program as follows:

Radsafe Branch	1 Off - 6 EM - 3 Civ
JTG 8.3	4 Off - 1 EM - 1 Civ
JTG 8.4	1 Off -23 EM
USPHS (Honolulu)	3 EM

It is pointed out, with respect to the Radsafe Branch, that two of the civilians and five of the enlisted men were occupied mainly with film badge dosimetry work. Radsafe Branch was assisted in ground monitoring surveys by USPHS, TU 8.5.1 and JTG 8.5. CJTG 8.3 and CJTG 8.4 supplied their own radsafe

personnel, as required, to meet task group requirements. Task Unit Laboratories were assisted by Radsafe Branch.

1.4 Training of Personnel

No training was necessary for the personnel procured by Chief, Radsafe Branch, due to the experience gained by these personnel during previous testing operations. JTG 8.3 and JTG 8.4 each conducted its own separate one week training program for task group radsafe personnel. Project personnel in scientific task units and contractor personnel in JTG 8.5 provided their own monitors for recovery and construction missions respectively.

1.5 Radsafe Support Functions

Chart 1.1 depicts the functional organization for execution of the radsafe mission on-site and support of radsafe off-site activities. It illustrates the working structure for certain functions of support required at various geographical locations. As stated previously, personnel were assigned to JTG 8.4 operational control as needed for decon and sample return assistance, and to JTG 8.3 operational control as required for pod recovery and handling operations. The off-site surveillance functions were performed by USPHS officers and are described separately in this report.

Chart 1.2 lists the specific tasks performed at various locations by the radsafe elements shown in Chart 1.1, and indicates the period of time during which the assistance was provided. The numbers of personnel assigned to these tasks varied throughout the operation as the degree of required assistance changed for specific events.

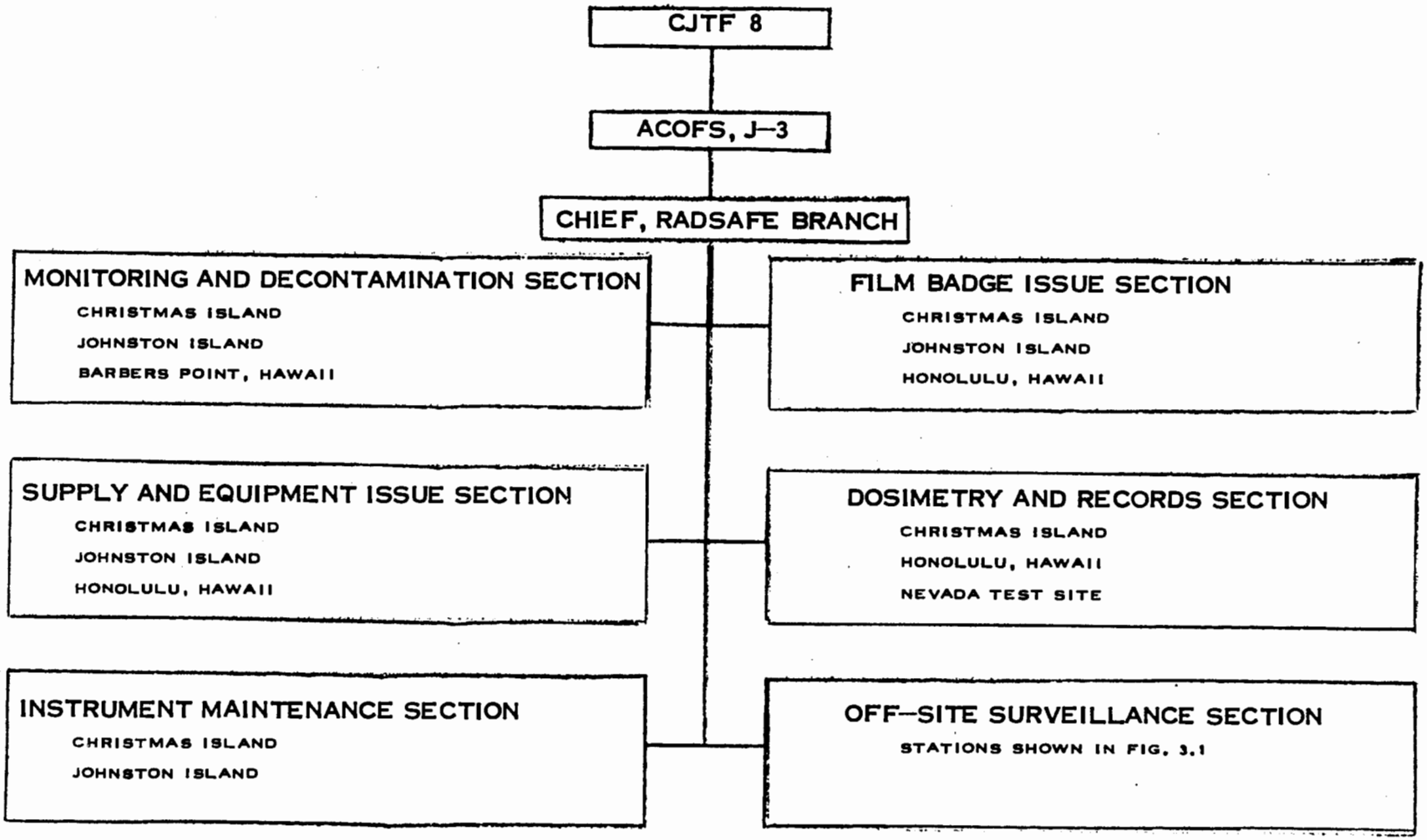

CHART 1.1 FUNCTIONAL RADSAFE ELEMENTS ASSIGNED FOR SUPPORT AT CERTAIN LOCATIONS

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CHART 1.2 SUPPORT PERFORMED BY RADSAFE ELEMENTS AT CERTAIN LOCATIONS

CHRISTMAS ISLAND (25 APR 62–11 JUL 62)

- AREA MONITORING
- AIRCRAFT DECONTAMINATION
- PERSONNEL AND EQUIPMENT DECONTAMINATION
- FILM BADGE ISSUE AND COLLECTION
- PHOTODOSIMETRY
- PROTECTIVE CLOTHING AND EQUIPMENT ISSUE
- INSTRUMENT MAINTENANCE
- SAMPLE RETURN

JOHNSTON ISLAND (3 JUN 62–3 NOV 62)

- AREA MONITORING AND DECONTAMINATION
- AIRCRAFT DECONTAMINATION
- PERSONNEL AND EQUIPMENT DECONTAMINATION
- FILM BADGE ISSUE AND COLLECTION
- PROTECTIVE CLOTHING AND EQUIPMENT ISSUE
- INSTRUMENT MAINTENANCE
- SAMPLE RETURN
- SCIENTIFIC–POD RECOVERY

OFF–SITE (15 MAR 62–15 DEC 62)

- ENVIRONMENTAL MONITORING
- SAMPLE COLLECTION

HONOLULU, HAWAII (15 MAR 62–15 DEC 62)

- PHOTODOSIMETRY
- PROTECTIVE CLOTHING AND EQUIPMENT ISSUE
- RADIO–CHEMICAL ANALYSIS

NEVADA TEST SITE (15 DEC 62–30 JAN 63)

- PHOTODOSIMETRY

BARBERS POINT, HAWAII (2 OCT 62–3 NOV 62)

- AIRCRAFT DECONTAMINATION
- PERSONNEL AND EQUIPMENT DECONTAMINATION

Chapter 2

CHRISTMAS ISLAND OPERATIONS

2.1 Facilities and Services

The Radiological Safety Program for Operation DOMINIC was divided into two parts, on-site and off-site. The radsafe program was planned and administered by the Radsafe Branch, Headquarters, Joint Task Force EIGHT. Generally, the program assigned the responsibility for basic radiological safety to the individual task groups, and the Commanders, Joint Task Group 8.3 and Joint Task Group 8.4 were directed to establish their own radsafe working organization. These task group radsafe units were designed to cope with routine radsafe matters and the problems unique to the function for the task group itself, such as decontamination of sampler aircraft by JTG 8.4 and ship decontamination by JTG 8.3. Special functions delegated to task groups are contained in Annex J to CJTF 8 Operation Order 2-62. The nucleus of radsafe personnel came from the Hq of Joint Task Force EIGHT and support was provided from the U.S. Public Health Service (USPHS); and Holmes and Narver, Inc. (H&N), Los Alamos Scientific Laboratory (LASL) and the Field Command, DASA (FCDASA) for TU 8.5.1, TU 8.1.1 and TU 8.1.3 respectively.

2.2 On-Site Radsafe Activities

Specifically, this program was designed to control from a radsafe standpoint all individuals who entered the designated "exclusion" area. The major problem in this function was the control of personnel engaged in area monitoring at Christmas Island. Other special functions included the photodosimetry program for the entire Task Force and assistance to task groups during the on-site phase of the operation. The Christmas Island On-Site Radiological Monitoring Program was designed to provide continuous coverage by means of the actions described below:

2.2.1 Pre-Operational Survey to Obtain Baseline Data

This included collection of land and sea biota for laboratory analysis; environmental samplings of food, vegetation, water and soil, air, and marine specimens; radiation background readings along major road networks; and film badge stake lines to record the total integrated dosage throughout the period of the test series.

2.2.2 Establishment of Static Sites for Routine Documentation

This included stations located at London Port, "A" Site, and JTF 8 Joint Operations Center (JOC) to cover the populated area (see Fig. 2.1). Each station was provided with an Eberline RM-5 Continuous Background Gamma Recorder, a Gamma Survey Instrument (AN/PDR-27J), a rain collector, and a Staplex Hi-Vol Air Sampler (running continuously).

2.2.3 Mobile Monitoring on Shot Days

All nuclear events at Christmas Island were detonations of devices

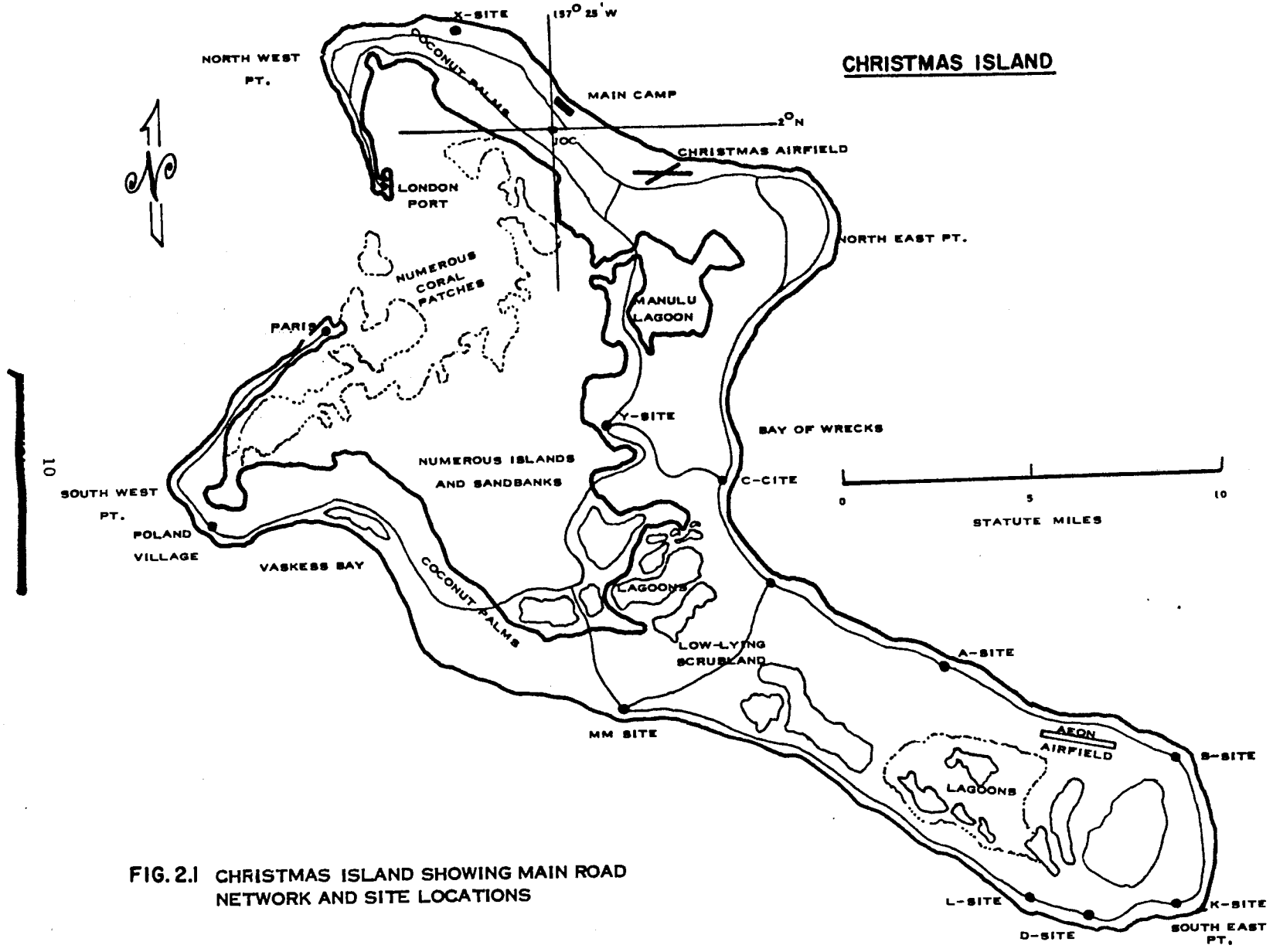

FIG. 2.1 CHRISTMAS ISLAND SHOWING MAIN ROAD NETWORK AND SITE LOCATIONS

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released from a drop-aircraft. These detonations occurred as air bursts over designated target-rafts positioned in open water. Each detonation was planned for execution under favorable atmospheric conditions to minimize the likelihood of contamination (fallout) of land surfaces. Moreover, each event was followed by a post-shot radiological survey of the island to assure that no fallout had been received and to insure timely warning of the arrival of fallout in case of unforeseen wind shifts or rain squalls. This was accomplished by three two-man teams covering preplanned routes. Each team was equipped with two AN/PDR-27J low range beta-gamma survey meters and two AN/PDR-39 (T1B) high range gamma survey meters. Two teams conducted ground surveys of all major roads between London Port, "Y" Site, and "D" Site. The third team conducted a helicopter sweep of the south and southwest coastal area between "D" Site, "MM" Site, and Paris. Team control was by radio net from the radsafe office at the JOC. Radiation background readings were tabulated until H plus 5 hours on a log sheet for permanent record.

2.2.4 Cloud Tracking Information

B-57 sampler aircraft, under JTG 8.4, made early penetrations of the radioactive cloud after each event. A member of the Radsafe Branch obtained timely information on cloud movement, cloud top and base altitudes from the Air Operations Center (AOC) Controller. This information was necessary for preparation of advisories which specified reopening of air lanes for passage of commercial aircraft through the announced danger area.

2.2.5 Decontamination

A decontamination facility was established in the vicinity of the main airstrip. Sampler aircraft returning from a cloud penetration mission were taxied onto a specially built hardstand for washdown. This hardstand was of sufficient size to accomodate two aircraft; however, in practice only one aircraft at a time was washed by the jet-sprays from a decon truck since only four to seven aircraft participated in a mission. The runoff water was channeled through a trough into a large plastic swimming pool which served as a holding tank for liquid waste. This water was then pumped into a tanker truck for transport to the outfall point for release into the ocean. Aircraft crews and decon personnel were showered and dressed in a nearby personnel decon building of conventional design. The decon facility was supported by an adjacent laundry building outfitted with 4 washing machines, 4 extractors, and 1 large dryer. The aircraft decon pad and personnel decon and laundry facilities were operated by JTF 8 radsafe personnel. Film badging of mission aircraft crews was performed by radsafe personnel assigned to JTG 8.4. (Film badge processing is described in Chapter 5).

2.2.6 Post-Operational Survey

All film badges on the stake line were collected, processed, and a record made of the total dosage at each point. Additional information was obtained by survey meter readings along the stake line.

2.3 Shots and Survey Results

Table 2.1 contains a list of the nuclear events which occurred near Christmas Island. Technical details pertaining to these may be found in the JTF 8 Final Report of Operation DOMINIC.

Readings obtained from stations equipped with continuous background radiation monitoring equipment, high and low range radiation detection and measuring equipment, and continuous air and water sampling equipment, showed a continuously normal background level. At no time were there instances of detectable increases above background level.

Table 2.1

CHRISTMAS ISLAND EVENTS DURING OPERATION DOMINIC

NAME OF EVENT	DATE	YIELD RANGE*	TYPE
ADOBE	25 Apr 62	Intermediate	Air Drop
AZTEC	27 Apr 62	Intermediate	Air Drop
ARKANSAS	2 May 62	Low Megaton	Air Drop
QUESTA	4 May 62	Intermediate	Air Drop
YUKON	8 May 62	Intermediate	Air Drop
MESILLA	9 May 62	Intermediate	Air Drop
MUSKEGON	11 May 62	Intermediate	Air Drop
ENCINO	12 May 62	Intermediate	Air Drop
SWANEE	14 May 62	Intermediate	Air Drop
CHETCO	19 May 62	Intermediate	Air Drop
TANANA	25 May 62	Low	Air Drop
NAMBE	27 May 62	Intermediate	Air Drop
ALMA	8 Jun 62	Intermediate	Air Drop
TRUCKEE	9 Jun 62	Intermediate	Air Drop
YESO	10 Jun 62	Low Megaton	Air Drop
HARLEM	12 Jun 62	Intermediate	Air Drop
RINCONADA	15 Jun 62	Intermediate	Air Drop
DULCE	17 Jun 62	Intermediate	Air Drop
PETIT	19 Jun 62	Low	Air Drop
OTOWI	22 Jun 62	Intermediate	Air Drop
BIGHORN	27 Jun 62	Megaton	Air Drop
BLUESTONE	30 Jun 62	Low Megaton	Air Drop
SUNSET	10 Jul 62	Intermediate	Air Drop
PAMLICO	11 Jul 62	Low Megaton	Air Drop

* Low yield is below 100 KT

Intermediate yield is 100-1000 KT

Low Megaton yield is 1-5 MT

Megaton yield is above 5 MT

Chapter 3

OFF-SITE OPERATIONS

3.1 Facilities and Services

Under the terms of the Memorandum of Understanding dated 5 February 1962, between the Commander, Joint Task Force EIGHT and the Surgeon General, U.S. Public Health Service (USPHS), a network of off-site monitoring stations was operated by the USPHS for JTF 8 to document the radiation exposure to significant populated groups in and outside the danger areas of Christmas and Johnston Islands. This network, shown on Figure 3.1 consisting of primary stations, secondary stations, and background stations, totaled 19 stations in all. The network was operated out of Christmas Island with the primary stations reporting daily and the secondary and background stations reporting weekly to the Radsafe Office at Christmas Island.

3.1.1 Primary Stations

Primary stations were established on Fanning Island (Line Islands), Washington Island (Line Islands), and Honolulu, Oahu (Hawaiian Islands) in addition to the ones on Christmas Island (Line Islands) as described in Chapter 2. These stations were manned by USPHS Officers with equipment and sampling techniques to document all forms of radiation exposure. On both Washington and Fanning Islands the assigned USPHS Radsafe Officer acted as Island Commander and Evacuation Officer. Two-way radio contact with the Radsafe Office at Christmas Island was maintained.

3.1.2 Secondary Stations

Secondary stations were operated on the islands of Canton (Phoenix Islands), Malden (Line Islands), Penrhyn/Tongareva (Tonga Islands), Palmyra (Line Islands), Midway, Johnston and French Frigate Shoals (Tern Islands). These stations (with the exception of Palmyra and Johnston Islands) were located just outside the danger area and were designed to document air concentration and the external radiation background. The USPHS group at Christmas Island made checks of precipitation and important food items where situations warranted such action. These stations were operated by Task Force Project Groups and Weather Groups.

3.1.3 Background Stations

Background stations were operated by Task Force Project Groups or Weather Groups for JTF 8 on Tutuila (Samoa Islands), Rarotonga (Cook Islands), Wake Island and Kwajalein Atoll. The background stations at Taiohae, Nuku Hiva (Marquesas Islands) and Papeete, Tahiti (Society Islands) were manned by French personnel. These stations were rather distant from the test area and were designed primarily for documenting the external radiation background as well as any changes therein.

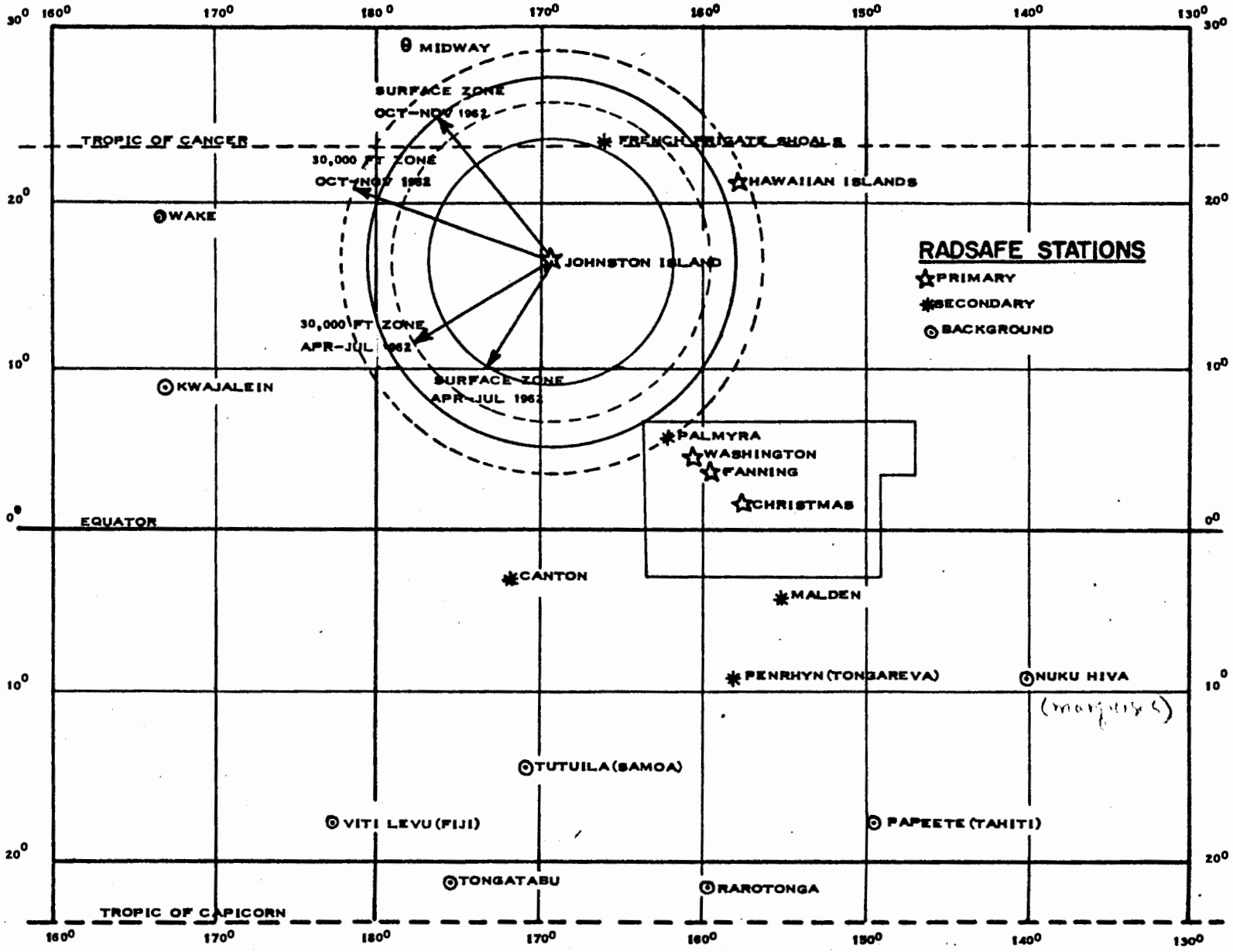

FIG. 3.1 PACIFIC OCEAN AREA SHOWING RADSAFE STATIONS AND BOUNDARIES OF DANGER AREAS

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3.1.4 Laboratory Facilities in Honolulu

Additional support for radiological analysis of food, water, and air samples was provided by a complete laboratory facility in Honolulu, Hawaii. The laboratory was located in Hawaii to support both the Christmas Island and Johnston Island operations, and to insure a low radiation background installation, making possible complete and accurate radio-chemical analysis of environmental samples. An account of this laboratory's efforts is documented in the JTF 8 Operation DOMINIC report titled "Off-Site Radiological Safety" (see footnote) prepared by the Officer in Charge, JTF 8 Radiological Health Laboratory - Hawaii. Support facilities for film badge dosimetry were also installed in the laboratory, which was located in the Hawaii State Health Department Building. The Hawaii State Health Department made this space available under an agreement whereby JTF 8 would install all equipment and provide all utilities. The laboratory was under the direction of a USPHS officer. This laboratory was augmented by a radchem trailer which was on loan from the U.S. Army Chemical Corps Nuclear Defense Laboratory. In preparation for its use in off-site support, a suitable modification and rehabilitation was necessary prior to shipment from the parent laboratory. Costs incident to rehabilitation and shipment were met by JTF 8 radsafe funds.

This laboratory, which supported the JTF 8 Off-Site Surveillance Program of documenting radiation exposure to off-site populations during Operation DOMINIC, was established at Honolulu, Hawaii to provide a facility for the radio-chemical analysis of air, precipitation, water, milk, food, and soil. The USPHS, working with the Hawaii State Health Department, expanded the existing Hawaiian Surveillance Program so as to provide an extensive fallout monitoring program. As a consequence of these two programs, JTF 8 was provided with a strong capability of assessing radiation for public confidence. The results indicated that fallout encountered was minimal, with no significant exposure occurring to populated groups inside or outside the danger area.

A post-operational surveillance activity in the Pacific area was continued by JTF 8 under arrangement with USPHS whereby USPHS continued to retain, on a loan basis, JTF 8 owned laboratory equipment. The Radiological Health Laboratory-Hawaii was relocated to Damon Tract and continued to be maintained in a state of minimum operation in order to carry out this long-term (1 year) surveillance. The conviction to retain this laboratory was supported by three reasons: First, USPHS had performed analysis on pre-operational food samples collected from several inhabited islands surrounding the testing area. Consequently it appeared prudent that subsequent sampling should be performed for at least a year following termination of the test series, i.e., as new food crops came in. Secondly, dismantling of the laboratory and storage of the equipment would be costly and it was probable that any electronic equipment put into storage and not used would deteriorate seriously during the period of storage. Various pieces of equipment utilized by the

FOOTNOTE/ THIS REPORT, PREPARED BY USPHS FOR JTF 8, DESCRIBES THE OFF-SITE RADIOLOGICAL SAFETY PROGRAM AND CONTAINS TABULATION OF MONITORING DATA PREPARED BY THE RADIOLOGICAL HEALTH LABORATORY-HAWAII.

laboratory were owned by JTF 8, the AEC, and the USPHS. Thirdly, the maintenance of a laboratory capability at the proposed location would continue the congenial relationship with the Hawaii State Health Department. The building facility for the laboratory was provided by the USAEC.

3.2 Results

As far as can be determined from existing monitoring data and investigations of reported incidents, no hazardous fallout occurred to populated areas or to transient surface craft and aircraft as a result of Operation DOMINIC. A complete documentation of all radiation levels and interpretations is contained in the JTF 8 Operation DOMINIC report titled "Off-Site Radiological Safety" (see footnote on previous page)

[redacted]

Chapter 4

JOHNSTON ISLAND OPERATIONS

4.1 Facilities and Services

In contrast to the Christmas Island series, these events produced radiological situations, varying from recovery of lightly contaminated scientific pods to rehabilitation of a launch pad. Since certain aspects of these events occasioned an extension of the Johnston Island schedule, it is convenient to divide this portion into two phases for discussion.. General aspects will be discussed in this section, followed by separate discussion of Phase I and Phase II in Sections 4.2 and 4.3 respectively. Phase I (25 Apr-25 Jul 1962) refers to that portion of the Operation DOMINIC test program which extends from commencement of the series up to and including the BLUEGILL PRIME event. The Christmas Island events were completed during Phase I. Phase II (2 Oct-3 Nov 1962) refers to the follow-on portion of the test program which resumed after the rehabilitation of THOR Launch Pad Nr. 1 which was damaged by fire during the BLUEGILL PRIME event. The Phase II portion included air drop events conducted at Johnston Island.

4.1.1 Routine Radiological Safety

The main effort of Radsafe was to provide personnel and equipment essential to the recovery of the scientific instrument pods which became contaminated as a result of the device detonation. Since three such pods required recovery, three fleet tugs (ATF), outfitted with crane and hoist, were situated in standby positions. The search and recovery procedure was planned as follows: A destroyer and three tugs would commence the search during darkness and would be joined by six helicopters during daylight. The helicopters, which flew in mutually protecting pairs, were actually the primary search and recovery means. If the helocopters located the pods, they would transport them to the land base. The tugs therefore were an alternate means of transport (if the pods were located in minimum time) to a location where transfer to an M-Boat could be accomplished. This specially configured M-Boat was designed with a shielding wall for crew protection. A JTF 8 radsafe specialist, equipped with RADIAC (radiation detection, indication, and computation) meters to assess the hazard prior to handling of the pods, was stationed on each fleet tug. The ultimate destination of the pods was a radsafe handling and holding area where detailed monitoring and decontamination could be performed. The handling area was provided with a field-type hot cell with slave manipulators for remote handling of items found to be more seriously contaminated. However, the hot cell facility was not used due to the fact that all pods recovered bore only low intensity contaminant.

4.1.2 Disaster Control

Each time a device (warhead) was moved in or out of Johnston Island, a radsafe representative was present at the airstrip to assist as required in the event of mishap involving damage or fire to the device. However, the major effort was concentrated in the manning and equipping

of the radsafe component of the Disaster Control Teams. During the launch of a missile carrying a nuclear warhead, Chief, Radsafe Branch stationed 2 officers, 1 instrument specialist, and 2 radsafe personnel from Task Unit 8.5.1 in the TU 8.1.3 bunker. Present at all times, both during shots and between shots, was a health physics expert from Task Unit 8.1.1 (LASL). This basic team was equipped with 8 AN/PDR-39 (T1B) gamma meters, 4 AN/PDk-39 (T1B) gamma meters modified for very high range, 4 GADORA gamma meters, 10 AN/PDR-27J low range beta-gamma meters, 1 MX-5 beta-gamma meter, and sufficient protective ensembles for all members of the disaster control teams including fire-fighting personnel. Although this was normally only a passive measure to provide the means of responding to a radiological disaster, the team was fully employed during two particular shots, the STARFISH and BLUEGILL PRIME events discussed in Section 4.2. During Phase II, the organization for disaster control was expanded. Disaster Control Teams, both ashore and afloat, were organized to provide for backup or relief contingency. The two teams were comparable in strength, proficiency and equipment, and each capable of independent response. The purpose of the additional offshore teams was to assure adequate reserve in case relief or replacement of the on-shore team were required.

4.2 Unusual Incidents During Johnston Island Phase I

4.2.1 STARFISH

The STARFISH warhead was destroyed in the air shortly after liftoff, causing several pieces of missile skin and miscellaneous debris to fall back onto Johnston Island and adjacent waters. A thorough search for debris was immediately initiated and a goodly collection of alpha contaminated scrap was isolated in an unused corner of the missile launch pad enclosure. No contamination to any portion of Johnston Island was detected as a consequence of debris impaction onto the island.

4.2.2 BLUEGILL PRIME

This event terminated in a destruct of the warhead on THOR Launch Pad No. 1 (see figure 4.1 and 4.2). During this event, the missile burned on the launch mount and the warhead was intentionally destroyed. This resulted in a deposition of alpha contamination on the launch pad complex, which presented a contamination problem of major proportions. Contaminated debris was scattered throughout the wire-enclosed pad area and neighboring areas. No contamination, other than pieces of removable debris, was found outside the concertina. Metal revetment buildings were highly contaminated with alpha activity. Burning fuel flowing through cable trenches caused contamination of the interior of the revetments and all equipment contained therein. Fuel which spilled and flowed over the compacted coral surrounding the launch mount and revetments resulted in highly contaminated areas. Prevailing winds at the time of destruction caused general contamination of all areas downwind of the launch mount. Figure 4.2 presents the results of the initial radiological survey on the morning following the deliberate destruct. The selected point readings around the still undisturbed area are a documentation of general

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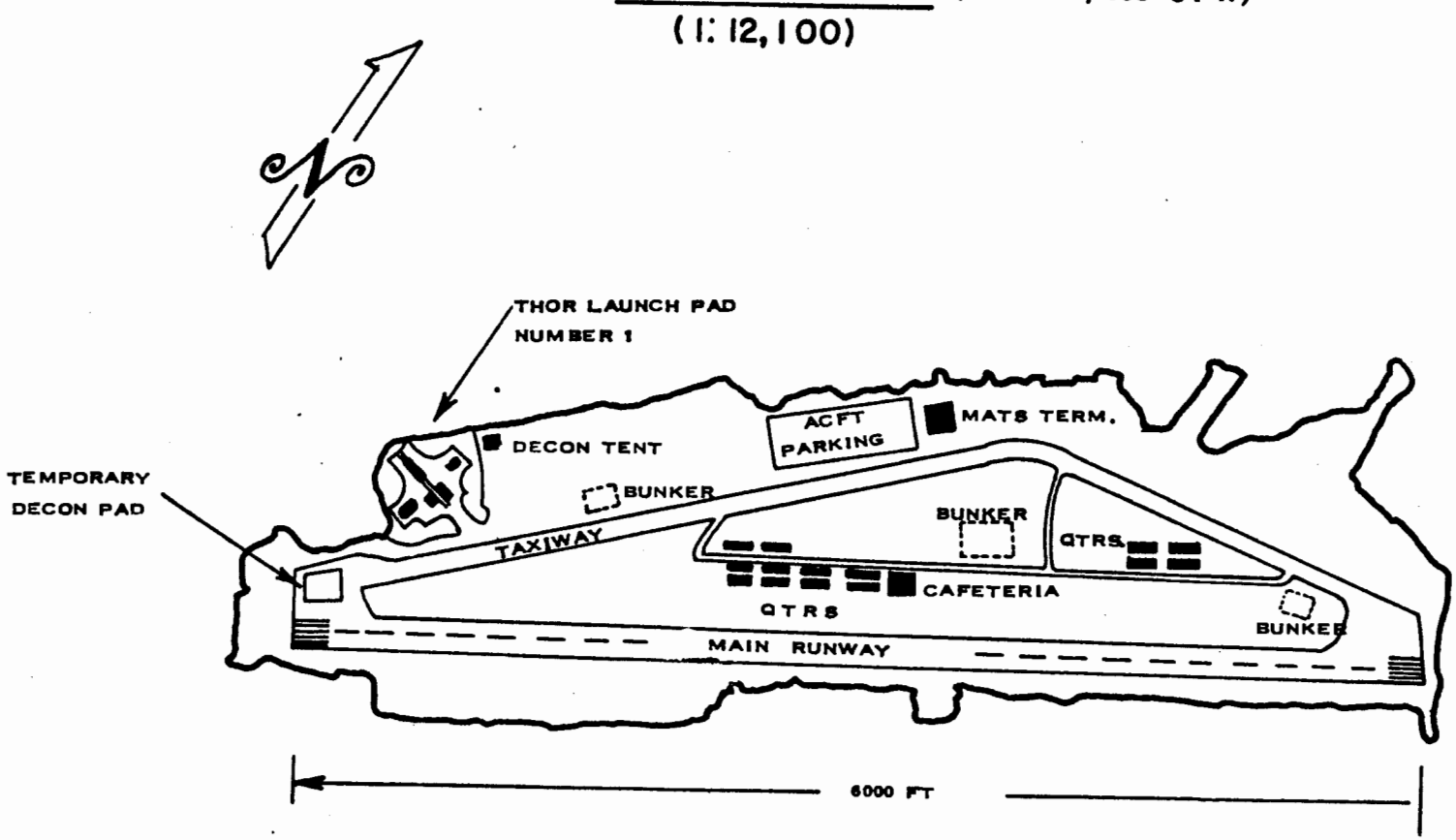

FIG. 4.1 , JOHNSTON ISLAND SHOWING THOR LAUNCH PAD NR. 1, DECONTAMINATION FACILITIES AND SEVERAL KEY FACILITIES.

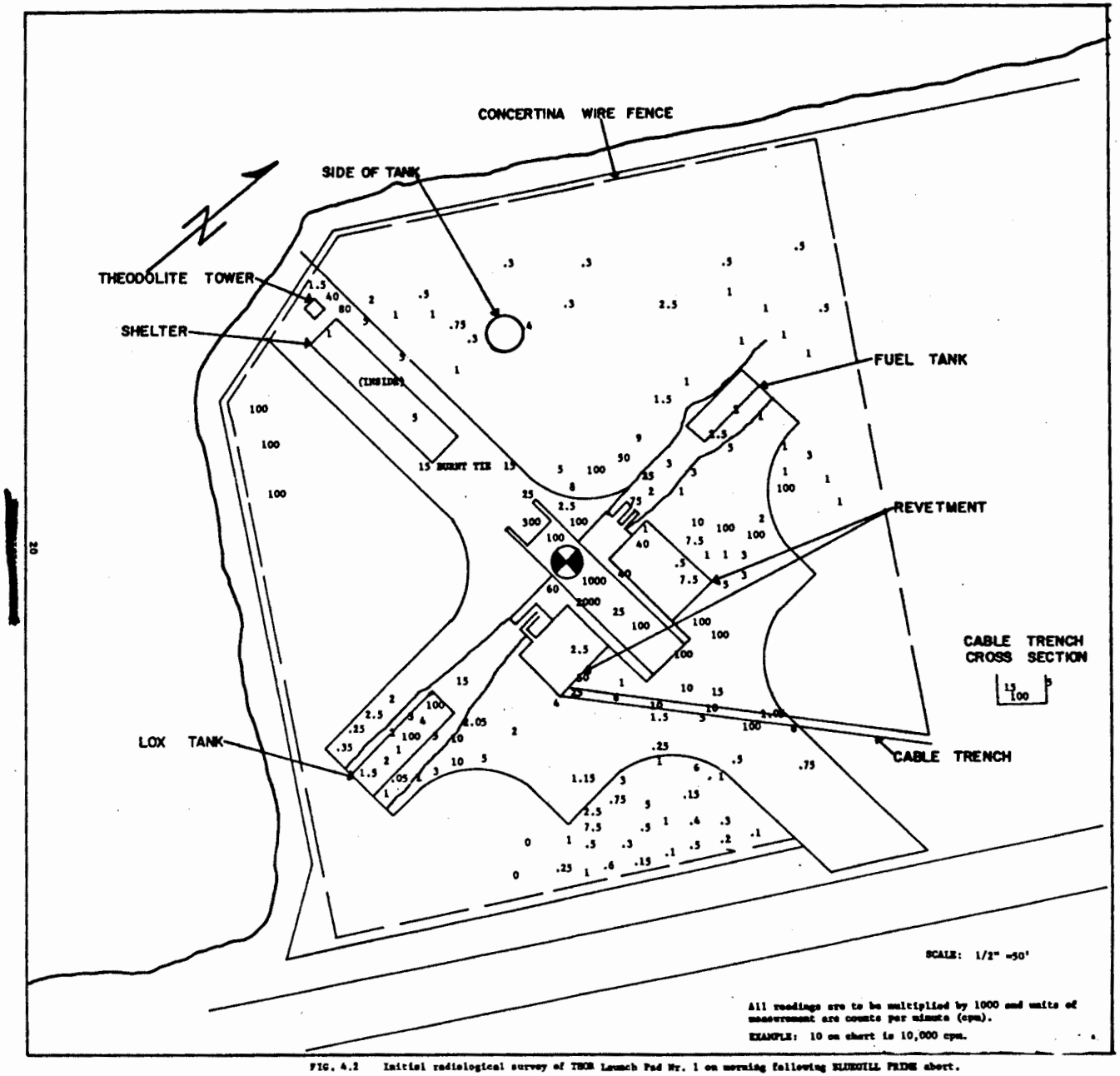

FIG. 4.2 Initial radiological survey of THOR Launch Pad Nr. 1 on morning following BLUEGILL PRIME abort.

levels of activity obtained by using Eberline PAC-3G and Eberline PAC-1S alpha survey meters. No attempt has been made to draw-in isocon lines. The irregularity of deposition can be attributed to fire-spread, fuel run-off, thermal up-drafts, and vortex winds of complex behavior. In view of the nature of this event, lack of particle distribution data, and an urgent necessity to rehabilitate the pad for subsequent shots, no effort was made in analyzing the magnitude and extent of the radiological hazard incident to the destruct of a nuclear device on a launch complex. No launch pad rehabilitation could be attempted until the radiological hazard had been brought under control by careful removal and fixing of contamination. A systematic procedure of debris removal, segregation, top soil (coral) removal, compaction, decontamination of hardstand and revetments followed by painting and fixation, and finally a sea-disposal of radioactive waste was required for control of the radiological hazard.

The following steps were taken to decontaminate and rehabilitate the pad:

1. All coral areas were sprinkled with oil to decrease the amount of contaminated airborne dust. Approximately two inches of top soil was graded off the coral surface. This contaminated soil was bulldozed over the embankment into the water at the northwest corner of the pad area.

2. The concrete pads were scrubbed with detergents and solvents to remove all loose contamination. The pad under the launch mount was then coated with epoxy paint. The remainder of the concreted areas, including the fuel tank and lox tank pads were covered with either epoxy or latex paint to fix the remaining contamination.

3. The revetments were washed, scrubbed, and painted.

4. The bottoms of all cable trenches were coated with one inch of concrete and the sides of the trenches were painted after scrubdown and washing. Contaminated cable trench covers were disposed of and replaced with new covers. Cable conduit pipes leading from the cable trench sumps inside the revetments were sealed at each end with either concrete or steel plate.

5. The missile shelter was scrubbed or scraped to bare metal and repainted. The wooden ties supporting the shelter rails were covered with concrete.

6. All electrical ground connection wells were filled with concrete.

7. All expansion joint grouting on the concrete pad was removed and replaced.

8. All equipment, tools, etc., that could not be decontaminated were disposed of in accordance with AEC standards by burial at sea.

9. The long range theodolite tower and the camera tower were scrubbed and repainted.

A radiological exclusion perimeter and a personnel decontamination station were the means of enforcing safety measures and avoidance of spreading of the contamination. The decon facility consisted of a "hot" tent with laundry, two showering compartments, a "clean" tent for clothing issue, and monitoring personnel including an enlisted medical corpsman. Air sampling at locations in main camp, adjacent to the decon tent, and within the launch pad enclosure was performed to assess the progressive decline of air-borne hazard arising from artificial resuspension. Task Unit 8.5.1 supplied the labor force and radsafe supervisory personnel during the reconstruction phase. These personnel were required to wear full protective clothing while working in the "hot" area. Six enlisted radsafe personnel, and a USPHS Officer, assisted the JTF 8 Radsafe Officer in supervision of this force. A period of approximately three weeks was required to reduce the alpha contamination to the point where it did not constitute a health hazard.

The following represented the condition of the launch pad area as of the time of termination of the test series:

1. All contaminated areas and surfaces were covered with protective coatings of either paint, concrete or clean coral sand.

2. All contamination was fixed. There was no evidence that the alpha contaminant was being moved by either vehicle or personnel.

3. Daily air samples showed that no contaminant was being resuspended.

The following were the procedures used in maintaining continuous surveillance.

1. Daily inspections were made of the entire launch pad area by radsafe personnel.

2. All painted surfaces which showed any deterioration for any reason, such as missile firings or construction work, were checked for loose contaminant and then repainted. Paint chips were placed in barrels for disposal at sea.

3. Any removal of the clean coral sand and exposure of the contaminated coral, either as a result of missile firings, heavy rains. or construction, was immediately remedied by replacing with clean coral sand. Any loose coral sand that was contaminated was immediately disposed of by dumping into the lagoon.

4. All chipped or broken concrete was either replaced with fresh concrete or exposed surfaces were painted if contaminated. The concrete fragments were placed in barrels for later disposal at sea.

5. All personnel working in areas where contaminated coral was exposed were required to wear canvas or rubber booties until such time as the contaminated areas were resurfaced with clean coral sand. Painters

chipping paint or repainting contaminated surfaces were required to wear full radsafe gear, including respirators or face masks.

6. No other radsafe restrictions were required. Shoes of individuals leaving the launch pad area were periodically spot-checked.

7. After each missile firing radsafe personnel, accompanied by the launch pad post-firing safety crew, inspected the area to determine the extent of the contamination problem and initiate any radsafe rehabilitation.

8. All tools and equipment utilized for any decontamination or rehabilitation were monitored and decontaminated if necessary.

9. Periodic surveillance was made of the kitchen and dining rooms for any contamination.

In lieu of any major decontamination effort, the procedures outlined above, implemented by experienced radsafe personnel, provided necessary radsafe protection for personnel on Johnston Island.

4.3 Johnston Island Phase II

In October 1962 a second series of air drops and a continuation of high altitude events was resumed.

4.3.1 Atmospheric Events

The air drops of devices detonated in the atmosphere again required B-57 sampler aircraft. A decon facility for aircraft and personnel was constructed at Barbers Point, Oahu, Hawaii. After completion of the cloud sampling mission the B-57s landed at Johnston Island, where trained crews from JTG 8.4 removed the samples for sealed container transport to laboratories in CONUS. Since cockpit dose rates in all four events were under 1 r/hr at H plus 4 hours, (radioactive decay varying inversely as the 1.4 power of time during the first several hours), an overnight "cooling" brought the dose rate down to a level permitting aircraft to be flown to Barbers Point without necessity for major decontamination at Johnston Island. A capability for primitive decon was provided at Johnston Island as a contingency for hasty removal of aircraft. A portion of the taxiway was isolated by a concertina wire barrier and a complete coral berm built to divert waste water flow into the run-off ditch. Fresh water was pumped through a hose from a reservoir tank for wash down. However, this field expedient was never used since the only radiological decon was that prompted by nuisance puddles of water resulting from short duration rain showers. Radiation levels from these were never more than 20-40 mr/hr close to the surface. The personnel decon facility erected after BLUEGILL PRIME event was utilized for sampler aircraft crews as well as a routine radsafe support installation.

4.3.2 High Altitude Events

The BLUEGILL DOUBLE PRIME missile was destroyed in flight and a very small amount of radioactive debris, consisting mostly of light weight fragments of components, fell onto Johnston Island. No injuries or contamination resulted.

BLUEGILL TRIPLE PRIME event required radsafe support for instrument recovery and handling. Contamination was of low intensity, permitting immediate removal of detector elements for early analysis.

4.4 Shots and Survey Results

Table 4.1 contains a list of the nuclear events which occurred near Johnston Island. Technical details pertaining to these may be found in the reference cited in Chapter 2, Section 2.3.

With the exception of the STARFISH and BLUEGILL PRIME events, no hazardous contamination occurred. All other events involved only recovery, monitoring, and handling of the scientific pods which were recovered and disassembled without mishap or injury. No personnel radiation exposures of any significance were observed.

Table 4.1

JOHNSTON ISLAND EVENTS DURING OPERATION DOMINIC

NAME OF EVENT	DATE	* YIELD RANGE	TYPE	
BLUEGILL	3 Jun 62	✓ Abort	Thor	
STARFISH	19 Jun 62	✓ Abort	Thor	Destroyed shortly after liftoff
STARFISH PRIME	8 Jul 62	Low Megaton	Thor	
BLUEGILL PRIME	25 Jul 62	✓ Abort	Thor	Burned on the pad
ANDROSCOGGIN	2 Oct 62	Low	Air Drop	
BUMPING	6 Oct 62	Low	Air Drop	
BLUEGILL DOUBLE PRIME	15 Oct 62	✓ Abort ✓	Thor	Destroyed in flight
CHAMA	18 Oct 62	Low Megaton	Air Drop	
CHECKMATE	19 Oct 62	Low	Sergeant	
BLUEGILL TRIPLE PRIME	25 Oct 62	Intermediate	Thor	
CALAMITY	27 Oct 62	Intermediate	Air Drop	
JOUSATONIC	30 Oct 62	Megaton	Air Drop	
KINGFISH	1 Nov 62	Intermediate	Thor	
TIGHTROPE	3 Nov 62	Low	Nike-Hercules	

* Low yield is below 100 KT

Intermediate yield is 100-1000 KT

Low Megaton yield is 1-5 MT

Megaton yield is above 5 MT

Chapter 5

PERSONNEL DOSIMETRY

5.1 Film Badge Processing and Record Posting

Two dosimetry sections were required for the Pacific Test Area. One was established at Christmas Island and the other in Honolulu, Hawaii. The Christmas Island section handled all film badge dosimetry for the Christmas Island operation, using the Honolulu, Hawaii installation as a back-up. The Honolulu installation performed all dosimetry for the Johnston Island site personnel and the Barbers Point site personnel.

Approximately 43,000 film badges were issued during the period 1 April-1 November 1962. During this same period approximately 33,000 film badges were processed using standard techniques. Density shown on film was then read using the Eberline densitometer and converted into dosage using a standard calibration dosage curve. The calibration curve was established under the normal process of exposing unused film against a known radiation source for specified periods of time.

The dose record cards (5x8 data card) were prepared in the Honolulu section, utilizing four to six female clerks hired locally. Approximately 20,000 5x8 data cards were typed and initial dosages posted.

Film badges worn by sampler aircraft crews were collected immediately after each event and returned to Radsafe Branch Dosimetry Section for expeditious processing (6 hours) of dosage information to successive sampler crews. A photodosimetry trailer on loan from the USAF, operated by JTF 8 radsafe personnel, was located in the JOC area. This trailer contained the necessary equipment for developing and drying film. Subsequently, film was read in the FS-3 densitometer manufactured by the Eberline Instrument Corporation. Two such instruments with auxilliary punch card readout, together with an addressograph machine, were situated in the building next to the trailer. This completely air conditioned building housed the dosimetry section and the TU 8.5.1 radsafe office on one end, the JTG 8.4 instrument repair section on the other end, and provided utilities service to the photodosimetry trailer.

The dosimetry operation at Christmas Island was closed and relocated in Honolulu, Hawaii near the end of the Christmas Island test series.

On 1 November 1962 the Honolulu dosimetry operations were terminated and preparations were initiated to transfer all processed film, film requiring processing, and records and materials to the Nevada Test Site (NTS), Mercury, Nevada. Reynolds Electrical and Engineering Company (REECo), located at NTS, had agreed to do the final portion of film badge processing and prepare a final IBM listing with the assistance of seven selected JTF 8 radsafe personnel. Four of the original JTF 8 personnel arrived 7 November 1962 and the remaining three arrived during the period 17-20 November 1962. The equipment and associated materials began to arrive at NTS between 14-17 November 1962.

Approximately 10,000 film badge packets were opened by JTF 8 radsafe personnel and sent to the REECo dosimetry laboratory for processing. Approximately 1,000 additional 5x8 data cards, NAVMED forms (naval medical forms indicating U.S. Navy issue), and approximately 30,000 listings were posted, finalized and coded for IBM key punching during the period 17 November - 11 January 1963. A few film badges were still being received at the time of publication of this report.

In order to utilize the IBM system for listing final rosters, organization codes were established by groups in the quantities indicated below:

GROUP	NR. OF SEPARATE CODES
HQ JTF 8	10
U.S. Army	92
U.S. Navy	162
U.S. Air Force	400
Civilian	85
Total:	749

Interim listings were furnished by the IBM division of REECo, and after the final review, all dose cards were sorted and the final listings were prepared in the quantities as follows:

TYPE	NR. OF LISTINGS
Alphabetical	12
Alphabetical-Organization	12
Service-Alphabetical	4
Service-Organization	4
Numerical-Non Returned Badges	4
Alphabetical-Non Returned Badges	4
Unassigned Badges	4

All copies of the final report were delivered to Hq JTF 8, Washington, D.C. by the NCOIC, JTF 8 Radsafe Branch. The reports were then separated and sent to the proper cognizant agency; Surgeons General, USA & USAF; Chief, Bureau of Medicine and Surgery, Navy Dept.; Chief Medical Officer, USCG; and the Division of Operational Safety, USAEC.

Four JTF 8 radsafe personnel remained at NTS for the final roll-up, which included assembling all final data records and processed film into acceptable order for proper storage at NTS by REECo. Upon completion of all dosimetry work for Operation DOMINIC, with the exception of unreceived film badges, the JTF 8 Radsafe Branch Dosimetry Section was dissolved and all personnel returned to their home stations.

5.2 Film Badges

The film badge program was designed to provide a dosage-indicating device to all personnel in the Task Force in order that complete dosage information could be maintained on everyone entering the Christmas and Johnston Islands area during the operation. Film badges were issued to all individuals upon their arrival at these locations, with instructions that the badge would be worn at all times, and would be turned in on recall by Radsafe Branch, upon exit from any contaminated area, return from a cloud sampling mission, or upon departure from the test area. The badge consisted of the DuPont 556 film packet (508 component 0-10r range and 834 component 0-1000r range) dipped in ceresin wax and then packaged in a rigid polyvinyl chloride (PVC) case. The purpose of the wax dip and the PVC case was to make the film packet impervious to moisture in order that it might be worn for several months without deterioration. Based upon extensive experience, and a check of overall efficiency of the packaging of similar badges used during Operation HARDTACK (JTF 7), it was not expected that any significant failure in packaging would be observed. However, near the end of the operation when certain film lots were being processed, it was observed that higher-than-expected dosage readings were being obtained. An immediate check of the rosters revealed that the individuals who had worn the badges could hardly have received such dosages, since thay had not participated in any operation which would have subjected them to such an exposure. A subsequent analysis of the film indicated that the film pack suffered deterioration due to environmental conditions. This deterioration was sufficient to cause an erroneous reading of the film. Careful examination of the film base fog revealed the pattern observed to be that of the characteristic associated with environmental damage such as heat, light, and humidity, and not that of ionizing radiation. The wax dip was suspected of being inadequate, rendering the film packet vulnerable to seal failure with resultant light damage.

During the operation 43,000 badges were issued, processed, and the information recorded. Records were maintained on approximately 30,000 individuals.

5.3 Pocket Dosimeters

Pocket dosimeters, Bendix Model No. 611, 0-5r range, were also used as a means of obtaining quick information on aircraft crew dosage.

Chapter 6

SUPPLY

6.1 Procurement of Equipment

RADIAC instrumentation and radsafe equipment was obtained primarily from the Nevada Test Site (NTS) or procured by Task Unit 8.5.1 (H&N). Table 6.1 contains the main items acquired for use in the forward area.

6.2 Instrument Maintenance

The mission of the Instrument Maintenance Section was that of maintaining and calibrating all portable RADIAC instruments for JTF 8 Radsafe. The section consisted of one officer and four enlisted men, assigned to duty to JTG 8.4 and located on Christmas Island.

By mid-April all instruments had been calibrated and issued to the various groups on Christmas Island and off-site stations. The instruments on neighboring islands were kept operable by constantly exchanging them for newly repaired instruments. During the remainder of April, approximately 200 instruments were calibrated and 80 were repaired. During the month of May, approximately 250 instruments were calibrated and 100 repaired. This was due to the almost continuous use of many of the instruments. During the month of June, approximately 50 instruments were calibrated and 20 repaired.

During Operation DOMINIC, approximately 98 percent of all the instruments were in working order at all times. Of these, about 5 percent were held in the instrument repair ship as a contingency replacement of any instrument in need of repair at a crucial time. Any delays in the repair of the instruments were due to shortage of spare parts. Resupply of parts required 60 days procurement lead time.

Eberline Instrument Corporation provided electronic engineers at all times to perform maintenance on the Eberline instruments, including the film densitometer. The remainder of the instruments, of other manufacture, were maintained by the U.S. Army personnel assigned to the instrument repair shop.

Table 6.1

RADSAFE EQUIPMENT AND SUPPLIES

QUANTITY	ITEM	SOURCE
20	E500B Eberline Beta-Gamma Geiger Counter	H&N (TU 8 5 1)
4	GADORA-2 Eberline Gamma Dose Rate Meter	H&N
15	E112B Eberline Beta-Gamma Geiger Counter	H&N
17	PAC-3G(AN/PDR-54) Eberline Alpha Contamination Meter	H&N 7 - NTS 10
15	MX5 Beta-Gamma Geiger Counter	NTS
12	IM-108 Gamma Survey Meter	25th Inf. Div., Ft Shafter
100	AN/PDR-39 Gamma Survey Meter	NTS
4	AN/PDR-39(T1B) Gamma Survey Meter(Mod. for high range)	NTS
100	AN/PDR-27J Beta-Gamma Survey Meter	Sacramento Sig.Depot,Calif.
2	FM-3G Eberline Alpha Floor Monitor	H&N
4500	4.025 Density Goggles	H&N
2000	4.5 Density Goggles	H&N
400	Pocket Dosimeters, Bendix Model No. 611 (0-5r)	H&N
3	FD-2 Eberline Film Densitometer	H&N
2	FS-11 Eberline Film Badge Evaluation & Recording System	NTS
2	Cobalt 60 Calibration Source	H&N
1000	Charg-a-Plate	H&N
1200	Coveralls	H&N
1000 pr	Canvas Booties	H&N
1000	Poly Bags	H&N
500 rls	Masking Tape	H&N
50	Respirators	H&N
50	Full-Face Masks	H&N
10	M-9 CmlC Protective Mask	H&N
1000 pr	Gloves, Tariff Issue	H&N
50	Surgeon's Cap	H&N
50	Hoods	H&N
2	T-289 Tritium Monitor	DASA FLD CMD
2	T-329A Radiological Urinalysis Kit	DASA FLD CMD
2	T-336 Alarm	DASA FLD CMD
1	Wound Monitor	H&N
25	RM-5 Eberline Radiation Monitors complete w/R-1 Chart Recorder	H&N
2	PC-6 Eberline Scaler complete w/SAC-2 & PC4-4 Detector Heads	H&N
2	E-113 Electronic Tool Sets	H&N
1	526 Summary Punch	H&N
4	Sellers Injector Corp. Liquid Jet Cleaners complete w/Lance & Discharge Hose	Procured by JTF 8, J-4
40	Staplex Hi-Vol Air Samplers	H&N
2	Gelman Air Sampler w/Dry Test Meter	USPHS
1	Band Saw (For opening plastic film badge packet)	H&N

Nuclear Testing Archive
(Coordination & Information Center (CIC))

References

JTF-8-62-12650

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FINAL REPORT
of
JOINT TASK GROUP 8.5
participation in
OPERATION DOMINIC

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1ST REVIEW DATE: 12/18/97
AUTHORITY: ☐ACC ☐ADC ☒ADD
NAME:
2ND REVIEW-DATE: 4/23/98
AUTHORITY: ADD
NAME:
DETERMINATION (CIRCLE NUMBER(S))
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FINAL REPORT
OF
JOINT TASK GROUP 8.5
PARTICIPATION IN
OPERATION DOMINIC

VOLUME IV

217277

JTF-8-62-12650

[redacted]

LT 12932

PA:JBS-68 21 May 1963

SUBJECT: Final Report of Joint Task Group 8.5 Participation in Operation DOMINIC

7. The need for upgrading facilities at both Johnston and Christmas Islands, in the event of future use, is a known and well published fact. The efforts of NVOO to this end are contained in two Secret Restricted Data memorandums from J. E. Reeves, Manager, Nevada Operations Office, to Major General A. W. Betts, Director, Division of Military Application, dated December 27, 1962, and January 19, 1963, Subject: Upgrading Certain Facilities at Christmas Island and Planning for Future Operations in the Pacific.

8. In the event you find errors and/or omissions in this Report please call them to our attention for expeditious correction.

JOE B. SANDERS
Commander

ABSTRACT

This report generalizes the activities of Joint Task Group 8.5 in Operation DOMINIC. Joint Task Group 8.5 consisted of personnel from: (1) the U.S. Atomic Energy Commission (JTG 8.5); (2) Holmes & Narver, Inc., the architect-engineer, construction, operation and maintenance contractor (TU 8.5.1); (3) Scripps Institution of Oceanography (TU 8.5.2); and (4) the University of Washington Laboratory of Radiation Biology (TU 8.5.3). It briefly describes the magnitude of the tasks accomplished, the changes in early planning, and problems encountered. This report is not intended to be detailed since a final completion report is required by the A.E.C. of Holmes & Narver, Inc. ninety days after official close of Operation DOMINIC.

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Revised May 1963

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HEADQUARTERS
TASK GROUP 8.5
JOINT TASK FORCE EIGHT
P. O. BOX 1676
LAS VEGAS, NEVADA

PA:JBS-68 21 May 1963

SUBJECT: Final Report of Joint Task Group 8.5 Participation in Operation DOMINIC

TO: Commander
Joint Task Force Eight
Washington 25, D. C.

1. In compliance with the request made in your letter dated 18 February 1963, forwarded herewith are fifteen (15) copies of the subject Report.

2. This report of Operation DOMINIC covers all aspects of engineering, construction operation and maintenance and logistic support activities performed by Task Group 8.5.

3. The principal objectives of this Report are to provide a complete account of the support type functions performed by Task Unit 8.5.1 as Architect-Engineer - Construction - Management Contractor for the U. S. Atomic Energy Commission; to make a careful evaluation of the work performance; and to present conclusions and recommendations which will be of value to participants in future similar or related projects. Other activities reported pertain to wave motion studies by Task Unit 8.5.2 and sampling of food for radioactivity by Task Unit 8.5.3. Information regarding the technical activities of Task Units 8.5.2 and 8.5.3 requires time for data analysis and will be published in the near future. Requests for these technical reports should be made directly to this office.

Revised May 1963

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PA:JBS-68 21 May 1963

SUBJECT: Final Report of Joint Task Group 8.5 Participation in Operation DOMINIC

4. Operation DOMINIC was conducted on a " crash" basis with severe time limitations placed on practically all phases and activities. Difficulties are inherent in an operation of this nature and during the early stages difficulties were compounded by the lack of trained personnel in both TG 8.5 and TU 8.5.1.

5. For example, Nevada Operations Office, which operates under a very strict personnel ceiling, was forced to conduct tests both at the Nevada Test Site, Operation Nougat, commencing in September 1961 and Operation DOMINIC, without an increase in the personnel ceiling. Thus, TG 8.5 until September 1962 when the office of Deputy Assistant Manager was established in Honolulu was staffed entirely with personnel borrowed from NVOO Divisions and other AEC operations offices.

a. Future tests in the Pacific will find both the AEC and the Holmes & Narver organizations strengthened and more capable. Present plans are at some time after authorization to conduct a nuclear test series in the Pacific and to staff the Holmes & Narver office in Honolulu with contract management, engineering and fund disbursing personnel with expectations that they will become a self sustained unit not dependent on the Los Angeles office and thus eliminate delays in contract approval, payment of accounts, etc., experienced during Operation DOMINIC.

6. The success or failure of the support coordination committee or its counterpart during previous tests, is and always has been controversial and subject to change during the planning stages for the following test series. Without regard for the unit established for the coordination effort certain conclusions and recommendations will be made in Appendix 6, regarding the work of this group.

Revised May 1963

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[redacted]

Island; three missile events at Johnston Island; a land-based shot at Baker Island; and airdrops in the area of the Hawaiian Islands.

The program actually staged included 24 air drops at Christmas; 5 successful missile events (nuclear), 4 unsuccessful missile events (nuclear), and 11 missile ballistic/ certification events (non nuclear) at Johnston; 5 air drops near Johnston; the Polaris system test; and the ASROC combined underwater effects and system test. One of the 5 successful missile events and one of the 11 ballistic/ certification events were two-missile events, the second missile in each being a companion/ observer of the first. The program also included the establishment of AFTAC and DASA diagnostic and Rad-Safe stations, and weather stations at various locations throughout the Pacific Ocean.

H&N provided support to this program in the fields of management planning, engineering, procurement, logistics, construction, and base operations.

3. CONTRACT HISTORY

Contract AT(29-2)-20 was modified 12 times during Operation DOMINIC. Other changes to the Contract and Appendix B resulted from 12 approved Reimbursement Authorizations which affected DOMINIC activities.

Contract modifications were as follows:

[redacted]

[redacted]

ANNEX A HOLMES & NARVER ACTIVITIES

Modification 96, dated 21 December 1961, increased funds.

Modification 97, dated 1 March 1962, increased funds.

Modification 98, dated 28 March 1962, effective 18 December 1961, modification to scope of work for Jobs 1 through 6 for locations off-continent, plus increased estimated costs.

Modification 99, dated 2 April 1962, increased funds.

Modification 100, dated 13 April 1962, estimated costs for 1 April through 30 June 1962.

Modification 101, dated 18 April 1962, obligated additional funds.

Modification 102, dated 4 June 1962, increased funds.

Modification 103, dated 28 June 1962, increased funds.

Modification 104, dated 12 July 1962, increased funds.

Modification 105, dated 31 August 1962, increased funds, plus estimated costs for 1 July through 30 September 1962.

Modification 106, dated 28 September 1962, estimated costs for 1 October through 31 December 1962.

Modification 107, dated 28 September 1962, increased funds.

[redacted]

[redacted]

ANNEX A HOLMES & NARVER ACTIVITIES

4. SUPPORT COORDINATION COMMITTEE

Coordination of operational requirements, performed by J-6 in previous operations, was assigned to a Support Coordination Committee (SCC). H&N representation on the SCC for Operation DOMINIC was comprised of a Chairman, Vice-Chairman, and staff personnel. Each of the following organizations was represented by one Committee member: the Atomic Energy Commission, Joint Task Force Eight; the Los Alamos Scientific Laboratory, the Lawrence Radiation Laboratory, Field Command, Defense Atomic Support Agency (Provisional), the Sandia Corporation, and Edgerton, Germeshausen, & Grier, Inc.

Responsibilities of H&N representatives, as members of the SCC, consisted of 1) reviewing all User requirements, 2) coordinating overall activities, 3) accumulating similar individual requirements for inclusion in a consolidated plan, 4) establishing design and construction priorities, 5) apprising the AEC and Users of current conditions, activities and developments, and 6) maintaining and publishing Instrumentation Chart.

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ANNEX A HOLMES & NARVER ACTIVITIES

In addition to the responsibilities originally conceived for the SCC, it was in a position to provide information on all phases of the Operation to authorized agencies.

5. ORGANIZATIONAL CONCEPT

The controlling and operating organization for Operation DOMINIC, JTF-8, included AEC as Task Group (TG) 8.5 under which Holmes & Narver, Inc. (H&N) functioned as Task Unit (TU) 8.5.1.

a. H&N established within the Special Projects Division the Construction Operations Department to consolidate activities related to 1) the movement of men and materials to remote sites, 2) complete camp operations and maintenance, and 3) construction of scientific and camp facilities. Collateral assistance to this Department was acquired from all associate Departments within the Division, with major participation by the Engineering, Contracts & Supply, Controller, Communications, Estimating, and Administrative Services Department.

b. Under the Division management, primary direction of all overseas operations was provided by the Manager,

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Construction Operations. Effective liaison with AEC and scientific groups was maintained by the Support Coordination Committee, an independent reviewing agency whose activities are detailed elsewhere in this report.

c. The H&N Special Projects Division organization chart which is included as an Exhibit of this Annex illustrates the various areas of responsibility within the Division. It will be noted that the job site organizations were under the jurisdiction of the Construction Operations Department; however, technical guidance was provided by the Los Angeles Office in areas of similar function, e.g. engineering, estimating, personnel, etc., to ensure quality control and universal application of established policies and procedures.

6. OPERATIONAL SITES

Overseas locations for Operation DOMINIC activities are as follows:

a. Christmas Island, 1300 miles south of Honolulu, was the site of British nuclear tests completed in 1958. Negotiations between the United States and the United Kingdom led to its use as a test site for Operation DOMINIC.

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ANNEX A HOLMES & NARVER ACTIVITIES

b. Johnston Island, 1 3/4 miles by 3/4 mile, is 715 miles west southwest of Honolulu. A United States controlled island, it also was used as a test site for Operation DOMINIC.

c. Oahu is one of the larger Hawaiian Islands. Barbers Point, Hickam Air Force Base, and Ford Island in Pearl Harbor were auxiliary sites used for Operation DOMINIC.

d. Hawaii is the largest of the Hawaiian Islands. Sites used for Operation DOMINIC were Mauna Loa, Hilo, and Kona.

e. Maui is south of Hawaii in the Hawaiian Islands. Mt. Haleakala, including the Silver Sword Inn, was used for Operation DOMINIC.

f. Kauai is northwest of Oahu in the Hawaiian Islands. A launch complex near Bonham Air Force Base was used for Operation DOMINIC.

g. Tongareva, encompassing a 10-mile lagoon, is a Cook Island coral atoll administered by New Zealand. Its airstrip was used for Operation DOMINIC.

h. Rarotonga, an island about 20 miles in circumference, is the capital of the Cook Islands, administered by New Zealand.

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ANNEX A HOLMES & NARVER ACTIVITIES

i. French Frigate Shoals is about 600 miles west of Hawaii. Tern Island of this archipelago is the site of a U.S. Coast Guard Loran Station.

j. Tongatapu, with an area of 250 square miles, is one of the Friendly Islands group administered by Great Britain.

k. Malden, a somewhat triangular island with a perimeter of 10 miles, is a UK possession.

l. Viti Levu is one of the largest of the 250 Fiji Islands, administered by Great Britain.

m. Palmyra, privately owned, is a group of islets surrounded by a coral reef which forms three lagoons.

n. Canton, 22 miles long, is one of the original eight islands of the Phoenix Group. Joint control for aviation and communications is maintained by Great Britain and the United States.

o. Fanning Island is a British possession used in recent events for radiation measurements and research activities.

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ANNEX A HOLMES & NARVER ACTIVITIES

p. Washington Island is a British possession used in recent events for Rad-Safe activities.

q. Tutuila, one of the 14 islands of Samoa, is administered by the United States. Its 17 mile L-shaped harbor is considered the best in the Pacific area.

7. ORGANIZATION AND COMMAND RELATIONSHIPS

As Task Unit 8.5.1 of Task Group 8.5 Support (AEC), Holmes & Narver performed the services set forth under Contract AT(29-2)-20, an Architect-Engineer-Construction-Management CPFF contract negotiated by the Nevada Operations Office of the U.S. Atomic Energy Commission. Services requested by authorized agencies of the Joint Task Force and approved by the AEC were provided under this contract. For the most part these requirements were established by the military and scientific task groups.

H&N support responsibilities during the operation encompassed activities in six general areas:

Administration and Industrial Relations

Engineering and Estimating

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ANNEX A HOLMES & NARVER ACTIVITIES

Communications

Construction-Maintenance

Contracts & Supply

Controllership

Performance of these activities was accomplished by the staffs of seven departments in the Los Angeles Office; the Oakland and Honolulu Offices; and Jobsite forces at Christmas Island, Johnston Island, and the remote sites.

All using agency requirements were handled expeditiously by taking advantage of a close liaison and working agreements.

8. MANAGERIAL ACCOUNT

a. Background and Pre-Planning Activities: Commencing 15 September 1961, H&N participated in pre-planning investigations for an overseas atmospheric test program. A report entitled "Preliminary Draft of the Report on Facilities and Requirements to Support Test Operations at Eniwetok Proving Grounds and Johnston Island" was forwarded to AEC on 16 October 1961.

On 19 October 1961, Message REM-3879 was received from the Manager, ALOO, authorizing H&N and Using Agencies to

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proceed with in-house preparations for an overseas atmospheric test program (Operation Ever Ready), consisting of seven air drops to be detonated either off Hilo, Hawaii, or Johnston Island. In addition, it was requested that all agencies provide AEC with information relative to airlift requirements for equipment, materials, and personnel to Johnston Island. This information was compiled for H&N activities and forwarded by a message from Howell to Reeves, DTG 240010Z, October 1961. Further information was furnished concerning requirements for office space and office equipment, ground transportation, and other special requirements for the movement of equipment and personnel within the Hawaiian Islands.

In early November 1961, a verbal request was made by AEC/ALO for H&N to prepare a basic operational plan covering 1) a program of air drops, balloon and surface shots at Christmas Island, 2) a program of three intermediate missile events at Johnston Island, and 3) a program of air drops staged in the Hawaii area. This plan was compiled with complete cost

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estimates and schedules on 19 November 1961 and was hand carried to Washington by the Manager, Construction Operations for a meeting with top level DOD and AEC officials on 20 November 1961.

As a result of this meeting, it was determined that a reconnaissance of Christmas Island would be necessary before detailed plans and schedules could be drawn-up for a full-scale test operation at that site. Arrangements for this trip were made by the State Department, and a comprehensive on-site investigation was made between 5 December and 10 December 1961 by the Manager, Construction Operations, H&N; Dr. Wm. E. Ogle, LASL; and Colonel C. M. Shook, AFSWC. These men were accompanied by a team of high ranking officials representing the United Kingdom. At the conclusion of this trip, a report entitled "Reconnaissance Report Pacific Area" was prepared and transmitted to all interested agencies. This report consolidated three separate reports prepared by the reconnaissance team and covered 1) Scientific Stations, 2) Base Facilities, and 3) Airfields.

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ANNEX A HOLMES & NARVER ACTIVITIES

On 30 November 1961, a meeting was held at Albuquerque for the purpose of outlining a proposed operation in the Pacific. It was determined that, with the exception of high altitude events, future plans should be directed towards using Christmas or some other land area, and an open-sea, ship-based operation. H&N was requested to start immediately on designs for the modification of shot and diagnostic vessels and to proceed with studies and designs for land-based alpha stations. In addition, it was requested that H&N study methods of anchoring or stabilizing barges in deep water.

Simultaneously with the conference in Albuquerque, a meeting was held at Vandenburg AFB among representatives of AEC, Douglas Aircraft, Sandia Corp., and H&N for the purpose of discussing ground facilities required for the use of Thor missiles at Johnston Island. An on-site tour of a Thor launch facility was conducted by Douglas, determinations were made concerning those items that could be deleted in a similar launch facility at Johnston Island, and initial criteria were presented

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for shop facilities in support of the missile launch. Due to the critical nature of certain dimensions on the pad, it was concluded that H&N would provide a survey crew and make "as-built" surveys of the critical areas. (This survey was later performed and proved extremely beneficial during the period of "hardware" installation at the launch pad on Johnston Island.)

On 6 and 7 December 1961, meetings were held in Washington among representatives of the Task Force, AEC, scientific laboratories, and H&N to discuss support requirements and a concept of operation for future test operations. Initial planning was centered on air drops over the open sea; however, other aspects or possible alternate methods of testing were discussed including high altitude events at Johnston Island, the use of ocean-going vessels as shot vehicles, the possible use of Christmas Island and the flexibility to relocate diagnostic trailers from shipboard to shore-base installations, and the probable use of Jarvis Island or some other remote island for a surface shot. Discussions also included Task Force organization and individual

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responsibilities, weather station support and possible locations of these stations, air support requirements, and Rad-Safe operations. At the conclusion of these meetings, it was determined that a site survey of Johnston Island was absolutely essential before further planning for facilities at that site could be accomplished. It was also determined that all boat-pool operations would be the responsibility of the Navy.

During the period from 12 to 14 December 1961, an on-site investigation of facilities at Johnston Island was made by two H&N engineering personnel accompanied by representatives from Douglas Aircraft, AFSWC, AEC, Sandia, and the U.S. Army Corps of Engineers. Particular attention was given the new area which had been filled in by dredging operations subsequent to H&N's evacuation from Johnston Island in August 1958. Profile drawings of this area along with information concerning soil investigations and pile bearing capacities were obtained from the Corps of Engineers and forwarded to the Los Angeles Office for use in the design of the proposed launch facility. During this tour tentative

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locations of the launch pad, launch control building, radar tracking station, and sampling rocket pads were made. Also, a planning conference was held by JTF-8 and tentative construction schedules were developed. A comprehensive report covering the condition of existing facilities and utility systems was prepared at the conclusion of this trip which proved invaluable during the detail planning phase of support operations at Johnston Island.

b. Operational and Related Activities: On 18 December 1961, Teletype Message JAS-4601 was received from AEC authorizing H&N to proceed with preparations for overseas atmospheric testing in the Pacific Area, specifically in connection with the support of DOD Operations at Johnston Island. This authorization included 1) the employment of personnel for on-continent, Honolulu, and Johnston Island; 2) procurement of the required construction equipment, materials, and supplies; and 3) the leasing of the required office space in Honolulu. Action was immediately taken to initiate the procurement of construction equipment and supplies, principally from the Honolulu area, and also the hiring of required

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construction and support personnel. In addition to procurement in Honolulu, excess lists from the PMR Facility at Eniwetok were reviewed and arrangements made for the shipment of all useable items from that site. Also arrangements were made by the Honolulu Office and the Los Angeles Office (Administrative Services) for leasing the required office space in the Honolulu area.

The initial complement of approximately 34 H&N employees arrived at Johnston Island on 27 December 1961 and started work on camp rehabilitation and activation. The first of many barge tows to Johnston Island commenced from Pearl Harbor on 3 January 1962, transporting heavy construction equipment and large quantities of construction materials. On 30 December 1961, a barge was dispatched from Honolulu to Eniwetok to transport construction equipment, distillation units, and miscellaneous camp support items to Johnston Island.

Due to the increased interest for a land-based surface shot and the lack of definitive information concerning various remote islands in the Pacific for this activity, it was determined

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that a reconnaissance trip would be made to Jarvis, Baker, and Howland Islands. The purpose of this trip was to select a suitable test site from the standpoint of a beaching operation, logistics support, and size and topography of the land. This reconnaissance trip was made between 22 and 31 January by representatives of JTF-8 Headquarters Task Group 8.3, DMA, CINCPACFLT, COMHAWSEAFRON, UDT-USN, USAF Weather Squadron, LASL, AEC, and H&N. At the conclusion, a comprehensive report was prepared by H&N outlining the data pertinent to each of the sites and recommending Baker Island as the most suitable site for activities during Operation DOMINIC.

On 5 February 1962, DMA authorized active preparations to support one land shot at either Jarvis or Baker Island (Ref. JAS-2620). The initial schedule required that the first load of material and equipment be ready at Pearl Harbor on 24 February for surface shipment on 1 March. Construction of the required support and scientific facilities was scheduled to start on 5 March. All equipment, materials, and supplies were procured for this activity and forwarded to Pearl Harbor for staging.

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ANNEX A HOLMES & NARVER ACTIVITIES

On 12 February 1962, verbal authorization was received from AEC to prepare for operations at Christmas Island. Arrangements were immediately made for a construction crew to report to Christmas Island. This crew arrived at Christmas Island on 15 February and rehabilitation work was immediately started at the Mess Hall in the Main camp. Verbal authorization was confirmed by Message JJC/CJTF-8-62-1701 received in H&N offices on 19 February.

In addition to approving Christmas Island as a test site for events in Operation DOMINIC, this message canceled all activities in conjunction with open-sea testing south of Hawaii. Plans for logistics, operations, and personnel were redirected to ensure operational capability at Christmas Island for all participants by 1 April 1962. Inasmuch as accommodations at Christmas Island were considered to be limited, all units were requested to provide maximum capability from a minimum number of personnel and support resources. Maximum use of equipment enroute to or located in the Hawaiian Islands was required in order to minimize

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the load on logistics and transportation systems, due to the changed location.

In connection with this preparation a Commander of U.S. Forces was assigned at Christmas Island, and the entire military organization was designated as Task Group 8.7.

When Message JJC/JTF-8-62-1552 was received on 15 February from JTF-8 Headquarters canceling the land-based shot at Baker Island and all related activities, the materials and equipment previously procured for that activity were routed to Christmas Island and utilized in the establishment of a forward area camp and rehabilitation of the main base camp.

Preparations for the activation of various weather stations were started on 25 January upon receipt of AEC Message JBS-2017 authorizing H&N to recruit personnel, procure materials and equipment, and provide logistical support for three weather/Rad-Safe stations. The schedule required that all equipment and materials be dockside Pearl Harbor on or before 4 February for surface shipment on 5 February; however, the lack of criteria for these stations at that time precluded immediate site

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planning and action on purchasing. Basic requirements for the establishment of DOMINIC weather stations were discused at a meeting held at Kirtland AFB on 26 January among representatives of the J-3 and J-4 Divisions of JTF-8, TG 8.4, and TG 8.5. At that time weather stations were to be located at Johnston Island, Christmas Island, Malden Island, and Palmyra. The initial requisitions for distillation units, power generating equipment, reefer units, and other essential camp equipment items not readily available in the Hawaii area were released to the Contracts & Supply Department, Los Angeles on 27 January. In addition, lists of common stock items and construction equipment were hand-carried to Honolulu in order to expedite procurement. With the exception of a few minor items, which were later airlifted to the sites, all items were delivered to Pearl Harbor as scheduled.

The fifth weather station, located at Tutuila, American Samoa, was authorized on 26 February by AEC Message FW:RPH-3308. Major items of equipment and materials were procured and staged at Pearl Harbor for surface shipment on 11 March.

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ANNEX A HOLMES & NARVER ACTIVITIES

The initial efforts for the establishment of AFTAC and DASA diagnostic stations at various locations throughout the Pacific Ocean were started on 7 March with the preparation of puchase requisitions for equipment and materials required for installations at Fanning and Tongareva (Penrhyn). Subsequently, H&N provided support for AFTAC and DASA at the remote sites of Palmyra, Tongatapu, Rarotonga, Viti Levu, Tutuila, Canton, French Frigate Shoals, and Malden, as well as supporting installations in the Hawaiian Islands and on Christmas and Johnston Islands.

Construction and support requirements were generated at an accelerated rate at both Johnston and Christmas Islands during the period following the initial move-in. The majority of these requirements were initiated by the Using Agencies in residence at the job sites and were accomplished at the sites through the efforts of the respective job site Engineering and Construction forces. Due to the continuous input of criteria for new or revised test facilities, in addition to the program previously planned, it became

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necessary to initiate 70-hour workweeks at both sites during the crucial construction phase in order to meet established schedules and ready dates.

All construction required in support of the tests was accomplished in advance of the ready dates and the test program at both Christmas and Johnston Islands proceeded on schedule without serious mishap until 25 July, when the malfunction of a rocket engine caused a Thor missile (Bluegill-Prime) to blow up on the launch pad at Johnston Island. Plans were immediately initiated for rehabilitation of this pad and associated facilities. Clean-up work was started on 29 July and the facility was completely rehabilitated and ready for User occupancy on 8 August.

On 1 August, AEC Message REM-10042 authorized H&N to proceed with the construction of a second Thor launch pad and associated facilities at Johnston Island. In addition to construction of the new Thor launch facility, requirements were generated for TU 8. 1. 7 (Nike-Hercules) launch facilities and a

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launch pad for Sandia (XM-33). In conjunction with these additional facilities it was necessary to relocate several existing major facilities on the Island. Principally these moves involved the world-wide countdown antenna farm, the high-explosive storage compound, the Command Destruct Transmitter facilities, and the primary AME-DME tracking antennas. Beneficial occupancy of the new Thor launch facilities was scheduled for 11 October, with work to continue through 1 November on a non-interference basis. This facility was essentially complete to provide beneficial occupancy by DACO on 1 October.

In order to meet the stringent schedules for the new work on Johnston Island, it was necessary to utilize the Honolulu Office as a principal source of supply for construction materials and equipment. By establishing Honolulu as the principal source of procurement, H&N was able to provide the required materials and supplies to Johnston on a much shorter lead time than if procurement had been accomplished in Los Angeles, and was also able to utilize many of the materials and equipment that had been

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returned to Honolulu from Christmas Island. Procurement in Honolulu was also advantageous from the standpoint of eliminating duplicate handling and possible loss of materials at transshipping points.

9. ADMINISTRATION & INDUSTRIAL RELATIONS

a. Personnel: Commencing December 1961, H&N's Personnel Branch concentrated on the task of obtaining personnel for Operation DOMINIC. Offices of the California State Employment Service in Los Angeles and San Francisco, and the H&N Office in Oakland were used for recruitment of overseas employees. Additional space for recruitment was furnished at the Garland Building, 117 West 9th Street, Los Angeles.

H&N's extensive file of former employees enabled the personnel staffs in Los Angeles and Honolulu to contact large numbers of qualified prospective overseas employees. This effort was successful in acquiring experienced personnel for H&N's initial job site requirements. Recruiting trips by an H&N Honolulu team to the Islands of Hawaii, Kauai, Maui, and Molokai were also

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successful. Stateside recruiting trips to a number of the larger mainland cities resulted in the employment of upper-level technical personnel.

Rehires for job sites totaled 1030 and new hires for job sites totaled 1295, for a grand total of 2325.

b. Security: The Chief Security Officer had the responsibility for the overall security program, including 1) pre-employment verification, 2) processing of employees' credentials and preparation of requests for security clearance, 3) personnel and physical security, 4) indoctrination of security personnel for job site duty, 5) information control, classification, declassification, and 6) security education.

The responsibility for the administration of the security program for H&N at locations in the Hawaiian Islands, Christmas and Johnston Islands, and remote sites was delegated to the Jobsite Security Officers.

All sites were staffed with security guards. Security was also maintained at H&N interests at Los Angeles and Oakland.

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c. Wage & Salary: Wage and salary activities for Operation DOMINIC included the establishment of wage and salary schedules for Off-Continent, State of Hawaii, and On-Continent categories not previously covered. These schedules were given continuing review to assure equitable payment in accordance with prevailing wage practices. Surveilance was maintained of the administration of the wage and salary program for all locations by the Wage and Salary Branch, to ensure consistent application at all operating sites; in addition, Davis-Bacon Wage Determinations were obtained to cover construction activities in the State of Hawaii.

10. ENGINEERING AND ESTIMATING RESPONSIBILITIES

a. Design: In the early stages of development, criteria from the major participants was directed exclusively to the Los Angeles Office where design and procurement were initiated. Many changes occured in scientific requirements, and preliminary engineering was necessarily abandoned on such items as Project Fishbowl, the open-sea shot series, the Baker/Jarvis event, and

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the instrumentation installations on Navy Ships Montecello Hornet, Merrill, and McGraw.

Later it was decided that much criteria could best be developed and engineered at the respective sites and future criteria was to be channeled through the Honolulu Office. Still later, this decision was modified and most of the scientific criteria for Johnston Island was converted into design at Los Angeles.

H&N established design groups at Honolulu, Johnston Island, and Christmas Island. The Honolulu Office provided design and inspection service for all activities at the remote sites as well as for construction in the Hawaiian Islands.

Design activity ended on 10 July at Christmas Island, and increased at Johnston Island following the malfunction on 25 July.

b. Estimating: The Estimating Department prepared and distributed estimates as required for Operation DOMINIC, provided personnel for various locations, and provided technical direction for job site estimating functions.

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ANNEX A HOLMES & NARVER ACTIVITIES

At Los Angeles, the Department prepared and issued overall budget estimates, engineering estimates, lump sum A/E estimates, and preliminary construction estimates for User funding purposes.

Estimating staffs were located at Johnston Island, Christmas Island, and Honolulu, under administrative control of the respective Resident Engineers.

11. COMMUNICATIONS RESPONSIBILITIES

H&N was assigned communications engineering, installation, maintenance, and operation tasks at Christmas Island, Johnston Island, and in the Hawaiian area.

a. Christmas Island: Responsibilities included:

Multi-channel teletype and voice radio trunk to Hawaii.

VHF FM radio networks for scientific and construction forces.

Island wide dial telephone system.

Scientific cable plant.

Public address countdown system covering all populated areas.

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ANNEX A HOLMES & NARVER ACTIVITIES

AEC scientific communication center at Site "A".

AN/TRC-24 VHF system between the JOC area and "A" Site.

Rad-Safe network to Washington and Fanning Islands.

Microwave system between the Main Camp and "A" Site.

b. Johnston Island: Responsibilities included:

World wide countdown transmitting and receiving facilities.

Scientific cable plant.

Rehabilitation of the telephone plant.

AEC communication center serving the AEC, scientific elements, and construction forces.

Shore to ship radio trunk for air drop operation.

c. Hawaiian Area: Responsibilities included:

AEC communication center and relay station in Honolulu.

AEC communication centers at Maui and Kauai.

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ANNEX A HOLMES & NARVER ACTIVITIES

Countdown communication installation at Maui and Kauai.

Countdown filter center in Honolulu.

Administration of telephone company contract for telephone, teletype, and mobile radio in the Hawaiian area.

d. Additional Responsibilities: H&N also was charged with the overall planning, frequency programming and inter-agency coordination of the countdown complex which included Johnston Island, Point Arugello, Point Mugu, Kauai, and Maui, various elements on Oahu, and widely scattered listening points in the greater Pacific area.

e. General: Originally involved in design and construction supervision of communication systems for the USS Hornet, USNS McGraw, USNS Merrill and the USS Montecello in the shipboard program, and a long haul communication system for Baker Island, all effort was transferred to the Christmas Island buildup in mid-February 1962. No time was available to do conventional

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basic planning and system design. Long haul communication and base telephone requirements were met by locating and obtaining existing system packages. These packages did not generally represent the optimum arrangement for the service desired but no alternate was available due to the extremely critical deadlines.

Throughout the communication activities area, the severe challenge was the time schedule. Normal lead time for procurement of materials and processing of personnel security clearances provided the main obstacles to the rapid build up. It was still possible to complete radio, telephone and signal cable installations on or before their actual operational deadlines.

12. CONSTRUCTION-MAINTENANCE RESPONSIBILITIES

Since Christmas and Johnston Islands were the major operational sites for Operation DOMINIC, the Construction-Maintenance Division consisting of five departments was established for each of these islands under a General Superintendent

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responsible to the Resident Manager. These departments were as follows: 1) Electrical Department, including Refrigeration and Power Generation Sections; 2) Utilities Department, including Plumbing and Distillation Sections; 3) Carpenter Labor Department, including carpenter, labor, and painting services; 4) Heavy Equipment Department, including the operation and maintenance of all mechanical equipment and vehicles; and 5) a Stevedoring Department, including rigging services. Within each department, Jobsite personnel were used interchangeably for construction and maintenance.

a. Johnston Island: Camp facilities were rehabilitated, and missile launch pads and associated instrument stations as well as scientific installations were constructed and maintained.

b. Christmas Island: The major work consisted of improvements to scientific installations and camp facilities plus establishment of Site "A". Support equipment also was maintained. Remote sites required only minor construction-maintenance activities.

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ANNEX A HOLMES & NARVER ACTIVITIES

13. CONTRACTS & SUPPLY

Contracts & Supply Department processed approximately 60,000 line items valued at $19 million. The Department expanded its operations by the addition of offices in Honolulu and Oakland to direct the functions of procurement, expediting, inspecting, and liaison with shipping agencies.

The Honolulu Office, which became a major procurement center, purchased materials locally available, appraised Government supplies for possible use, and forwarded requisitions to the mainland when necessary.

The Oakland Office served efficiently in contracts with Bay Area vendors and with export packers and shippers.

14. CONTROLLERSHIP FUNCTIONS

The Division Controller directed the mobilization of fiscal functions at the various job sites with primary control retained in the Los Angeles Office. These functions included Cost Control, Payroll and Timekeeping, Property, and accountability for cash receipts and disbursements.

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ANNEX A HOLMES & NARVER ACTIVITIES

Collateral services from this Department included the functions of Internal Audit, Budget & Contract Administration, and Insurance & Cash Control.

15. ROLL-UP

Terminal arrangements for property and equipment varied with the site. At Christmas Island, the program was affected by agreements with the United Kingdom and by unanticipated requirements at Johnston Island. In general, unoccupied buildings were sealed; and equipment and materials that were neither assigned to the British nor required at Johnston were shipped to Honolulu for warehousing and storage.

Initial roll-up was accomplished at Johnston Island between 5 November and 9 December 1962. However, certain equipment and materials were retained in support of required rehabilitation of various facilities in preparation for return to PACAF.

Following roll-up activities at Christmas and Johnston Islands, and upon completion of the rehabilitation program at Johnston, both sites were placed in stand-by maintenance status.

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ANNEX A HOLMES & NARVER ACTIVITIES

Roll-up of Hawaiian Islands sites and remote islands commenced in November when equipment was evacuated from the sites for storage or return to sources. User equipment from Maui and Kauai was shipped directly to the Mainland from the island ports, launch facilities at Kauai were coccooned in place. All other equipment was returned to Honolulu for storage, except communications equipment, which was returned to Mercury, Nevada, for storage at NTS.

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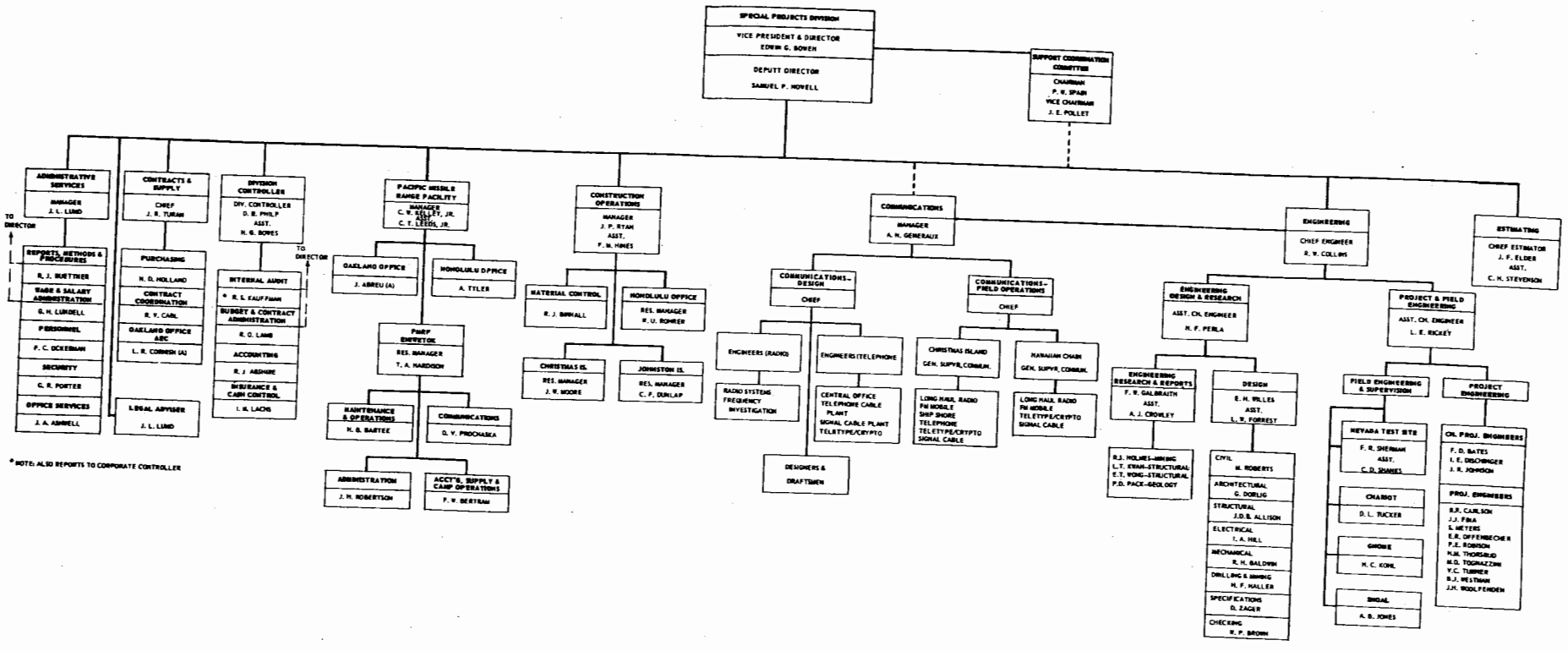
ANNEX A

HOLMES & NARVER ACTIVITIES

HOLMES & NARVER, INC.
ENGINEERS CONSTRUCTORS

SPECIAL PROJECTS DIVISION



*NOTE: ALSO REPORTS TO CORPORATE CONTROLLER

HOLMES & NARVER, INC.
820 SOUTH FIGUEROA ST.
LOS ANGELES 17

APPROVED _____ AS OF MARCH 12, 1963
EDWIN G. BOWEN
VICE PRESIDENT & DIRECTOR
SPECIAL PROJECTS DIVISION

OFFICIAL USE ONLY

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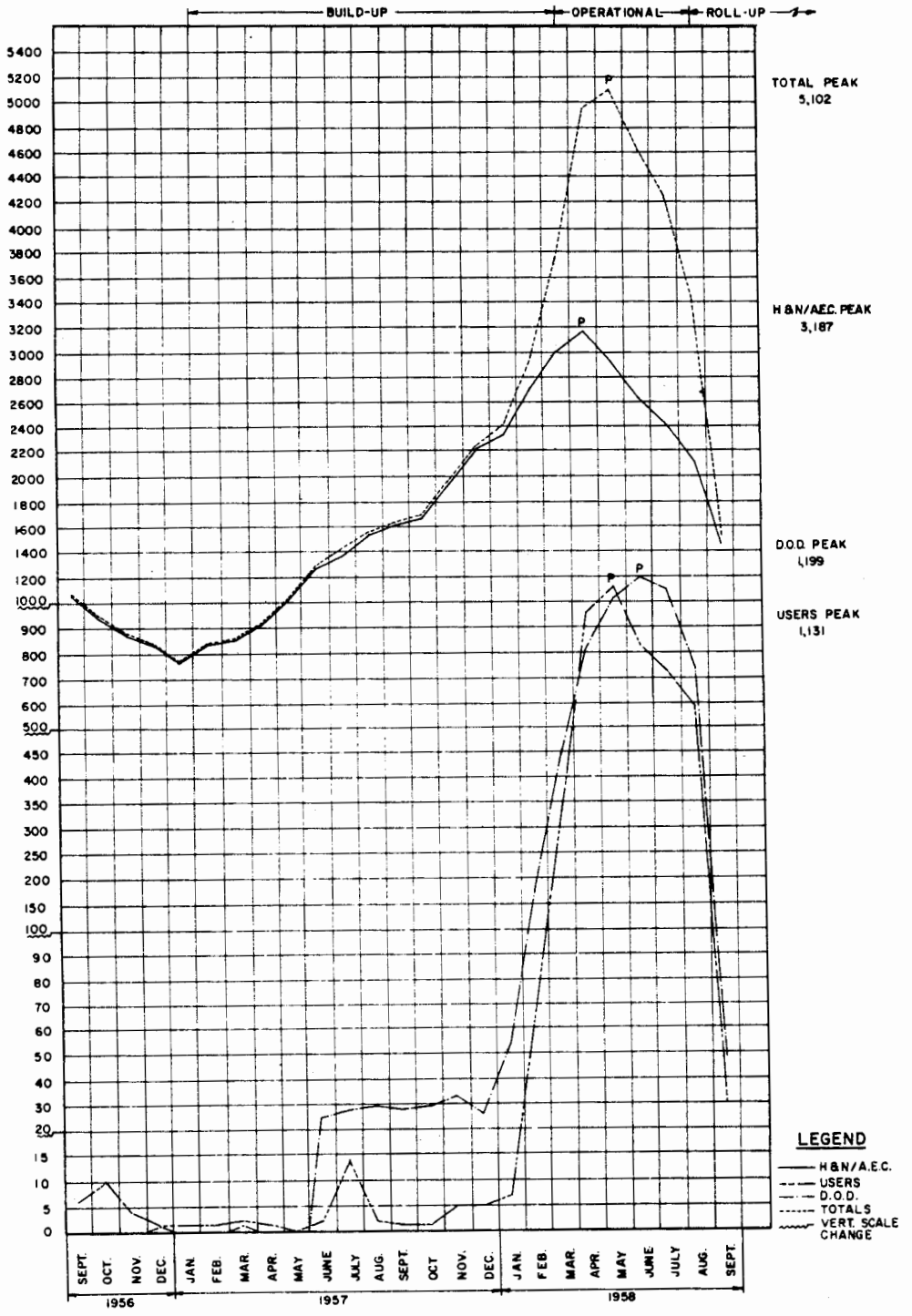
ANNEX A

HOLMES & NARVER ACTIVITIES

HARDTACK - I - MONTHLY AVERAGE PERSONNEL TOTALS



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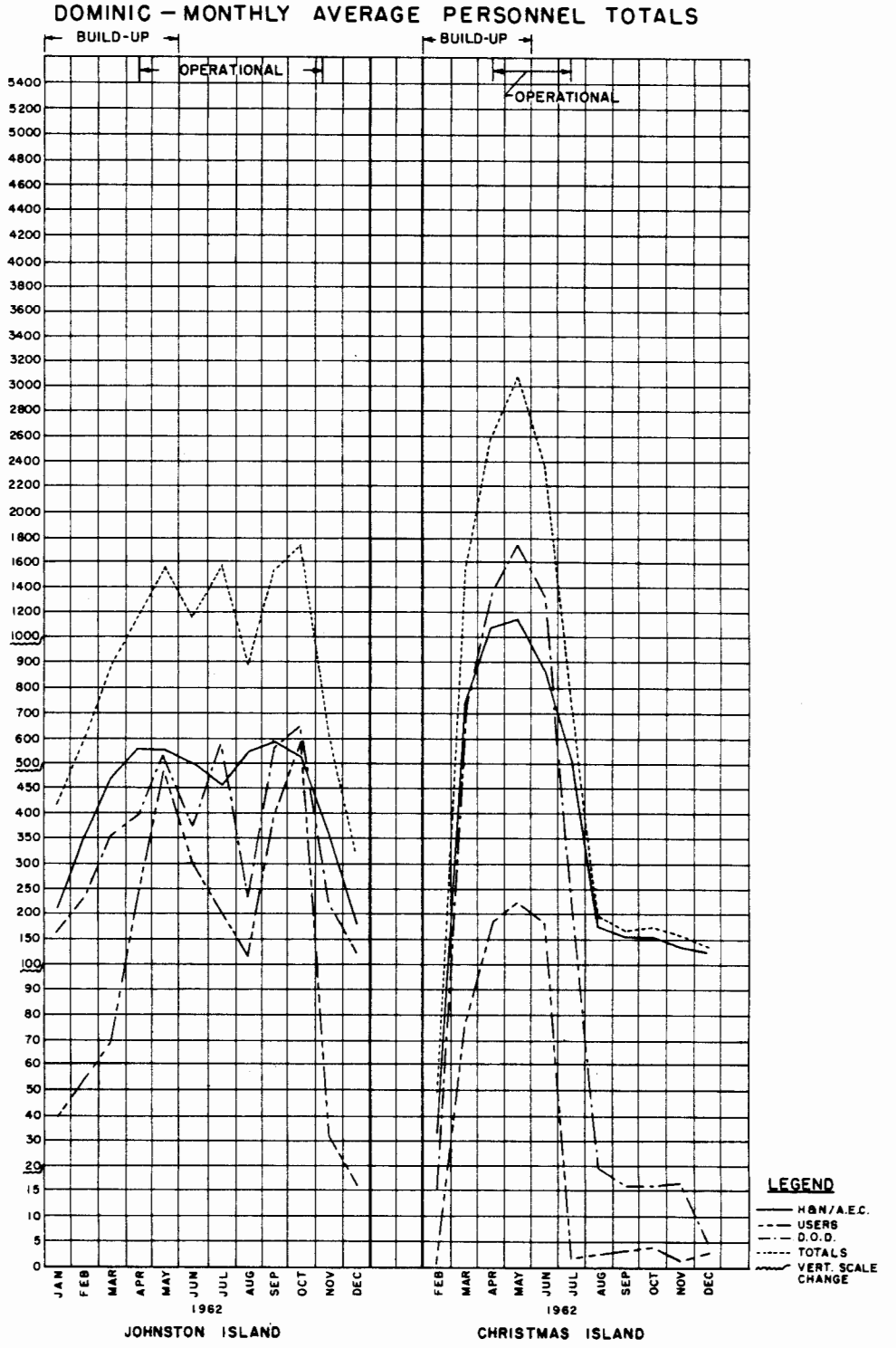
ANNEX A

HOLMES & NARVER ACTIVITIES



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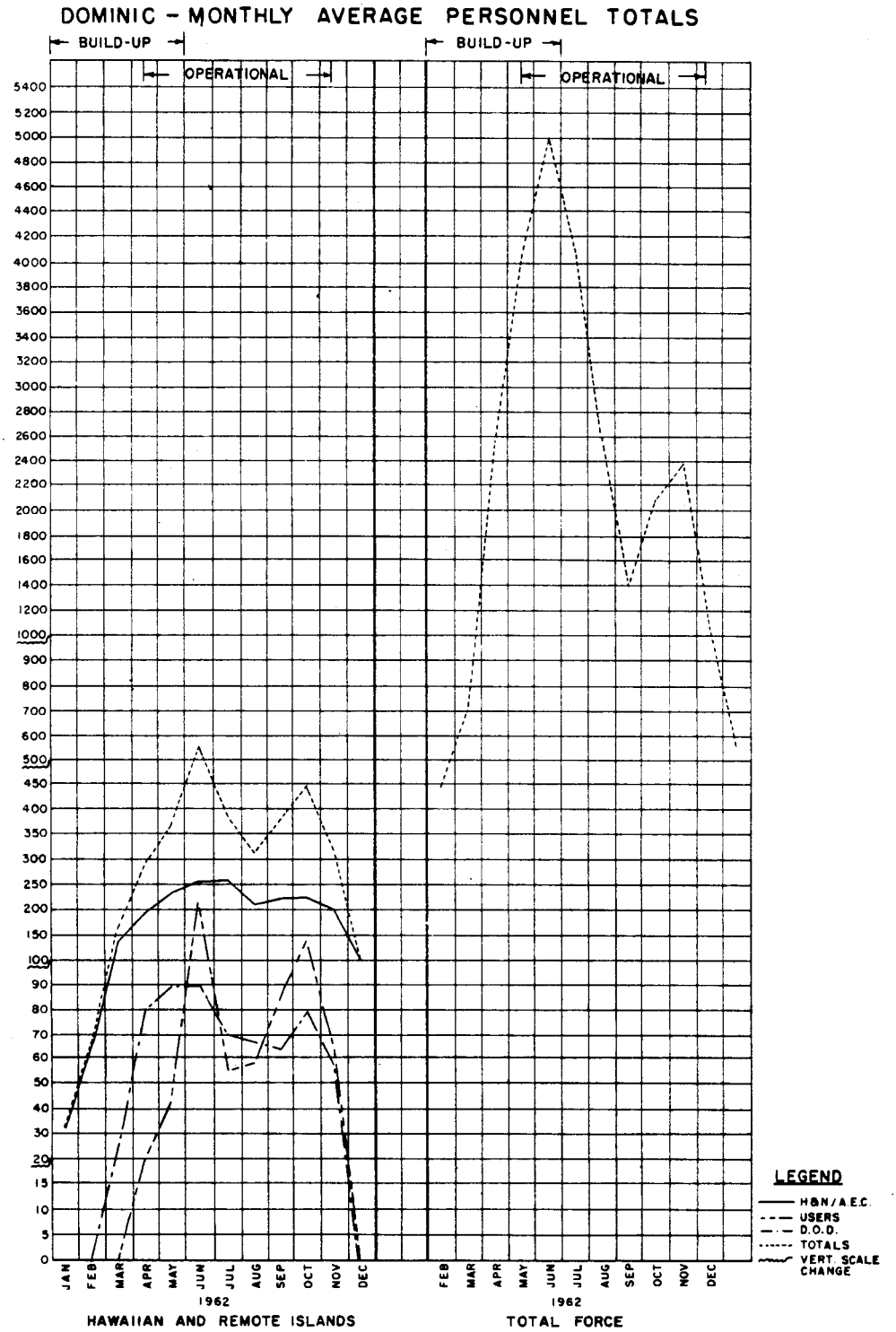
ANNEX A

HOLMES & NARVER ACTIVITIES



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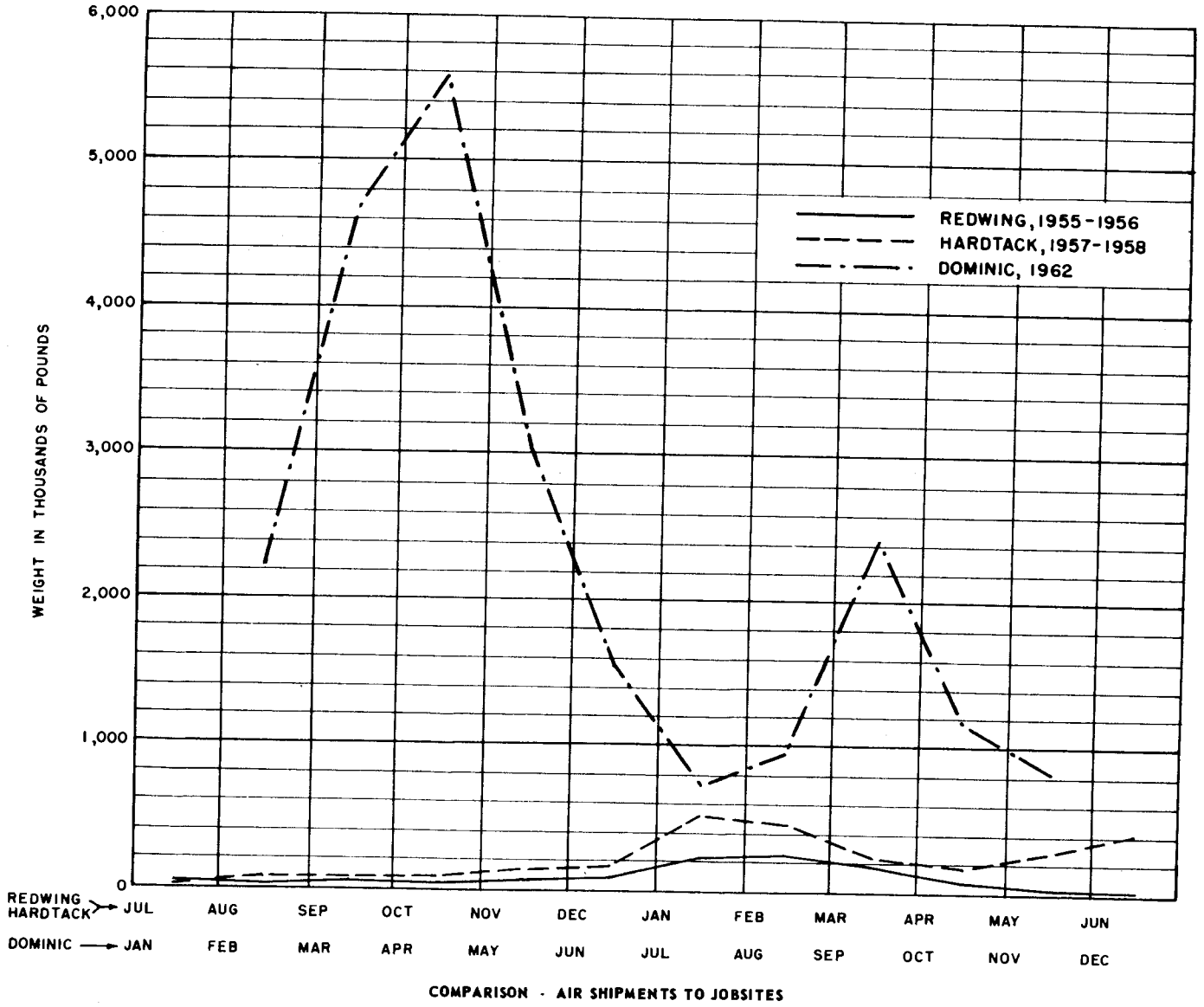
ANNEX A - HOLMES & NARVER ACTIVITIES



COMPARISON - AIR SHIPMENTS TO JOBSITES

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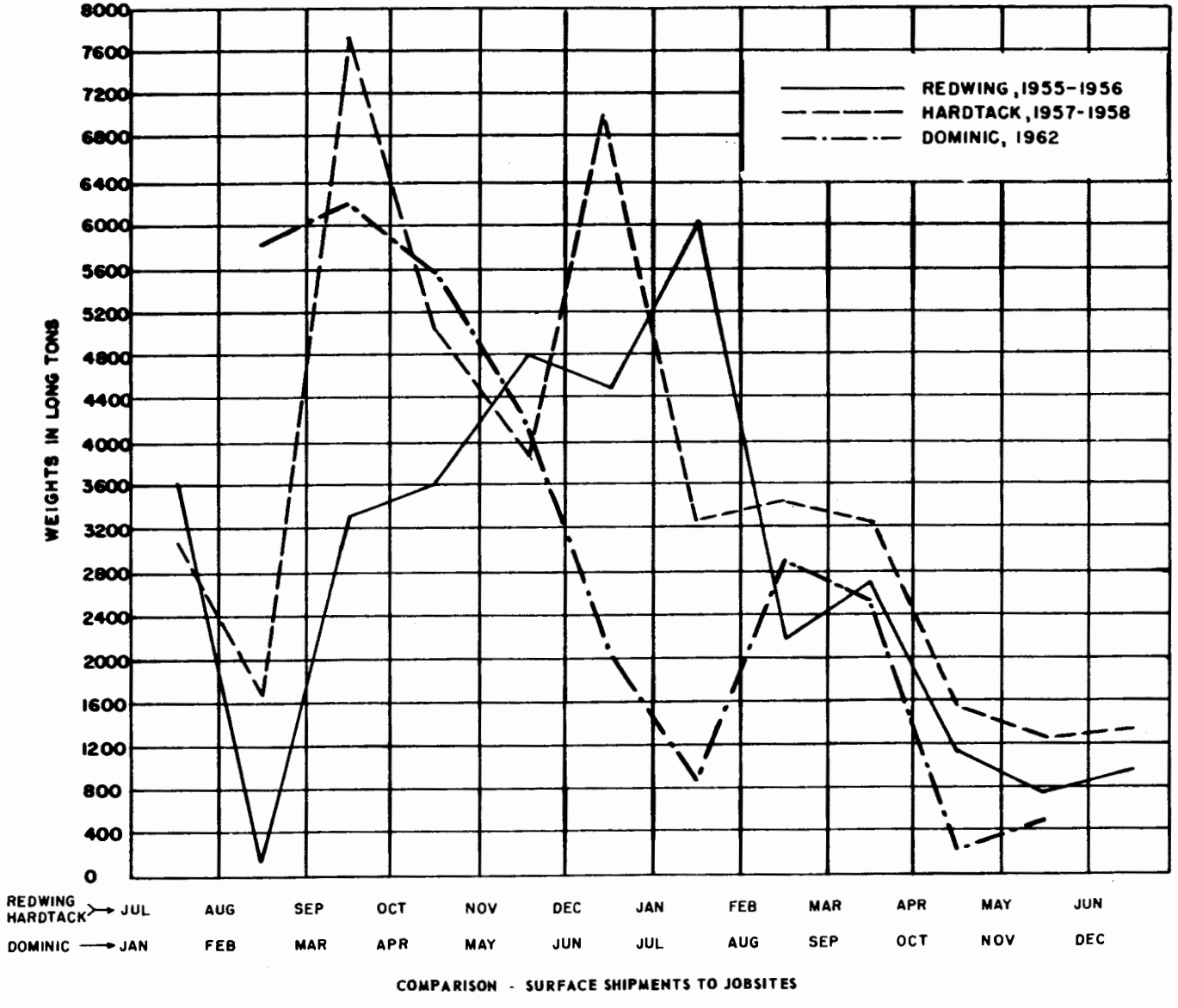
ANNEX A - HOLMES & NARVER ACTIVITIES



COMPARISON - SURFACE SHIPMENTS TO JOBSITES

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APPENDIX 1

LOS ANGELES OFFICE

1. ORGANIZATIONAL CONCEPT

The organizational planning of H&N's assignment as Task Unit 8.5.1 under AEC Task Group 8.5 for Operation DOMINIC was accomplished by the Management of Special Projects Division at the Los Angeles Office.

Primarily, the Construction Operations Department was established within the organization of the Special Projects Division for the purpose of consolidating activities related to 1) the movement of men and material to the various jobsites, 2) overall camp operations and maintenance, and 3) construction of scientific and camp facilities. This Department also utilized contributory assistance from all associate organizations within the Division, with major participation by Engineering, Contracts & Supply, Controller, Communications, Estimating, and Administrative Services.

The Manager of the Construction Operations Department, under direction of Division Management, administered primary direction of all overseas operations. Liaison activities with AEC

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and scientific groups were accomplished through the Support Coordination Committee, an independent reviewing agency. H&N representatives on this Committee consisted of a Chairman, Vice-Chairman, and associated staff personnel. Activities of the SCC are detailed in Appendix II of this Annex.

An organization chart of the Special Projects Division, which is included as an Exhibit of this Annex, illustrates the areas of responsibility within the Division. In the structure of this chart, it will be noted that job site groups were organized under the administration of the Construction Operations Department; however, technical guidance was provided by the Los Angeles Office in areas of similar functions, to ensure a high level of quality control and universal application of established policies and procedures.

2. ADMINISTRATION

a. Personnel

(1) Recruiting Activities: H&N's initial recruiting effort was directed toward obtaining additional engineering and

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estimating personnel for Operation DOMINIC. Commencing 9 December 1961 representatives of the Los Angeles Personnel Branch conducted a 15-day recruiting trip encompassing San Francisco, Seattle, Salt Lake City, Denver, Minneapolis, Chicago, St. Louis, and Kansas City.

During this same period a cadre of employment representatives and interviewers was formed in Los Angeles, and recruiting for overseas was commenced formally on 19 December 1961. The extensive files of previous off-continent employees enabled the personnel staff to contact former employees, particularly on the West Coast, which was a key factor in successfully acquiring an initial group of experienced personnel for overseas employment.

On 2 January 1962 H&N employment representatives began performing initial qualification interviews for applicants at the Los Angeles Offices of the California State Employment Service. Processing of acceptable applicants was completed at the Special Projects Division offices at the beginning of this major effort. It became apparent, however, that additional space would

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be needed for this processing. During the month of January 1962, space was obtained in a nearby office building and the employment and processing staff for off-continent personnel continued operations from the new location. To take advantage of the Northern California labor market, H&N employment representatives also obtained space and conducted initial recruiting and processing activities at the San Francisco office of the California State Employment Service.

Because of the urgency of Operation DOMINIC and the limited time available for personnel recruitment, it was necessary to utilize intensive classified advertising in newspapers and in engineering and construction journals. As may be noted in the statistical compilation accompanying this section, H&N made extensive use of former employees. Without this tremendous backlog of personnel who had already proven their experience and capability during previous off-continent work, the task of obtaining personnel within the time limits imposed would have been nearly impossible. An example of this type of difficulty was encountered in the recruitment of Medical Doctors, who were reluctant to

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APPENDIX I

LOS ANGELES OFFICE

JOBSITE PERSONNEL EMPLOYED BY THE LOS ANGELES OFFICE

	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Total For Period
Rehires	11	117	210	106	17	9	7	1	27	15	5	525
New Hires		2	105	329	119	89	44	2	4	10	7	711
Monthly Totals	11	119	315	435	136	98	51	3	31	25	12	1236

[redacted]

accept remote overseas positions on extremely short notice, particularly where this required a Doctor to leave his established practice.

Initially, it was necessary for requisitioning of personnel to be initiated and effected from the Los Angeles Office. As soon as feasible, the control of personnel requisitioning was transferred to the respective job sites. This was accomplished in entirety by April 1962. Policy control for personnel recruiting and staffing for all hiring locations, including Honolulu, was maintained by the Los Angeles Personnel Office.

(2) Travel Arrangements: In conjuction with the activities of the Personnel Branch, the Los Angeles Travel Section provided transportation to Honolulu for 1236 overseas employees hired in Los Angeles and 296 employees on temporary duty in connection with Operation DOMINIC.

b. Security

(1) Chief Security Officer Functions: H&N's Chief Security Officer, Los Angeles, participated in the planning and implementation of the Special Projects Division's security

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program for Operation DOMINIC and directed the overall activities of the Division's Security Branch.

Close, direct, and continuing liaison was maintained by the Chief Security Officer with AEC and other governmental representatives in matters pertaining to over-all security policies, criteria, standards, and requirements to ensure the successful accomplishment of H&N's security responsibilities.

In addition, the Chief Security Officer, designated as an Administrative Assistant to the Commander, Task Group 8.5, held authority to sign and issue Government Travel Orders. This authority also was delegated to a Security Officer at Los Angeles and to certain members on the staff of the Honolulu Resident Manager.

(2) Staffing and Preparation of Security Guard Forces: The urgency of Operation DOMINIC presented some diverse problems during the effort to staff Johnston and Christmas Islands with Security Guard Forces: 1) the original plan was augmented to include Christmas Island and required the acquisition of an additional guard force within the time schedule of the Operation;

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2) the initial "Secret" classification on any information pertaining to the proposed testing operations at Johnston and Christmas Islands made recruiting of guard personnel extremely difficult; and 3) a considerable time element was inherent in the processing and granting of "Q" clearances.

Upon notification to proceed with Operation DOMINIC, the Security Branch immediately concentrated on the task of providing Security Guard Forces as quickly as possible. 73 applicants were interviewed, and 49 selected and submitted for clearance processing, by early February. Since the number of applicants with AEC clearance in the Los Angeles area was limited, it was necessary to recruit security guards with "Q" clearances in Cincinnati, Kansas City, Los Alamos, and other industrial centers where previous or present AEC operations indicated the potential availability of "Q" cleared applicants. Approximately 200 individuals were contacted, interviewed, and submitted for processing. As a result of this concentrated effort, a total of 95 guards were employed for the security forces at the job sites.

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(3) Security Operations: The day-to-day security operations were conducted within the Special Projects Division at 849 South Broadway in Los Angeles and encompassed all aspects of 1) pre-employment verification, 2) processing of employee's credentials and preparation of requests for security clearance, 3) personnel and physical security, 4) indoctrination of security personnel, 5) information control, 6) classification and declassification of documents, and 7) security education.

(4) Personnel Clearances: Personnel Clearances and Good Security Risk approvals granted to H&N employees at Los Angeles during the period 1 January to 31 October 1962 were as follows:

QR (Reinstatement)	707
Q	602
LR (Reinstatement)	96
L	1,319
GSR New Hire	1,791
GSR Rehire	28

Clearance Requests cancelled during

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period 1 January to 31 October 1962 were as follows:

QL	105
L	191
LR (Reinstatement)	3
QR (Reinstatement)	17
Q	182

Pre-employment verifications during the period 1 January to 31 October 1962 totaled 2,501.

c. Wage and Salary: Upon notification to proceed with Operation DOMINIC, a wage and salary schedule was placed in effect to apply to off-continent operations. This initial schedule was based primarily on rates of pay in effect for other H&N off-continent operations and amended to include additional positions required for the Operation. A survey of the wage practices prevailing in Los Angeles, Honolulu, and in the Pacific area was conducted to assure equitable payment for services rendered by H&N employees. This Schedule became effective on 18 December 1961.

In general, wage and salary responsibilities were

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carried out by the General Supervisor - Administration and by the Supervisor - Personnel at the various job sites, while policy control and review were maintained at the Los Angeles Office. The Wage and Salary Branch, Los Angeles, maintained continuing surveillance of the application of the wage schedule to work being performed at the various job sites. Also, additional classifications, as required, were placed in effect during the course of operations to meet the needs of the field offices and job sites.

Initially, the wage and salary schedule applicable to positions in the H&N Los Angeles Office was applied to operations in Honolulu and Oakland. A survey was conducted in the Honolulu area during April 1962 and resulted in a wage and salary schedule, effective 21 May 1962, which applied specifically to the State of Hawaii. This schedule reflected additional positions for Hawaii, particularly in the areas of logistics and warehousing. In respect to some construction activities, Davis-Bacon Wage Determinations were obtained for the State of Hawaii.

As Operation DOMINIC neared its completion, the Wage and Salary Branch, Los Angeles, was assigned the responsi-

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bility of reviewing employees' claims involving classification, wages, and other related problems. In these cases, action by the Los Angeles Office was closely coordinated with the respective job site in reaching final resolution. Every effort was made to resolve potential claims equitably. The majority of wage claims resulted from minor misunderstandings of the employment agreement terms.

d. Office Services: Services rendered by the Office Services Branch in Los Angeles in support of Operation DOMINIC included the following:

(1) Communications: To provide adequate teletype communications service for Operation DOMINIC, a new system was installed at the Los Angeles Office, which consisted of a KW-9 on-line crypto, a Model 28 teletypewriter and a full duplex circuit. This system was connected to the STARCOM system.

The Communications Center operated 24 hours a day and, at times, seven days a week to facilitate the transmission and receipt of telegraphic correspondence relative to the Operation. An average monthly volume of 7500 messages passed

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through the Communications Center, the apex occurring in March 1962, when 13,500 messages were handled.

(2) Stores and Property: Stock room supplies and some office equipment were forwarded to the various job sites at the beginning of the Operation. Throughout the entire Operation standard forms were furnished.

In compliance with the custodial requirements of the Office Services Branch, property records were established and maintained in Los Angeles for all property items in the Honolulu and Oakland Offices.

(3) Records: Record inventories (including those compiled at the various job sites) and Disposition Schedules were prepared at Los Angeles for the Honolulu, Johnston Island, Christmas Island, and Oakland facilities.

e. Reports, Methods, and Procedures: Within the Administrative Services Department the Reports, Methods and Procedures Branch encompassed the functions of reports preparation and control, Division Procedures, Directives, and forms.

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APPENDIX I LOS ANGELES OFFICE

The Reports Section solicited and received monthly narratives on various phases of Operation Dominic from all operating sites, and compiled these data into monthly publications showing the status of construction and base operations. This group also published special reports related to initial planning and summarization of the program.

The continuing review and analysis of operational functions has produced improvements in the systems which service, control, and coordinate the Division activities. Organizational responsibilities and policy determinations have been authorized by Division Directives and defined in Division Procedures, both of which were prepared and published by this Branch.

3. CONTROLLERSHIP

a. General: Mobilization of fiscal functions for Operation Dominic was complicated by the requirements for rapid expansion, and constant adherence to schedule in routine activities at remote sites. It was determined that

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effective support could best be provided by an organization with primary control in the Los Angeles Office. The Department was accountable for: Cost Control, Payroll and Timekeeping, Jobsite Property, Jobsite Cash Receipts and Disbursements, Internal Audit, Budget and Contract Administration, and Insurance and Cash Control.

Although the Los Angeles Office provided the job sites with key personnel, it was necessary to hire and train many new employees for off-continent assignments, and to check their work with extraordinary diligence.

Standard operating procedures from previour programs were adapted for use at the various locations. Information channels were established to maintain the continuing flow of data between the off-continent sites and the Los Angeles Office.

b. Operations: Functional operations conducted by the various components of the Division Controller's organization at Los Angeles included the following:

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APPENDIX I LOS ANGELES OFFICE

All payroll checks were prepared by the Payroll Section for Division personnel at all locations, payroll records were maintained, and related reports developed for authorized distribution to all concerned.

Invoices received for purchased items ordered for delivery to all locations were processed for payment by the Los Angeles Office Accounts Payable Section.

Cost and general accounting activities were coordinated to accomplish the accounting work load and prepare required reports for authorized distribution on scheduled dates.

Accounts Receivable, Auditing, Budget Coordination, Contract Administration, Insurance and Cash Control, and methods development activities were continuously conducted in other areas of the Controller's organization to provide general support as required.

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c. Operational Data:

(1) Labor forces engaged in Dominic operations at off-continent locations reached a numerical peak of approximately 2,000 employees during May, 1962. Personnel enrollment approached within 5% of this peak during the preceding month, and fell off approximately 11% in the month following, for a rounded average of 1,900 during the three month peak period ending 30 June 1962.

(a) Gross payroll dollars applicable to AEC off-continent operations, and the number of corresponding payroll checks issued, reached related peaks, as noted in Paragraph 3, during April and May, 1962.

(2) During the period of Dominic operations the total Department enrollment increased from 40 at mid-January, 1962, to a peak of 78 during the following June, which included six additional employees assigned to supporting activities in the Insurance & Cash Control, Budget and Contract Administration, Internal Audit, and Systems Sections.

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(a) Enrollment in affected Accounts Payable, Payroll, Cost Accounting, and General Accounting Sections of the Division Controller's organization at Los Angeles increased to 50 employees. Peak enrollment for these operations numbered 61 during the month of August.

(b) Average enrollment in other areas of the Los Angeles accounting organization increased to 15 employees during the period.

(3) The volume of AEC off-continent payroll purchasing, and receiving actions, detailed by month over the DOMINIC period, is reflected in the following information, and related to the Division Controller's organizational enrollment at Los Angeles.

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APPENDIX I

	PAYROLL		ACCOUNTS PAYABLE		ACCOUNTING ENROLLMENT				
1962	No. of Checks	Amount Paid	No. of Checks	Amount Paid	Division Controller and Staff	Gen. Acc. Acts. Pay Payroll Cost. Acc.	Internal Audit	Ins. & Cash Con. Budget & Cont. Adm.	Total
January	744	$ 93,974	416	$ 1,237,289	4	29	1	6	40
February	1,718	291,934	732	1,847,463	4	30	1	7	42
March	4,662	1,223,184	945	4,066,186	5	38	1	7	51
April	8,409	1,820,123	1,126	4,760,182	5	50	2	7	64
May	7,232	2,431,109	1,702	5,923,607	6	55	2	9	72
June	6,847	1,691,851	4,005	7,807,916	7	59	3	9	78
July	6,826	1,431,433	2,045	4,678,497	5	60	2	9	76
August	3,797	1,191,759	2,305	2,773,891	5	61	2	9	77
September	4,504	858,536	1,221	2,645,796	4	58	3	8	73
October	3,040	728,415	1,359	3,012,732	5	57	3	8	73
November	2,688	686,192	1,153	1,795,385	5	56	1	8	70
Totals	50,467	$ 12,448,510	17,009	$ 40,548,944					
Average	4,588	$ 1,131,683	1,546	$ 3,686,268	5	50	2	8	63

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4. ESTIMATING

The Estimating Department, Los Angeles, prepared and issued for Operation DOMINIC overall budget estimates, engineering estimates, lump sum A/E estimates, and preliminary construction estimates for User funding purposes.

Budget estimates for the entire Operation, encompassing engineering and field operations, construction and maintenance, camp operations, special order work, construction and capital equipment, and revenue, were furnished to the AEC in both fiscal year and operational splits which delineated both AEC and DOD funding responsibilities. The initial budget estimate for FY 1962 was issued in February 1962 in the amount of $26,800,000, revised in March to $30,800,000, and finalized on 1 May 1962 at $30,055,000. The FY 1962 closing book cost was at $30,471,000, less than a 2 percent difference from the estimate.

Engineering estimates were issued for inclusion in Work Authorizations to enable H&N to accomplish the design

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work. Nearly 200 estimates represented $1 million in engineering.

A/E estimates were prepared in Los Angeles for the lump sum construction bids on the Hawaiian Islands of Kauai, Maui, and Hawaii.

During the early phases of the Operation, construction estimates were prepared in Los Angeles for inclusion in work orders issued at job sites. As soon as the sites were adequately staffed and past the initial work load, the resident estimating staffs assumed direct responsibility for all work order estimates.

The extension of Operation DOMINIC at Johnston Island, occurring at a time when the estimating responsibilities had been essentially completed, necessitated the re-staffing of the job sites and the preparation of extended budget and work order estimates. All basic estimating was accomplished and the last Estimator returned to Los Angeles in November.

To assist the AEC in determining the future course of

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Pacific Operations, numerous planning-type budget estimates were prepared for the AEC. The estimates in the July report of "Pacific Operations, Future Test Activities Planning," for example, contained over $450 million in total alternates. Future course of action planning estimates will be accomplished as required.

5. ENGINEERING

a. General: The Los Angeles Engineering Department began work on Operation DOMINIC 6 December 1962, when criteria were received for Project Fishbowl on Johnston Island; the open sea shot series, later cancelled, and the Baker/Jarvis Event, also cancelled. Engineering of Christmas Island facilities began immediately following the 19 February 1962 cancellation of the proposed open sea operation.

b. Organization: The Engineering Department organization for Operation DOMINIC included the Chief Engineer, the primary Departmental executive for all engineering activities; an Assistant Chief Engineer who provided executive supervision

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of engineering design and engineering research; an Assistant Chief Engineer in charge of project and field engineering; a Chief Project Engineer who was responsible for the coordination of all project engineering efforts; a maximum of five Project Engineers and three Assistant Project Engineers assigned to the various phases of Los Angeles Office engineering and Jobsite coordination; a Chief Production Engineer who was responsible for the overall administration and technical direction of all design sections, the engineering coordination and analysis group, and the engineering design service group; an Assistant Chief Production Engineer who coordinated intrasection design, drafting, and checking to provide a continuous flow of accurate construction drawings from Los Angeles to job sites. The design sections included architectural, structural, civil, mechanical, electrical, checking, and specifications. Each was headed by a Section Chief, and an Assistant Section Chief who supervised and coordinated all design, drafting, checking and technical writing activities, prepared man-hour estimates in accordance with criteria, and performed other functions related to the section.

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c. Production: Los Angeles Office engineering personnel in Operation DOMINIC increased from 11 persons on 1 December 1961 to a peak of 72 persons on 1 April 1962. On 1 November 1962, 11 persons were engaged in as-built drawing and reporting efforts.

A total of 76,215 engineering and design man-hours had been expended on Operation DOMINIC on 1 November 1962, as shown in the following tabulation:

Code 1 -	15,043 Man-hours	(Preliminary Drawings)
Code 2 -	37,990 Man-hours	(Final Design Drawings)
Code 3 -	4,279 Man-hours	(As-Built Drawings)
Code 4 -	717 Man-hours	(Special Reports)
Code 5 -	452 Man-hours	(Engineering Research & Reports)
Code 6 -	17,733 Man-hours	(Management Services)
Total	76,214 Man-hours	

Major design efforts at the Los Angeles Office were related to Johnston Island, with minor support for the Hawaiian Islands and outer islands. Christmas Island design and engineering

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generally was accomplished at Jobsite, with the Los Angeles Office participating only to a small degree before the Jobsite engineering group was established.

Drawings prepared at the Los Angeles Office totaled 480 of which 69 were voided because of criteria changes or cancellation of certain facilities. A breakdown, by site, shows:

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APPENDIX I

LOS ANGELES OFFICE

Site	Total Dwgs	Voided Dwgs	Total Issued
Johnston	230	7	223
Christmas	99	22	77
Oahu	10	1	9
Maui	27	1	26
Kauai	21	0	21
Hawaii	1	0	1
Fr. Frigate Shoals	11	2	9
Palmyra	20	8	12
Canton	0	0	0
Malden	12	3	9
Washington	0	0	0
Fanning	1	1	0
Tutuila	29	11	18
Tongatapu	9	9	0
Rarotonga	0	0	0
Viti Levu	1	1	0
Tongareva	9	3	6
Totals	480	69	411

(Note: Drawings prepared at the various job sites are tabulated under " Field Engineering")

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APPENDIX I

LOS ANGELES OFFICE

Engineering by the Los Angeles Office for Johnston Island was limited to the rocket and missile launchers, and other scientific structures as listed below. Engineering for rehabilitation projects was performed at jobsite.

DASA Stations

J-680	J-611.01 and .02
J-621	J-612.01 through .03
J-642	J-613
J-631	J-614
J-632	J-790
J-633	J-671.01 and .02
J-622	J-672.01 through .03
J-673	Project 8A.3 - Pod Cells

AFTAC and DOD Stations

J-8410 and J-8411 (AFTAC)

40 x 50-foot screen room (DOD)

50 x 100-foot screen room (DOD)

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APPENDIX I

LOS ANGELES OFFICE

Douglas, Sandia, LRL, LASL, EG&G Stations

Launch Complex - Douglas

J-3254 (Sandia)

J-3220.01 through .04 (Sandia)

J-1030 (LASL)

J-4000 (EG&G)

Criteria for the open sea series included three instrumented ships arrayed in a pattern to monitor the detonations fired from old Liberty Ships which had been towed into position. The three instrument ships were the USS Hornet, an aircraft carrier, and two smaller ships (the USNS Merrill and McGraw).

Plans were made to equip the Hornet to serve as an instrumentation platform. Optical and electromagnetic sensing instruments were to be installed on the flight deck with recording equipment to be located on the hangar deck below. On 20 January 1962, the USS Hornet was docked at Long Beach Naval Shipyard for modifications required for support of this mission.

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APPENDIX I

LOS ANGELES OFFICE

Allocated space was extremely limited and, therefore, arrangement of equipment to satisfy scientific criteria was difficult. Measurement and recording instrumentation of the participating agencies was installed in truck type semi-trailer vans. Other vans of the same type were equipped as repair shops, offices, and spare parts stores. Vans were supported on steel supports, which were welded to the deck, and secured with wire rope tie-downs.

Additional equipment consisted of portable air-conditioning units, transportainers for spare parts, helium and nitrogen bottles, rocket assembly dollies, and miscellaneous small gear. The installation of numerous antennas for scientific use was also a major problem due to physical and electromagnetic interference with existing ship's antennas.

Refitting the Merrill and McGraw with instrumentation (a project of less magnitude than the Hornet work) had begun in Richmond, California, when, on 19 February 1962, this

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series was cancelled. At that time most of the shipboard modifications and scientific installations had been completed. The Los Angeles Office had issued 18 drawings for the Hornet and ten drawings for the Merrill and McGraw.

Scientific and support equipment was quickly removed from the aircraft carrier and loaded aboard a U. S. Navy LSD for shipment to Christmas Island. Communication equipment was packaged and shipped to the island via MATS. Roll-up of the shipyard project was completed on 15 March 1962.

Engineering and design for the Christmas Island facility started at the Los Angeles Office immediately following the 19 February 1962 cancellation. Soon after, an engineering organization was established at Jobsite and all but a very small percentage of engineering was accomplished at the Jobsite Office.

Basic criteria for the development of the Christmas Island Facility were initiated by the major Users participating in the Program (LASL, LRL, Sandia and EG&G) during a field

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trip to the site in February. At a later date additional criteria were initiated and submitted by AFTAC and DASA.

Major items of engineering, accomplished during this period of approximately two weeks duration, included:

Electrical power supply and distribution for the scientific Trailer Area at Site "A."

Signal and diagnostic cable design for the Trailer Area, Site "A."

EG&G crank-up towers; six 100 feet, one 87.5 feet, and one 107.5 feet high.

A 200-man temporary camp.

A 3000-man laundry facility (used as a warehouse when structure was erected).

Aircraft decontamination facility.

Distillation plant rehabilitation, Main Camp.

Recreation facilities.

Hospital facilities.

Office, shop, and warehouse facilities.

Fresh water, salt water, and sewer utilities.

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APPENDIX I LOS ANGELES OFFICE

The Los Angeles Office completed the engineering and design for the Sandia launch complex at Kauai and the LASL Optical Building at Maui. Preliminary design was started for the AFTAC Station K-8470 on Kauai, and sent to Honolulu for completion.

Design was completed during March and April, 1962, in Los Angeles for the following items at remote sites:

Palmyra

A 72-man camp at Station W-190

Station W-8460 and camp (AFTAC)

Station W-8461 (AFTAC)

Stations W-8462.01 through .04 (AFTAC)

Station W-520 (DASA Project 7.2)

Tutuila

8-man camp at Station W-710

Enlargement of a 35-man camp to a 70-man camp.

Revision to Station W-821 (EG&G)

Station W-771 (DASA Project 6.5B)

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APPENDIX I

LOS ANGELES OFFICE

Station W-780 (DASA Project 6.5C)

Station W-821 (DASA Project 8A.2

Tongareva

15-man camp for AFTAC Stations W-8440 and W-8441.

Fanning

Distillation plant for AFTAC Station W-8450

French Frigate Shoals

32-man camp

Station W-782 (DASA Project 6.5C)

Station W-661 (DASA Project 6.6)

Tongatapu

35-man camp

Station 781 (DASA Project 6.5C)

Station 770 (DASA Project 6.5B)

Station 822 (DASA Project 8A.2)

Viti Levu

Station W-823 (DASA Project 8A.2)

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APPENDIX I LOS ANGELES OFFICE

Final satisfaction of User requirements was achieved by means of a close relationship between the User Agencies, the Support Coordination Committee, and the H&N Engineering groups. Copies of User criteria usually were received simultaneously by the SCC and the H&N Project Engineer. The SCC reviewed the criteria for acceptable integration into the overall program and arranged for AEC concurrence. The Project Engineer issued Engineering Data Sheets (EDS) and maintained surveillance of design activity, making any changes required by criteria revisions or in compliance with SCC determinations. The Project Engineer also secured User approval of final design.

A similar liaison was conducted between the Los Angeles Office and the Jobsite design groups. The EDS copies to Jobsite conveyed detailed information related to the division of work between Los Angeles and Jobsite engineering. Further correspondence usually was carried by teletype to expedite information requests and clarify details of work status and

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criteria and plan changes. TDY visits were made by engineering personnel, as required, to coordinate the design efforts.

6. COMMUNICATIONS

The original Operation DOMINIC communication engineering effort in December 1961 was concerned with the establishment of communications centers at Honolulu and Johnston Island and arrangement of circuits from these comcenters back to the mainland and the various JTF-8 elements ashore and afloat.

In January 1962, following ships' surveys and gathering of criteria, construction drawings were prepared for the installation of communications equipment aboard the USS Hornet, USNS Merrill, USNS McGraw, and the USS Monticello. Since this was a crash program, engineers responsible for the design work supervised the installation of equipment aboard these ships at shipyards on the West Coast.

Along with the shipboard program, work was started on a projected Baker Island operation and the Johnston Island

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operation. The first effort was to determine the major items of equipment and material required, and then provide the Purchasing Branch with sufficient information to order items for these programs.

With the switch in plans eliminating the shipboard and Baker Island operations, a complete Navy radio system was obtained by JTF-8 and the AEC. The Los Angeles Office engineering group designed associated equipment for this unit, which provided the only multi-channel teletype and voice service in and out of Christmas Island.

The basic 600-line and three 80-line dial central offices were obtained on loan for the Christmas telephone plant and the remainder of the system was developed around these units.

Although there was insufficient time to prepare formal drawings for most of the systems, procurement had to be complete to the smallest item required because the Christmas operations area was completely without in-place logistics support. As the engineers completed their basic conceptual

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design and material lists, they proceeded to the job sites to supervise the communications installations.

The Johnston Island installation, with a longer build-up time, permitted a conventional engineering approach. The basic design drawings were prepared in the Los Angeles office and formed a basis for additional engineering accomplished in the field.

The Los Angeles engineering office was responsible for the radio propagation studies in connection with the Johnston Island operational countdown system. A frequency plan was forwarded each month to JTF-8 for distribution to all User elements. The engineering group also was responsible for all communications coordination with Point Mugu and Point Arguello activities.

When installations were completed, original drawings were revised or new drawings were prepared to show the "as-built" condition of the facilities. The extensive Johnston Island cable record drawings made during the first phase of

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the operation aided considerably in the rapid cable rerouting and placement required for the final phase of the Operation.

7. CONSTRUCTION OPERATIONS

On 18 December 1961, the Construction Operations Department was established within the Special Projects Division for the purpose of planning and executing the construction and support services required to facilitate nuclear testing at various overseas locations. This department was under the direction of the Manager, Construction Operations, and was staffed with an Assistant Manager; a Chief, Material Control; and a Technical Coordinator.

The Material Control and Technical Coordination Branches were primarily responsible for 1) construction planning and scheduling, 2) preliminary planning for the staffing of the various job sites, 3) coordinating the flow of engineering data into the Department through close liaison with the Los Angeles Office Engineering Department, 4) material take-off and subsequent preparation of requisitions for the procurement of materials and

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equipment, 5) maintaining a control of material and equipment being procured for all sites, and 6) coordinating special air and surface transportation requirements with JTF-8 Liaison Officers. These branches also maintained a close liaison with the Contracts & Supply Department, making recommendations for the procurement of materials and equipment, approving substitutions to effect earlier deliveries, and, in many instances, actually locating materials and equipment which were critical to the overall construction schedule.

During the initial planning stages for the construction and support effort, lists of construction equipment, camp equipment, vehicles, small tools, and miscellaneous construction supplies were compiled for each anticipated site of operation. Then, at the time authorization was received to proceed with a specific site, the equipment lists for that particular site were formalized on purchase requisitions and forwarded to the Contracts & Supply Department for their action.

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APPENDIX I

LOS ANGELES OFFICE

Due to the exceedingly short lead time allowed for activation of many of the island sites in the Southern Conjugate, it was necessary for this department to interpret basic criteria and plan the complete base installations. In a number of instances as few as 10 or 12 days were permitted for the procurement and delivery of equipment and materials for transshipment to the specific site(s) involved. In order to meet these dates, plans were closely coordinated with the Honolulu Office and the Engineering and Contracts & Supply Departments. Special equipment and materials normally requiring long-lead procurement were obtained from various on-continent military sources or expeditiously procured on the open market. Air missions were arranged with JTF-8 for the transport of these items from Travis Air Force Base to Hickam Air Force Base, and special handling arrangements were initiated by the Honolulu Office for the delivery of all items to points of embarkation. All common construction materials and equipment were procured in the Hawaiian area and construction crews were organized by the Honolulu office. With the exception of one vessel, which

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was delayed approximately 24 hours, all ships sailed from Pearl Harbor on schedule and all sites were activated on the dates required.

The Material Control group was organized early in Operation DOMINIC for the express purpose of close surveillance of requisitioning, purchasing, movement, and final delivery of materials, supplies, and operational equipment. Special forms and status reports were devised to keep accurate and timely control of the flow of all critical items of supply. In certain instances this group maintained direct contact with vendors and shipping agencies in order to expedite the movement of critical items.

The Requisition group was organized for the purpose of preparing and editing all Los Angeles originated requisitions and initiating a control of all requisitions. Control measures included, but were not limited to, 1) insuring that material and equipment were properly charged to an established account number and/or an assigned identification number, and 2) methods which precluded the duplication of requisitions. Due to the urgency of the program, assistance was rendered in locating

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critical items from commercial and governmental sources, and planning the requirements for office furniture, base camp equipment and supplies, and subsistence items.

The Material Take-Off group consisted of one individual each in the structural, mechanical, and electrical fields. The prime responsibility of this group was the preparation of bills of material from approved drawings. However, due to the rapid increase in the overall scope of the Operation coupled with the limited time for completion, it was necessary in many instances to order materials and equipment prior to the receipt of approved drawings. This was accomplished by the use of an Advance Information Form which was prepared by the Engineering Department as the drawings progressed, and listed those items that required long procurement lead time. Upon receipt of the Advance Information Forms, the Material Take-Off group proceeded to prepare bills of material for these items and also for items of shop stock and related materials that would be required for installation. As preliminary drawings were available, additional bills of material were made to include the

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additional items required. A final check was made upon receipt of approved drawings and any differences in types and quantities of materials were reconciled. Bills of material were actually prepared in the format of requisitions and transmitted directly to the Requisition group for editing and formalization.

8. CONTRACTS & SUPPLY

a. Purchasing: Procurement action was formally initiated 18 December 1961, to fill the requirements of the JTF-8 program for field construction, camp activation at Johnston and Baker Islands, several outlying weather stations, and other Users' support sites. Materials for Baker Island were later diverted to Christmas Island.

Program requirements made it necessary to accelerate the procurement functions in order to meet construction schedules. Procurement offices were established in Honolulu and Oakland, and the purchasing load was allotted to achieve maximum efficiency in deliveries. It soon became apparent that the usual standard procedure of issuing requisitions

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from one central point, such as the "Material Control Branch" in Los Angeles, or from a single authority at a job site, was not feasible because of the urgent requirements from the various job sites. In order to expedite procurement the requisitioning system was implemented by the use (almost exclusively) of teletypes indicating applicable requisition numbers with designated job site prefixes, item numbers, quantities, and descriptions. All three branches of procurement were simultaneously advised of the requirements, with Honolulu taking the initial action for all items and quantities available in that area for shipment as soon as possible. Items not available in Honolulu were referred to Los Angeles or Oakland for purchasing action.

At the peak of the Operation, approximately 15 April 1962, the procurement offices in Los Angeles, Oakland, and Honolulu were staffed as follows:

Los Angeles Office	43 Employees
Oakland Office	52 Employees
Honolulu Office	62 Employees

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APPENDIX I

LOS ANGELES OFFICE

The following is a summary of the procurement accomplished at each location for the period 18 December 1961 through 31 October 1962.

	TWX's	Number of P.O.'s	Number of Line Items	Total of P.O.'s	Transfers
Los Angeles	2,405	2,727	13,041	$ 7,381,255.00	$ 3,412,170.00* (Form 90's)**
Oakland	1,772	2,174	10,396	1,659,227.00	
Honolulu	6,369	7,188	36,083	6,435,600.00	
Totals	10,546	12,089	59,520	$ 15,476,082.00	$ 3,412,170.00

* The amount of $3,412,170.00 is not included in the $7,381,255.00.

** Form 90 is a document executed by H&N which initiates issuance of an AEC Purchase Order for transfer of materials and supplies from other Government agencies.

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b. Logistics: Expediting by telephone, teletype, and telegraph was combined with personal inspection of materials and equipment to maintain a continuing flow to forward areas. A staff of H&N personnel was permanently assigned to the export packing facilities while cargo was being received and crated for delivery to the MATS terminal at Travis AFB, and to NSC Oakland, for further transshipment. As a result of close coordination with JTF-8 liaison personnel at Travis, the backlog of air cargo was held to a minimum. Commercial air freight was used extensively in meeting critical deadline delivery dates. An estimated 915,000 lb of air freight was shipped via commercial carriers to Honolulu during the period January through October 1962. Approximately 5,590,000 lb of air freight was shipped via MATS to Honolulu during the operation.

Surface shipments of cargo were handled by MSTS ships and other Navy vessels as directed by JTF-8. In some instances, commercial carriers were utilized in shipments to Honolulu for further transshipment. Shipments to Honolulu and

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various other sites originated from several west coast points of embarkation. An estimated 20,615 M/T of cargo was shipped via surface carriers during the period January through November 1962.

c. Contract Coordination: Support coordination was provided by the Los Angeles Office on all subcontract activities handled by the Honolulu Office during the operation. A subcontract in the amount of $145,997 was issued by the Los Angeles Office to D. R. Kincaid, Ltd. in Honolulu for construction of a single-story building on Maui, and one in the amount of $313,186.74 was issued to Hawaiian Dredging & Construction Co. for general contracting services on Kauai. A listing of subcontract activities in the Hawaiian area appears in Appendix 5.

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APPENDIX 2

SUPPORT COORDINATION COMMITTEE

1. BACKGROUND & ORGANIZATION

Past experience in operations similar to DOMINIC proved the need for establishing a group responsible for reviewing individual User criteria and requirements and developing a coordinated plan free of conflicts and duplication.

Since Holmes & Narver, Inc., was intimately involved with the design, construction, and support aspects of Operation DOMINIC, the Atomic Energy Commission and the Scientific Users requested that H&N provide key personnel to head an advisory committee responsible for independent appraisal of User criteria and requirements. In response to that request, the Support Coordination Committee (SCC) was officially established on 2 January 1962, and included a Chairman, Vice-Chairman, and staff personnel from Holmes & Narver, Inc., and one Committee member from each of the following organizations: Joint Task Force Eight (JTF-8), the Atomic Energy Commission (AEC), the Los Alamos Scientific

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Laboratory (LASL); the Lawrence Radiation Laboratory (LRL); Field Command, Defense Atomic Support Agency (Provisional) (FC/DASA); the Sandia Corporation (Sandia); and Edgerton, Germeshausen, & Grier, Inc. (EG&G).

2. CONCEPT OF SCC FUNCTIONS & METHODS OF ACCOMPLISHMENT

On 3 January 1962, representatives from JTF-8, AEC, LASL, LRL, FC/DASA Sandia, EG&G, and H&N met in the H&N Special Projects Division Office, Los Angeles, to determine basic functions to be performed by the SCC, and the methods by which they should be accomplished.

During that meeting, responsibilities of the SCC were defined as the functions outlined below; however, it was agreed that all design details would continue to be handled between H&N Project Engineers and the Laboratories, with no change in existing relationships.

a. Review All User Requirements for: 1) Impact on the total operation, 2) detection of conflicts between Users requirements, and 3) possible interference with outside organizations.

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APPENDIX 2 SUPPORT COORDINATION COMMITTEE

Means of accomplishment: Each Scientific User provided every Committee Member with separate copies of his criteria and any subsequent changes which might be made. Conflicts detected through subsequent review were reported to the Committee Chairman who took such remedial action as necessary to resolve the problem. If no conflicts were apparent, or when existing conflicts were resolved, the SCC recommended approval of the criteria by AEC.

Formal notice indicating the status of any given criteria (as to whether conflicts did or did not exist, and if AEC approval was or was not recommended) was accomplished through SCC letters issued to all agencies concerned.

b. Coordinate Over All Activities: Means of accomplishment: The SCC maintained close liaison with the AEC, the Scientific Users, H&N, and other elements of JTF-8 to assure cognizance of specific details in design, construction, support, space allocation, and assignment, station numbering, and leasing activities by all agencies concerned. Efforts directed toward

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clarification of criteria were augmented by frequent checks with various H&N departments to determine progress in satisfying the criteria.

c. Accumulating Similar Individual Requirements for Inclusion in a Consolidated Plan: Means of accomplishment: User requirements were classified by location (Christmas, Johnston, and the Hawaiian and other smaller outlying islands) and function (scientific facility, camp facility, or support equipment) to simplify fulfillment. Tabulations of total requirements in each of the categories above were maintained throughout the build-up phase of Operation DOMINIC and were distributed as summaries of known requirements, space allocation plans, or consolidation sheets.

d. Secure AEC Approval of Individual Requirements: Means of accomplishment: The original concept of procedure to be followed for security AEC approval of individual requirements included the following steps: (a) all User requirements to be reviewed by SCC; (b) assuming that no apparent conflicts existed, SCC would recommend approval by AEC; and (c) AEC

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would approve requirements. That procedure was modified to the extent that the AEC accepted the SCC's recommendation for approval and did not issue any formal statement unless approval was withheld pending clarification, or if approval was to be denied; however, individual jobs continued to require Work Authorization approval of the AEC. This procedure was applicable only to the general aspects of User requirements. The actual, detailed performance by the appropriate department within H&N continued to require AEC signature for approval and further action.

e. Establishing Design and Construction Priorities: Means of accomplishment: The SCC maintained close liaison with the H&N Engineering and Construction Operations Departments as a means of concentrating design and construction efforts on those items for which a critical need had been expressed by Users. Priorities were established on the basis of beneficial occupancy dates (BOD) and the indicated date of arrival of User personnel at any given site.

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APPENDIX 2 SUPPORT COORDINATION COMMITTEE

f. Apprise the AEC and Users of Current Conditions, Activities, and Developments: Means of accomplishment: Information on all aspects of Operation DOMINIC was distributed to major elements of JTF-8 (i.e., CJTF-8, all Task Groups, and all Task Units) throughout the build-up phase of all the Operation. That policy was practiced for dissemination of information originating within or secured by the SCC, as well as for those cases whereby one or more agencies having a "need to know" had been omitted as recipients of information originated by other organizations.

g. Maintain and Publish Instrument Chart: Means of accomplishment: Data secured from User criteria and requirements were entered in a Preliminary Instrument Chart published in April, 1962. At the conclusion of testing activities conducted in the Christmas Island area and at Johnston Island, all Users were requested to provide pertinent details regarding their scientific stations to the SCC for inclusion in the Operation DOMINIC Instrument Chart.

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APPENDIX 2 SUPPORT COORDINATION COMMITTEE

3. AUXILIARY OPERATIONAL PERFORMANCE

In the initial stages of Operation DOMINIC the SCC became concerned with many aspects and details of the Operation which were beyond those functions outlined in the original concept of responsibilities.

As a recipient of virtually all Users' criteria, requirements, and requests, the SCC was quickly recognized as a center of information for most aspects of the Operation. The volume of questions directed to, and answered by the SCC was indicative of the service performed by this group for the AEC, the Users, and H&N.

In keeping with the policy of exercising care not to interfere with H&N departments, the SCC made no attempt to initiate any major design or engineering efforts; however, in the course of close cooperation between the SCC and the Engineering and Construction Operations Departments there were numerous occasions in which the SCC was able to render assistance in regard to certain aspects of engineering problems, and by

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frequent checking to determine timely awareness of User criteria requirements, and changes thereto, as a means of keeping Construction Operations personnel apprised of new or additional requirements.

The SCC consolidated individual User real estate requirements for use in securing leases of property on off-island sites; ascertained certain requirements for personnel scheduled for overseas assignment (i.e., innoculations, passport requirements, etc.) and disseminated that information to all Joint Task Force elements; secured and provided maps, photographs, and narrative data for various sites to those organizations which expressed a need for such material; and extended assistance in determining space allocations and assignments.

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APPENDIX 3

CHRISTMAS ISLAND

1. BACKGROUND

Christmas Island is controlled by the United Kingdom and was the site of British nuclear tests which ended in 1958. The combination of existing facilities and isolation appeared to meet certain requirements for the DOMINIC program and, after completion of negotiations between the United States and Great Britain, the Island was established in February 1962 as a job site and Holmes & Narver was authorized to provide engineering, construction, base operations and maintenance, and management support. The first H&N contingent arrived 15 February.

The Island lies along the North 2 degree parallel, approximately 1200 miles due south of Honolulu. It has a land area of 160 square miles and an average height of 15 feet above sea level. Monthly rainfall ranges from 2 to 7 inches; daily temperatures range from 75 to 95 degrees; and the humidity usually varies between 69 and 85 percent. Christmas Island is administered by a British District Commissioner who is stationed

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at the Port of London along with elements of the Royal Air Force, the Royal Navy, and the Royal Engineers. Next to London is a village of approximately 400 Gilbert Islanders who work in the British copra operation.

Existing facilities available for use in Operation DOMINIC included a main camp, an airfield with a 6400-foot runway, a 50-cycle power system, port facilities, perimeter blacktop roads, several remote scientific instrument sites, and a control center which had been the focal point of management and instrumentation. By agreement, the port facilities and the airport tower remained under British control.

Plans for adapting these facilities were limited to the rehabilitation and additions needed for scheduled activities, and did not include any changes related to a long-range program of facility improvement.

During the Operation, H&N provided support in various capacities to the United States Army, Navy, Marines, and Air Force, the Atomic Energy Commission, the Lawrence Radiation

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Laboratory (LRL), Los Alamos Scientific Laboratory (LASL), Defense Atomic Support Agency (DASA), Air Force Technical Application Center (AFTAC), Edgerton, Germeshausen & Grier, Inc. (EG&G), the Sandia Corporation, Scripps Institution of Oceanography, and the University of Washington.

2. ADMINISTRATION

a. General: The Administration Division functioned under the direction of a General Supervisor, Administration and performed the following activities: Personnel, Security, Rad-Safety, Industrial Safety, Fire Department (Structural), Fire Department (Crash-Rescue), Medical and Dental, Transportation, Reports & Procedures, and Recreation. In addition, the General Supervisor provided staff assistance to the Resident Manager, and made further contribution in the following areas:

(1) Coordination of Administration functions with various military and scientific organizations.

(2) Assistance in activities pertinent to Government relations with the United Kingdom.

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(3) Professional guidance and assistance to other H&N Division supervisors in personnel and labor relations problems.

(4) Representation of Task Unit 8.5 in the planning and execution of evacuation and disaster programs.

b. Personnel: The Personnel Department was administered by a Supervisor, who was assisted by a Chief Clerk, a Senior Clerk, and two Clerks.

The Department conducted the processing of incoming and outgoing personnel, maintained employee personnel records, and assisted employees with personal problems.

The following are tabulations of Jobsite strength and H&N personnel actions:

JOBSITE STRENGTH

	28 Feb	30 March	30 April	31 May	30 June	23 July
H&N	367	502	1104	1069	863	494
Users	74	150	210	133	179	3
Military	152	598	1548	1572	1337	223
Total	593	1250	2862	2774	2379	720

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H&N PERSONNEL ACTION

	14 Feb to 23 March	23 April	May	June	23 July
New Arrivals	688	341	201	61	2
Departures (VQ)	6	65	135	37	2
Departures (LOA)	2		9	9	3
Discharges		4	9	8	7
Completed Contract (Surplus)	1		57	206	319
Completed Contract (Early)			2		
Completed Contract			2	2	1
To Honolulu (Emergency Medical)			15	3	2
To Honolulu (Reassignment to EPG)					3
To Honolulu (Transfer to Johnston Island)		3			24
Transfer to Honolulu					2
Completed Contract (Convenience of Management)		4			
Physically Unqualified		3	4	4	

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c. Security: The Security Department functions, under the direction of a Security Officer, included Security Guard activities, Security (Physical, Personnel, and Document Control), and Pass and Badge Issuance and Control.

In order to ensure compliance with requirements, the Security Department developed and maintained a program, which included 1) indoctrination of employees as to security regulations and their individual responsibility, 2) issuing of badges for all units of the Task Force for identification purposes, 3) maintaining security and general guard patrols, and 4) conducting activities necessary to safeguard classified material.

The Security Guards maintained seven posts, including London, the Airport, and the JOC area. Regular patrols were established for repository and exclusion area checks; POL and tank farm coverage; and camp area patrols to ensure that camp regulations were observed.

d. Rad-Safety: The Rad-Safe Department, in cooperation with the military and scientific groups, developed a safety program, established monitoring stations, and determined the equipment

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required to preserve radiological safety. This Department also monitored and recorded radiation data, maintained radiation instruments, and instructed personnel regarding radiation hazards.

Monitoring stations were located at one-mile intervals around the perimeter of the island, and around the Airport. These stations consisted of stake-mounted radiation detectors that were coded for location and inspected at scheduled intervals.

Facilities were established for decontaminating aircraft and personnel. Contaminated water was hauled by tank truck from the decontamination area to the disposal site, where it was discharged on the reef and carried out to sea by the tide. Following the final test, a thorough check was made of all areas and warning signs were posted in English and Gilbertese at both ends of the runway approach to the decontamination area. The tank used to collect contaminated wash water from aircraft was drained and flushed, and all sludge was transferred to 55-gallon drums, sealed with concrete, and buried at sea.

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A Kardex file was maintained as a complete record of dosages accumulated by each individual at the site. Daily station reports of the simplex continuous air monitoring machines were sent to the Public Health Service Surveillance Network Headquarters in Honolulu.

e. Industrial Safety: The Industrial Safety Department was maintained by a Safety Engineer who inspected shops, buildings, grounds, and construction projects, and recommended, as required, action to ensure safe practices and conditions. An initial joint survey was made of all major site areas by the AEC and H&N Safety Engineers. All facilities were examined for potential safety and health hazards.

Roadways on Christmas Island presented a considerable hazard due to the fact that they were narrow and winding, with some areas surfaced on only one lane. A major effort of the Safety Engineer was directed toward marking danger areas, posting speed control zones, etc. Also, many problems arose because of the British left-hand-side-of-the-road driving.

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For this reason, "Left" reminder signs were posted and personnel were instructed on British road regulations.

The Safety Engineer provided driver training and issued driving licenses. Also, investigation and reporting of industrial accidents were carried out by the Safety Engineer.

Parking areas were laid out near the Messhall and PX, and adjacent to all barracks to ensure access by fire trucks in case of emergency.

The following statistics were compiled by the Safety Engineer from the beginning of the Operation through 23 July:

Vehicle Damage

March	$ 3,620.00
April	3,050.00
May	3,050.00
June	1,725.00
July	65.00
Total	$ 11,510.00

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Loss Time Accidents

March	1
April	1
May	4
June	8
July	5
Total	19

f. Fire Department (Structural): The Fire Department (Structural) included a Fire Chief, a Lieutenant, and twelve firemen. The major equipment consisted of four fire trucks and one jeep. Although a fire hydrant system existed at the Main Camp it was necessary to augment this system with many fire extinguishers to deter the potential fire hazard of temporary structures.

The Fire Chief (Structural) was responsible for all fire prevention and fire fighting activities, excepting those involving aircraft and related Airport functions.

A base radio station was installed at Department Headquarters and two-way radios were installed in fire trucks to ensure maximum coverage with a minimum of equipment and crews.

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The following tabulations indicate the amounts of fire damage during the Operation.

Fire Damage Incurred

March	$ 150.00
April	75.00
May	80.60
June	363.90
July	60.00
Total	$ 729.50

Fire Loss Per Capita Per Month

March	$ 0.93
April	0.37
May	0.31
June	1.36
July	0.55

g. Fire Department (Crash Rescue): The Fire Department (Crash Rescue) included a Fire Chief and 38 Crash Firemen. Major equipment consisted of three 0-11B crash trucks, one rescue

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vehicle, two tankers, and two jeeps. All equipment carried two-way radios on a special wave-length. One major piece of equipment with crew was provided for daily 24-hour duty at the Airport and one major piece of equipment with crew was provided for daily 12-hour stand-by for aircraft parked on the flight line. These crews were directed by the personnel on duty at the Airport Control Tower.

Routine training classes were held on crash rescue. Also, the crews, with structural fire-fighting equipment, participated in command-wide simulated "Broken Arrow" training exercises, which consisted of procedures to be used in the event of a nuclear accident. In addition to general duty status, the crews participated in stand-by for : aircraft emergency alerts, "hot cargo," refuelings and defuelings, engine run-up, air evacuations, fuel wash-downs, and aircraft arrivals and departures.

h. Medical and Dental: The Medical Department, under the administrative direction of the General Supervisor, Administration, was supervised by a Chief Medical Officer. The Medical

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APPENDIX 3 CHRISTMAS ISLAND

Department provided medical care and emergency dental service for H&N employees and personnel attached to other elements of JTF-8. With the exception of emergencies, surgery was limited to injuries and infections which, by treatment at Jobsite, would restore the patient to active duty in a reasonable period of time. Surgery cases were evacuated by air to general service hospitals, usually Tripler Hospital or Queen's Hospital at Honolulu. Medical and dental services were rendered by a Chief Medical Officer, a Dentist, and 13 aidmen. Assistance was provided by military doctors during peak military population periods. There were three regularly operated facilities: the Hospital at the Main Camp, a First Aid Station at the Main Camp, and a First Aid Station at Site "A."

Four fatalities of military personnel occurred during the Operation. These fatalities resulted from an accident involving a 2-1/2 ton truck and a jeep.

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APPENDIX 3 — CHRISTMAS ISLAND

The following is a tabulation of medical activities during the operation.

Patients, By Organization, on Sick Call at the Facilities Listed Below

	Main Camp Hospital	F.A. Station Main Camp	F.A. Station Site "A"	Total
H&N	1,698	1,333	495	3,526
LASL	40	17	31	88
Sandia	17	12	42	71
LRL	25	13	83	121
Army	241	133	23	397
Navy	598	305	0	903
Air Force	579	342	3	924
Marines	51	31	0	84
EG&G	36	9	24	69
Misc.	97	20	7	124
Totals	3,384	2,215	708	6,307

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Patients Admitted to the Station Hospital

Civilian - 94 Military - 74

Number of Patients Evacuated to Hawaii

Civilian - 31 Military - 41

The Dental Office provided services for all participating organizations, and also to Gilbertese and United Kingdom Personnel. Approximately 1460 separate dental tasks were accomplished during the Operation.

i. Transportation (Air and Ground): The Transportation Department was staffed with a dispatcher, an assistant dispatcher, and four bus drivers. The Department booked flights for all outgoing passengers, dispatched all local passengers, met all incoming aircraft, provided ground transportation, and maintained a regular local bus transportation service. Also, the Department provided a full scope of "passenger services," which included provision of box lunches, preparation of manifests, etc.

(1) Air: With the exception of special air missions, all personnel arrived and departed via MATS aircraft. Service rendered for this activity consisted of checking passengers off and on aircraft arranging passage for outgoing passengers.

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APPENDIX 3 CHRISTMAS ISLAND

Local air transportation was accomplished by USAF H-21 helicopters. Service was available from the Airport to pads at the Main Camp and Sites "A," "D," "K," "L," "MM," and "Y." Schedules for helicopter service were worked out by the Transportation Department and U.S. Air Force, and special flights were arranged as required. A stand-by capability by H-19 helicopters was maintained for rescue.

(2) Ground: Ground transportation consisted of four buses on regular scheduled runs. Each bus traveled approximately 125 miles per day and carried an average of 150 passengers. Special schedules included meeting all incoming aircraft and transporting passengers from the camp to outgoing aircraft.

The following tabulations show plane arrivals and passenger arrivals and departures.

Plane Arrivals

February	16	May	186
March	434	June	142
April	420	July	87
		Total	1285

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APPENDIX 3 CHRISTMAS ISLAND

Passenger Arrivals and Departures

	Incoming	Outgoing
February	525	85
March	1783	619
April	1177	994
May	1441	1691
June	1981	1751
July	554	2078
Total	7461	7218

j. Reports & Procedures: Reports and Procedures were prepared by an Editor under the direction of the General Supervisor, Administration. Reports on all H&N aspects of the Christmas Island operation were published monthly for Los Angeles Office distribution. Most activities on procedures were of a revisory nature and, as such, were accomplished as required. In addition, the Editor was responsible for the preparation and publication of the daily newspaper, "Xmas Cheer."

k. Recreation: The Recreation Department conducted a diversified program for the benefit of all employees. The

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Department organized and rendered assistance in the formation of participation and spectator-type games and sports. Primary activities included a recreation hall with games such as chess, checkers, and cards, as well as outdoor sports including tennis, badminton, volley ball, and softball. The H&N Recreation Department instructed the British in the fundamentals of typically American games such as basketball and softball, and the British instructed H&N personnel in cricket; thus, competition in these activities ensued between these groups.

Movies were shown nightly in an outdoor theater.

3. ENGINEERING

The Engineering Department, directed by a Resident Engineer, consisted of the following groups: Survey, Design, Project Engineering, Test and Inspection, Estimating (see following section for estimating activities), and a Photographic Service.

Engineering at Jobsite began on 5 March 1962. Initial efforts were directed toward the preparation of drawings for the Trailer Park at Site "A." Subsequently, engineering effort

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was required for the rehabilitation of existing facilities and scientific stations, conversion of certain facilities to existing power, and air conditioning of certain buildings.

a. Survey: The Survey Group, consisting of three 4-man parties, performed various surveying tasks at the Scientific Sites, the Airfield, the JOC Area, and the Main Camp. All survey calculations performed were checked by a Survey Supervisor.

b. Design: The major activities of the Design Group included the preparation of drawings for the Trailer Park at Site "A," the JOC Area, and the Main Camp; sketches for various rehabilitation projects; and "as-built" drawings as required. Of the 210 drawings issued for construction, 133 were prepared at the site. Preparation of Engineering Data Sheets which directed all Engineering and Construction Activities were accomplished by the Project Engineering Group.

c. Test and Inspection: The Test and Inspection Group inspected all construction and inspected and tested all

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electrical and mechanical installations, equipment, and materials as required. Also, various indigenous materials were sent to Honolulu for testing. This Group also marked-up existing prints for the preparation of "as-built" drawings by the Design Group.

d. Photography: A photographic service was operated by an H&N Photographer for recording construction progress and for informational purposes. Other activities included the photography of accidents, damaged equipment, etc. Processing and printing were accomplished at local sources and also in Los Angeles & Honolulu.

4. ESTIMATING

The Estimating staff at Christmas Island prepared and issued 250 work orders, totaling more than $7 million of engineering and construction.

In addition to the above-mentioned work, the staff assisted engineering and management by preparing comparative engineering estimates and providing assistance to the responsible fiscal personnel in properly distributing accumulated costs.

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5. COMMUNICATIONS

Major H&N communications efforts at Christmas Island included the long haul circuit to Hawaii, the base telephone system, the VHF networks, the scientific cable plant, the public address countdown system, the Rad-Safe radio circuit to Fanning and Washington Islands, and the VHF and microwave radio systems between the Main Camp area and Site "A."

a. Long Haul Communications: The most difficult communications task was the establishment of the Christmas Island terminal of the radio trunk to Honolulu. (Prior to 20 February 1962 no multi-channel circuit existed on Christmas Island.) The radio circuit that was established carried ten teletype channels, two voice channels, and one voice cyphony channel. The schedule established for Operation DOMINIC generated an unusual traffic load, which involved lengthy planing messages under secure transmission and a large volume of traffic connected with the movement of men and materials.

A communications van and associated power trailer were acquired for this project on a replacement basis from the

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Navy, modified for multi-channel teletype operation, and then air-shipped to Christmas Island. This task was coordinated and accomplished within a four-day period.

The communications van, which arrived at Jobsite on 20 February 1962, was originally placed near the area of the planned Communications Center. Occupancy of the Communications Center by long haul installations caused severe interference in the surrounding area. Consequently, during March, the van was moved to the site of the old United Kingdom transmitter. Also, early in the operation, it was necessary to replace two vital units (single-sideband receiving converters) and rewire the van.

Although the original concept of the Honolulu-Christmas Island voice channel was a simple installation, it became necessary to activate three voice channels, completely integrated, into the on-island telephone system at Christmas and the military and commercial facilities in Honolulu. The usual difficulties in maintaining high voice quality on a single-sideband multi-channel system were experienced. However,

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quality at Christmas Island was somewhat improved by locating the control equipment where it could be constantly monitored.

Significant improvement in reception at Christmas Island was attained following the transfer on 22 April of the transmitting function at Honolulu to Army facilities located there. During the remainder of the Operation, overall performance of the circuit, based on trunk outage time, compared favorably with long established circuits in the Pacific area.

b. Base Telephone System: A trailer-mounted 600-line dial central office (obtained on loan from the Signal Depot at Lexington, Kentucky) was placed in operation at the Main Camp on 7 March 1962. Two 70-line dial central offices, one located at the Airport and the other at Site "A," were placed in operation late in March. On 7 May, following the installation of a 75-pair cable, the Airport central office was discontinued.

Forty-six lines were installed between the various sites to meet operational requirements. Three cordless switchboards were installed in connection with this service. A cord-

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type switchboard was installed and operated, together with voice central equipment, on three radio telephone trunk circuits to Hawaii.

The telephone distribution system consisted of the cable from previous United Kingdom operations; additional cables installed by H&N on the AN/TRC-24 VHF system between the Main Camp and Site "A," and a microwave link between the Main Camp and Site "A." Major rehabilitation of the United Kingdom cable plant was necessary due to its deteriorated condition. To provide service as quickly as possible, the in-place cable plant was used extensively, although the routings and pair count did not generally match the requirements of Operation DOMINIC. Additional cables were installed to expand the cable system during the build-up. These new cables extended from the long haul radio site to various sites on the island. United Kingdom cables were used from London to the Main Camp, with the exception of 4000 feet of cable installed from the POL area to a refueling barge.

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The telephone system was generally satisfactory, although maintenance of the deteriorated cable was extensive. The microwave system between the Main Camp and Site "A" was of excellent quality.

c. Cable Plant: The scientific cable plant generally consisted of six-pair cables running from Site "A" to the various outlying scientific sites.

The total amount of cable installed was in excess of 450,000 feet, with three-fourths of this amount placed prior to the end of April. The above total consisted of both scientific and telephone cables, including the 75-pair run from the Main Camp to the Airport and the 50-pair run from the Main Camp through the JOC area to the long haul site. To meet the required deadlines, it was necessary to airlift most of the cable to Jobsite.

d. VHF FM Radio System: Under the original requirement for the VHF radio program, 63 mobile radios and 44 fixed-base stations were installed. These stations operated on four networks into repeaters installed at Site "A" with a 200-foot

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tower for the repeater antenna. The general coverage through the repeater system was satisfactory.

Other networks were added during the Operation, for a final total of five duplex and three simplex networks. The system, with the additional networks, consisted of 106 mobile units, 66 base stations, 33 remote stations, and 34 portable units. The duplex networks were used by LRL, LASL, Sandia, H&N/Rad-Safe, and the Military Police; the simplex networks were assigned to Crashfire, TG 8.4 maintenance group, and the POL facility.

e. Audio Countdown System: A public address system was installed at the populated sites to provide countdown and general information dissemination. Three 60-watt amplifiers with associated speakers were located in London, four at the Airport, two in the Main Camp, one in the Command Post JOC area, and one at Site "A." Three vehicles with mobile public address systems also were used.

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f. Rad-Safe Radio Circuit: Communication circuits using single-sideband transceiver equipment were established between Christmas and Washington and Fanning Islands. H&N operated the Christmas and Washington Island circuit terminals.

g. VHF and Microwave Circuits: Due to the limited number of pairs (14) and the quality of transmission between the Main Camp and Site "A," it was necessary to supplement the existing cable with an AN/TRC-24 system between the JOC area and Site "A." Microwave units originally included in the long haul packages were combined with multiplex units (originally scheduled for the USS Hornet) to provide 12 channels of high quality service between the Main Camp and Site "A."

h. Communication Center Operations: H&N operated the Communication Center serving the Site "A" scientific facilities. This center functioned as a tributary of the Military-operated primary JOC Communication Center. Although H&N was originally requested to operate the JOC Communication Center, it was impossible to obtain operators with "Q"

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clearances in time to man the station adequately. Therefore, this operation was shifted to the Military. H&N personnel continued throughout the Operation to provide teletype maintenance service to the JOC Communication Center. H&N maintained classified records at the JOC ComCenter.

i. Miscellaneous Communications Activities: H&N personnel performed the following services: 1) operated the movie theatres at the Main Camp and Site "A," 2) set up an amateur radio station, 3) set up a music system in the dining hall, 4) set up public address systems in the Main Camp and Site "A" for recreation activities, and 5) supplied tape recorders and record players for recreation purposes.

6. CONSTRUCTION - MAINTENANCE

a. Organization: The Construction - Maintenance Division, administered by a General Superintendent, conducted all construction and maintenance operations at Jobsite. The Division comprised several departments, each administered by a Superintendent.

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APPENDIX 3 CHRISTMAS ISLAND

(1) Electrical Department: Supported field work in the rehabilitation, installation, and maintenance of all electrical systems employed at Jobsite. Under the supervision of this Department, all refrigeration and air conditioning equipment was installed and maintained by the Refrigeration Section. The Power Section operated and maintained all portable power-generating equipment, including the Scientific Power Plant at Site "A."

(2) Utilities Department: Rehabilitated, constructed, and maintained all plumbing and water distribution piping systems in addition to maintaining the POL systems installed by the Military. The Plumbing Section was responsible for the construction and maintenance of all fresh and salt water piping systems, sewerage, and other facilities related to sanitation. All distillation equipment was operated and maintained by the Distillation Section. This section was responsible for providing adequate supplies of fresh water to meet Jobsite requirements. Sheet metal components required for the construction

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or repair of buildings or equipment were fabricated or repaired by the Sheet Metal Section.

(3) Carpenter-Labor Department: Performed the construction of all structural components; rehabilitated and maintained buildings, structures, and scientific stations, as required. Carpenter and paint shops were established as bases of operation and provided various labor services, as required.

(4) Heavy Equipment Department: Under the supervision of this Department all vehicles, heavy equipment, mobile and stationary equipment with the exception of power generating and refrigeration equipment, were installed, operated, and maintained. Shop facilities were provided for vehicle repair and maintenance, welding, and machine shop services. This department also provided fuel transportation and distribution equipment for the support of construction and other operational requirements.

(5) Stevedoring Department: Stevedoring and rigging services required for off-loading and back-loading

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all materials and equipment arriving or leaving Jobsite by ocean transport vessels, were provided. A rigging loft was operated at the Port to store, repair, and maintain tools and equipment used by Stevedoring personnel. The Stevedore crew augmented the Air Cargo crew during peak air movement periods.

b. Rehabilitation Program: To meet scheduled operational requirements, it was necessary at the inception of this project to establish a priority system in the use of available manpower and materials. After completing minimum requirements for housing and messing, efforts were directed, as much as possible, to the construction of essential scientific facilities. Following in priority were improvements to the Airport, the JOC Area, roads and utilities, and rehabilitation work designed to better the living conditions.

(1) Main Camp Area: Within seven days after rehabilitation work was started at Christmas Island, the Messhall and Boiler House were put in operating condition. Approximately 95 percent of all piping was replaced or repaired. Two

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small British dishwasing tubs were replaced by one large automatic dishwasher capable of washing dishes for a population of some 35000, and a smaller automatic dishwasher was installed for glasses and utensils. Stoves and work tables were completely rehabilitated. Four large metal sinks were fabricated for the scullery, and supplied with hot and cold water. The three boilers in the main plant were repaired, and piping changes were made on the automatic controls. The boiler at the "Flag Mess" was rehabilitated and placed in service.

Rehabilitation and maintenance of the Mess Hall facilities was continued throughout the operation. New installations and modifications included ranges, ovens, meat saws, refrigerators, four griddles in the galley and three griddles at the serving lines, two deep freeze boxes for ice cream, a dough mixer, a meat slicer, two stainless steel sinks, bakers' tables, hoods and fans as needed. Modifications to the Mess Hall buildings included new roofing

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over the reefer bank adjacent to the Mess Hall, removing single screen doors and replacing with double screen doors at the entrances, bake shop, dishwashing room, and galley. The Butcher Shop was enlarged and three "A" frames were fabricated and installed.

Due to population changes, all the serving facilities were eventually relocated.

Rehabilitation of barracks and latrine facilities was accomplished during the initial stages of occupation. All latrine facilities were overhauled completely and in some cases rearranged and components replaced as required. The initial rehabilitation of water wells and British power plants was adequate until additional power and distillation facilities were available.

Offices, warehousing facilities, and maintenance shops were established as buildings were cleared and rehabilitated. The Hospital rehabilitation consisted of installing a new roof on top of the old one, replacing window screens, and installation of compartments for surgery, X-ray,

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and the Dark Room. The Treatment Room, Record Room, and Pharmacy Laboratory were remodeled. Portable screens were fabricated and the First Aid Room was modified. The Dental Office required installation of shelves, cabinets, and a dental sink. Air conditioning units and dental equipment were installed upon arrival. The Hospital facilities including offices, ward rooms, latrines, and other inside areas were painted and new linoleum laid as required. The Post Office, Camp Store, Barber Shop, Theater, Clubs, Liquor Store and the Communications Building were rehabilitated after minor modifications.

(2) JOC Area: The rehabilitation of existing buildings in the JOC Area was started soon after the Main Camp Messhall and Barracks were made operable. All buildings were cleaned out and partitions, work benches, new doors, windows, and shelves were repaired, rearranged, or installed as required.

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Dehumidified Laboratory space was provided for LASL and air conditioning units installed as required. A water chiller and distilled water system were installed to provide service for Building JB 24-2. All buildings were painted as required and office furniture and equipment was placed ready for use. Electrical outlets and connections were installed, and telephone lines were restored or relocated. Physical security protection was provided for critical areas.

(3) Airport Area: Existing buildings, roads, taxiways, parking areas, and related facilities were placed in operation in the Airport Area. Repairs and modifications to the existing structures and areas were made to meet the requirements of the military or scientific units. Power and telephone communications were restored and existing landing lights were checked and modified as required. The Airport latrines were activated and water lines and drain piping were repaired or replaced. Ventilation ducts and air-conditioning units were repaired or replaced. Road and taxiway markings were repainted.

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(4) Miscellaneous Rehabilitation: The British Hot Plant, Screening Plant, and Test Laboratory were rehabilitated or modified to perform necessary services to support the construction and maintenance programs at Jobsite. The following British equipment was rehabilitated and utilized until replaced with American equipment.

3 earth scrapers

2 mobile cement mixers

1 wobby compactor

1 Fordson tractor

1 Caterpillar D-2 tractor

1 post hole digger

1 Parker screening plant, 10-ton capacity

2 rectifiers for Battery Shop

c. Construction Program: After the Main Camp facilities were rehabilitated, all available manpower, material, and equipment were directed to the task of providing adequate scientific stations, sites, and facilities. The designated areas for camp or station sites were cleared, stabilized,

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and compacted. Foundations were poured for towers, installations and generators. The structures were completed and the equipment installed. Helicopter pads were cleared and established for each scientific site. Whenever possible, existing facilities were rehabilitated and utilized. Power, communications, and transportation were established for the support of all outlying scientific stations. In addition to the scientific support program, it was necessary to expand the Airport facilities and provide additional roads, security areas, decontamination facilities, and other support structures. The following breakdown of the construction effort, indicates by area the major activities to provide the required facilities.

(1) Site "D": The site area was cleared and stabilized as required. A base foundation and anchors were poured for a 100-foot crank-up tower and the tower was erected. A theodolite instrument pad was established, an area on top of an existing British station was stabilized, and a camera transportation installation set up. All sighting poles were set up by survey and one antenna pole was set for Sandia Corporation.

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(2) Site "K": The site area was cleared and stabilized as required. Bunker facilities were provided and rocket launching pad with related facilities was completed.

(3) Site "L": The area was cleared and bunker facilities were provided. An Electromagnetic Measurement Station was constructed.

(4) Site "MM": The site area was cleared, graded, and stabilized. A new access road of approximately four miles was provided. Two eight-man tents were erected, a theodolite instrument pad with a shelter was constructed and a pole set for use by the Sandia Corporation. A personnel shelter was constructed, trailers positioned, and work shops provided in addition to a ham radio shack, and tower.

(5) Site "Y": All existing structures and facilities were rehabilitated and a pole platform was installed. The general area was cleared and stabilized. One eight-man tent was erected and shop facilities provided. The "Ocean View" and "Seaside Terrace ' trailer parks were compacted and adequate facilities provided. Kitchen facilities were available to provide meals for personnel.

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(6) JOC Area: In addition to the rehabilitation of the JOC Area, two British pre-fabricated buildings were erected, additions were made to existing buildings, and new facilities provided for all buildings. Radio antennas and towers were erected and a 28-foot extension was added to the JTF-8 Command Post Building. Two crank-up towers were constructed and installed. Communications and electrical underground cables were installed. A chainlink security fence with barbed wire top was installed surrounding the JOC Area. A guard post was established on the Main road entering the area. Two pole-type antennas were installed for JTF-8 Headquarters.

(7) Airport Area: Two 20 by 80-foot British pre-fabricated buildings were erected to provide additional facilities. Hangar No. 2 was remodeled and the mezzanine was partitioned, to provide office space. The Decontamination and Rad-Safe Areas were completely remodeled. A 10,000 square-yard Helicopter pad constructed, using two inches of hot mix asphalt for the surface. A water storage tank and washing trough were installed in the B-57 tent area. Buildings WB-9 and WB-10 were reactivated

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and wired for 60-cycle power. Six air-conditioning units were installed in building WB-9. The runway and taxiway lighting system was completely revamped. A welding shop was set up, fire-fighters' tents and storage facilities were erected, and all tents and latrines were wired for electricity. Tents were erected to provide additional quarters and office areas for all military units as required. An 8-foot high security fence was installed around the POL pump station. Floodlighting was provided along the plane parking ramps and at the POL parking area. A new MATS Terminal Building was constructed.

(8) Main Camp Area: Modifications to existing buildings were made as required. A "Go-No Go" light system was installed at the Main Camp, Port of London, and Site "A." The line crew repaired British overhead lines and ran 29 new overhead services and set poles. Ten new antenna poles were set and guyed. Blast shielding was provided at the Port. Thirteen antenna towers were installed and guyed and thirty poles with floodlights were set at the Airport and Main Camp.

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One hundred thirty British and American air conditioners were installed in the JOC Area. A "Jumbo Quonset" building was erected for use as a laundry building but converted and utilized as a Property and Camp Supply Warehouse.

(9) Site "A": The Camp Area was cleared, stabilized, and compacted. Construction of this camp began on 9 March and on 13 March, 27 men moved into camp with temporary facilities which included an Army type field kitchen, a fresh water storage tank feeding a 5-head outdoor shower, a 600-gallon water tank trailer for the mess facilities, and a pit latrine. A total of 65 8-man tents were erected as living quarters for personnel at Site "A." A "Jumbo Quonset" building was erected for use as the Messhall. A ComCenter Building, power house building, refreshment building, laundry building, boiler house, camp office, latrine, record storage and briefing building, garbage shed, dry storage buildings, reading room, time office, lube rack, shop building, and reefer bank were constructed. These buildings and several miscellaneous sheds

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and tents comprised the Site "A" camp area. A 100-foot crank-up tower, a 144-foot TV tower with a 35-foot radar platform, and a 200-foot communications tower were erected. Roads were graded and compacted throughout the camp area. The Consolidated Trailer Parking Area adjacent to Site "A" was constructed. Security fencing was erected where required.

(10) Taxiways, Parking Area, and Roads:

New roads were graded and compacted or existing roads widened and graded to all scientific camps, sites, and stations. An access road and turnaround area for passenger busses was prepared to the VIP Observation Point. The Airport access road was excavated, graded, and sealed with cold roadmix and dividing lines were painted. The decontamination pad was renovated, rebuilt, and a fresh water tank of 3500-gallon capacity was installed. An underground tank for 1100 gallons of contaminated water was installed and an 11,000-gallon diesel fuel storage tank was installed.

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The helicopter pads, MATS, and P2V parking areas were graded, compacted, and paved with road-mix bitumuls or surface treated as required. Continuing maintenance was performed on all parking areas, taxiways, runways, and all types of roads.

The Airstrip at Site "A" was stabilized, compacted, and graded. Sidewalks were paved in the Main Camp area. An area of approximately 200 by 400 feet was stratified and compacted to provide a main runway overrun.

d. Power:

(1) Main Camp and JOC Areas - Power Generation: The existing British power plant was comprised of six 392.5 kva, 50-cycle, 415-volt, transportable-type generator sets. On 16 February H&N personnel began assisting the British in preparing all units for operation. A 3300-volt underground transmission line was run from the British plant to the JOC Area. Two generating units were placed in operation and a general maintenance program of the main plant was undertaken.

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Since adapting to British power was not always feasible, American generators were shipped to Jobsite to supplement this power, as well as to provide power at remote sites. This dual system was operated at the JOC Area, where British power provided the lighting and power for the British air conditioners, and American generators provided the power for American air-conditioning units and for scientific instrumentation and communications.

The Messhall used British power for the lighting, all British electrical appliances, plus two American reach-in boxes, and eight American grills. Three 75-kw American generators provided power for 27 American reefers, four flake ice machines, reach-in and ice cube boxes, and two dishwashers. Smaller generators were installed to provide power for special buildings and machines. The Hospital, except for specialized units, utilized British power, and additional electrical wiring was installed in the main building, the wards, and the dental laboratory. A 675-cubic foot reefer was installed in the morgue, using British power, and 110-volt power was provided for the living quarters.

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(2) Airport Area: Power from the British power plant was used for lighting most of the buildings in this area. However, American power was provided for special equipment and buildings. Two 15-kw generators furnished power for the Airport Control Tower. Two 150-kw generators were installed to operate three 400-cycle M G sets for the Air Force.

(3) Site "A": Initially all camp power in this area was provided by three 75-kw American generators located in the camp power house.

The Scientific Power Plant, consisting of two 750-kw engine generators and one 1000-kw engine generator, was installed. The power distribution system and the grounding system for the Trailer Park were completed and security and safety fencing around transformers were installed.

The three 75-kw generators then were removed from the camp powerhouse. Three 100-kva transformers

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were installed and camp power was supplied from the Scientific Power Plant.

(4) Scientific Sites:

(a) Site "L": A 10-kw generator was installed, the inside wiring of the bunkers was completed, and an air-conditioning unit was installed.

(b) Site "D": Three 10-kw generators and two 15-kw generators were installed and the power distribution for Sandia and EG&G was completed.

(c) Site "K": One 50-kw generator, complete inside wiring of the bunker, and an air-conditioning unit were installed.

(d) Site "MM": Two 50-kw generator, three 75-kw generators, and one 100-kw generator were installed with a power distribution center. All trailers and equipment were put in operation. A grounding screen was installed and wiring of shops and personnel tents was completed.

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(e) Site "Y": Two 30-kw generators, and a power distribution system were installed and wiring of living quarters, trailers, and Messhall was completed.

(f) EM Station: A 75-kw generator was installed and the station completely wired, including a grounding grid and screen.

(g) Rocket Site: Two 10-kw generators were installed and all wiring for the generator bunker, firing bunker, assembly shop, area floodlighting, and the rocket launchers was completed.

(5) General: A refueling and maintenance program was carried on to service all generators located in scattered locations. Additional or larger generators were added or replaced as requirements at the various scientific stations changed.

e. Distillation and Fresh and Raw Water

(1) Main Camp: At the Main Camp, rehabilitation of the salt, raw, and fresh water supply systems was completed. The British production estimate of 56, 500 gallons of fresh water

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and 30,000 gallons of raw water per day was not realized because of numerous failures of pipelines and pumping equipment. To overcome the deficiency, nine surplus 600-gph distillation units were brought in from Eniwetok.

Seven of the 600-gph distillation units, all of which arrived in poor condition, were made operable during March. Unit No. 8 required major overhaul. Due to the late arrival of the proper valves and pipe, available materials were acquired from the UK for placing the units in operation.

The Distillation Plant produced approximately 600 gal/hour/unit. Portable generators furnished temporary power for the unit motors. Island power provided the lighting. Island power was brought into the building for a future hook-up of the entire Distillation Plant.

Subsequently, a total of twelve S-200-D distillation units were installed, and an extension to the existing building was constructed to cover these units. Ground storage tanks with a total capacity of 98,800 gallons were installed.

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A settling tank was installed to reduce the amount of sand and seaweed entering the distillation units. Two 3500-gallon filter tanks and overhead floodlights were installed. A water well was blasted, to supply clean sea water for the operation. A platform and railing were installed to assist in the changing of screens in the salt-water settling tanks, and a safety fence was erected around the percolation sump.

(2) Site "A": A Utilities Department crew was assigned to Site "A" to set up the Distillation Plant. One 600-gph, one 200-gph, and two 85-gph distillation units were put in operation. The salt water was fed through a 2-1/2 inch and a 3-inch galvanized pipeline beginning 15 feet upstream of the latrines. The Distillation Plant supplied all drinking water. Since soil pipe and fixtures of American manufacture were in short supply, British materials were obtained and used for the Messhall, temporary latrine, drains, etc. An additional S-200-D distillation unit and water pump were connected to augment the camp water supply.

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A ground storage tank and fresh water system was completed and a booster pump put on the line. Steam and hot water for the Messhall was supplied by a 100-psi boiler.

(3) General: Fresh water was supplied to scientific stations through the use of tank trucks and trailers. Smaller working parties carried water cans which provided daily supplies.

f. Stevedoring: Initially, stevedoring services on Christmas Island were performed by the U.S. Army Transportation Corps, who provided all loading and off-loading facilities, equipment, and personnel. The Stevedoring Department, under the direction of the Construction Maintenance Division, assumed these duties on 31 March 1962. Most of the stevedoring gear and supplies for continuing the operation were obtained from the departing Army detachment.

Due to lack of proper advance ships' manifests, and methods adopted for offshore loading and off-loading of cargo, preplanning of this operation was limited. The heaviest piece of equipment off-loaded was a 1000-kw generator of approximately

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sixty tons. Trailer vans arriving on LSD's, too large to be handled over the side with regular ships' gear, were off-loaded by the following method: 1) The LSD took on ballast, sufficient to allow an LCU to enter the stern gate; 2) the vessel was then pumped dry allowing the LCU to rest on the deck; 3) the large vans were then backed aboard the LCU over the bow ramp; 4) the LSD then took on sea water ballast, re-floating the LCU and allowing it to return to the beach where the trailer vans were off-loaded. Heavy cargo (over 5 tons) was loaded on and off-loaded from LST's anchored off-shore by means of a pontoon barge secured to the bow ramp of the LST. Vehicles and equipment were transferred to the barge over the bow ramp. Deck cargo was handled over the side with ships' gear, in a normal manner.

Initially, refrigerated cargo was off-loaded via cargo nets to LCU's and transferred at the beach to 2-1/2 ton trucks for transportation to the Main Camp refrigeration plant. Due to the excessive time that meat and poultry were

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subjected to high temperatures, this method was replaced by one utilizing portable refrigerated boxes. These boxes were filled at the vessel's side, thus the food was kept under constant refrigeration until its arrival at the Main Camp, located 15 miles from the dock.

POL bulk fuels were transferred to storage tanks on the beach via submarine hose from tankers, or barges, anchored offshore. Drum stock was transferred to LCM's or LCU's and off-loaded by shore crane at the dock area.

Security guards were posted at points of ingress or egress whenever security cargo was handled. These guards escorted the cargo to its destination and released it to the proper authorities.

During times of peak air traffic, the air cargo crew was augmented by stevedores as required.

The incoming surface cargo from 31 March through 23 July 1962 totaled 16,409.2 L/T. The outgoing surface cargo during the same period totaled 6464 L/T.

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7. SUPPLY

The Supply Division, administered by a General Supervisor, consisted of the following Departments; Material Coordination, Material Control, and Warehousing. The activities of these departments during the Operation are discussed below.

a. Material Coordination: The Material Coordination Department, directed by a Senior Material Coordinator, coordinated and expedited material and equipment requisitions. In addition, the Department maintained records necessary for furnishing delivery information to interested agencies in the field.

A total of 1248 requisitions were processed from 8 March 1962 through 23 October 1962, an average of 156 requisitions per month. The processing of field requisitions consisted of reviewing purchase requests submitted by the various H&N components and User agencies at Jobsite, checking them for accuracy and complete nomenclature, and preparing formal purchase requisitions.

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A total of 4290 Receiving and Inspection Reports and 8 Over, Short and/or Damage reports were processed from 21 February to 23 October 1962. The processing of Receiving and Inspection Reports involved reconciling the warehouse "tally-in" with the advance packing lists and purchase orders forwarded by the home office. During this same period, 807 shipping order documents were processed. The Material Coordination Department also prepared manifests and documented all materials and equipment shipped from Jobsite. Documentation for the roll-up phase resulted in the preparation of 19 ocean manifests, totaling 927 pages plus allied shipping documents.

b. Material Control: The Material Control Department, directed by a Supervisor, maintained records and inventories of all materials, supplies, and returnable containers received and stocked at Jobsite. A Kardex system was maintained which reflected all transactions involving receipts and issues of materials. A daily transmittal to the

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Fiscal Division was made, to provide information for monetary accountability of all stocks received and issued. A total of 13,648 individual documents, with an aggregate value of $17,916,693.66, were processed and transmitted.

c. Warehousing: The Warehousing Department, directed by a Supervisor, received, stored, and issued all material at Jobsite, and was responsible for the operation of the POL farm, the fork lift pool, and the air cargo crew.

The department's accountability for material commenced at the port of entry for both air and surface carriers and continued until the material or equipment involved reached its final destination and/or end use. The air cargo crew, augmented at times by personnel from the Stevedoring Department, loaded and off-loaded aircraft with minimum ground time. The air cargo crew was utilized in clean-up and rehabilitation of supply facilities during slower periods of air traffic.

The incoming air cargo from 1 February through 31 October 1962 totaled 9,814,660 pounds. The outgoing

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air cargo from 1 April through 31 October 1962 totaled 3,548,998 pounds.

A total of 128 metal bins and 797 metal shelves were reclaimed from UK disposal areas in addition to 120 bins fabricated from dunnage. These were utilized to obtain the maximum use of inside storage space available, resulting in an additional 6550 square feet of usable storage.

An office machine repair shop was maintained to provide all agencies with repair and maintenance services for office machines and other equipment during the operational period.

The following warehousing and storage facilities were utilized at Christmas Island:

Warehouse Buildings	27,475 sq ft
Outside Storage Area	167,002 sq ft
Refrigerated Storage Area	30,655 cu ft
POL Outside Bulk and Package Lubricant Storage	95,900 sq ft
Temporary POL Tank Farm (Mogas & Diesel)	329,000 gal capacity

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Note: Aviation fuels and related POL products were stored in POL facilities and areas located in the Airport area.

d. Property Warehouse: The Property Warehouse activity consisted of receiving, storing, and issuing all AEC-owned or controlled property and equipment. Accountability was maintained through close liaison with the Property Management and Material Accounting Section of the Fiscal Division.

e. General: In mid-June, a system for inter-site supply support was devised and placed in operation, primarily for the support of Johnston Island. Inventory lists of all stocks were exchanged to provide each job site with information relative to the availability of materials. All procurement requests were screened through these stock lists before requisition action was initiated. This action resulted in 1) more expeditious delivery of material, 2) a substantial reduction of excess stocks, and 3) lower overall procurement costs.

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Christmas Island received a total of 169 inter-site service request messages involving 851 line items. Of these, 296 line items were shipped to Johnston Island. During the period from April through September, 51 air and 16 surface shipments, for a total of 881,279 pounds, were made to Johnston Island.

8. CONTROLLERSHIP

a. Organization: The Fiscal Division's functions, administered by a Resident Controller, included Payroll and Timekeeping, Facilities Accounting, Property Management Accounting, General Accounting, and Cashiering.

The activities of the Fiscal Division, covering the period from 18 February, through 19 August 1962, are detailed in the following paragraphs.

b. Payroll and Timekeeping: During the first four weeks of the Operation, almost the entire accounting effort was devoted to timekeeping and payroll functions. Pertinent

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payroll information was difficult to obtain due to the dispersion and movement of personnel, and poor communications; however, routines were expeditiously devised by which this information was secured, and payrolls were submitted regularly.

Upon receipt of supplies and equipment and a nucleus of experienced timekeeping personnel, the brassing system and field checking were instituted and normal timekeeping and payroll procedures were instituted.

c. Facilities Accounting: The Fiscal Division operated and managed the Refreshment Bar and the Camp Store during the first month of the Operation in order to provide these facilities to rapidly increasing military and civilian populations. Since the rapid build-up did not permit sufficient lead time for ordering merchandise from commercial sources, all stocks were purchased from the United Kingdom, Navy, Army, and Air Force International. Later these stocks were supplemented by shipments of commercial supplies from Honolulu and the continent.

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APPENDIX 3 CHRISTMAS ISLAND

Strict accountability was maintained and Operating Statements were prepared for each facility operated. Following is a typical Operating Statement of Dining Hall Operations.

Total Meals Served		1,051,452
Cost of Food:		
Receipts	$	1,366,580.76
Transferred		17,129.16
Food Available	$	1,349,451.60
Sales to Military & Others		7,811.76
Ending Inventory-Warehouse		126,350.95
Ending Inventory-Galley		17,007.34
Net Cost of Food	$	1,198,281.55
Add:		
Direct Labor		796,465.30
Direct Supplies		75,468.00
Other Cost		2,037.87
Total Cost	$	2,072,252.72

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d. Property Management and Material Accounting:

Large quantities of equipment and materials arrived at Jobsite daily and in certain instances proper identification was difficult. In order to maintain financial responsibility, the Fiscal Division instituted a simplified Kardex system to permit the recording of receipts and prices by commodity group and nomenclature. Since documentation was lacking in many instances, all pieces of equipment wherein ownership was questionable were numbered as AEC-owned, pending positive identification. The value of equipment subsequently determined to be AEC-owned, approximated $5,395,000.

Steps were taken early in April to organize a material audit function to ensure that all materials and equipment were properly received and issued by the warehouses. Close coordination between Fiscal and Supply Divisions was maintained, and by the end of the fiscal year sufficient progress had been made to permit a preliminary physical inventory and reconciliation to the booked inventories.

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Since much equipment transferred from other federal agencies was received in poor or inoperable condition, or deteriorated through use or exposure, surveys were prepared on all such equipment, and disposals were made as recommended.

e. General Accounting: Many unusual accounting problems occurred due to geographical and test organizational factors. Two purchase orders for the support of the Military and H&N employees at Washington Island and Fanning Island were administered at Christmas Island, although the two islands were under the jurisdiction of the H&N-AEC Honolulu Office. This was occasioned by the proximity of Christmas Island to these islands, and the corresponding availability of transportation and communications. A purchase order for the service of Gilbertese labor was also administered at Christmas Island. All payments and audit of invoices for these activities were made by the Fiscal Division at the site.

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In addition, Camp Store, refreshment, and subsistence supplies were provided to the weather stations at Washington and Fanning Islands, which required transfers of inventories and cash collections for the revenue-producing goods.

At inception of the program, United Kingdom materials and supplies were utilized in rehabilitating the camp area. A report on the condition of structures prior to rehabilitation was prepared and was approved by the Commanding Officer of the Royal Engineers and the AEC Project Engineer. Costs of United Kingdom supplies and materials consumed in the operation were based on estimates, since actual prices were not available.

f. Cashiering: The cashiering functions were of such magnitude that four employees of the Fiscal Division were permanently assigned to the Cashier's Office to effect subsistence collections, maintain receivables, cash checks, process and pay various expenses and maintain control of

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cash. Revenues exceeded disbursements to such a degree that it was found necessary to ship excess currency to Honolulu for conversion to a cashier's check and subsequent transmittal to Los Angeles. As much as $75,000 was transmitted at a time. Below is a schedule of total subsistence collections by month from inception through 19 August 1962.

February	$ 259.50
March	49,574.40
April	119,275.05
May	150,113.15
June	166,630.60
July	90,915.21
August	14,011.25
Total	$ 599,779.16

In order to ensure that payment of subsistence was made by departees, the Fiscal Division developed a check-out procedure which was approved by the JTF-8

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Headquarters and the AEC Project Engineer. Departees were required to present a paid-in-full cash receipt prior to departure.

Since no check cashing facilities were available, and the Military were unable to provide this service, H&N was instructed by the AEC to cash checks for the Military and Users subject to certain restrictions, and to accept personal checks for the payment of subsistence.

9. CAMP OPERATIONS

a. Organization: The Camp Operations Division was responsible for the management and operation of Housing, Messing, Pest and Rodent Control, Rubbish and Garbage Disposal, Janitorial Service, Laundry, Camp Stores, Clubs, Postal Facilities, and Barber Shop. The Division was administered by a General Supervisor, who was assisted by an Assistant General Supervisor. Each of the following sections was headed by a Supervisor: Housing, Messing, Camp Facilities, and Camp Supplies and Equipment.

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The activities of the Camp Operations Division are detailed in the following paragraphs.

b. Housing: The existing British barracks at the Main Camp were in a state of general disrepair at the time of initial occupancy and extensive rehabilitation was necessary. All British bedding was replaced with new American bedding and the quarters were provided with clothing lockers, tables, and chairs. Hot lockers were provided where possible for protection of clothing against the high humidity condition; however, due to the lack of sufficient camp power, it was not possible to provide all quarters with hot lockers. Custodial services were provided daily to all barracks and latrines; linen was changed weekly.

Due to the rapid build-up of military and civilian personnel, double bunks were placed in the barracks where necessary.

Twenty 10-man tents were erected to house H&N personnel. A portable latrine was erected for use by the personnel

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occupying these tents. In addition, prefabricated portable quarters were erected southeast of the Main Camp to accommodate distinguished visitors.

A camp was established at Site "A" on 12 March 1963. This camp was primarily a "tent city" designed to accommodate a population of 200 men. To support this site, Camp Operations assigned 22 men, which included a camp manager, janitors, mess personnel, and a laundryman. The population at this camp increased to approximately 300. To meet this situation, billeting was made available by the erection of additional tents and by setting up 10 bunks in 8-man tents.

c. Messing: The initial activation of the Messhall at Main camp began on 18 February 1962 and limited service was started on that day.

Messing operations were altered significantly as the island population increased. The original method of cafeteria-style feeding soon became cumbersome and time

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consuming. To alleviate this condition, shift-feeding was initiated. This system partially corrected the problem; however, to achieve a higher standard of Messhall operations, semi-family-style feeding was put into operation.

In addition to normal messing activities, the Messhall provided daily coffee-and-roll service for various scientific parties and the JOC Command Post. In May, a portable galley was installed at the Airport and as many as 350 men were served lunch daily. The food served was prepared at the Messhall and transported in hot containers.

On Shot Days, the Messhall provided coffee and rolls at assembly areas, thereby relieving the workload normally involved at breakfast. A short breakfast also was available on those days.

The messing operation at Site "A" was similar to that of the Main Camp except that cafeteria-style feeding was retained. This system of feeding was not changed, since the number of personnel located there did not justify a change-over.

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Due to the large quantities of foodstuffs required and the inherent problems of transportation and storage, it was necessary to allow a minimum procurement lead time from 6 to 8 weeks.

The following is a tabulation of the number of meals served by the Main Camp and Site "A" Messhalls:

April	264,078
May	250,582
June	185,468
July	87,277
Total	787,405

During May, June, and July, 44,478 meals were served outside of the Messhalls. Also, coffee for in-flight service was prepared for about 7000 servings.

d. Pest and Rodent Control: Pest and Rodent Control required immediate attention at the outset of the operation. The greatest problem was the control of flies and ants. This was overcome to a large extent by spraying the Main Camp by air-

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plane and later by continuous spraying with truck-mounted spray equipment. Indoor spraying also was performed periodically.

Under the supervision of the General Supervisor, Camp Operations, all sources contributing to pests were controlled through a preventive program. Periodic inspections were made by the Chief Medical Officer of all the island sites to assure that the program was in conformance with recognized health standards. Forty-two Gilbertese natives were hired initially to assist H&N personnel in camp clean-up activities. As additional H&N manpower became available, a camp labor crew took over general camp clean-up details, allowing the Gilbertese more time for garbage and rubbish pickup. Camp clean-up was maintained on a daily basis and contributed greatly to the reduction of pests in general.

e. Garbage and Rubbish Disposal: The disposal of garbage and rubbish was of prime importance since this waste contributed heavily to the pest problem. Initiation of garbage

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and rubbish pickup and disposal was instituted during the first week in March and continued throughout the Operation. Daily service was scheduled, with pickups made twice daily at predetermined points at all camp sites.

All combustible rubbish was put in large metal trash cans and hauled to dump sites for burning. The labor pool assigned to this task consisted of Gilbertese who were supervised by H&N personnel. The disposal of garbage from the Messhalls was accomplished in a similar manner, with the exception that all garbage was buried.

f. Janitorial Services: Janitorial service was started in early March and maintained throughout the operation. This service consisted of sweeping and cleaning all barracks and keeping all latrines and chemical toilets as clean and sanitary as possible. The servicing of chemical toilets in all MATS aircraft also was performed by the janitorial personnel.

g. Laundry: Laundry facilities and equipment were practically non-existent at the inception of the Operation.

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APPENDIX 3 CHRISTMAS ISLAND

Although plans had been made for the construction of a laundry facility at the Main Camp, it was agreed by the Commander, JTF-8 and the AEC that this requirement, not be completed, as little or no use could be realized after its completion. Earlier completion of the laundry was deferred in favor of scientific construction, and because of the lack of water to permit operation. To compensate for the lack of this facility, laundry service by aircraft to Honolulu was initiated. This service was provided on an unlimited basis and included camp linens as well as personal laundry. The amount of personal laundry flown to Honolulu averaged 125 bundles daily.

In March, a laundry with 10 automatic washing machines and 2 dryers was erected at Site "A" for the personnel assigned to that site. At the end of May, eight automatic washing machines were installed in a rehabilitated building, behind the Main Camp Messhall, which served as a laundry facility for Messhall linens.

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h. Camp Store: The Camp Store was established for the convenience at all JTF-8 personnel. Its purpose was to provide articles for ordinary use and for recreation at reasonable prices.

This facility began operation as an H&N function and continued until 7 April 1962. During this period, stocks were purchased from the UK Post Exchange at Port London. These supplies were later supplemented by shipments from Honolulu and the Mainland.

On 7 April 1962, the operation and stock of the Camp Store was transferred to the Hawaiian Army & Air Force Exchange. All supplies on order by H&N which could not be cancelled were transferred and billed to the Military as received. The HAAF maintained this operation until approximately 20 July 1962. At this time, the HAAF Exchange returned the facilities to H&N, who pruchased the small stock on hand at cost.

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i. Clubs & Resale Store: An Officers' Club and three beach clubs were operated at Christmas Island. These clubs operated on regularly scheduled hours so as not to interfere with working hours. Controls were established governing the handling and sale of beer and liquor. An "allowance" card system was used in supplying liquor rations to individuals through a resale package store.

j. Barber Shop: Facilities for barbering with three barber chairs were provided in a small building adjacent to the Pass & Badge Office. Barber services were performed on a "volunteer basis" by H&N and Military personnel. The Chief Medical Officer periodically inspected this facility to insure proper sanitation standards.

k. Postal Facilities: During the operational phase of DOMINIC, postal facilities were operated at Jobsite by the Army and Air Force Postal Service. Complete postal services, including postal money orders, were provided and all incoming and outgoing mail was processed through

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APO 86. In support of this, H&N established an auxiliary facility for the purpose of distributing personal mail to H&N employees.

10. ROLL-UP

a. Off-Island Sites: Roll-up operations for the islands of Washington, Fanning, and Malden were undertaken by a force from Christmas Island, and completed by 23 July 1963. All equipment from the roll-up of these islands was returned to Christmas Island for consolidated shipment to Honolulu.

b. Main Camp: Roll-up in this area consisted mainly of securing facilities and areas not needed to support the reduced personnel strength during an interim period. Excess office furniture and machines were crated and shipped to Honolulu. Power to those barracks and office areas which were closed was discontinued. The majority of portable generators were removed from the area and shipped to Honolulu and most areas of the camp reverted back to British 50-cycle power.

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c. Airport: Air conditioning equipment in hangar and parachute building was secured in place. All generators except two 15-kw units used for runway lighting were removed and shipped.

d. JOC Area: With the exception of certain air-conditioning units which were mothballed in place, all the equipment and furniture was removed and the buildings were secured. All generators were removed and power to the area was terminated. Antennas and towers located near the JOC area were taken down, crated, and shipped from the site. All trailers were removed from the area and shipped.

e. Distillation Plant: Twelve 200 gph distillation units were removed from the line and shipped to Honolulu. All storage tanks were cleaned and painted.

f. Site "A": Roll-up consisted of removing all furniture and equipment. Minor fixtures and receptacles were preserved in place. All antennas and towers, with

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the exception of the 200-foot communications tower were removed and shipped. Tents were secured but tent flys were removed and used as tarps.

g. General: Facilities at Sites "MM", "D", "K", "L", "Y", Alpha, and the consolidated trailer park near Site "A" were completely rolled-up, leaving only concrete pads and foundations. Rolling stock and various equipment and vehicles in excess of interim requirements were shipped to Honolulu.

All User diagnostic equipment was coccooned and mothballed prior to shipment to Honolulu and the Mainland.

The total roll-up surface cargo shipped from the site amounted to 7,873.9 long tons. The total roll-up air cargo shipped from the site amounted to 2,468,651 pounds.

Roll-up activities were started on 12 July 1962 and primarily completed on 17 August 1962, with the sailing of the USS Point Barrow.

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Additional materials and equipment were shipped from the Site as they were determined to be surplus to needs. The site was placed in stand-by maintenance status.

16. UNUSUAL CONDITIONS OR REQUIREMENTS

Because of its proximity, activating and construction forces were assembled at Christmas Island and dispatched to Fanning and Washington for the establishment of scientific stations.

Washington, Fanning, Malden, and Tongareva (Penrhyn), following their establishment, received support from Christmas Island. (The latter two islands were established by task forces from Honolulu.) The support consisted of materials and supplies as well as personnel movement for support throughout the complex.

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APPENDIX 4

JOHNSTON ISLAND

1. BACKGROUND

Johnston Island is a small land mass on an atoll located some 700 miles west-southwest of Honolulu. The mean annual temperature is 80 degrees. The extreme temperatures recorded on the island are 68 and 98 degrees. It has an average annual rainfall of 23 inches; nearly half of this falls in the four-month period of September through December. Winds are nearly always east or northeast with mean wind speeds of about 14 knots. There are a few trees and sparse vegetation.

Although the Island was annexed by both the Kingdom of Hawaii and the United States in 1858, the United States laid final claim to it. Initially, administration of the Island was the responsibility of the Department of the Interior, but then it passed to the U.S. Navy in 1934. The Island was placed under Air Force jurisdiction in 1948, with the Navy retaining administrative responsibility.

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APPENDIX 4 JOHNSTON ISLAND

Prior to World War II, the island was about 1060 yards long and 500 yards wide. However, in September 1941, under direction of the Navy, a civilian construction company enlarged the island with coral dredged from the nearby lagoon to make an airfield. In 1942, the Seabees completed work on the airfield. The island is now approximately 1-1/4 miles long and 550 yards wide. Much of its area is taken up by the airstrip and related facilities.

There are no people native to the Island. During World War II, several thousand individuals were garrisoned at the air base which was a primary stopping point between Honolulu, Kwajalein, and Australia. After World War II, it continued in its role as an aerial way-station with a substantial military population. As longer range aircraft were substituted for World War II planes, the importance of the base decreased and its garrison was reduced. The Island was then used primarily as an emergency airstrip.

Late in 1958 Johnston Island was utilized as a launching point for two high-altitude nuclear experiments. The

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Island then reverted to caretaker status garrisoned by small Military and Coast Guard detachments. Operation of the weather station by the U. S. Weather Bureau commenced at that time. Prior to October 1958 the weather station was operated by the U. S. Air Force.

Large-scale construction and dredging of the channel and turning basin in recent years made it possible to use the island for Operation DOMINIC.

2. ADMINISTRATION

a. Introduction: The Administration Division, was directed by a General Supervisor, who also served as the United States Commissioner and the J-2 Officer of JTG 8.6.

The Division included the following departments: Personnel, Safety, Security, Medical, Dental, Rad-Safety, Reports & Procedures, and Recreation.

b. Personnel: The Personnel Department conducted the processing of incoming and outgoing personnel, maintained employee personnel records, assisted employees with personal problems, and booked passage for all outgoing H&N personnel.

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c. Safety: The H&N Safety Department was represented by an Assistant Safety Engineer, who maintained close liaison with the AEC Safety Engineer, the Air Force Ground Safety Officer, and the Base Fire Chief.

Activities of the H&N Safety Engineer consisted of participation with the Military to establish fire and safety procedures, participation in a survey of the fire-fighting equipment and crews on hand, and indoctrination of H&N Division Heads and Supervisors on safety requirements and the safety equipment required by H&N personnel. Other activities during the Operation included daily fire and safety inspection of all camp, shop, and work areas; conducting periodic fire drills in all buildings where personnel were billeted; issuing of drivers' permits to qualified personnel; and posting roads, airfield, and sensitive areas.

d. Security: Coordination between H&N and the Military on security matters was established immediately following the arrival of the H&N Security Officer on 19 January 1962.

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APPENDIX 4 JOHNSTON ISLAND

The major efforts of the Security Department during the first two months were directed toward establishing a Pass & Badge Office, completing security briefing procedures, and organizing the Security Guard Force for the staffing of posts and patrols.

By 23 April, the Security Guard Force consisted of 3 Guard Lieutenants and 32 Security Guards and provided security for Task Units: 8.1.1, 8.1.2, 8.1.4, and 8.1.5. The Guard Force, provided around-the-clock coverage and maintained 2 roving patrols, a perimeter patrol (from 1900 and 0700 hours), and 8 fixed posts.

Security briefings for incoming military and civilian personnel during the Operation numbered 811. Pass & Badge Office activities resulted in 2867 photographs being taken and processed and 3371 badges being prepared and issued.

c. Medical: The H&N Medical Department was activated on 19 January. The hospital and out-patient dispensary was staffed with one Chief Medical Officer and two Aidmen, who worked in cooperation with Army Medical Specialists,

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Technicians, and Aidmen. During the operation, 9,522 patients were treated for various disorders resulting in 1,435 clinical procedures (including X-ray, Urinalysis, Hematology, Fracture, Sutures, etc.)

f. Dental: The Dental Office, activated on 12 January, was staffed with one Dentist and one Dental Assistant throughout the Operation. The Dental Office provided services for the Military, Users, H&N, and the AEC. Approximately 2224 separate dental procedures were accomplished during the Operation.

g. Rad-Safety: Prior to H&N participation at Johnston Island, all Rad-Safe activities were handled by a JTF-8 Rad-Safe Officer. On 25 May the H&N Rad-Safe Officer and a Senior Rad-Safe Technician arrived on site to establish an office for H&N Rad-Safe activities. Subsequently, film badges were issued to all personnel.

Initially the H&N Rad-Safe Officer divided his time between Johnston and Christmas Islands; however, as activities at both sites increased an Assistant Rad-Safe Officer, was

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assigned to Johnston Island and assisted in the routine monitoring of the active areas immediately after each test.

Subsequent to 25 July when the Bluegill-Prime missile was destroyed on the pad, the Launch Pad area was declared a full Radex area. A Rad-Safe check point and personnel decontamination facility was established at the northeast corner of the Launch Pad area and entry into the alpha contaminated area was controlled at this point. All personnel entering the area were required to wear protective clothing, shoe covers, and respirators. Personnel showers and a laundry were installed at the check point for the decontamination of personnel and protective clothing. Nose swipes were taken from all persons returning from the contaminated area and daily air samples were collected in the contaminated area and at the Decontamination Center. Alpha counting of the nose swipes and air samples was performed at the Nuclear Defense Laboratory trailer with an Eberline PC-6 proportional counter.

The area surrounding the No. 1 Launch Pad was henceforth monitored daily. "Hot Spots" which were uncovered or

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exposed during the reconstruction of the area were back-filled or repainted. Air samples were collected daily at the Launch Pad, and all samples were found to be well below the permissible limits for air-borne radioactivity. All contaminated equipment and tools were decontaminated and monitored. In December, the entire area at Pad No. 1 was being fenced with security type fencing to limit personnel access.

Following the 15 October event, H&N Rad-Safe personnel supervised the alpha monitoring of the island and collected contaminated debris.

The Rad-Safe Officer and an assistant remained at the Jobsite after the close of the Operation and continued to monitor the Launch areas and other areas of the Island.

h. Recreation: The Recreation Department began its activities on 29 January 1962. Most recreation activities, other than outdoor sports, were consolidated in the Recreation Center, which contained the Recreation Office, the Supply and Photo Hobby Shop, the Library, the Leathercraft and Woodworking Shops, the Hobby Storeroom, and the Music Room.

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The Recreation Center also contained a soundproof room where a turntable, an amplifier, and a tape deck were available for the transcription of Long Play stereo records onto blank tapes. A disc-cutting machine also was available for the cutting of "mail-home" recordings.

Shuffleboards, ping pong tables, and pool tables were available at the NCO Club, where bingo and checker tournaments were held. Weight lifting activities were held at two 8-man tents. Movies were shown regularly at two theatres, one indoor and the other outdoor.

Outdoor games consisted of softball, mountain ball, and volleyball. Also, a boat and raft were available for fishing and coral hunting.

3. ENGINEERING

The Engineering Department, directed by a Resident Engineer, consisted of the following groups: Survey, Design, Test and Inspection, and Estimating (see following section for estimating activities).

a. Rehabilitation Projects (General): Since most of

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the existing Johnston Island facilities were in a state of disrepair, rehabilitation projects required extensive engineering support. Support facilities, such as barracks, shops, mess, warehouse, and recreation buildings, and their related utilities, required considerable rehabilitation. The Chapel-Theater Building was extensively rehabilitated and movie facilities were later augmented by the construction of a new outdoor theatre. Engineering for all rehabilitation was accomplished at Jobsite.

b. Field Engineering: Initial work involved the recovery of survey mounts established by H&N in 1958. Triangulation of the proposed Launch Site work point was started on 29 December 1961 and completed on 11 January. Following this, the Survey Group prepared layout for construction of new stations and support facilities, furnished line and grade during construction progress, established horizontal and vertical control, provided permanent monuments, and aligned scientific instruments and equipment.

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APPENDIX 4 JOHNSTON ISLAND

The Design Group prepared Jobsite drawings for scientific facilities, sketches for camp rehabilitation, revisions to tracings transmitted from the Los Angeles Office, and "as-built" drawings of completed work. The number of drawings prepared by Engineering at Jobsite totaled 300. These and the 223 Los Angeles Office drawings, a total of 523, were issued to the Construction Department. Jobsite revisions to Los Angeles Office drawings totaled 311.

The Test and Inspection Group inspected all construction; inspected and tested all electrical and mechanical installations, equipment, and materials as required. When testing of concrete was required, test cylinders were sent to Honolulu for compression tests. The Test and Inspection Group also marked-up existing prints for the preparation of "as-built" drawings by the Design Group.

4. ESTIMATING

The Estimating staff at Johnston Island prepared and issued nearly 450 work orders, totaling $7 million worth of

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engineering and construction, as well as issuing some 1400 "Buck Slip" type User support work orders.

In addition to the above-mentioned work, the Jobsite staff assisted engineering and management by preparing comparative engineering estimates and providing assistance to the responsible fiscal personnel in properly distributing accumulated costs.

5. COMMUNICATIONS

H&N communications efforts at Johnston Island included the worldwide countdown transmitting and receiving facilities, the scientific cable plant, the rehabilitation of the base telephone plant, and the AEC Communications Center. During the latter part of the Operation, a shore-to-ship radio trunk terminal was established for the air drop events.

a. Radio Countdown System: A package transmitter van containing three 10-kw sideband transmitters was obtained from the Navy. Three discone-discharge antennas provided the radiating system for a long-range countdown facility. This system covered the Pacific Area over a radius of

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4500 miles by use of simultaneous broadcast on three frequencies programmed to supply coverage to all areas. During the initial part of the Operation, the transmitters were operated 14 hours per day; however, the frequency of transmission was later reduced to four hours per day three times per week.

The countdown installation was originally located on the southwest corner of the Island. Due to the construction of the second Thor launch pad, the Sandia AME-DME installation was relocated directly across the runway from the countdown installation. Sandia then requested removal of the countdown antennas to eliminate possible error interference to their tracking antennas.

Extreme difficulty was encountered in finding sufficient unused space on the complex for the countdown antennas; however, it was finally determined that this facility should share the northeast corner of the Island with the long-haul radio antenna installation. The move was made during a period when there was no operational requirement for countdown broadcasts.

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APPENDIX 4 JOHNSTON ISLAND

Shortly after this move, the PMR shore-based tracking facility complex was moved to Jobsite. Much of the equipment was located in the near field of the countdown antennas and considerable RF interference was experienced, particularly to an unshielded analog computer located in a commercial house trailer 100 feet from one of the countdown antennas. During the operation, it was necessary to make a number of compromises in transmitter power level and operating time schedules to permit successful operation of all the facilities.

In addition to the three simultaneous countdown broadcasts, there was an associated "go-no-go" communication system which tied Johnston Island to the Honolulu filter center by use of teletype circuit and pre-empted voice channels of the Honolulu-Johnston Island long-haul circuit. The Honolulu filter center was connected to Point Arguello, Kauai, and Maui, by direct leased commercial lines. A backup single-sideband radio system functioned with transmitters at Point Mugu, Kauai, and Maui.

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b. Scientific Cable Plant: H&N performed services of design, procurement, and installation of cable systems for the PMR, Cubic, DASA, EG&G, Project 6.1A and Project 9.6. A total of 714,049 feet of cable was installed on Johnston Island during Operation DOMINIC. This total consisted of 44 different types of cable including coaxial, paired signal and telephone, and special configuration cables.

Cable installations for all H&N - designed systems included termination and conduit work, as required. After installation, each cable conduit and terminal cabinet was bonded and tested for shorts, grounds, and shield continuity. In addition, all cables were installation-tested between pairs and ground prior to release to the Users.

Approximately 95 percent of the new cables were placed underground and buried to a depth averaging 24 inches. The cables were laid in coral sand and covered with a layer of coral sand, before general backfilling. To avoid additional splicing time, cables were routed around obstacles.

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Instrumentation, power, control, communication, and backup cables were segregated and placed for maximum separation. Conduits varying from 3 to 24 inches in diameter were used for cable protection where required.

The cable installation included intercom systems for DASA and Cubic and radio ground systems for the count-down installations and the PMR.

c. Rehabilitation of Telephone Plant: H&N assisted the maintenance force of the 1957th Communication Group in the repair and replacement of the base cable plant, which was in a deteriorated condition at the start of Operation DOMINIC. Approximately 20,000 feet of new cable ranging in size from 6 to 51 pair was installed to provide service into new areas or augment the existing cable system.

d. AEC Communication Center: The first H&N communication activity on Johnston Island was the establishment of the AEC Communication Center. A special enclosure for this facility was constructed by H&N and the teletype and cryptographic equipment was installed by the 1957th

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Communication Group. The Communication Center, which was activated on 22 January and operated by H&N, served the AEC, H&N, and all TG 8.1 elements except DASA. A 24 hour per day schedule was maintained from 1 April until after the last event.

The Communication Center utilized one full send-receive duplex crypto secured circuit that was terminated at the AEC Communication Center in Honolulu. A teletype facility was manned in Bunker 405 during operational events. This circuit terminated in the Honolulu Filter Center.

e. Operational Shore-Ship Radio Trunk: During the latter part of the Johnston Island operation, H&N provided transmitter facilities in support of the air drop events. Two of the three countdown transmitters were used for FSK teletype transmission to a ship approximately 200 miles from Johnston Island. The third transmitter was modified for voice transmission to aircraft, other ships, and ground points.

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6. CONSTRUCTION - MAINTENANCE

a. Organization: The Construction-Maintenance Division, administered by a General Superintendent, conducted all construction and maintenance operations at Jobsite. The Division comprised several Departments, each administered by a Superintendent.

(1) Electrical Department: Supported field work in the rehabilitation, installation, and maintenance of all electrical systems employed at Jobsite. Under the supervision of this Department, all refrigeration and air conditioning equipment was installed and maintained by the Refrigeration Section.

(2) Power and Distillation Department: Operated and maintained all power-generating and water distillation equipment at Jobsite. This Department was responsible for providing adequate power and fresh water supplies to meet Jobsite requirements.

(3) Utilities Department: Rehabilitated, constructed and maintained, as required, all plumbing,

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water distribution piping systems and the POL system. The Plumbing Section was responsible for the construction and maintenance of all fresh and salt water piping systems, POL system, sewerage, and other facilities related to sanitation. Sheet Metal components required for the construction or repair of buildings or equipment were fabricated or repaired by the Sheet Metal Section.

(4) Carpenter-Labor Department: Performed the construction of all structural components; rehabilitated and maintained buildings, structures, and scientific stations, as required. Carpenter and Paint Shops were established as bases of operation and provided various labor services as required.

(5) Heavy Equipment Department: Under the supervision of this department all vehicles, heavy equipment, mobile and stationary equipment with the exception of power generating, water distillation, and refrigeration equipment, was installed, operated and maintained. Shop facilities were provided for vehicle repair and maintenance,

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welding, rigging loft and machine shop services. This Department also provided fuel transportation and distribution equipment for the support of construction and other operational requirements.

(6) Stevedoring Department: Provided all stevedoring and rigging services required for off-loading and back-loading materials and equipment arriving or leaving Jobsite by ocean transport vessels. A rigging loft was operated to store, repair, and maintain tools and equipment used by Stevedoring personnel.

b. Rehabilitation Program: At the inception of this project, a priority system in the use of available manpower and material was established to meet the operational requirements. After rehabilitating housing and messing to provide for minimum requirements, efforts were directed to the rehabilitation and construction of essential scientific facilities. This site had previously been utilized for high altitude testing and many of the scientific stations were modified and rehabilitated. A general rehabilitation program

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of all buildings, utilities, and facilities was carried out as additional manpower and materials arrived at Jobsite.

(1) Camp Area: The Jobsite was established on 27 December 1961 and the rehabilitation program of barracks, messing facilities, Power and Distillation plants, office buildings, recreational facilities, laundry and maintenance shops was started immediately. The Messhall Building was renovated and new installations included a new dishwasher, coffee urn, drain boards, two walk-in refrigerators, and air conditioning for the west end of the building. Repairs and modifications included relocating sinks, new field tanks for the boilers, complete overhaul of the boiler, new plumbing facilities, window covers, a new garbage room, and a Messhall addition for the seating of 136 persons. The Messhall was painted, as required, and a Porto Camp Trailer was installed for the bakery. New electrical services were provided and control panels installed. Fifteen barracks were rehabilitated and electrical and plumbing services repaired and tested. Windows and doors were

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repaired and the buildings were painted as required. The NCO Club, Recreation Building, Beach Club, and the rough-dry Island laundry were activated and the fresh and salt water systems repaired or replaced. Concrete work was provided and areas were painted, as required. H&N, Military, JTF-8, and Scientific office buildings and areas were assigned and inside partitions and modifications were installed, as required. Dehumidified and air conditioned areas were provided, and gutters with downspouts installed. The Power and Distillation plants were rehabilitated and a new suction line with a foot valve was installed in the Pump House. Facilities for expanded operations were installed and the building was cleaned and painted. Port facility rehabilitation included the addition of five bollards (pipe and concrete) and two new log camels; replacing gangplank to YFN barge; and repairing or replacing fuel, fresh water, and steam lines to the APL mooring. Maintenance shops were reactivated and new electric services provided as required.

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(2) Scientific Stations: The program to rehabilitate and utilize existing stations, bunkers, and facilities was launched after receipt of materials, tools, and equipment. Twenty stations, buildings, and bunkers required only minor modifications to fulfill station requirements, while nine required extensive changes, and, in some cases, relocation. Minor rehabilitation of stations consisted of repairing or replacing electrical wiring, installing new partitions, painting, insulating, installation of "A" frames, repairing roofs, reconditioning tiling and piping, installation of air conditioners and duct work, installing work benches and shelves, and activating sanitation and water systems to scientific stations. Extensive work in rehabilitating nine stations included major additions, relocations, installation of complex electrical systems, construction of trailer facilities, major rearrangements to existing structures, construction of personnel shelters, and installing of antennas.

(3) Airport Facilities: The runway, taxiway, parking areas, and terminal buildings were rehabilitated and

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repairs to asphalt surfaces made as required. Signs and markings were repainted or replaced as required. Continuing maintenance of these facilities was instituted and modifications performed as required.

b. Construction Program: The construction of new scientific stations was started concurrently with the rehabilitation program. Stations required for early testing were given higher priorities and actual construction started at the earliest possible time. As more material, equipment, and manpower were available, the construction program was expanded to meet all operational requirements. The scientific stations requiring extensive and complex construction were given precedence. Some of these were as follows:

(1) Station 6100 - Launch Pad: Heavy concrete slabs were poured and sheet pile walls constructed. Trailer shelters were provided with all utility services connected. A firex system and drains for fuel and fresh and salt water were installed. Security fencing and flood lights were

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installed and painting was done as required. A 2100-gallon fresh water tank was erected and decontamination facilities provided. Subsequent to the destruction of the Bluegill-Prime missile on 25 July, a complete rehabilitation was performed and electrical, mechanical, and structural components were replaced or repaired as required. Areas were cleaned and painted. All systems were re-established and checked out.

(2) Station 6200 - Launch Facility: The same general construction work was performed. A sprinkler and Firex system was installed. A new camera station slab was poured and cameras were relocated. The area was graded and five TV stands were installed. A photo tower was erected and a long range Theodolite station was constructed. Areas were painted, as required.

(3) Station 6101 - Control Bunker: The bunker slab was poured and the bunker framed, and sheeted, insulated, and air conditioning installed. All electrical services and the Firex control cables and panel were installed. The necessary shelters were provided, and the areas were painted, as required.

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(4) Stations 6102 - 6103 and LOX Storage Area: Concrete slabs and footings, dikes, and bases were provided as required. Electrical, fresh and salt water, and fuel lines and drains were installed. Sheds were provided for the generators and a water chiller unit complete with condenser and filters were placed in position. Fuel tanks and related piping were installed, and security fences and flood lights installed as required.

New buildings were erected for the Power Plant (Building 45), two 10,500-gallon fuel tanks were erected in the POL Tank Farm, Trailer Shelter Bunker Stations 3230 and 3231 were relocated and modified. A new building (Station 4040) was constructed and air conditioned, and towers were erected for Stations 6212 and 693. The Countdown Radio Antenna Station 4010 was relocated and all related concrete, structural, mechanical, electrical, and piping work was installed.

Other stations, which required only minor construction or were utilized for support, were constructed

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and utility services connected as required. Security fencing, flood lighting, shelters, sheds, slabs, painting, air conditioning, sand bagging, pumps, and other work and facilities were provided. Tents were erected as required in the support of scientific or military efforts.

As revisions or modifications became necessary, new work orders or revisions to work orders were issued and the required work accomplished. Changes and additions to camp buildings and facilities were accomplished as a part of the overall construction effort. Support in the installation of equipment and instruments was made available for all Scientific and Military units.

d. Power: Island power came primarily from the Main Power Plant with individual generators providing power at isolated or special stations. In the main Power Plant additional generators were installed as power requirements expanded. Modifications to the buildings and power lines were accomplished with no loss of power to the field. New fuel lines and tanks were installed as more units were utilized for power generation.

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e. Distillation; Fresh and Salt Water: All available distillation units were utilized to provide adequate supplies of fresh water for Island consumption or use. As more units were received, they were installed and placed in service. Major overhaul of older equipment was necessary to maintain adequate production. New service lines were installed and the distribution system modified as required. A new 21,000-gallon storage tank was erected and placed in operation.

f. Stevedoring Activities: Under the direction of the Construction-Maintenance Division, the Stevedoring Department loaded and off-loaded all cargo entering or leaving Johnston Island via surface.

Approximately 75 percent of the stevedoring work was performed at the cargo pier facility. Ships and barges were positioned alongside the pier and were loaded or off-loaded with ships' gear or with a 40-ton shore crane. All ship's gear and stevedoring gear was carefully inspected to ensure safe operation. The balance of the stevedoring

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operation took place at a sand-filled ramp, utilized for beaching LST's that were to be loaded or off-loaded through the bow ramp. The heaviest lift executed was the loading of a 32-ton, 750-kw generator.

Refrigerated cargo was palletized on board the vessels and off-loaded onto flatbed trailers for transportation to the refrigerated storage area. Bulk POL products were off-loaded by pumping through lines to the respective tanks in the POL storage area.

Two security guards were posted at points of ingress or egress whenever security cargo was handled, and escorted the cargo until it was released to proper authorities.

Most of the stevedoring gear was fabricated at Jobsite; however, it was necessary to procure certain specialty items and all lashing gear.

The incoming surface cargo from December 1961 through October 1962 totaled 12,445 L/T. The outgoing surface cargo from March through October 1962 totaled 387.9 L/T.

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7. SUPPLY

The Supply Division, administered by an Assistant General Supervisor, consisted of the following departments: Material Control, Material Coordination, and Warehousing. The activities of these departments during the operation are discussed below.

a. Material Coordination: The Material Coordination Department, directed by a Senior Material Coordinator, coordinated and expedited material, and initiated field requisitions for equipment, materials, and supplies. In addition, the Department maintained records necessary for furnishing delivery information to interested agencies in the field.

A total of 2063 requisitions were processed from 27 December 1961 through 23 October 1962, an average of 229 per month.

A total of 3678 Receiving & Inspection Reports and 52 Over, Short and/or Damage Reports were processed from 27 December 1961 to 23 October 1962. During this

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same period, 14 shipping order documents were processed. The Material Coordination Department also prepared manifests and documented all materials and equipment shipped from Jobsite.

b. Material Control: The Material Control Department, directed by a Supervisor, maintained records and inventories of all materials, supplies, and returnable containers received and stocked at Jobsite. A Kardex system was maintained which reflected all transactions involving receipts and issues of materials. A daily transmittal to the Fiscal Division was made to provide information for monetary accountability of all stocks received and issued.

c. Warehousing: The Warehousing Department, directed by a Supervisor, received, stored, and issued all material at Jobsite, and controlled the operation of the POL farm, the fork-lift pool, and the air cargo crew. The department's accountability for material commenced at the port of entry for both air and surface carriers and continued until the material or equipment involved reached its final destination and/or end use.

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APPENDIX 4 JOHNSTON ISLAND

The air cargo crew was responsible for loading and off-loading aircraft with minimum ground time. This crew was augmented with stevedores on occasions of peak air traffic. The air cargo crew was utilized during slower periods to assist in general warehousing duties.

The incoming air cargo from February through October 1962 totaled 12,625,515 pounds. The outgoing air cargo from March through October 1962 totaled 1,571,197 pounds.

The following facilities were utilized to conduct the supply functions at Johnston Island:

Warehouse Buildings	15,000 sq ft
Outside Storage Area	41,000 sq ft
Refrigerated Storage Area	30,760 cu ft
POL Outside Bulk and Package Lubricant Storage	18,000 sq ft
POL Tank Farm	1,162,192 gal capacity

d. General: In mid-June, a system for inter-site supply support between Johnston and Christmas Islands was

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devised and placed in operation. Inventory lists of all stocks were exchanged to provide each job site with information relative to the availability of materials. All procurement requests were screened through these stock lists before requisition action was initiated.

8. CONTROLLERSHIP

The Fiscal Division was administered by a Resident Controller and included such activities as Payroll and Timekeeping, Facilities Accounting, Material and Property Control, Cost Accounting, Cashiering and Cash Control, and General Accounting and Auditing.

a. Payroll and Timekeeping: This section was responsible for the accurate distribution of hours worked by all employees at the site and the proper labor distribution to the jobs in progress.

A "brass" system was effectively used for timekeeping and employee control. Time sheets were audited daily as well as were requests for overtime worked in excess of the established workweek.

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Field checking by timekeepers was accomplished to insure correct labor distribution, and through close liaison and coordination with jobsite engineering, all discrepancies were adjusted and subsequently eliminated.

b. Facilities Accounting: The Facilities Accounting section maintained all records and accountability for H&N operated revenue producing facilities and prepared operating statements covering Mess Hall, Beach Club and Snack Bar operation activities. This section also handled all accounts receivable, accounts payable, and bank account activities related to the jobsite.

c. Material and Property Control: Appropriate Kardex control was established in order to maintain Fiscal control of equipment and consumable supplies. In addition, all AEC-owned equipment were assigned property numbers which were painted or otherwise placed on equipment for identification.

d. Cost Accounting: Close liaison was maintained with the Engineering Division in order to provide Weekly

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Progress Cost Reports to that division, and Management for the timely control of the costs related to construction work features being performed at the site. Such control at the Jobsite level was maintained for direct labor, direct material, equipment usage and installed equipment charges as appropriate. Direct cost charges were related to engineering estimates and where distribution occurred, in-place inspection and as-built drawings were reviewed as a basis for adjustments of cost where required.

e. Cashiering and Cash Control: Cashiering activities were heavy during the entire operation, which included collection of Subsistence and Quarters charges from supported personnel and maintainance of detailed records by individuals which included arrival and departure times of such individuals in order to establish their accrued liability. In addition, a Revolving Fund was maintained for the purpose of cashing checks for individuals on the basis of appropriate directives, amount limitations, and proper counter authorizations by the User agencies. Replenishment of such fund was

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made from Los Angeles on a weekly basis by registered insured mail directly from a Los Angeles bank to the job site. Cash funds were reconciled daily.

f. General Accounting and Auditing: General Accounting was primarily concerned with general and subsidiary ledgers, the preparation of Journal Vouchers, Operating Statements and Schedules and Reports for transmittal to the Los Angeles Office. The auditing function consisted of examination of Fiscal, Supply, and Administrative functions performed at the job site.

Cash receipts and disbursements were audited daily and the cash items were examined and reconciled on a daily basis.

9. CAMP OPERATIONS

The Camp Operations Division, administered by a General Supervisor, was responsible for the management and operations of Housing, Messing, Pest and Rodent Control, Rubbish and Garbage Disposal, Janitorial Service, Laundry, Clubs, Post Office, and Barber Shop.

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APPENDIX 4 JOHNSTON ISLAND

a. Housing: Military enlisted personnel, and technicians, mechanics, and office workers of the various User groups occupied two 3-story concrete buildings with 24 rooms per floor. The number of men billeted in these buildings totaled 596.

Military officers, Task Force scientific, engineers, and H&N staff members occupied 12 concrete buildings, each containing 6 family-type apartments. Two large frame buildings were renovated and converted into compartments, each of which contained four bunks. Also, there were some single and double rooms in the center portion of these buildings. These buildings housed 480 H&N personnel. Additional bunks were placed in the buildings to accommodate the increased population during peak activities.

A Navy APL which arrived at Jobsite on 7 May, also was used for billeting personnel. Approximately 330 men were housed there. Also, four houses having three bedrooms each were utilized to house VIPs.

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b. Messhall: Initially, the Messhall was operated by military personnel. On 2 January, H&N took over the preparation of lunch and dinner and on 12 January complete operation of the Messhall was taken over by H&N.

During the initial occupancy period messhall operations were seriously hampered by the lack of equipment and operating supplies. On 19 January, this situation was relieved by the receipt of additional dinnerware and miscellaneous galley equipment.

During February, additional equipment was placed in operation and family-style feeding was instituted. The Island population at this time totaled about 700. By 25 May, the population reached 1700 and an early lunch period was initiated. Due to the irregularly scheduled work hours of various personnel, the Messhall was opened for service 16 hours per day. In June, it became necessary to schedule four servings for both lunch and dinner. In addition, certain of the User personnel whose work schedules did not permit the attendance of regular meal hours were serviced at their convenience.

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During the evacuations H&N Messhall personnel were employed in various capacities in the evacuation ship's galleys.

During latter July, the reduction in overall population permitted a return to single feedings for each meal. In September, however, it was necessary to revert to multiple seatings for lunch and dinner. On 8 October, a newly completed addition to the Messhall was opened for service to accommodate the increased population.

The island population reached its peak on 17 October with a total of 1873 personnel.

c. Pest and Rodent Control: Continuous spraying of the island was necessary to control flies. Spraying also was necessary on the Navy APL to eliminate cockroaches. Mice were controlled by the use of both poison and traps.

d. Janitorial Services: The Janitorial Section, provided daily janitorial service for all living quarters, offices, and scientific stations. Limited janitorial services were performed by H&N aboard ship during the evacuations.

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e. Laundry: A personnel laundry service was established by H&N during January 1962 through a commercial laundry firm in Honolulu and included the laundering of shirts, trousers, and shorts for Military and Civilian personnel. Laundry service for sheets and pillow cases also was provided by this firm.

In addition to the above service, H&N started operation of a four-machine laundromat in January which offered a damp dry service to both Military and Civilian personnel. In March the average daily output was 110 bundles, which increased to 140 bundles in May. Also, during May, two 40-pound-capacity, oil-fired driers were installed in the laundromat and "fluff drying" service was added. In addition to the laundromat service, 11 household-type washing machines were installed in the barracks and apartments.

f. Clubs: On 9 February, H&N opened the "Waikiki" Beach Club, Building 130, for the sale of beer and soft drinks. Also, management of the Snack Bar in the

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NCO Club was assigned to H&N on 15 February. In addition to food, this facility also handled the sale of soft drinks. Soft drink distribution to the theaters, the Air Terminal, the ball games, and the Coast Guard installation of Sand Island also was handled by H&N.

g. Post Office: The Main Post Office, APO 105, was operated by the Military. An H&N Postal Clerk, delivered H&N mail to the Administration Building and to individual personnel. By the end of March, an H&N Post Office was established in a room adjoining the Military Post Office in Building 520. One H&N Clerk handles all H&N Post Office activities.

h. Garbage & Rubbish Disposal: The disposal of all garbage and trash was accomplished by the Camp Operations' labor force. These men also policed the grounds daily and performed general clean-up as time permitted.

i. Barbering Facilities: A Barber Shop with three barber chairs was located in one half of the quonset

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building which housed the laundromat. The shop was operated by an H&N Barber and volunteer barbers who worked during their off-duty hours. Also, two barber chairs were located at one of the two 3-story barracks buildings and barbering services were provided on a volunteer basis.

10. ROLL-UP

a. Camp Area: Roll-up in this area consisted mainly of securing facilities and areas not needed to support the reduced personnel strength. Excess office furniture, office machines, heavy equipment, and other materials, were crated or packaged and shipped to Honolulu for storage. Power to inactivated areas was discontinued and the majority of portable generators were shipped to Honolulu. The remaining power and distillation equipment was cleaned, repaired, and painted as required.

b. Scientific Stations: Scientific support facilities, such as revetments, bunkers, antennas, lighting, power and signal installations, and other like facilities were removed and the reusable items of equipment were shipped to

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Honolulu for storage. Equipment and supplies of scientific units were stored in scientific vans or shipped individually.

c. General: Rolling stock and various equipment and vehicles in excess of interim requirements were shipped to Honolulu. All diagnostic equipment of Using agencies was coccooned and mothballed prior to shipment.

The first segment of roll-up shipments departed on board the USS Princeton on 4 November. There were 11 vessels with 3042.0 L/T of cargo departing Jobsite during the month of November, and early December. 709,930 pounds of air cargo was shipped during this same period. The basic roll-up period extended from 4 November through 9 December.

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APPENDIX 5

HONOLULU OFFICE AND OFF-ISLAND SITES

1. EXECUTIVE

The Honolulu Office was administered by a Resident Manager who reported directly to the Manager, Construction Operations. During the period of greatest activity an Assistant Resident Manager was assigned to this office. This organization consisted of five principal divisions, including Fiscal, Contracts & Supply, Engineering, Administration, and Communications. The Supervisors of these Divisions comprised the staff of the Resident Manager and were responsible for the performance of all assigned responsibilities under their jurisdiction. Liaison was provided by various Los Angeles personnel whenever certain technical assistance was required in connection with the Honolulu Office operation.

All construction work for sites within the Hawaiian Island area and at the various small remote island sites located throughout the Pacific were performed under the direction of this office. In addition, the responsibility for the logistics, operations, and support of the remote island sites was the responsibility of the

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APPENDIX 5 HONOLULU OFFICE AND OFF-ISLAND SITES

Honolulu Office. Also, this office assisted all Task Group elements in resolving various logistic and support problems whenever required.

2. ENGINEERING

On 10 January 1962, an H&N Project Engineer was assigned to assist in the development of User criteria for Ford Island, Hickam Air Force Base, and Barber's Point Naval Air Station for Operation DOMINIC. Subsequently, the engineering staff was increased in order to provide the following services: Design, Project Engineering, Surveying, test and inspection, and the administration and preparation of work orders.

Continuous liaison was maintained by the engineering staff between the User Agencies and the District Public Work Office (the principal construction and support service organization in the Hawaiian area). Most of the 1960 "buck slip" type work orders issued by the Engineering staff pertained to action taken by the District Public Works Office.

Survey support was furnished at Palmyra, Maui, and Hawaii, principally in support of the Sandia Photo Instrumentation Group.

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APPENDIX 5 HONOLULU OFFICE AND OFF-ISLAND SITES

The Engineering Staff implemented and also reviewed numerous tests and studies, which were performed by the Hawaiian Testing Laboratory.

The following is a list of installations or construction inspected by H&N Engineering Representatives in the Hawaiian complex. All installations and construction at the sites indicated were accomplished by subcontractors.

a. Hawaii

(1) EG&G Photo Station

(2) Rehabilitation of power distribution at Mauna Loa

(3) DOMINIC "R" facility

(4) Sandia Photo Station

b. Kauai

(1) Launcher Complex and related facilities

(2) Sandia Photo Station

(3) Stations K-3227.01 through K-3227.04

(4) Station K-3251

(5) Control Point and related facilities

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APPENDIX 5 HONOLULU OFFICE AND OFF-ISLAND SITES

c. Maui

(1) Optical and Photo Building with related facilities

(2) Paving of Haleakala site

(3) Erosion Control

(4) DASA Photo Building

(5) Sandia Photo Building

(6) Rehabilitation of buildings at Silversword Inn

d. Barber's Point NAS

(1) Buildings 195 and 196

(2) Ready Building

(3) Modifications to facilities, Buildings 203, 278, 285, and 605

(4) Communications Center, Hangar 117

(5) Modifications to Hangar 117

(6) Facilities at Flight Line Area

(7) Modification to Building 1575

(8) Modification to Taxiway

(9) Building 605-C

(10) Runway Marker Relocation

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APPENDIX 5 HONOLULU OFFICE AND OFF-ISLAND SITES

(11) Addition to Building 605-A and new Building 605-B

(12) Modification to Building 1065

(13) R.F. Test Building

(14) Vehicle Storage Building

(15) Load Test Frame for Straddle Carrier

e. Hickam AFB

(1) Extension of power in Air National Guard Area

(2) Antenna Installation and electrical rehabilitation Building 3300

(3) Modifications to Buildings T-3022, T-3235, T-3218, T-3207, T-3210, T-3222, T-3215, T-3214, T-3117, T-3248, T-3208, T-3211, T-3216, T-3217, T-3232, T-3237, T-3238, T-3239, T-3240, T-3241, T-3202, T-3204, T-3205, T-3212, T-3213, T-3219, T-3223, and T-3235

(4) Trailer facilities at Building 122

f. Ford Island

(1) Communication Facilities at Hangar 175

(2) Rehabilitation of Barracks No. 55

(3) Rehabilitation of Hangar No. 175

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APPENDIX 5 HONOLULU OFFICE AND OFF-ISLAND SITES

3. ESTIMATING

The Resident Estimator at Honolulu prepared and issued more than 400 work orders, totaling nearly $4 million worth of engineer- and construction, as well as more than 500 "buck slip" type User support work orders. Estimating activity at Honolulu included all of the off-islands such as Palmyra, Fanning, Canton, etc., as well as the Islands of Kauai, Maui, Hawaii, and Oahu. Also, considerable estimating effort was provided in monitoring the Department of Public Works' construction missions at Barber's Point and Ford Island.

4. COMMUNICATIONS

H&N Communication efforts in the Hawaiian area included the AEC Communication Center and the relay station in Honolulu; the AEC Communication Centers at Maui and Kauai, the countdown communication installation at Maui and Kauai, the countdown filter center in Honolulu; and the administration of the Hawaiian Telephone contract for telephone, teletype, and mobile radio in the Hawaiian area.

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APPENDIX 5 HONOLULU OFFICE AND OFF-ISLAND SITES

In addition, H&N performed the overall planning, frequency programming, and inter-agency coordination of the countdown complex which included Johnston Island, Point Arguello, Point Mugu, Kauai, Maui, various elements on Oahu and widely scattered listening points in the northern and southern Pacific area.

a. Hawaiian Communications Centers: Following the construction of the Honolulu Communication Center which began 26 December 1961, and completion of all structural work and equipment installations, operation was started on 21 January 1962. This installation consisted of a secure circuit to Johnston Island and an unsecured circuit to Fort Shafter STARCOM. It was necessary to staff the Communication Center with cleared personnel on loan from Bendix and the Military because of the time interval required to obtain "Q" clearances for newly recruited personnel.

In early March circuits were commissioned in rapid succession. A full duplex secure circuit was activated to Christmas Island on 2 March 1962. Two full duplex secure circuits to the mainland were placed in operation, one to the Davis California Major Relay Center on 5 March, and the other to the AEC

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APPENDIX 5 HONOLULU OFFICE AND OFF-ISLAND SITES

Communication Center, Las Vegas, on 7 March 1962. On 13 March, the full duplex circuit to Barber's Point was activated. Because of the direct circuit to Davis, the Fort Shafter circuit was discontinued on 17 March. By the end of March, the Davis, Christmas Island, Johnston Island, and Barber's Point circuits were all operating with on-line KW-9 cover.

The unsecured half duplex circuits to Maui, Kauai, and Hawaii were commissioned on 18 April, 23 April, and 13 May respectively, and were terminated 1 August. The final circuit was a full duplex secure circuit to Hickam AFB to provide alternate route capability. This circuit was in operation from 19 September to 15 November to support the continuation of the Operation at Johnston Island.

Total message traffic for a 10-month operational period, 21 January through 15 November, was 67,641 messages sent and 57,814 messages received.

On the off-island sites, the Maui and Kauai circuits were staffed at each location by a single crypto operator. Classified traffic was handled by off-line encryption. The teletype

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machine on the Island of Hawaii, working into the Honolulu AEC Communication Center, was operated without a crypto system by User personnel.

b. Countdown Communications: The rapid coordination of time-related scientific experiments and diagnostics at such widely scattered points as Johnston Island, Kauai, Maui, and Point Arguello became a major concern in the initial Operation DOMINIC planning. A 100 percent reliability factor for the communication service between these points was imperative. To meet this stringent requirement a redundant system was evolved.

The countdown was broadcast on three frequencies, each with 10-KW peak envelope power, programmed to provide a satisfactory signal to all the widely scattered activity points on at least one frequency regardless of the daily or seasonal variations in propagation path. A filter center was established at 544 Ohohia Street in Honolulu. Two of the normal Johnston Island-Honolulu long-haul voice trunks were pre-empted during operational periods and connected directly from Johnston Island, to the filter center at Honolulu. A teletype circuit backed up the

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voice circuits. Point Arguello, Maui, and Kauai had exclusive-use lease line connections to the filter center during operational periods. The Point Arguello direct line was backed up by a 10-kw PEP transmitter located at Point Mugu and controlled from Point Arguello. The Maui and Kauai sites were backed up by H&N-installed and operated 1-kw PEP transmitters. The back-up transmitters worked directly into Johnston Island.

A radio patch circuit through Hickam AFB allowed two-way communication between the LASL aircraft and the filter center.

Two outputs from Wheeler AFB receivers tuned to countdown frequencies were connected to amplifier-speakers in the filter center.

At Maui, in addition to the 1-kw transmitter, two receivers with amplifiers and speakers were installed to pass the countdown to all trailers and User groups located in the Haleakala area.

The transmitter and receivers at Kauai were mounted in a communications trailer adjacent to the trailer dock. Amplifiers

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APPENDIX 5 HONOLULU OFFICE AND OFF-ISLAND SITES

and speakers carrying the countdown were located in tents, trailer docks, and in the launch area.

c. General Telephone, Teletype, and Mobile Radio Service: All telephone, and teletype facilities in the Hawaiian area were supplied by Hawaiian Telephone Company. In the case of Maui and Kauai, it was necessary for the Telephone Company to construct new lines into the Operation DOMINIC areas. Additional new construction was required at remote areas on Oahu. A PABX was installed at Kauai with 5 trunks and 35 instruments to serve the Users in the launch complex and administrative area.

Four VHF radio systems were provided, installed, and maintained by the Hawaiian Telephone Company. The Oahu repeater network consisted of 34 mobile units during the second phase of the Operation at Johnston. Since this number of units was double the original installation, it was necessary to supplement the Telephone Company resources with AEC-owned units from Christmas Island and the Nevada Test Site.

The Kauai repeater mobile network consisted of eight mobile units. On Maui, six mobile units, two base stations, and one remote control unit were installed in addition to the repeater.

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APPENDIX 5 HONOLULU OFFICE AND OFF-ISLAND SITES

A radio link was commissioned to provide direct communication between the sites on the Islands of Maui and Hawaii.

A number of special installations were made at Hickam AFB by the Telephone Company. In addition, at Hickam, a six-master-station intercom was engineered and installed on a crash basis by H&N for LASL.

5. CONSTRUCTION, MAINTENANCE, USER SUPPORT, AND CAMP OPERATIONS

a. Hawaiian Islands Area: Construction and some support services in the Hawaiian Islands area were performed through subcontract and purchase order agreements. The following is a listing of subcontractors and the services performed:

SUBCONTRACTS - HAWAIIAN AREA

Subcontractor	Scope of Work	Location	Cost
Dept. of Public Works (U. S. Navy)	Gen. Construction, rehabilitation, & maintenance of Government facilities	Oahu	$ 504,861.00
F&M Contractors	Rehabilitation of Silver Sword Inn & general support (mechanical, electrical, etc.)	Maui	30,000.00

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APPENDIX 5 HONOLULU OFFICE AND OFF-ISLAND SITES

Subcontractor	Scope of Work	Location	Cost
Stanley Kobayashi	Modifications (Ohohia Street Offices)	Oahu	$ 14,102.00
J. W. Glover, Ltd.	Scientific facilities	Hawaii	3,770.00
Oahu Air Conditioning Company	Air conditioning (Ohohia Street Building)	Oahu	705.00
AA Electric Company	Electrical installations	Oahu & Hawaii	2,743.00
R. M. Towill Corp.	Survey	Hawaiian Area	20,000.00
Hawaiian Testing Laboratory	Laboratory tests	All sites	20,000.00
Air Conditioning Company of Hawaii	Air conditioning	Oahu	6,400.00
*D. R. Kincaid, Ltd.	General contractor (Scientific facilities)	Haleakala & Maui	145,997.00
*Hawaiian Dredging & Construction Company	General contractor (Scientific facilities)	Kauai	313,186.74
Weinrich Fencing Company	Security fencing (Ohohia Street Building)	Oahu	1,765.00

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APPENDIX 5 HONOLULU OFFICE AND OFF-ISLAND SITES

Subcontractor	Scope of Work	Location	Cost
Maui Electric Company	Provide commercial power	Maui	$ 20,000.00
Capitol Builders	Naval area	Oahu	269.00
Progress Carpenter Shop, Ltd.	Tent frames	Oahu	16,400.00
U. S. Naval Shipyard	Repair work	Pearl Harbor	5,500.00
Hale Construction Company	General contractor (Punchbowl facility)	Oahu	2,264.20
Stanley Haraga Construction Company	Modifications (Public Health Service Building)	Honolulu	1,401.00
David Sheard	Electrical Installation (Public Health Service Building)	Honolulu	470.00
Air Conditioning Company	Air conditioning (Public Health Service Building)	Honolulu	775.00
Lacy Manufacturing Company	Security fencing	Maui	6,372.39
Heide & Cooke, Ltd.	Sheet metal	Oahu	36.37
Universal Services, Inc.	Contract catering (Silver Sword Inn)	Maui	90,000.00

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APPENDIX 5 HONOLULU OFFICE AND OFF-ISLAND SITES

Subcontractor	Scope of Work	Location	Cost
Trans Lease Hawaii, Ltd.	Leased vehicles	Hawaiian Area	$ 225,000.00
United Service Company, Ltd.	Janitorial services	Oahu	1,500.00
Hawaiian Freight Forwarders, Ltd.	Materials transportation	Oahu	10,000.00
W. J. Burns	Providing security guards	Hawaiian Area	78,000.00

* Issued by Los Angeles Office

TOTAL $1,521,517.70

NOTE: Individual contractor costs indicated above represent limitations on contracts issued and in some cases may not be fully expended.

b. Off-Island Sites: Construction and support at off-island sites generally were provided by H&N forces. H&N activities at these sites are related below.

(1) Canton: H&N constructed a 70-man tent camp complete with messhall, latrine, and distillation units. Upon completion of camp construction, H&N population averaged 12 men.

Services provided by H&N in addition to subsistence and quarters included maintenance and repair of generators,

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air conditioning and dehumid units, and providing and maintaining vehicular support; occasional assistance also was provided for erection of antenna arrays. Due to the large amount of MATS and Air Force traffic through Canton, population figures at times rose to above 100, and required messing at all hours.

(2) Tutuila: H&N constructed a 70-man tent camp and utilized an existing building for the messhall. Distilling units were not required as fresh water was piped in from a local source. Upon completion of camp construction, H&N population averaged 14 men. Services provided in addition to subsistence and quarters included maintenance and repair of generators, air conditioning and dehumid units, and providing and Maintaining vehicular support; also provided was construction and maintenance of a road leading to the top of Mt. O'lotele. The scientific stations were widely separated and guards were employed from the local population to assist in surveillance during hours of darkness and periods of inactivity. Most of the food required was purchased from local sources.

(3) Tongatapu: Support services consisted of maintenance of generators. air conditioning, and dehumid units. Minor

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construction was accomplished by local firms. Transporation was provided by a local taxi service on a rental basis. One H&N employee remained at the site at all times, primarily for accounting purposes and to arrange for any services required. Subsistence and quarters were provided by the local hotels.

(4) Viti Levu: H&N did not provide any personnel at this location. A checking fund was established, and the military Commander at the site drew on this for services required.

(5) Rarotonga: H&N did not provide any personnel at this location. A revolving fund was set up with the local government to provide for services required.

(6) Fanning: H&N did not provide any personnel at this location. The military Commander at the site accounted for supplies and services. Minor construction was required at the beginning of the Operation, and road repair at the completion.

(7) Washington: Two H&N employees were stationed at this site throughout the Operation to perform radio and radex duties.

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APPENDIX 5 HONOLULU OFFICE AND OFF-ISLAND SITES

(8) Malden: H&N constructed a 35-man tent camp, complete with all facilities and provided maintenance and minor construction services as required.

(9) Palmyra: A 35-man camp was constructed and later expanded to accommodate 70 men. Services provided were generally the same as those for Tutuila.

(10) Tongareva (Penrhyn): H&N constructed a 35-man camp complete with all facilities and provided maintenance and minor construction services as required.

6. CONTRACTS & LOGISTICS

a. Purchasing: In support of Operation DOMINIC, procurement action at Honolulu was started on 18 December 1961. Initially, requisitions were issued from Los Angeles. However, as soon as possible, a system was established to cover requisitioning for the Honolulu area and other site locations.

Requisitions issued at Honolulu were as follows:

Month	Requisitions
January	165
February	312

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APPENDIX 5 HONOLULU OFFICE AND OFF-ISLAND SITES

Month	Requisitions
March	715
April	1,025
May	653
June	358
July	342
August	458
September	725
October	660
Total	5,413

b. Logistics: A tabulation of the cargo weights of air and water shipments from Honolulu to sites indicated from January to 15 November 1962 appears on the last two pages of this Appendix.

7. ADMINISTRATIVE SERVICES

The H&N-AEC Honolulu Office, located at 544 Ohohia Street, began its activities for Operation DOMINIC in December 1961. The various Administrative Services performed during the Operation are related below.

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APPENDIX 5 HONOLULU OFFICE AND OFF-ISLAND SITES

a. Personnel: Through the use of extensive personnel files of former H&N overseas employees in the Hawaiian Islands, the Personnel Department staff was able to acquire initial groups of experienced personnel for overseas employment. In addition, an H&N recruiting team made six trips covering the following islands: Hawaii, Kauai, Maui, and Molokai.

Functions of the Personnel Department included selection of employees required for the Operation, arrangements for pre-employment physical examinations, and preparation of personnel security questionaires (AEC). Also, various personal services were provided to overseas personnel.

The following is a tabulation of personnel hired by the Honolulu Office for job site locations.

	Rehires	New Hires	Total
December	57	0	57
January	96	5	101
February	121	45	166
March	94	239	333
April	23	146	169

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APPENDIX 5 HONOLULU OFFICE AND OFF-ISLAND SITES

	Rehires	New Hires	Total
May	16	84	100
June	3	42	45
July	2	2	4
August	59	11	70
September	41	9	41
October	2	1	3
Total	505	584	1,089

Employees hired for work in Honolulu totaled 229 during the Operation, with a peak employment of 146. On the average, 31 employees a month were assigned to various JTF-8 organizations in the Honolulu area for the purpose of providing clerical assistance.

b. Security: Security guard service at the Honolulu Office, Mt. Haleakala (Maui) and Barking Sands (Kauai), under direction of an H&N Security Officer, was maintained by the William J. Burns Detective Agency, Inc. on a 24 hour per day schedule. Twelve periodic security inspection trips were conducted at Mt. Haleakala and Barking Sands by H&N security personnel.

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APPENDIX 5 HONOLULU OFFICE AND OFF-ISLAND SITES

Personnel clearance and good security risk approvals granted to H&N employees during the period December 1961 through 15 November 1962 were as follows:

Q	294
QR	326
L	866
LR	285

The number of badges issued during the Operation totaled 13,616.

c. Office Services: During the Operation the following office services were rendered; providing office furniture and equipment; complete mail room service; messenger service (four messengers were utilized during the peak period); a telephone system, with 195 telephones and 14 incoming and outgoing lines; a reproduction service, and an office supply stock room. Much of the office equipment used during the Operation was rented on an "as-needed" basis; thus, costs were kept at a minimum.

d. Transportation

(1) Personnel Movement: The H&N Transportation

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APPENDIX 5 HONOLULU OFFICE AND OFF-ISLAND SITES

Office, located at the MATS terminal at Hickam AFB provided 24 hour per day service for transients. Billeting facilities were provided for transients in Area 57 (Hale Aloha) at an average cost of $1.50 per night. Meals also were available in the area.

The Transportation Office contained a storage area for the storing of items for H&N and support organization personnel on TDY enroute to job sites. Approximately 650 items were checked during the Operation. Also, this office served as a coordinating agency for the dispatching of packages and Company mail to job sites. Approximately 100 packages were dispatched monthly.

Close coordination with the Air Evacuation Service at Hickam AFB was maintained. Twenty emergency medical cases were routed through the Transportation Office. The use of ambulance service and special medical equipment was arranged when needed.

(2) Motor Vehicle Section: This section maintained vehicles leased from vendors for the purpose of providing transportation for authorized personnel of the JTF-8 organizations.

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APPENDIX 5 HONOLULU OFFICE AND OFF-ISLAND SITES

Also, 10 sedans and 25 AEC-owned trucks were utilized for support purposes. Preventive maintenance for all vehicles was provided.

8. CONTROLLERSHIP

During the early stages of Operation DOMINIC (January to March) the Honolulu Accounting and Fiscal Office performed minimum services in connection with Accounts Payable andPayroll activities. During early April an Assistant Controller was assigned to Honolulu and the office was expanded to perform additional services of an accounting and fiscal nature.

The accounting and fiscal activities of the Honolulu Office included payroll and timekeeping, facilities accounting, general accounting, and property control.

a. Payroll and Timekeeping: During January through April 1962 the Honolulu Office prepared and submitted to the Los Angeles office weekly time cards of Honolulu employees and Los Angeles TDY personnel in the Hawaiian Islands. In April 1962, office activities were increased to include the maintenance of

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APPENDIX 5 HONOLULU OFFICE AND OFF-ISLAND SITES

timekeeping and payroll records. The Los Angeles payroll section prepared all payrolls and checks in payment of time submitted.

b. Facilities Accounting: Cash revenue from remote Pacific sites at which a camp was operated by H&N was reported weekly by Senior Site Representatives. This revenue consisted of collections for subsistence and sales at camp stores.

c. General Accounting: Although no cost records were maintained at the Honolulu Office, the assignment of Identification Numbers for cost control purposes was made at Honolulu with concurrence of the Los Angeles Office. Costs incurred at Honolulu were identified with these numbers and incorporated into the Los Angeles records.

Approximately 6800 Purchase Orders for material and equipment, totaling $5,147,000 were issued by the Honolulu Procurement Section. Vendor invoices were received in the Honolulu Office and were processed by the Accounting and Fiscal Department to assure that Purchase Orders, Receiving & Inspection Reports, and Invoices were in agreement and that the provisions of the Purchase Order were fulfilled. These invoices were

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transmitted to the Los Angeles Office for payment. Approximately 250 of the Purchase Orders issued were of an open-end or continuing nature, requiring the processing of numerous invoices for each individual Purchase Order. Payment of all invoices pertaining to a Purchase Order was made directly to the Vendor by the Los Angeles Office.

A cash operating fund was established at the Honolulu Accounting and Fiscal Office on 16 April 1962, to supply Senior Site Representatives at the remote Pacific Sites with funds required for local expenses. It was also used for Honolulu procurement actions of an emergency nature or of an amount less than $100.00, which reduced the number of Purchase Orders issued for smal dollar amounts. During Operation DOMINIC, 1938 separate cash transactions were paid from this fund.

Cash receipts and disbursements at the remote sites were controlled by means of weekly reports from Senior Site Representatives indicating subsistence collections and camp store sales as well as disbursements supported by invoices, which were submitted to Los Angeles for reimbursement. Due to many of the

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sites being located in areas under the jurisdiction of foreign Governments, it was necessary to convert to the use of currency other than that of the United States.

d. Property Control: On 1 July 1962, the Damon Tract Warehouse and Storage Area was activated. Materials of an inventory nature totaling over $500,000 were transferred to this location from Christmas Island. Transfers to Johnston Island and the remote sites amounted to $79,000, with a remaining balance of $435,000. Financial records concerning warehousing activities at Damon Tract were maintained in the Honolulu Office.

Equipment records were established to identify and maintain financial control of all items procured for local use as well as items returned to Honolulu for storage or disposal.

9. ROLL-UP

Roll-up at all remote sites was accomplished in accordance with instructions issued by the Chief, Material Control. Instructions for the roll-up of the Hawaiian chain were issued by the Resident Manager of the Honolulu Office.

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APPENDIX 5 HONOLULU OFFICE AND OFF-ISLAND SITES

Non-expendable items at the sites were prepared for shipment prior to the arrival of vessels that were to return equipment to Honolulu. Equipment at remote sites was to be evacuated aboard the LSD Pt. Barrow, and that at Hawaiian Islands sites by barge or aircraft.

The schedule of the LSD was maintained until bad weather was encountered following its arrival at Palmyra. A departure from the roll-up plan was necessitated because there was not sufficient space remaining aboard the LSD to accommodate all the equipment to be removed from Palmyra. The remaining equipment subsequently was airlifted from Palmyra.

User equipment from Maui and Kauai was shipped directly to the Mainland from the island ports, and launch facilities at Kauai were coccooned in place. All other equipment was returned to Honolulu for storage with the exception of communications equipment, which was returned to Mercury, Nevada, for storage at NTS.

10. UNUSUAL CONDITIONS OR REQUIREMENTS

During Operation DOMINIC, as in past operations, off-island

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APPENDIX 5 HONOLULU OFFICE AND OFF-ISLAND SITES

remote sites for weather and scientific stations generally were activated by construction parties that had been assembled in Honolulu, and subsequent support was provided from Honolulu. However, there was a departure from this method in the case of establishment or support of four remote sites; Washington, Fanning, Malden, and Tongareva (Penrhyn).

The stations at Washington and Fanning Islands were established by parties assembled and dispatched from Christmas Island. Thereafter, support of these two sites was provided from Christmas Island. The stations at Malden and Tongareva (Penrhyn) were activated by parties from Honolulu but, because these islands are located much nearer to Christmas than to Honolulu, support after original activation was provided from Christmas. Support from Christmas Island consisted of materials and supplies as well as personnel, when required, throughout the complex.

A cross-supply system was used between Christmas and Johnston Islands, whereby materials and supplies required at one site could be provided from the other site. In many cases use of this method obviated Honolulu or Mainland procurement action.

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APPENDIX 5

HONOLULU OFFICE AND OFF-ISLAND SITES

SECRET

CARGO SHIPPED FROM HONOLULU

		JAN. FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT.	OCT.	NOV.	TOTAL
WAKE	Air (lb)			18,760		200						18,960 (lb)
	Water (M/T)											
KWAJALEIN	Air (lb)			5,740								5,740 (lb)
	Water (M/T)											
WASHINGTON	Air (lb)			467	7,835	400						8,702 (lb)
	Water (M/T)											
RAROTONGA	Air (lb)			8,072	3,136	82		20				11,310 (lb)
	Water (M/T)											
TONGATAPU	Air (lb)			4,332	29,051	2,160	2,560	24,760	25,479	290	138	88,770 (lb)
	Water (M/T)											
VITI LEVU	Air (lb)			12,222	2,334	37,480	640					52,676 (lb)
	Water (M/T)											
MAUNA LOA	Air (lb)											
	Water (M/T)			10.8								10.8 (M/T)
OKINAWA	Air (lb)					102						102 (lb)
	Water (M/T)											
TAHITI	Air (lb)					186						186 (lb)
	Water (M/T)											
HAWAII	Air (lb)											
	Water (M/T)					3.4				.8		4.2 (M/T)
MISCELLANEOUS	Air (lb)					354	500					854 (lb)
	Water (M/T)											

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APPENDIX 6

CONCLUSION AND RECOMMENDATIONS

Looking back on Operation DOMINIC, there appear to be areas of activity where some procedure changes should be made in the interest of reducing or eliminating confusion and duplication of effort, and improving facilities, all to result in more expeditious handling of the job to be done. The following is offered for your consideration:

1. SUPPORT COORDINATION COMMITTEE

a. During Operation DOMINIC, copies of individual User's criteria or requirements were distributed to all other Users, JTF-8, AEC, H&N, and the Support Coordination Committee (SCC). As a result of this method, a very large volume of material, usually highly classified, was processed; the probability of errors in transmission was unnecessarily high; and there was a strong possibility that interested agencies, particularly newly-established offices, might inadvertently be omitted from distribution of subsequent changes.

(1) Recommendation: That all criteria, requirements, and requests for support be directed solely to the SCC for review

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purposes, and information copies be provided to the AEC (Las Vegas, Los Angeles and Field Offices) and to H&N (Los Angeles and Field Offices). This system would focus responsibility on the SCC for detection (and reconciliation) of conflicts and for keeping all participants informed of all review determinations. In addition, it would entail considerably less distribution of data by the individual User and would enable him to deal more effectively with only those groups responsible for the review (SCC), approval (AEC), and accomplishment (H&N) of his requirements.

b. Review of any given User's criteria was performed jointly by other Users and the SCC in keeping with the procedure developed for determination of conflicts between Users' criteria. That method involved review by several separate agencies and resulted in (1) duplication of effort, (2) tendency for individual groups to rely on others for the detection of conflicts, (3) delays in reaching determinations.

(1) Recommendation: That the SCC be exclusively responsible (with consultation where required) for review of all User criteria; making final determination of existence or lack of

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conflicts; resolving those conflicts which may exist; and notifying the User whose criteria is being reviewed, the AEC, and the A-E of findings as determined by the SCC.

c. There were instances where conflicts in criteria, facility requirements, and requirements for support were created when more than one representative of a User made requests independently of other representatives of the same User. This condition made it difficult to determine which authority should be recognized. Further confusion was caused by some sub-elements (Those units classified lower than Task Units) submitting criteria directly to the SCC rather than through their parent organizations.

(1) Recommendation: That there be only one representative assigned by any Task Group or Task Unit as the individual authorized to express, confirm, or clarify a requirement or request. In addition, all sub-elements would have their requirements consolidated with those of the parent organization; however, in all cases, each project should be identified both as to number and title.

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d. Although there were SCC representatives at both Johnston and Christmas Islands at various periods of Operation DOMINIC, it would have been more desirable to have continuous representation at each of the principal test sites, as well as a representative assigned responsibility for SCC activities at all of the ancillary sites throughout the operational period.

(1) Recommendation: That one SCC representative be assigned to each major site (such as Johnston or Christmas) and one for all of the smaller islands (considering them as a group). These representatives would be responsible for the following functions:

a Make every effort to assure that User support was being provided as requested; be responsible for technical space assignment.

b Cooperate with all persons concerned in detecting and evaluating potential problem areas.

c Work with Island Commander, Resident Managers, Task Force, Task Group, and Task Unit personnel to

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establish realistic completion dates and priority schedules commensurate with job site capabilities and requirements.

d Act as an intermediary to ensure accomplishment of scientific requirements.

e Accomplish all preparatory work for compiling "as-built" and "as-tested" instrumentation charts.

e. In view of the fact that the SCC was contacted so frequently as a source of information during Operation DOMINIC, there appears to be a definite need for a central source of data of all kinds.

(1) Recommendation: That SCC services be refined and expanded to include the following:

a Information - Informing all Task Force elements of established personnel requirements including passports inoculations, clearances, clothing requirements, transportation, camera regulations, and other special considerations.

b Site Data - Securing and providing the following items to all Users and other interested persons on an "as-requested" basis: Maps, site plans, hydrographic charts, weather data, photographs, descriptive material, leasing data, and such other details as may be available.

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APPENDIX 6 CONCLUSION AND RECOMMENDATIONS

c Forms, Charts and Schedules - Inasmuch as the SCC is the group responsible for accumulating similar support items (i.e., vehicles, space, personnel-at-sites, etc.) for consolidation into a master list, it is the logical group for determining the manner in which requirements should be expressed. For that reason the SCC should be responsible for designing, producing and distributing forms, charts and schedules to accomplish this function.

2. CAMP CONDITIONS

a. The time allotted for mobilization and activation of Christmas Island was extremely short and created many problems in providing first-rate personnel support services during the initial phase. In addition, many of the existing facilities were in a poor state of repair and in many cases inadequate to fulfill requirements, even though cursory inspections and initial information supplied by UK personnel indicated otherwise. For example, when attempts were made to activate the existing mess facilities, it was found that much of the galley equipment was inoperable due to long-term storage and in certain cases it was necessary to replace in kind and

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supplement. Also, the provisioning of spare parts for UK equipment presented a major problem.

(1) Recommendation: Future planning should emphasize the importance of realistic forecasts and movement of personnel to the site. Planning should also include realistic requirements and schedules for operating equipment and supplies, such as vehicles and office furniture, supplies and equipment.

3. SUPPLY - REMOTE SITES

a. Initial planning for support of the remote sites was not coordinated with TU 8.5.1 and original air schedules established did not provide sufficient space to allow shipment of necessary supplies from Honolulu to all sites. Revisions were made at later dates furnishing additional aircraft, but early construction efforts were severely hampered at several sites and re-supply of comestibles and maintenance parts remained a problem during the earlier phases of the Operation.

(1) Recommendation: Shipping schedules, particularly those by air, should be established by consultation with all concerned. Advance notification of limitations that must be applied will allow

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for better use of available space, completion dates will be more realistic, and re-supply can be made on a planned basis.

4. COMMUNICATION - REMOTE SITES

a. Communication with the remote sites was generally poor. Mail was the only really dependable method, but delay in establishing APO numbers caused early confusion and some personnel problems.

(1) Recommendation: Definitive plans for providing adequate channels of communication should be made prior to the establishment of any site where normal communication facilities are not available.

5. SECURITY BADGES

a. Periodic confusion was experienced at the Honolulu Office when individuals or groups of individuals from various agencies of JTF-8 arrived there without previous notification of badge requirements.

(1) Recommendation: That a definitive plan be adopted, for use by all agencies of the Task Force, whereby more timely notification of badge requirements of all agencies be provided to the agency responsible for issuance of badges.

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APPENDIX 6 CONCLUSION AND RECOMMENDATIONS

6. FUNDS

a. Under the circumstances which prevailed during Operation DOMINIC, it was frequently necessary for a member of the TU 8.5.1 staff to designate the funding agencies. This in turn necessitated periodic review with the various agencies concerned to determine the validity of each designation.

(1) Recommendation: That those authorized to request work should be apprised of the necessity for including in their work request a statement as to which agency will fund the specific item of work, thereby eliminating the problem as stated above.

8. ISLAND DESIGNATORS

a. Some confusion and delay in getting equipment and materials delivered to the proper job sites was experienced particularly in the early phases of Operation DOMINIC, by the lack of a definite list of site designators from the outset of the activities. Until the numbered designators were established by JTF-8, many different methods were used by different agencies to designate sites.

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APPENDIX 6 CONCLUSION AND RECOMMENDATIONS

(1) Recommendation: That a definitive list of site designators, or a method of arriving at site designators, be established and included as a part of the original planning documents of a future operation. Consideration of the use of words or combinations of repeated letters instead of number designators also is recommended because of the reduced likelihood of errors in typing or writing.

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ANNEX B

SCRIPPS INSTITUTION OF OCEANOGRAPHY (TU 8.5.2) ACTIVITIES

Scientific investigations and observations were accomplished by Scripps Institution of Oceanography (Task Unit 8.5.2) during the period March 1962 - July 1962 for the purpose of conducting wave measurement studies to determine test effects on waves in the vicinity of Christmas, Johnston, and various other islands.

Results of these studies are set forth in a separate report to the Scientific Deputy, Joint Task Force EIGHT. Data are considered to be of a strictly scientific nature and, therefore, are not included as a part of this report.

ANNEX C

UNIVERSITY OF WASHINGTON (TU 8.5.3) ACTIVITIES

1. INTRODUCTION: In February 1962 the Division of Military Application (DMA) requested the Division of Biology and Medicine, Atomic Energy Commission, to document the radioactivity in the local foods at and adjacent to the testing site at Christmas Island before, during, and after Operation DOMINIC. The Laboratory of Radiation Biology, University of Washington (Dr. Lauren R. Donaldson, Director), was requested to and did undertake the responsibility for this requirement and in March 1962 joined Joint Task Force EIGHT as Task Unit 8.5.3 (Biological Monitoring Group, University of Washington).

2. SAMPLING PROGRAM: In order to accomplish the objective of T.U. 8.5.3, a program was designed to obtain an adequate sampling of the food items at (1) Christmas Island, (2) islands adjacent to Christmas Island, (3) several islands at some distance from Christmas Island, and (4) in the waters off Christmas Island.

ANNEX C

UNIVERSITY OF WASHINGTON (TU 8.5.3) ACTIVITIES

At each island the inhabitants were consulted to determine which locally-grown foods comprised the major portion of the diet. These foods were then purchased or collected by T.U. 8.5.3 personnel in company with representatives of the local authorities.

Also, the following samples were obtained for T.U. 8.5.3 by other Task Force personnel and by personnel outside the Task Force: (1) Three collections of plant foods and of tuna were made by Holmes & Narver personnel at Tutuila, American Samoa, and shipped directly to the Laboratory of Radiation Biology in Seattle. (2) Lt. Fred Rueter and Lt. James Channell at Washington Island and Lt. Commander David Flora at Fanning Island (members of the U.S. Public Health Service attached to Rad-Safe, HQTF-8) collected a variety of biological and environmental samples at intervals and forwarded them to the T.U. 8.5.3 laboratory at Christmas Island. (3) Mr. Victor Cox, FAA, Canton Island, arranged for two shipments of fish to Honolulu for T.U. 8.5.3. (4) Also, Mr. Pat O'Sullivan, representative of

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UNIVERSITY OF WASHINGTON (TU 8.5.3) ACTIVITIES

the Government of New Zealand at Penrhyn Atoll, collected and arranged for air shipment of biological samples to T.U. 8.5.3 at Christmas Island on two occasions during the operation. T.U. 8.5.3 wishes to acknowledge the assistance of these personnel and of many others who assisted us during the collections. A summary of the dates and locations of the samples collected at the island stations is presented in Table 1. The locations of the stations at Christmas Island and the "off-site" islands are shown in Fig. 1 and Fig. 2 respectively.

In cooperation with the U.S. Fish and Wildlife Service Bureau of Commercial Fisheries, Honolulu, Hawaii, oceanic fishes, plankton, and water were collected from the waters within a 300-mile radius of Christmas Island during the operational period. The exploratory fishing vessel, the Charles H. Gilbert (FWS 1003), under the command of Captain William Tanaka and R. T. B. Iversen, U.S. Fish and Wildlife Field Party Chief, made two stations for fish and plankton before the start of Operation DOMINIC (Cruise No. 55). Later, two

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Table 1. Check off list of terrestrial and inshore samples collected from April 6, 1962 to August 16, 1962 during Operation DOMINIC.

DATE	LOCATION	FISH	ALGAE	LAND PLANTS	SOIL	INVERTEBRATES	WATER	PLANKTON
April 6	Fanning I.			x		x		
7	XI*, UW-1			x	x			
11	XI, UW-2			x	x	x		
11	XI, UW-3			x	x			
	XI, MM-site		x			x		
	XI, Poland			x				
17	Canton I.	x	x	x	x	x	Rain	
18	Tongatapu I.	x		x	x	x		
20	Fiji-Viti Levu I.	x	x	x	x	x		
21	Rarotonga I.	x	x	x	x	x		
22	Samoa-Tutuila I.			x	x			
23	Penrhyn I.	x		x	x	x	Cistern	
	Malden I.	x		x	x	x		
24	Palmyra I.	x	x	x	x	x	Cistern	
17-20	XI, Y-site, NW Point, London	x		x		x		
28	XI, UW-4	x		x	x	x	Cistern	
May 1-5	Samoa-Tutuila I.	x		x				
7	Fanning I.			x	x	x	Rain	
11	Washington I.			x	x	x	Rain	
15	XI, UW-5					x		
16	XI, UW-5	x	x	x	x	x	Sea	
18-19	Samoa-Tutuila I.	x		x				
22	Fanning I.	x		x				
23	Washington I.			x				
26	Main lagoon							x
June 3	XI, NE Point	x	x			x		
9	Penrhyn I.	x		x	x	x	Cistern	
13	XI, SE Point	x	x	x	x		Cistern	
15	Target area off XI						Sea	x

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Table 1. Check off list of terrestrial and inshore samples collected from April 6, 1962 to August 16, 1962 during Operation DOMINIC.

Date		Location	Fish	Algae	Land Plants	Soil	Invertebrates	Water	Plankton
June	16	XI, UW-2			x	x	x		
	20	Malden I.			x	x			
	23	Samoa-Tutuila I.	x		x				
	25	XI, UW-5			x	x	x		
	25	XI, UW-3			x	x	x		
	27	XI, Target area						Sea	x
July	1	XI, SW Point					x		
	2	XI, NE Point		x	x		x		
		XI, UW-1		x	x				
	4	Malden I.			x	x			
	7	Penrhyn I.			x	x			
	9	XI, NE Point	x						
	12	Malden I.	x	x		x	x		
	13	Penrhyn I.	x		x		x	Cistern	
	15	XI, UW-2			x	x			
		XI, UW-5			x	x			
		XI, UW-3			x	x			
		XI, MM site	x	x			x		
	16	XI, UW-4	x	x	x	x		Cistern	
	20	Canton I.		x	x	x		Rain	
	20	Samoa-Tutuila I.	x		x	x	x		
	21	Rarotonga I.	x	x	x	x	x	Cistern	
	22	Tongatapu	x	x	x	x		Tap	
	24	Fiji, Viti Levu I.	x	x	x	x		Tap	
	25	Canton I.	x				x		
Aug	13-16	Johnston I.							
		East end	x		x	x	x	Sea	
		West end	x	x	x	x	x	Sea	
		Off shore				x			x
		Sand I.				x			

* XI = Christmas Island

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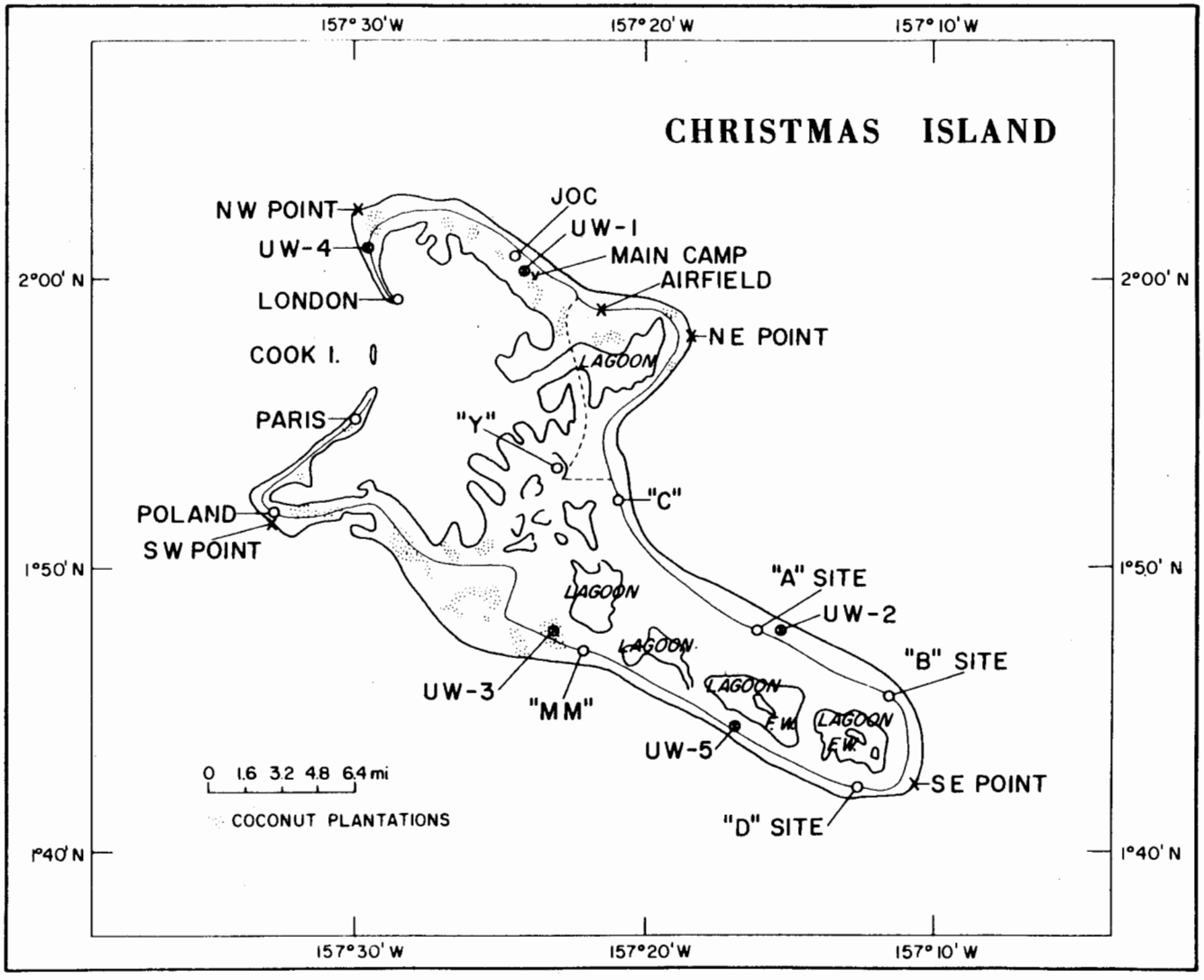

Figure 1. Christmas Island, showing the locations of the collecting stations.

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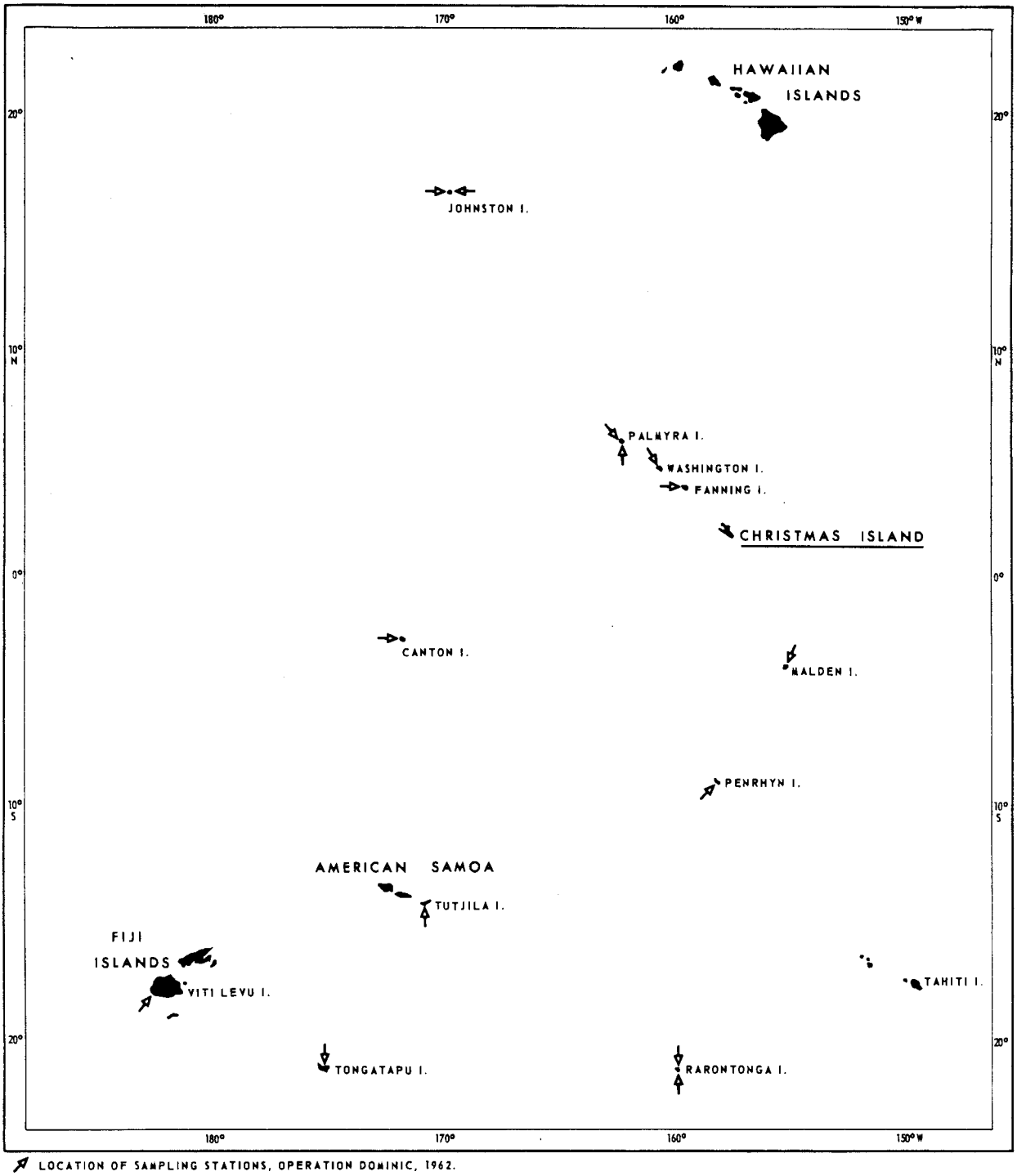

Figure 2. Central Pacific Ocean, showing the locations of the 'off-site' islands.

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members of T.U. 8.5.3 joined the scientific party of the Charles H. Gilbert for each of three cruises, two during the testing period (Cruise No. 56 and Cruise No. 57) and one (Cruise No. 59) after the test series had been completed at Christmas Island. The cruise plans were based on the best information available as to fallout pattern, wind and water currents, availability of the vessel, and its ability to operate within the requirements set forth by Joint Task Force EIGHT. The locations of the stations occupied during the four cruises are shown in Fig. 3 and the list of samples collected is given in Tables 2, 3, and 4.

3. LOGISTICS: The laboratory used by T.U. 8.5.3 at Christmas Island was located in the west end of Building JB-2 in the JOC area. The space had served earlier as a storeroom for EG&G supplies but Mr. Strabala, Unit Director, made the space available to T.U. 8.5.3. With the approval of the Commander, Task Group 8.5, Holmes & Narver personnel remodeled the storage area for laboratory use by installing appropriate

ANNEX C - UNIVERITY OF WASHINGTON (TU 8.5.3) ACTIVITIES

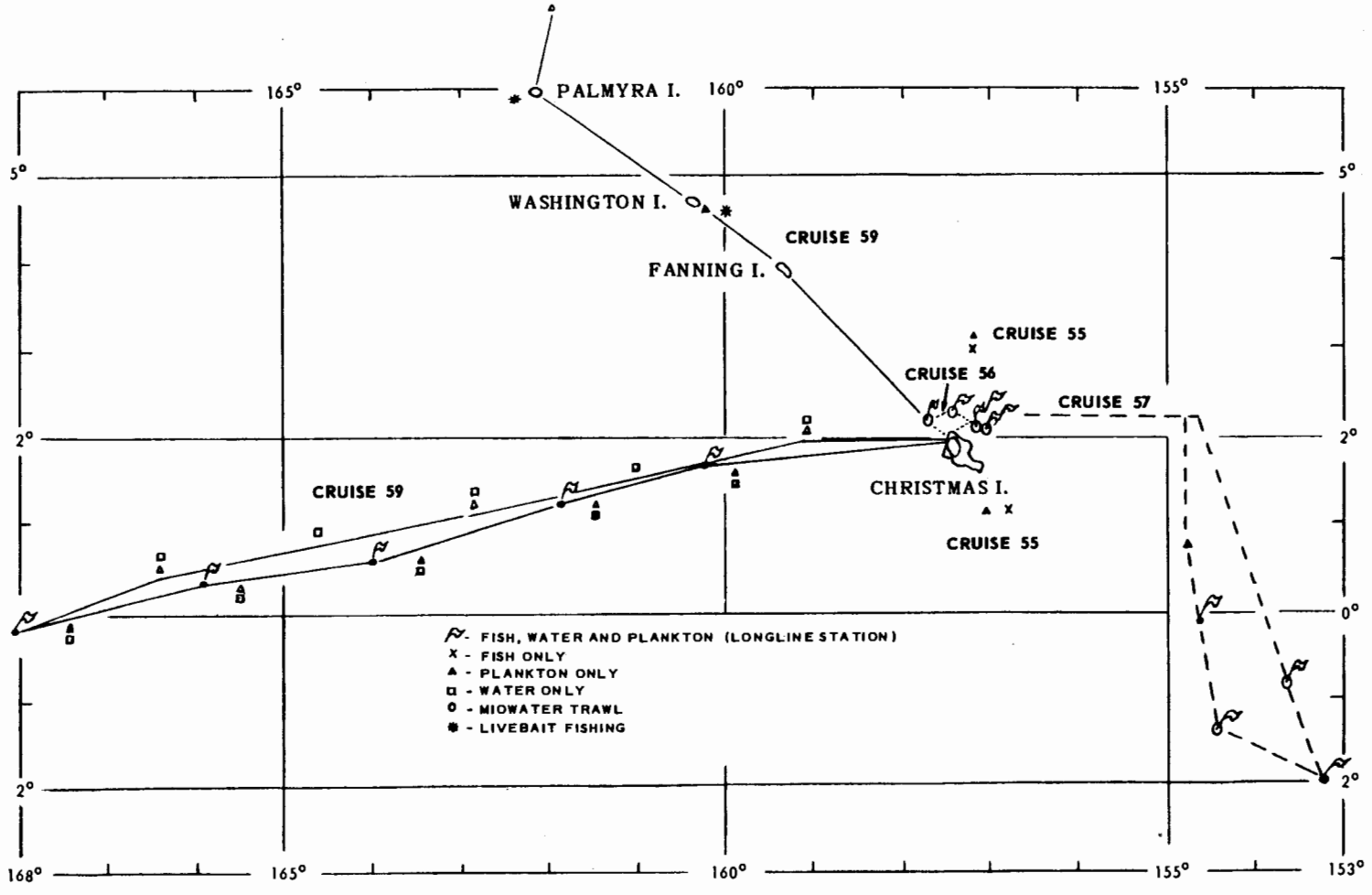

Figure 3. Tracks of the cruises of the Charles H. Gilbert (USFWS 1003) during Operation Dominic: Cruise 55 - March 1962; Cruise 56 - May 1962; Cruise 57 - June 1962; Cruise 59 - July 1962.

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Table 2. Fish samples collected during Charles H. Gilbert Cruises No. 55, 56, 57, and 59, March to August, 1962.

CRUISE NO.	STATION	DATE	TUNA YF	TUNA BE	TUNA SJ	SHARK	OTHER FISH
55	127	28 March	1				
	130	29 March		2			
56	05	3 May	3	1		2	
	08	4 May	6	5			
	13	5 May	20				
	17	6 May	20			1	Sailfish (1), wahoo (1)
	22	7 May	2				Black marlin (1)
57	03	12 June	7				
	07	14 June	7	1	4		Black marlin (1)
	12	15 June	10	2			Wahoo (1)
	16	16 June	3		2		
	21	17 June	1		5	1	
59	11	1 August	2			2	Flyingfish (2), wahoo (1), black marlin (1)
	17	2 August	2	3			Flyingfish (1), black marlin (1), sailfish (1)
	24	4 August	9	2	2	1	Flyingfish (1)
	27	5 August	9	3	2	1	Black marlin (1), albacore (1)
	32	6 August					Flyingfish (2), jack (1)
		7 August					Surgeonfish (1), snapper (1)

YF = Yellowfin
BE = Bigeye
SJ = Skipjack

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Table 3. Plankton samples collected during Charles H. Gilbert Cruises No. 55, 56, 57, and 59 March to August, 1962.

Cruise No.	Station	Date	No. of sub samples Surface	No. of sub samples Below Surface
55	128	28 March (AM)	1	1
	131	29 March (AM)	1	1
56	02	2 May (PM)	1	1
	04*	2 May (PM)		4
	06	3 May (AM)		1
	09	4 May (AM)		1
	11	4 May (PM)	1	1
	12*	4 May (PM)		3
	15	5 May (AM)		1
	16	5 May (PM)	3	1
	19	6 May (AM)		1
	20*	6 May (PM)		1
	20	6 May (PM)	4	
	24	7 May (AM)		1
57	05	12 June (AM)		1
	06	12 June (PM)	lost	1
	08	14 June (AM)		1
	10*	14 June (PM)		4
	11	14 June (PM)	1	3
	14	15 June (AM)		2
	15	15 June (PM)	1	1
	18	16 June (AM)		1
	19	16 June (PM)	1	1
	20*	16 June (PM)		1
	23	17 June (AM)		1
	24	17 June (PM)	1	1
	25	18 June (AM)	4	
59	06	29 July (PM)	3	3
	08	30 July (PM)	3	2
	10	31 July (PM)	2	1
	13	1 Aug (AM)		1
	14	1 Aug (PM)	3	2
	17	2 Aug (AM)		1
	18	2 Aug (PM)	2	1
	21	3 Aug (AM)		1
	22	3 Aug (PM)	3	2
	24	4 Aug (AM)		1
	26	4 Aug (PM)	3	1
	29	5 Aug (AM)		1
	30	5 Aug (PM)	3	1

* Mid-water trawl station

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Table 4. Water samples collected during Charles H. Gilbert Cruises No. 56, 57 and 59, May to August, 1962.

Cruise No.	Station	Date	OM	25M	50M	100M	300M
56	03	2 May	x	x	x	x	x
	07	3 May	x	x	x	x	x
	10	4 May	x	x	x	x	x
	14	5 May	x	x	x	x	x
	18	6 May	x	x	x	x	x
	23	7 May	x	x	x	x	x
57	04	12 June	x	x	x	x	x
	09	14 June	x	x	x	x	x
	13	15 June	x	x	x	x	x
	17	16 June	x	x	x	x	x
	22	17 June	x	x	x	x	x
59	06	29 July	x				
	07	30 July	x				
	08	30 July	x				
	09	31 July	x				
	10	31 July	x				
	12	1 Aug			x	x	
	13	1 Aug	x				
	14	1 Aug	x				
	16	2 Aug			x	x	
	17	2 Aug	x				
	18	2 Aug	x				
	20	3 Aug			x	x	
	21	3 Aug	x				
	22	3 Aug	x				
	24	4 Aug			x	x	
	25	4 Aug	x				
	26	4 Aug	x				
	28	5 Aug			x	x	
	29	5 Aug	x				
	30	5 Aug	x				

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work benches; running water and sinks; 110 volt, 60-cycle power; air conditioning; and drying facilities. The work was completed during the last week of April 1962. The laboratory served as a base of operations for sample collections, sample preparation, and as a radiation counting laboratory. A staff of one to five scientists was maintained at the laboratory during the period April to August, 1962. During this period the following off-site surveys were made: 1) Two three-man surveys to islands in the "Southern Conjugate" area in Pacific Air Mission Flights originating at Hickam Air Force Base, Honolulu; the first trip occurred during the period of 16-24 April 1962 and the second during the period 19-26 July 1962; 2) three two-man surveys aboard the Charles H. Gilbert (FWS 1003) on the following dates: 2-7 May 1962; 11-19 June 1962; and 29 July-7 August 1962; 3) three two-man trips to Penrhyn Atoll, 9 June, 7 July, and 13 July; 4) two two-man trips to Malden Atoll, 4 July and 12 July 1962; 5) one three-man trip to Johnston Island, 13-16 August 1962.

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A total of 387 man days were spent by personnel of T.U. 8.5.3 at Christmas Island or on off-site surveys. A list of the personnel and the dates of participation is presented in Table 5.

4. LABORATORY PROCEDURES: A brief summary of the procedures used in the preparation and analysis of samples is given here. Detailed procedures will be presented in the technical reports to be submitted to the Division of Biology and Medicine, U.S. Atomic Energy Commission.

Since the main objective of T.U. 8.5.3 is related to items in the diet of humans, the greatest priority was given to the edible portions of the organisms collected. The edible portion was removed from the organism, weighed while fresh, and then dried in an oven at 95°C for 24 hours. It was then weighed dry, broken up by grinding, and placed in a plastic container for counting the gamma-emitting radionuclides. A multi-channel gamma spectrometer (Nuclear Data 512) connected to a three-inch by three-inch sodium iodide crystal was

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Table 5. Summary of the on-site data for the personnel of TU 8.5.3 during Operation DOMINIC, 1962.

Name	Arrive Christmas I.	Leave Christmas I.	Number of days
Held, E. E.	7 April	29 April	23
Palumbo, R. F.**	7 April	23 June	78
Nakatani, R. N.	26 April	24 May	29
Bonham, K.	2 May	28 May	27
Casey, H.	10 May	5 June	27
Engstrom, D. E.	13 May	28 May	16
Welander, A. D.	1 June	23 June	23
Olson, P. R.	10 June	18 July	39
Hines, N. O.	10 June	18 June	9
Barnes, R.	30 June	23 July	24
Donaldson, L. R.*	11 July	18 July	8
Lusk, R.	14 July	23 July	10
Gessel, S.***	19 July	29 July	11
Donaldson, L. R.***	19 July	27 July	9
Palumbo, R. F.***	19 July	29 July	11
Welander, A. D.	27 July	10 August	15
Mathisen, O.	27 July	10 August	15
	Arrive Johnston I.	**Leave Johnston I.**	
Held, E. E.	12 August	16 August	5
Welander, A. D.	12 August	14 August	3
Palumbo, R. F.	12 August	16 August	5
Man days on site			387
Man days en route			51
Total man Days			438

* Project officer TU 8.5.3
** Field party leader TU 8.5.3
*** Leave Honolulu for Christmas I. via "Southern Conjugate" area

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used for this purpose. The time of counting varied from 40 to 800 minutes depending upon the size of the sample and upon the expected level of radioactivity in the sample. Since the laboratory at Christmas Island was not able to process all the samples collected, the remainder were frozen or dried and shipped to the Laboratory of Radiation Biology, Seattle, for further processing and counting in a second multi-channel analyzer identical to the one used at Christmas Island.

In order to express the results for all samples in standard terms, both instruments were calibrated using suitable radioactive standards. An IBM data processing program was designed by Mr. D. Engstrom of our staff to calculate simultaneously the amounts of radioactivity contributed by nine radionuclides in a given sample. When completed the results of the analyses will be presented in picocuries per gram of material ($\mu\mu$c/gm.).

The levels of Sr^{90} in approximately 100 samples are being determined by radiochemical methods. The samples for Sr^{90} analysis were selected on the basis of their location,

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type of sample and time of collection and it is hoped that the results will represent the pattern of distribution of Sr^{90} in both the edible and environmental samples collected during the operation. The samples collected at Johnston Island will be analyzed for gamma and alpha emitters. Sr^{90} will be determined for selected samples only.

5. PRELIMINARY RESULTS: Only a brief statement will be made in this report regarding the results available at this time. An addendum to the report, containing the completed data, will be submitted later and it will include the amounts of radioactivity due to the specific radionuclides present in all the edible portions of the samples collected during Operation DOMINIC. However, sufficient data has been accumulated at this time to indicate the nature of the results.

Samples collected at off-site stations before the start of Operation DOMINIC contained very little radioactivity other than the naturally occurring K^{40}. There were traces only ($<$ $\mu\mu$c/gm wet) of Cs^{137} in some plants and of Ce^{144}, Zn^{65}

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and Co^{60} in a few samples of fish liver and muscle and of Zn^{65} and Ce^{144} in some samples of invertebrates, such as crabs and clams. Since we have the results of only a few post-DOMINIC samples, we cannot provide a reliable summary at this time. The samples of plant leaves collected at Christmas Island before the start of testing contained some recently deposited radionuclides, such as Zr^{95} - Nb^{95}, Ru^{103}, and Ce^{141}; this radioactivity is attributed to the Russian nuclear tests of late 1961. The results of the few analyses available for post-DOMINIC plant samples indicate that there has been no substantial increase in radioactivity from the tests of the DOMINIC series.

NSTec Form FRM-0190	DOSIMETRY HISTORY RESEARCH PACKET CHECKLIST	01/16/07 Rev. 02 Page __ of __

Date Rec.	06-02-2009	Researcher:	DAW
Date Out:	06-03-2009	Type:	NIOSH
OPD Date	06-02-2009	Yrs Rqt:	1947-2009
Name: Last	OLSON	First	RUDOLPH
Middle	FRED		
SSN:	470-26-0967	DOB:	06-01-1929
NTS:		OT:	H&N# 11846
Drp Acct No:	91264		

WSI	NO RECORD
Badged Master Report	↓
REECo Payroll Cards	
H & N employee Cards 49-79	ATTACHED
NRDS Master Report 10/65-1/73	NO RECORD
Current Bioassay Master 64 to present	↓
Historical Bioassay Master 55-63	ATTACHED
1945 – 1962	1962
1963 – 1983	NO RECORD ↓
1984	
1985	
1986	
1987 - Present	↓

NSTec Form FRM-0190	DOSIMETRY HISTORY RESEARCH PACKET CHECKLIST	01/16/07 Rev. 02 Page __ of __

SOURCE DOCUMENT SEARCH

Researcher: DAW

Date: 06-02-2009

Name: Last OLSON First RUDOLPH Middle FRED

SSN: 470-26-0967 DOB: 06-01-1929 NTS: OT: H&N# 11846

Drp Acct No 91264

ISSUE CARD	NO RECORD
ENEWETAK REPORTS	↓
CIC SEARCH	ATTACHED

NSTec Form FRM-0190	DOSIMETRY HISTORY RESEARCH PACKET CHECKLIST	01/16/07 Rev. 02 Page __ of __

EXPOSURE WORKSHEET

Researcher: DAW

Date: 06-02-2009

Name: Last OLSON First RUDOLPH Middle FRED

SSN: 470-26-0967 DOB: 06-01-1929 NTS: ______ OT: H&N# 11846

Pacific (1946-1962) Drp Acct No: 91264 Hire Date 04-13-1962

	BETA	GAMMA	T NEU	OT NEU	EYE	TRIT	THY	BP1	BP2	COMMENTS
1946										
1947										NO RECORD ↓
1948										↓
1949										↓
1950										↓
1951										↓
1952										↓
1953										↓
1954										↓
1955										↓
1956										↓
1957										↓
1958										↓
1959										↓
1960										↓
1961										↓
1962		79								ORG-8500 H&N BY30#
TOTAL		79								

NSTec Form FRM-0190	DOSIMETRY HISTORY RESEARCH PACKET CHECKLIST	01/16/07 Rev. 02 Page __ of __

EXPOSURE WORKSHEET

Researcher: DAW

Date: 06-02-2009

Name: Last OLSON First RUDOLPH Middle FRED

SSN: 470-26-0967 DOB: 06-01-1929 NTS: OT: H&N# 11846

Continent (1945-1980) Drp Acct No: 91264 Hire Date 04-13-1962

	BETA	GAMMA	T NEU	OT NEU	EYE	TRIT	THY	BP1	BP2	COMMENTS
1945										
1946										
1947										NO RECORD
1948										
1949										
1950										
1951										
1952										
1953										
1954										
1955										
1956										
1957										
1958										
1959										
1960										
1961										
1962										
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1965										
1966										
1967										
1968										
1969										
1970										
1971										
1972										
1973										
1974										
1975										
1976										
1977										
1978										
1979										
1980										
TOTAL										

NSTec Form FRM-0190	DOSIMETRY HISTORY RESEARCH PACKET CHECKLIST	01/16/07 Rev. 02 Page __ of __

EXPOSURE WORKSHEET

Researcher: DAW

Date: 06-02-2009

Name: Last OLSON First RUDOLPH Middle FRED

SSN: 470-26-0967 DOB: 06-01-1929 NTS: OT: H&N# 11846

Continent (1981-2010) Drp Acct No: 91264 Hire Date 04-13-1962

	BETA	GAMMA	T NEU	OT NEU	EYE	TRIT	THY	BP1	BP2	COMMENTS
1981										NO RECORD
1982										
1983										
1984										
1985										
1986										
1987										
1988										
1989										
1990										
1991										
1992										
1993										
1994										
1995										
1996										
1997										
1998										
1999										
2000										
2001										
2002										
2003										
2004										
2005										
2006										
2007										
2008										
2009										
2010										
TOTAL										

NSTec Form FRM-0190	DOSIMETRY HISTORY RESEARCH PACKET CHECKLIST	01/16/07 Rev. 02 Page __ of __

DATABASE SEARCH

Ret Name: OLSON, RUDOLPH FRED

Drp Acct No: 91264 Date 06-02-2009

Check Box If No Record Found	D75 Last Name	First	Middle	Other
☐				470-26-0967
☐	OLSON	R*		
☐				
☐				
☐	117			
☑				470-26-0967
☑	OLSON	R*		
☐				
☐				
☐				
☐				
☐				
☐				
☐				
☐				
☐				
☐				
☐				
☐				
☐				

Comments:

LAST NAME	OLSON
FIRST NAME	RUDOLPH
MIDDLE NAME	FRED
SSN	470-26-0967
DOB	6/1/1929
NTS NO:	
EMPLOYEE NO:	H&N# 11846
MILITARY ID:	

NAME			SSN	BIRTH DATE	ORG	BADGE	EFFECTIVE DATE	EXPIRATION DATE	VISITOR	PREVIOUS EXPOSURE
OLSON	MARY	ELIZABET	479-52-9862	45-06-11	0051	220717	85-10-17	86-10-17		
					0051	222356	86-11-03	87-11-03		
					0051	278216	85-10-02	86-10-02		
OLSON	MILTON	H	501-26-3935	33-06-18	0050	953925	85-12-09	85-12-09		
OLSON	NORMAN	L	517-32-0358	31-09-01	0636	251499	85-01-07	85-09-30		
OLSON	OLAF	D	535-36-1138	38-08-20	0636	097262	83-10-01	84-09-30		
OLSON	OTTO	L	537-36-1481	37-09-03	0012	116899	82-12-13	82-12-13		
OLSON	PAULINE	D	526-84-9828	53-03-07	0050	707043	86-11-19	86-11-19		
OLSON	PAULINE	F	526-84-9828	53-03-07	0050	948200	85-08-09	85-08-09		
OLSON	PHILIP	D	307-36-3628	37-10-29	0001	968708	86-02-21	86-02-21		
OLSON	RALPH	W	525-46-7737	28-12-18	0322	904922	86-08-27	86-08-27		
OLSON	RICHARD	H	476-10-8281	56-03-09	0050	926912	84-08-09	84-08-09		
OLSON	RICHARD	H	476-70-8281	56-03-09	0050	919991	84-10-12	84-10-12		
OLSON	RICHARD	L	477-58-0436	49-06-09	0050	039993	81-01-16	- -		
					0050	068849	81-07-06	- -		
					0050	069067	81-07-27	- -		
					0050	098476	82-06-24	- -		
					0050	106897	82-08-13	- -		
					0050	109136	82-11-17	- -		
					0050	109209	82-11-23	82-11-23		
					0050	109660	83-01-03	83-01-03		
					0050	111615	83-03-24	83-03-24		
					0050	112244	83-08-02	83-08-02		
					0050	113214	83-09-22	83-09-22		
					0050	132406	84-05-03	84-05-03		
					0050	132543	84-05-10	84-05-10		
					0050	139235	84-06-11	84-06-11		
					0050	139838	84-07-12	84-07-12		
					0050	207338	85-03-02	85-03-03		
					0050	209975	85-03-18	- -		
					0050	215239	85-07-22	- -		
					0050	215746	85-05-14	85-05-14		
					0050	224079	86-05-14	- -		
					0050	225786	86-04-24	86-04-24		
					0050	226233	86-02-26	86-02-26		
OLSON	RICHARD	LEE	477-58-0436	49-06-09	0050	206872	85-01-07	- -		
OLSON	ROBERT		534-30-4514	37-02-17	0050	919788	86-07-11	86-07-11		
OLSON	ROBERT	E	026-30-3739	40-11-20	0482	059409	81-07-24	82-07-23		
					0482	079873	82-07-07	83-07-23		
					0482	096684	83-08-29	84-08-11		
					0482	149815	84-08-17	85-07-31		
					0482	251967	85-01-07	- -		
OLSON	ROBERT	L	242-56-3846	38-07-27	0001	112137	83-09-13	86-03-03		
OLSON	ROY	K	516-32-1137	25-03-13	0636	086198	82-12-15	83-09-30		
OLSON	STEPHEN	R	561-52-0936	43-01-05	0020	961493	86-03-06	86-03-06		
OLSON	THOMAS	M	516-82-1797	58-09-21	0482	917235	84-05-09	84-05-09		
					0916	917287	84-05-10	84-05-10		
OLSON	TIMOTHY	E	470-70-1166	54-09-10	0050	044641	81-11-30	- -		
					0050	091233	82-04-07	84-05-29		
OLSON	VIRGIL	JOHN	468-32-4385	26-07-13	0001	943880	84-11-26	84-11-26		
OLSON	WILLIAM	H	538-40-9127	44-01-03	0361	065074	80-10-15	- -		
					0361	065382	80-10-15	- -		
OLSON	WILLIAM	HENRY	538-40-9127	44-01-03	0361	202385	85-01-29	- -		
OLSON	WILLIAM	P	474-62-6286	51-09-27	0321	245018	87-01-05	87-01-06		
					0321	245297	86-11-23	86-11-23		

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Hn_Master Table (Bioassay Database)

Date: *2009/06/02* **Time:** 12:25:03

Location: **Seq No:** 06205800 **Hn:** HN **Reel:** 06 **Frame:** 2058

Ident: **Last:** OLSON **First:** RUDOLPH **Middle:** FRED **Suffix:**

Aec_No: **Payroll_No:** 011846

Ssn: 470260967 **Sex:** **Race:**

Address: **Street:** 11010 ARLETA STREET

City: SAN FERNANDO

State: CA **Zip:**

Country:

Birth: **Date:** 19290601

City: DULUTH

State: MN

Country:

Misc: **First_Date:** 19620413 **Last_Date:** 19620817

Remarks: **Initials:** EB

NAME OLSON, Rudolph Fred PROCESS CLASS ASST. DISPATCHER AIR

ADDRESS 11010 Arleta Street, San Fernando, California

ADDRESS

P.O.B. Duluth, Minnesota D.O.B. 6-1-29 WT. 160 HT. 5'10"

PR. # 11846 HAIR Brown EYES Blue SS NO. 470-26-0967

	SUBMITTED	GRANTED	CLEAR-LAPSED	DATE	CLASSIFICATION OR TERMINATION	REHIRE YES	REHIRE NO
L	4/10/62	5/12/62	1-19-65	4-23-62	Telephone Operator Xmas		
Q	4/10/62	6/8/62		4/30/62	Assistant Dispatcher (Air)		
QR				8/17/62	~~Completed Contract surplus~~	X	
QR							
QR							
LR							
LR							
LR							
GSR		5/28/62					
S							
S							
IS							
C					NO - HIRE INFORMATION		

CAP# 798

Not available 1-13-65 X

S-23 REV. 1 PROCESSING SIMPLA 6-1194 A-R

GENERAL INFORMATION			AEC - DOD REQUESTS		
P. C.			CORRECTED PSQ - SEC.	ON	
AUTOSTAT			RETURNED TO AEC./DOD.		
PRE EMP. VERIFICATION: COMMENCED		COMP.	S/C	FPC.	DISCHARGE PAPERS
FLIGHT DATE			FORWARDED ON		
FOR MEDICAL	MEDICAL RECD.	RATING	FOR MEDICAL	MEDICAL RECD.	RATING

REMARKS Grant 1-18-65

BADGE NUMBER AEC NUMBER AB 9087A VG

ON CONTINENT I. D. NUMBER CONTINENT S.S. NUMBER 103690

PLACE OF HIRE	DEPT.	JOB #	LOCATION
L.A.			

		AEROJET	0190	01-08-71	06-30-71	000075	000000		0005596000
		AEROJET	0190	10-26-71	11-01-71	000000	000000		0005597000
		AEROJET	0190	06-30-71	01-05-72	000115	000000		0005595000
		AEROJET	0190	01-07-72	01-12-72	000000	000000		0005593000
		AEROJET	0190	01-04-72	03-28-72	000015	000010		0005594000
OLSON GALEN R	517-28-1764	CATALYTIC CONS							0005376000
		CALALYTIC CONS	0243	07-14-71	07-27-71	000000	000000		0005377000
OLSON OTTO L	537-36-1481	SNPO							0007709000
		SNPO	0248	08-11-70	01-04-71	000000	000000		0007713000
		SNPO	0248	01-04-71	05-25-71	000000	000000		0007710000
		SNPO	0248	06-30-71	01-05-72	000035	000000		0007712000
		SNPO	0248	01-03-72	04-05-72	000000	000000		0007711000
OLSON RAYMOND J	399-28-9289	SNPO							0003172000
		SNPO	0249	08-18-70	08-19-70	000000	000000		0003173000

EMPLOYEE NAME	SOC-SEC-NUM OR ASSIGNED	ORGANIZATION NAME	ORG. NO.	ISSUE OR COLLECT DATE	COUNT OR PROCESS DATE	TLD PENETR MREM	TLD NONPENETR MREM	W-BODY COUNT MICROCURIE	BIOASSAY URINE GAMMA MICROCURIE	ACCESS NO.
OLSON ROBERT E	517-12-4423	WESTINGHOUSE								0005367000
			0145	03-13-72	03-14-72	000000	000000			0005368000
ONDINA DARIO	558-46-3228	AEROJET								0008648000
		AEROJET	0190	10-06-70	10-14-70	000000	000000			0008649000
		AEROJET	0191	02-18-71	02-23-71	000000	000000			0008650000
		AEROJET	0191	10-05-71	10-12-71	000000	000000			0008651000
OPENSHAW FRANCIS L	554-34-3925	AEROJET								0008419000
ORAVETZ RICHARD A	557-40-9238	AEROJET								0008567000
		AEROJET	0191	07-08-71	07-21-71	000000	000000			0008568000
ORCHELLE JR RALPH P	405-56-9973	PAN AMERICAN								0003212000
					08-12-69			BACKGROUND		0003213000
ORITZ MANUEL B	527-03-4269	CATALYTIC CONS								0006389000
		CALALYTIC CONS	0243	02-08-71	06-30-71	000000	000000			0006390000
ORR DEBORAH M	530-40-1248	AEROJET								0007344000
		AEROJET	0190	08-31-70	09-01-70	000000	000000			0007345000
		AEROJET	0190	09-01-70	01-07-71	000000	000000			0007346000
ORTIZ LOUIS G	525-44-4958	EG+G								0006059000
		EG@G	0020	10-18-71	01-05-72	000040	000000			0006060000
		EG@G	0020	01-04-72	04-18-72	000000	000000			0006062000
		EG@G	0020	08-15-72	08-24-72	000000	000000			0006061000
ORTSTADT PAUL E	306-30-1850	WESTINGHOUSE								0002305000
		AEROJET	0190	04-26-71	06-30-71	000100	000000			0002306000
		AEROJET	0190	10-15-71	10-20-71	000000	000000			0002307000
		AEROJET	0190	07-01-71	01-05-72	000000	000000			0002311000
		AEROJET	0190	01-04-72	06-29-72	000025	000000			0002310000
		WESTINGHOUSE	0144	06-28-72	01-04-73	000000	000000			0002309000
		WESTINGHOUSE	0144	01-22-73	02-01-73	000000	000000			0002308000
		WESTINGHOUSE	0144	01-04-73	03-08-73	000000	000000			0002312000

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REYNOLDS ELECTRICAL & ENGINEERING CO., INC.

MICROFILM BIOASSAY MASTER REPORT RPT. 732-00 10-31-88

NAME / IDENT. NO.	ACCESS NO.	SAMPLE NO.	COLLECT. DATE / ANALYSIS DATE	SAMPLE TYPE / ANALYSIS TYPE	MICROCURIES PER / COMMENT NUMBER	LOWER LIMIT SENSITIVITY / COMMENT AREA	PERCENT ERROR
OLSON PERLE E 084518578	37462		07-01-66 - -	URINE GFP	1.56E-08 MI/CC		
OLSON PERLE E 084518578	37463		12-12-66 - -	URINE GAMMA	2.37E-06 MI/CC		
OLSON PERLE E 084518578	37464		12-12-66 - -	URINE 239-PU	4.27E-08 MI/CC		
OLSON PERLE E 084518578	37465		12-12-66 - -	URINE 003-H	LESS THAN MI/CC		
OLSON PERLE E 084518578	37466		01-21-67 - -	URINE GAMMA	3.84E-06 MI/CC		
OLSON PERLE E 030145144	37467	65466	04-09-69 04-14-69	URINE 003-H	LESS THAN MI/CC	0	
OLSON PERLE E 030145144	37468	65466	04-09-69 04-12-69	URINE GAMMA	1.88E-07 MI/CC		5.92E+01
OLSON PERLE E 030145144	37469	65466	04-09-69 04-22-69	URINE GFP	1.71E-08 MI/CC		1.47E+01
OLSON RICHARD A 288163234	37470	00773	03-13-78 03-13-78	WHOLE BODY	SCAN		
OLSON RICHARD A 288163234	37471	01957	07-12-79 07-12-79	WHOLE BODY	SCAN		
OLSON RICHARD L 477580436	37472	11053	04-19-84 04-19-84	WHOLE BODY	SCAN (1) BATHES IN WELL WATER		
OLSON T E 079157578	37473		12-08-64 - -	URINE GAMMA	LESS THAN MI/CC		
OLSON WILLIAM P 474626286	55186	12942	01-23-86 01-23-86	WHOLE BODY	SCAN		
OLSON WILLIAM P 474626286	98960	14280	02-20-87 02-20-87	WHOLE BODY	SCAN		
OLSON WILLIAM P 474626286	99841	15307	02-09-88 02-09-88	WHOLE BODY	SCAN		
OLSON,DENNIS E 470421459	64797	66976	04-24-84 04-24-84	URINE GAMMA	NOT DETECT MI/CC (1) 1-GAMMA - CT TIME: 20 MIN (2) 2UNIT 61 SMPL SIZE: 518.00CC		
OLSON,DENNIS E 470421459	73754	66976	04-24-84 05-02-84	URINE 003-H	LESS THAN MI/CC 6.57E-07 (1) 1-GAMMA - CT TIME: 20 MIN (2) 2UNIT 61 SMPL SIZE: 518.00CC		

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REYNOLDS ELECTRICAL & ENGINEERING CO., INC.

MICROFILM BIOASSAY MASTER REPORT RPT. 732-00 10-31-88 PAGE 6456

NAME / IDENT. NO.	ACCESS NO.	SAMPLE NO.	COLLECT. DATE / ANALYSIS DATE	SAMPLE TYPE / ANALYSIS TYPE	MICROCURIES PER / COMMENT NUMBER	LOWER LIMIT SENSITIVITY / COMMENT AREA	PERCENT ERROR
OLSON,MARK C 134446019	85905	69822	12-10-85 12-21-85	URINE GFP	LESS THAN MI/CC (1) 1-GAMMA - CT TIME: (2) 2 50111 SMPL SIZE: (3) 186.2 KEV (4) 512.0 KEV	3.03E-09 20 MIN 189.00CC .8 CPM .2 CPM	
OLSON,MARK C 134446019	94853	69822	12-10-85 12-11-85	URINE 003-H	LESS THAN MI/CC (1) 1-GAMMA - CT TIME: (2) 2 50111 SMPL SIZE: (3) 186.2 KEV (4) 512.0 KEV	6.78E-07 20 MIN 189.00CC .8 CPM .2 CPM	
OLSON,WILLIAM 474626286		67566	08-21-86 08-28-86	URINE 003-H	LESS THAN MI/CC (1) 1-GAMMA - CT TIME: (2) 2 50811 SMPL SIZE: (3) 3COUNT FACT= (4) 1460.5 KEV (5) 74.7 KEV (6) 86.5 KEV	7.20E-07 45 MIN 424.00CC 1.000 .4 CPM .5 CPM .6 CPM	
OLSON,WILLIAM 474626286		67566	08-21-86 08-21-86	URINE GAMMA	NOT DETECT MI/CC (1) 1-GAMMA - CT TIME: (2) 2 50811 SMPL SIZE: (3) 3COUNT FACT= (4) 1460.5 KEV (5) 74.7 KEV (6) 86.5 KEV	 45 MIN 424.00CC 1.000 .4 CPM .5 CPM .6 CPM	
OLSON,WILLIAM P 474626286		66342	06-20-86 06-20-86	URINE 003-H	1.71E-06 MI/CC (1) 1-GAMMA - CT TIME: (2) 2 50711 SMPL SIZE: (3) 3COUNT FACT= (4) 163.4 KEV	20 MIN 238.00CC 1.000 1.3 CPM	1.86E+01
OLSON,WILLIAM P 474626286		66342	06-20-86 06-20-86	URINE GAMMA	NOT DETECT MI/CC (1) 1-GAMMA - CT TIME: (2) 2 50711 SMPL SIZE: (3) 3COUNT FACT= (4) 163.4 KEV	 20 MIN 238.00CC 1.000 1.3 CPM	
OLSON,WILLIAM P 474626286		66342	06-20-86 07-24-86	URINE 239-PU	LESS THAN MI/CC (1) 1-GAMMA - CT TIME: (2) 2 50711 SMPL SIZE: (3) 3COUNT FACT= (4) 163.4 KEV	2.33E-11 20 MIN 238.00CC 1.000 1.3 CPM	
OLSON,WILLIAM P 474626286		68092	09-23-86 10-15-86	URINE GFP	LESS THAN MI/CC	3.33E-09	
OLSON,WILLIAM P 474626286		65518	03-31-87 04-01-87	URINE 003-H	3.56E-06 MI/CC (1) 1-GAMMA - CT TIME: (2) 2 50513 SMPL SIZE: (3) 3COUNT FACT= (4) 364.5 KEV	20 MIN 179.00CC 1.000 .5 CPM	1.41E+01

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BIO LAST NAME	FIRST	MIDDLE	SUF	REC AREA / DLO NUM	LAB / DLO LAST NAME	C DATE / BOX	A DATE / FOLDER	SAMPLE TYPE / PAGE	REEL / SUF	ANALYSIS TYPE / FRAME	YR	SSN	RESULTS / UNITS
OLSON, O.S.				000007 3,7,9		12/10/56 38	/ / 7	NASAL SWIPE 45			56		2.0 D/M
OLSSON, A.N.				000001 U16A	7814	07/19/62 43	07/20/62 23	URINE 7		BERYLIUM 62			
OMMART, T.				000001 3		11/05/59 62	11/19/59 3	NASAL SWIPE 98		ALPHA 59			15 D/M
OMMART, T.				000002 3		11/05/59 62	11/19/59 3	NASAL SWIPE 98		BETA 59			228 D/M
OMMONT				000001 3		/ / 62	11/05/59 3	NASAL SWIPE 91		ALPHA 59			0 D/M
OMMONT				000002 3		11/02/ 62	11/05/59 3	NASAL SWIPE 92		ALPHA 59			0 D/M
ONSTEAD, C.C.				000001 D		05/17/57 43	05/18/ 11	NASAL SWIPE 2		ALPHA 57			0,0 D/M
ONSTEAD, C.C.				000002 13D		05/17/57 43	05/18/57 15	NASAL SWIPE 31		ALPHA 57			0,0 D/M
ONSTEAD, C.C.				000003 D		05/17/57 38	05/18/ 24	NASAL SWIPE 197		ALPHA 57			0,0 D/M
ONSTEAD, C.C.				000004 13D		05/17/57 38	05/28/57 25	NASAL SWIPE 127		ALPHA 57			0,0 D/M
OREAR, E.L.				000001 U 9L	6580	04/09/62 79	04/13/62 4	URINE 76		ACTIVITY 62			BKG MICCI/L
ORENSTEIM, E.D.				000001 11		02/25/ 43	02/25/ 17	NASAL SWIPE 34		ALPHA 57			8,1.0 D/M

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NAME			IDENT NUMBER	ORG. NO.	METER NO.	ISS DATE	PRSS DATE	DAMG CODE	LOC CODE	BAT. NO.	BETA RAD	GAMMA REM	T-NEU REM	F-NEU REM	INT. REM	BODY PRT	BODPT REM	A D
OLSON	ROBERT	E	026303739	0482	1753314	020585	062685	K	01	6162	0.000	0.000	0.000					
				0482	1810706	052985	093085	K	01	6260	0.000	0.000	0.000					
									YEAR-TO-DATE:		0.000	0.000	0.000	0.000	0.000		0.000	
OLSON	WILLIAM	H	538409127	0361	1837666	070985	102585	K	01	6291	0.000	0.000	0.000					
									YEAR-TO-DATE:		0.000	0.000	0.000	0.000	0.000		0.000	
OLSON	WILLIAM	P	479626286	0321	1740454	011485	020485		01	6003	0.000	0.000	0.000					
									YEAR-TO-DATE:		0.000	0.000	0.000	0.000	0.000		0.000	
OLSON	WILLIAM	P	474626286	0321	1741055	011785	020485		01	6002	0.000	0.000	0.000					
				0050	1874147	101185	110785		01	6299	0.000	0.000	0.000					
									YEAR-TO-DATE:		0.000	0.000	0.000	0.000	0.000		0.000	
OLSON	ZENA	M	329224034	0050	1857433	091085	101085		01	6272	0.000	0.000	0.000					
									YEAR-TO-DATE:		0.000	0.000	0.000	0.000	0.000		0.000	
OLUND	WAYNE	A	568060153	0022	1753534	020185	093085	K	01	6264	0.000	0.000	0.000					
									YEAR-TO-DATE:		0.000	0.000	0.000	0.000	0.000		0.000	
OLWIN	MARILYN	R	475324954	0024	1829662	072485	082885		01	6226	0.000	0.000	0.000					
									YEAR-TO-DATE:		0.000	0.000	0.000	0.000	0.000		0.000	
OLWIN	RICHARD	B	470289216	0024	1762817	021385	042285	K	01	6079	0.000	0.000	0.000					
				0024	1779403	030185	052485	K	01	6119	0.000	0.000	0.000					

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			0050	1199477	120386	020687		01	6754	0.000	0.000	0.000			
							YEAR-TO-DATE:			0.000	0.000	0.000	0.000	0.000	0.000
OLSON	ROBERT	534304514	0050	1123438	070986	083086		01	6600	0.000	0.000	0.000			
							YEAR-TO-DATE:			0.000	0.000	0.000	0.000	0.000	0.000

OFFICIAL USE ONLY

NAME			IDENT NUMBER	ORG. NO.	METER NO.	ISS DATE	PRSS DATE	DAMG CODE	LOC CODE	BAT. NO.	BETA RAD	GAMMA REM	T-NEU REM	F-NEU REM	INT. REM	BODY PRT	BODPT REM	A D
OLSON	STEPHEN	R	561520936	0020	1062196	030586	040986			01 6461	0.000	0.000	0.000					
								YEAR-TO-DATE:			0.000	0.000	0.000	0.000	0.000		0.000	
OLSON	WILLIAM	H	538409127	0361	1132393	070286	081586			01 6589	0.000	0.000	0.000					
				0361	1137289	080186	091986			01 6624	0.000	0.000	0.000					
								YEAR-TO-DATE:			0.000	0.000	0.000	0.000	0.000		0.000	
OLSON	WILLIAM	P	474626286	0321	1030018	123085	022186			01 6408	0.000	0.000	0.000					
				0321	1046112	022686	031986			01 6442	0.000	0.000	0.000					
				0321	1060803	022686	040886			01 6459	0.000	0.000	0.000					
				0321	1075831	032786	052886			01 6503	0.000	0.000	0.000					
				0321	1101737	050186	062586			01 6531	0.000	0.000	0.000					
				0321	1116632	060286	071186			01 6545	0.000	0.000	0.000					
				0321	1121737	062786	091786	K		01 6622	0.000	0.000	0.000					
				0321	1140509	082586	091686			01 6620	0.000	0.000	0.000					
				0321	1151994	090286	100886			01 6645	0.000	0.000	0.000					
				0321	1167802	092686	111886			01 6682	0.000	0.000	0.000					
				0321	1183765	110386	121186			01 6708	0.000	0.000	0.000					
				0321	1186750	112186	121286			01 6710	0.000	0.000	0.000					
				0321	1197913	120186	020487			01 6750	0.000	0.000	0.000					
								YEAR-TO-DATE:			0.000	0.000	0.000	0.000	0.000		0.000	
OLUND	WAYNE	A	568060153	0022	1072590	030586	120986			01 6705	0.000	0.000	0.000					
								YEAR-TO-DATE:			0.000	0.000	0.000	0.000	0.000		0.000	

NAME	SSN	ALPHA BIRTH-DTE	EMP ORG	OCC CD	FORWARDING-ADD			ALPHA ARR-DATE	ALPHA DEPART-DT	GRADE
DUCE ROBERT A	464467654	09APR35	MPRL	9F	UNIV RHODE ISLAND	KINGSTON	RI02881US	06DEC77	07DEC77	CIV
DUCE ROBERT A	464467654	09APR35	MPRL	9F	UNIV RHODE ISLAND	KINGSTON	RI02881US	29NOV78	20DEC78	CIV
DUCE ROBERT A	464467654	09APR35	MPRL	9F	UNIV RHODE ISLAND	KINGSTON	RI02881US	09JAN79	12JAN79	CIV
DUCE ROBERT A	464467654	09APR35	MPRL	9F	UNIV RHODE ISLAND	KINGSTON	RI02881US	29MAR79	06APR79	CIV
LOPEZ RODOLFO F	464921769	02APR47	H&N	6E	HOLMES & NARVER	HONOLULU	HI96820US	28FEB78	06SEP78	CIV
LOPEZ RODOLFO F	464921769	02APR47	H&N	6E	HOLMES & NARVER	HONOLULU	HI96820US	26SEP78	24MAR79	CIV
SMITH STEPHEN V	466620792	29JUL42	MPRL	9F	HI INST MAR BIOL	KANEOHE	HI96744US	15AUG78	06SEP78	CIV
SMITH STEPHEN V	466620792	29JUL42	MPRL	9F	HI INST MAR BIOL	KANEOHE	HI96744US	13FEB79	14MAR79	CIV
GALLIMORE JOHN C	467242063	15NOV25	LASL	9D	LASL PO BOX 1663	LOS ALAMOS	NM87545US	17JAN78	23FEB78	CIV
GALLIMORE JOHN C	467242063	15NOV25	LASL	9D	LASL PO BOX 1663	LOS ALAMOS	NM87545US	10APR79	18MAY79	CIV
SMITH LILLY C	467624167	29JUN42	DOE	9C	DOE NV PO BOX 14100	LAS VEGAS	NV89114US	11JUL78	23AUG78	CIV
FOX CHARLES R	468346769	24JUL36	H&N	6R	941 N VIRGINIA	RENO	NV89503US	25APR78	16AUG78	CIV
FOX CHARLES R	468346769	24JUL36	H&N	6R	941 N VIRGINIA	RENO	NV89503US	22AUG78	25OCT78	CIV
NOLL WILLIAM J	470223765	24FEB27	H&N	0E	H&N 999 TOWN&COUNTRY	ORANGE	CA92668US	10JAN78	15FEB78	CIV
MCCORMICK CARL H	470381532	12OCT37	EG&G	9M	7101 MICHAEL COLLINS	LAS VEGAS	NV89128US	23MAY78	05JUL78	CIV
MCCORMICK CARL H	470381532	12OCT37	EG&G	9M	7101 MICHAEL COLLINS	LAS VEGAS	NV89128US	16JUL78	25OCT78	CIV
WENNER ADRIAN M	472263640	01JAN00	MPRL	9F	UNIV OF HAWAII	HONOLULU	HI96820US	19JUL77	03AUG77	CIV
JIMMERSON RICHARD W	475501452	29SEP44	H&N	6H	BOX 2032	SALMON	ID83467US	26SEP78	25OCT78	CIV
CLUSEN RUTH C	476169655	01JAN00	DOE	0B	20 MASSACHUSETTS	WASHINGTON	DC20301US	25JUN79	27JUN79	CIV
CLUSEN RUTH C	476169655	01JAN00	DOE	0B	20 MASSACHUSETTS	WASHINGTON	DC20301US	08APR80	09APR80	CIV
LOFTFIELD ROGER D	476301048	22AUG32	H&N	1F	H&N 999 TOWN&COUNTRY	ORANGE	CA92668US	20SEP77	28OCT77	CIV
LOFTFIELD ROGER D	476301048	22AUG32	H&N	1F	H&N 999 TOWN&COUNTRY	ORANGE	CA92668US	10JAN78	15FEB78	CIV
LOFTFIELD ROGER D	476301048	22AUG32	H&N	1F	H&N 999 TOWN&COUNTRY	ORANGE	CA92668US	24APR79	15AUG79	CIV
LOFTFIELD ROGER D	476301048	22AUG32	H&N	1F	H&N 999 TOWN&COUNTRY	ORANGE	CA92668US	21AUG79	13OCT79	CIV
LOFTFIELD ROGER D	476301048	22AUG32	H&N	1F	H&N 999 TOWN&COUNTRY	ORANGE	CA92668US	30OCT79	28NOV79	CIV
SCHUTJER KENNETH D	477129409	23NOV22	H&N	6T	6716 63RD AVE N	BROOKLYN PARK	MN55428US	27JUN78	23JAN79	CIV
SCHUTJER KENNETH D	477129409	23NOV22	H&N	6T	6716 63RD AVE N	BROOKLYN PARK	MN55428US	23MAY79	06JUN79	CIV
DORAN GERALD V	477180731	10JUL25	DOE	0B	5425 BANJO ST	LAS VEGAS	NV89107US	15NOV78	16NOV78	CIV
ROBISON WILLIAM L	478400900	18JUN38	LLL	9L	LIVERMORE LAB	LIVERMORE	CA94550US	24MAY78	30MAY78	CIV
ROBISON WILLIAM L	478400900	18JUN38	LLL	9L	LIVERMORE LAB	LIVERMORE	CA94550US	19JUN78	21JUN78	CIV
ROBISON WILLIAM L	478400900	18JUN38	LLL	9L	LIVERMORE LAB	LIVERMORE	CA94550US	13NOV78	15NOV78	CIV
ROBISON WILLIAM L	478400900	18JUN38	LLL	9L	LIVERMORE LAB	LIVERMORE	CA94550US	04APR79	13APR79	CIV
ROBISON WILLIAM L	478400900	18JUN38	LLL	9L	LIVERMORE LAB	LIVERMORE	CA94550US	18SEP79	18SEP79	CIV

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NAME		SSN	ALPHA BIRTH-DTE	EMP ORG	OCC CD	FORWARDING-ADD			ALPHA ARR-DATE	ALPHA DEPART-DT	GRADE
****		***	*********	***	***	**********			********	*********	*****
NOLL	WILLIAM J	470223766	24FEB27	H&N	0E	H&N 999 TOWN&COUNTRY	ORANGE	CA92668US	10JAN78	15FEB78	CIV
NOSHKIN	VICTOR F	550368242	08MAR32	LLL	9L	DOE NV PO BOX 14100	LAS VEGAS	NV89114US	24MAY77	08JUN77	CIV
NOSHKIN	VICTOR F	550368242	08MAR32	LLL	9L	DOE NV PO BOX 14100	LAS VEGAS	NV89114US	03APR79	13APR79	CIV
NOSHKIN	VICTOR F	550368242	08MAR32	LLL	9L	DOE NV PO BOX 14100	LAS VEGAS	NV89114US	18JUN79	22JUN79	CIV
NUA	MIKE	563702282	01JAN00	H&N	6J	HOLMES & NARVER	HONOLULU	HI96820US	21JUN77	17AUG77	CIV
NUA	MIKE	563702282	01JAN00	H&N	6J	HOLMES & NARVER	HONOLULU	HI96820US	23AUG77	12OCT77	CIV
NUESCA	MAXIMO	576209822	29DEC27	MPRL	9F	737 ULUANI ST	KAILUA	HI96734US	06DEC77	07DEC77	CIV
NUESCA	MAXIMO	576209822	29DEC27	MPRL	9F	737 ULUANI ST	KAILUA	HI96734US	09MAR78	15MAR78	CIV
NUESCA	MAXIMO	576209822	29DEC27	MPRL	9F	737 ULUANI ST	KAILUA	HI96734US	01AUG78	08AUG78	CIV
NUESCA	MAXIMO	576209822	29DEC27	MPRL	9F	737 ULULAI ST	KAILUA	HI96734US	04MAR80	05MAR80	CIV
NUNES	MANUEL	575481564	03SEP45	H&N	6F	91-913 N RD APT 62	EWA BEACH	HI96706US	29NOV77	30DEC77	CIV
NUNES	MANUEL M	575284005	28MAY33	H&N	6G	GEN DELIVERY	KAPPA KAUAI	HI96746US	19JUL77	11JAN78	CIV
NUNES	MANUEL M	575284005	28MAY33	H&N	6G	GEN DELIVERY	KAPPA KAUAI	HI96746US	22FEB78	15DEC78	CIV
NUNES	MANUEL M	575284005	28MAY33	H&N	6G	GEN DELIVERY	KAPPA KAUAI	HI96746US	09JAN79	08JUN79	CIV
NUNES	MANUEL M	575284005	28MAY33	H&N	6G	GEN DELIVERY	KAPPA KAUAI	HI96746US	13JUN79	28SEP79	CIV
NUNES	MANUEL M	575284005	28MAY33	H&N	6G	GEN DELIVERY	KAPPA KAUAI	HI96746US	03OCT79	12DEC79	CIV
NUNES	MANUEL M	575284005	28MAY33	H&N	6G	GEN DELIVERY	KAPPA KAUAI	HI96746US	22JAN80	13MAY80	CIV
NUNES	WENDELL H	576345031	06JUL40	H&N	1F	5009 MACIE RD	KAPAAKAUAI	HI96746US	03MAY77	21DEC77	CIV
NUNES	WENDELL H	576345031	06JUL40	H&N	1F	5009 MACIE RD	KAPAAKAUAI	HI96746US	10JAN78	03MAY78	CIV
NYBERG	PHILIP C	015743684	07JAN44	EG&G	9D	PO BOX 15027	LAS VEGAS	NV89114US	11OCT77	23NOV77	CIV
NYBERG	PHILIP C	015743684	07JAN44	EG&G	9D	PO BOX 15027	LAS VEGAS	NV89114US	12SEP78	18OCT78	CIV
NYKREIM	RUSSELL D	570527472	04FEB40	H&N	9M	BOX 694	STEILACOOM	WA98388US	29MAR79	23MAY79	CIV
OBRIEN	RICHARD C	304091805	22JAN21	H&N	0E	1235K PALMYRA	ORANGE	CA92668US	01AUG78	09AUG78	CIV
OGDEN	JOHN C	149324784	27NOV40	MPRL	9F	WEST INDIES LAB	ST CROIX	VI00820US	04JUL78	26JUL78	CIV
OHERA	LEIGHTON	576889542	05AUG59	H&N	6F	H&N 999 TOWN&COUNTRY	ORANGE	CA92668US	09JAN79	19APR79	CIV
OHERA	LEIGHTON	576889542	05AUG59	H&N	6F	H&N 999 TOWN&COUNTRY	ORANGE	CA92668US	02MAY79	18JUL79	CIV
OKABAYASHI	RAYMOND S	575445060	05JAN43	H&N	6T	80 ALOHALANI DR	HILO	HI96720US	18AUG77	10MAR78	CIV
OLDS	BARNEY R	575125503	06OCT23	H&N	4E	45-1042 WAILELE RD	KANEOHE	HI96744US	29NOV77	07DEC77	CIV
OLDS	BARNEY R	575125503	06OCT23	H&N	4E	45-1042 WAILELE RD	KANEOHE	HI96744US	14FEB78	10MAR78	CIV
OLDS	BARNEY R	575125503	06OCT23	H&N	4E	45-1042 WAILELE RD	KANEOHE	HI96744US	06JUN78	14JUN78	CIV
OLDS	BARNEY R	575125503	06OCT23	H&N	4E	45-1042 WAILELE RD	KANEOHE	HI96744US	03OCT78	13OCT78	CIV
OLDS	BARNEY R	575125503	06OCT23	H&N	4E	45-1042 WAILELE RD	KANEOHE	HI96744US	30NOV79	21DEC79	CIV

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NAME		SSN	ALPHA BIRTH-DTE	EMP ORG	OCC CD	FORWARDING-ADD			ALPHA ARR-DATE	ALPHA DEPART-DT	GRADE
****		***	*********	***	***	**************			********	*********	*****
OMURO	MASAHITO	539402691	02FEB20	H&N	6F	1866 PALAMOI ST	PEARL CITY	HI96782US	28JUN77	21DEC77	CIV
OMURO	MASAHITO	539402691	02FEB20	H&N	6F	1866 PALAMOI ST	PEARL CITY	HI96782US	03JAN78	05JUL78	CIV
OMURO	MASAHITO	539402691	02FEB20	H&N	6F	1866 PALAMOI ST	PEARL CITY	HI96782US	25JUL78	01FEB79	CIV
OMURO	MASAHITO	539402691	02FEB20	H&N	6F	1866 PALAMOI ST	PEARL CITY	HI96782US	13MAR79	24DEC79	CIV
OMURO	MASAHITO	539402691	02FEB20	H&N	6F	1866 PALAMOI ST	PEARL CITY	HI96782US	15JAN80	01MAY80	CIV
ONATO	SANDALL J	575558290	21DEC51	H&N	6F	802 PROSPECT ST 302	HONOLULU	HI96813US	31OCT78	16NOV78	CIV
ONEAL	WILLIAM H	292325118	09AUG24	FIC	9J	7021 PAN AMERICAN HY	ALBUQUERQUE	NM87110US	03JAN79	06JUL79	CIV
ONEILL	LAYTON J	517260384	30NOV27	DOE	0B	DOE NV PO BOX 14100	LAS VEGAS	NV89114US	12JUL77	24AUG77	CIV
ONITSUKA	ANDREW K	576346967	26OCT37	H&N	6E	H&N 999 TOWN&COUNTRY	ORANGE	CA92668US	30AUG77	08APR78	CIV
ONITSUKA	ANDREW K	576346967	26OCT37	H&N	6E	H&N 999 TOWN&COUNTRY	ORANGE	CA92668US	16MAY78	25OCT78	CIV
ONITSUKA	ANDREW K	576346967	26OCT37	H&N	6E	H&N 999 TOWN&COUNTRY	ORANGE	CA92668US	15NOV78	09MAY79	CIV
ONITSUKA	ANDREW K	576346967	26OCT37	H&N	6E	H&N 999 TOWN&COUNTRY	ORANGE	CA92668US	19JUN79	25JUL79	CIV
ONITSUKA	ANDREW K	576346967	26OCT37	H&N	6E	H&N 999 TOWN&COUNTRY	ORANGE	CA92668US	31JUL79	19SEP79	CIV
ONITSUKA	ANDREW K	576346967	26OCT37	H&N	6E	H&N 999 TOWN&COUNTRY	ORANGE	CA92668US	02OCT79	23JAN80	CIV
ONITSUKA	ANDREW K	576346967	26OCT37	H&N	6E	H&N 999 TOWN&COUNTRY	ORANGE	CA92668US	05FEB80	13MAY80	CIV
OROSCO	DWAYNE	576947559	26MAR60	H&N	6E	H&N 999TOWN&COUNTRY	ORANGE	CA92668US	27APR79	26JUL79	CIV
OROSCO	DWAYNE	576947559	26MAR60	H&N	6E	H&N 999 TOWN&COUNTRY	ORANGE	CA92668US	31JUL79	30JAN80	CIV
OROSCO	DWAYNE	576947559	26MAR60	H&N	6E	H&N 999 TOWN&COUNTRY	ORANGE	CA92668US	12FEB80	15APR80	CIV
ORTIZ	MICHAEL A	535424681	27JUN49	FIC	9I	7318 YORKTOWN NE	ALBUQUERQUE	NM87109US	02AUG77	28SEP77	CIV
ORTIZ	MICHAEL A	535424681	27JUN49	FIC	9I	7318 YORKTOWN NE	ALBUQUERQUE	NM87109US	24JAN78	01FEB78	CIV
ORTIZ	MICHAEL A	535424681	27JUN49	FIC	9I	7318 YORKTOWN NE	ALBUQUERQUE	NM87109US	18JUL78	26JUL78	CIV
ORTIZ	MICHAEL A	535424681	27JUN49	FIC	9I	7318 YORKTOWN NE	ALBUQUERQUE	NM87109US	15NOV78	22NOV78	CIV
OSENBERG	CRAIG W	343423438	09APR58	MPRL	9F	1185 ANDERSON LN C	SANTA BARBARA	CA93111US	07AUG79	29AUG79	CIV
OSHIO	CALVIN K	576260485	24FEB29	H&N	3C	1641 ANAKOLE PL	PEARL CITY	HI96782US	14OCT77	26OCT77	CIV
OSHIO	CALVIN K	576260485	24FEB29	H&N	3C	1641 ANAKOLE PL	PEARL CITY	HI96782US	14MAR78	29MAR78	CIV
OSHIO	CALVIN K	576260485	24FEB29	H&N	3C	1641 ANAKOLE PL	PEARL CITY	HI96782US	06JUN78	14JUN78	CIV
OSHIO	CALVIN K	576260485	24FEB29	H&N	3C	1641 ANAKOLE PL	PEARL CITY	HI96782US	09JAN79	24JAN79	CIV
OTSUJI	KOTARO	576127557	28DEC22	H&N	6H	H&N 999 TOWN&COUNTRY	ORANGE	CA92668US	31MAY77	21SEP77	CIV
OTSUJI	KOTARO	576127557	28DEC22	H&N	6H	H&N 999 TOWN&COUNTRY	ORANGE	CA92668US	18OCT77	21DEC77	CIV
OTSUJI	KOTARO	576127557	28DEC22	H&N	6H	H&N 999 TOWN&COUNTRY	ORANGE	CA92668US	14FEB78	31MAY78	CIV
OTTERMAN	CHARLES C	572542537	21FEB37	DOE	0B	666 PROSPECT ST PH 1	HONOLULU	HI96813US	04MAR79	09MAR79	CIV
OTTERMAN	CHARLES C	572542537	21FEB37	DOE	0B	666 PROSPECT ST PH 1	HONOLULU	HI96813US	20MAR79	04APR79	CIV
OTTERMAN	EDNA L	284321273	26NOV37	DOE	0B	666 PROSPECT ST PH 1	HONOLULU	HI96813US	20MAR79	04APR79	CIV
OVIATT	ALBERT F	523300418	10MAY29	H&N	6A	H&N 999 TOWN&COUNTRY	ORANGE	CA92668US	27JUN78	27SEP78	CIV
OVIATT	ALBERT F	523300418	10MAY29	H&N	6A	H&N 999 TOWN&COUNTRY	ORANGE	CA92668US	10OCT78	24JAN79	CIV

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RECORD-DESCRIPTION RECORD-CONTENT

ARRIVAL SSN ARRIVAL-DATE NAME BIRTH-DATE EXP-DEPT-DTE EMP-ORG GRADE COMMENT
DEPARTURE DEPARTURE-DTE O-C FORWARDING ADDRESS BIOASSAY FILM-BADGE
ISLAND-ACCESS I-C PERIOD DATES-PRESENT-ON ISLAND..... COMMENT
BIOASSAY COLL-DTE ANAL-TYPE ANAL-DTE LAB-SYM LAB-SMPL-NO CONCENTRATION SMP-VOL COMMENT
DOSIMETRY ISSUE-DTE COLL-DTE LAB-SYM SKIN-AMT & TYPE GAMMA-AMT & TYPE BADGE-NO COMMENT
NARRATIVE ORDINATE-DTE SEQ-NO NARRATIVE STATEMENT OR COMMENT
POCKET-DOSIMETER COLL-DTE I-C READING COMMENT
NASAL-SMEAR COLL-DTE I-C NASAL ACTIVITY COMMENT
TLD-DATA COLL-DTE ISSUE-DTE TLD-NUMBER TLD-READING COMMENT

ARRIVAL	470-22-3766	10 JAN 78			NOLL	WILLIAM J	24 FEB 27	08 JAN 79		H&N	CIV	
DEPARTURE	470-22-3766	15 FEB 78		OE	H&N 999	TOWN&COUNTRY ORANGE			CA92668US	N	N	
DOSIMETRY	470-22-3766	10 JAN 78	15 FEB 78	FCZ	.000		.000	A		0000	NOT BADGE MONITORED	

N/R FOR 570-26-0967

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RECORD-DESCRIPTION	RECORD-CONTENT
ARRIVAL	SSN ARRIVAL-DATE NAME BIRTH-DATE EXP-DEPT-DTE EMP-ORG GRADE COMMENT
DEPARTURE	DEPARTURE-DTE O-C FORWARDING ADDRESS BIOASSAY FILM-BADGE
ISLAND-ACCESS	I-C PERIOD DATES-PRESENT ON ISLAND..... COMMENT
BIOASSAY	COLL-DTE ANAL-TYPE ANAL-DTE LAB-SYM LAB-SMPL-NO CONCENTRATION SMP-VOL COMMENT
DOSIMETRY	ISSUE-DTE COLL-DTE LAB-SYM SKIN-AMT & TYPE GAMMA-AMT & TYPE BADGE-NO COMMENT
NARRATIVE	ORDINATE-DTE SEQ-NO NARRATIVE STATEMENT OR COMMENT
POCKET-DOSIMETER	COLL-DTE I-C READING COMMENT
NASAL-SMEAR	COLL-DTE I-C NASAL ACTIVITY COMMENT
TLD-DATA	COLL-DTE ISSUE-DTE TLD-NUMBER TLD-READING COMMENT

ARRIVAL	470-38-1532	23 MAY 78			MCCORMICK	CARL H	12 OCT 37	05 JUL 78		EG&G	CIV			
ARRIVAL	470-38-1532	16 JUL 78			MCCORMICK	CARL H	12 OCT 37	25 OCT 78		EG&G	CIV			
DEPARTURE	470-38-1532	05 JUL 78			9M	7101 MICHAEL COLLINS	LAS VEGAS		NV89128US	Y		Y		
DEPARTURE	470-38-1532	25 OCT 78			9M	7101 MICHAEL COLLINS	LAS VEGAS		NV89128US	N		Y		
ISLAND-ACCESS	470-38-1532	FS	MAY78				1							
ISLAND-ACCESS	470-38-1532	FS	JUN78	1	11	1 1	1111	1 1						
ISLAND-ACCESS	470-38-1532	FI	JUN78		1									
ISLAND-ACCESS	470-38-1532	FJ	JUN78		1		13							
ISLAND-ACCESS	470-38-1532	FP	JUN78				11							
ISLAND-ACCESS	470-38-1532	FS	JUL78	1										
BIOASSAY	470-38-1532	02 JUL 78	URINE		22 JUN 79	0EHL	17801459		LT	.03		2.450	K400981681200	
DOSIMETRY	470-38-1532	23 MAY 78	17 JUN 78	LBDA	.000	.000				0287				
DOSIMETRY	470-38-1532	18 JUN 78	05 JUL 78	LBDA	.000	.014			G	0287				
DOSIMETRY	470-38-1532	16 JUL 78	19 AUG 78	LBDA	.000	.000				0287				
DOSIMETRY	470-38-1532	20 AUG 78	16 SEP 78	LBDA	.000	.000				0287				
DOSIMETRY	470-38-1532	17 SEP 78	25 OCT 78	LBDA	.000	.000			A	0287		FILM DAMAGED B		

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DATE: 6/2/09

NSTec

DOSIMETRY LIAISON OFFICE
EXPOSURE HISTORY ISSUE CARD SEARCH

Name: OLSON, RUDOLPH FRED SSN: 470-26-0967 - -

NTS No: DOB: 06-01-1929 Other: H&N# 11846

DRP Acct No: 91264

YEAR	DATABASE	NAM E	NTS	SSN	NO RECORD QUALIFIED
1957	N/A				N/A
1958					
1959					
1960					
1961					
1962					
1963					
1964					
1965					
1966					
1967					
1968					
1969					
1970					
1971					
MISC:					

REMARKS

FRM-0274 (10/06)

External Dosimetry

NSTec Form FRM-0190	DOSIMETRY HISTORY RESEARCH PACKET CHECKLIST	01/16/07 Rev. 02 Page __ of __

EXPOSURE WORKSHEET

Researcher: DAW

Date: 06-02-2009

Name: Last OLSON First RUDOLPH Middle FRED

SSN: 470-26-0967 DOB: 06-01-1929 NTS: OT: H&N# 11846

Pacific (1946-1962) Drp Acct No: 91264 Hire Date 04-13-1962

	BETA	GAMMA	T NEU	OT NEU	EYE	TRIT	THY	BP1	BP2	COMMENTS
1946										
1947										NO RECORD
1948										
1949										
1950										
1951										
1952										
1953										
1954										
1955										
1956										
1957										
1958										
1959										
1960										
1961										
1962		79								ORG-8500 H&N Bkg#
TOTAL		79								

Film Badge Dosimetry 1962
Pacific Proving Grounds

Rudolph F. Olson | Individual External Dosimetry Records | SSN: 470-26-0967

Film Badge No.	Issue Date	Return Date	Deep Dose (Gamma) (mrem)			Comment	Org Name	
16655	4/16/1962	7/26/1962	79			Dominic-I Operation	H&N	
Pacific Proving Grounds								
1962 TOTAL:			**79**					

CONTAINS PRIVACY ACT INFORMATION

FILM BADGE NO.	ISSUE DATE	PROCESS DATE	DOSAGE (mr)	ACCUMULATED DOSAGE (mr)
16655	16 Apr. 62	26 July 62	79	79

Serial No.
Home Organ.

Soc.Sec.No. 470-26-0967

Date of Birth 1 June 1929

Station

OLSON, RUDOLPH F.

T.G. 8.5

8582-1846

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BECHTEL NEVADA ISSUE CARD INQUIRY LIST HDDR-85602-01 PAGE 1

DATE RUN -06/11/09 TIME RUN -11:27:35

SELECTION OPTIONS: NAME: OLSON RUDOLPH F SSN/MILNO/NTSNO: BATCH SEQ NO:

FILM BADGE NO: UNDEF NO: FROM/TO YR: 1962 - 1962

LAST NAME-------FIRST-------MIDDLE--SUF	BATCH SEQ	FRAME	REEL	ORG NO	ORG NAME----------	REMARKS----------
OLSON RUDOLPH F	19620819040	10007	01		H&N PPG	DOMINC-I

ID- ASGN NO- ASGN CD- ISS DT-19620416 PROC DT-19620726 IND- GAMMA- 000079

SSN, MIL, or NTS 470260967 UNDEF NO-DOMINIC-I LOC CD- AREA CD- BATCH NO- DOSE CD- BETA-

RANK- ISS YR- 1962 CALIB- DAMAGE CD- DENSITY- THERMAL-

FILM BADGE- 016655 OTHER-

TOTAL RECORDS PRINTED: 1

********** END REPORT HDDR-85602-01 **********

OLSON, RUDOLPH F.

11846-82

470-26-0967

6-1-29

8582-1846

2607 79

OLSON, RUDOLPH F. 8582-1846

16655

LAST NAME, FIRST NAME, MIDDLE INITIAL	ORG. NO.	I.D. NO.	TOTAL DOSE	ISSUE DATE	TURN-IN DATE	DOSE	FILM BADGE NO.
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35	36 37 38	39 40 41	42 43 44 45	46 47 48 49 50	51 52 53 54 55	56 57 58 59 60 61	62 63 64 65 66 67	68 69 70 71 72	73 74 75 76 77 78 79 80

IBM J50167

ORGANIZATION

NAME	IDENTIFICATION NUMBER	ORGANIZATION NUMBER	TOTAL REM
OLSON DONALD L	567326223	8602	.232
OLSON EDGAR L	473102400	8500	.093
OLSON EWEN B	005387123	8309	.000
OLSON GENE A	005198855	8322	.000
OLSON GERALD	003115797	4107	6.014
OLSON GERALD A	537244300	3505	.000
OLSON GERARD R	000584094	8316	.000
OLSON IRVING C	543405969	8331	.070
OLSON J R	005374867	8314	.000
OLSON LEON E	004808598	8337	.000
OLSON MELVIN L	003903939	8374	.099
OLSON NERVIN L	005387314	8316	.000
OLSON P S	005324592	8366	.000
OLSON PAUL R	531200693	8671	.027
OLSON PETER C	000032344	8359	.093
OLSON RICHARD D		8500	.064
OLSON ROALD A	000635305	3007	.067
OLSON ROBERT E	005318998	8343	.142
OLSON ROBERT G	536386524	8120	.000
OLSON ROBERT W	540167338	8500	.000
OLSON ROGER E	003915058	8351	.000
OLSON RUDOLPH C	003901666	8328	.211
OLSON RUDOLPH F	470260967	8500	.079
OLSON SHERMAN A	003898870	8353	.000
OLSON WAYNE O	501127043	8140	.000
OLSZEWSKI CYRIL J	006537330	8332	.000
OLTMER MERLIN H	003194518	3002	.486
OMARA EDWARD F		8110	.000
OMAZUB GODOFREDO S	004679494	8316	.000
OMURA KANETU	575180529	8500	.046
ONAKA ROBERT T	576071915	8500	.000
ONCALB DONALD E	437326685	8500	.000
ONCALE EUGENE J JR	005842345	8305	.000
ONDERDONK STANLEY V	000378713	8312	.000
ONEIL CARL T	009032108	8316	.000
ONIZUKA GALEN	005929908	8387	.180
ONKEN DOYLE W	005404656	8316	.000
ONO SHIGETOSHI	576079540	8500	.218
ONO TAMOTSU	576187619	8500	.130
ONUMA SHOICHI		8500	.056
OOMS ADAM		4027	.065
OOSTENVELD	005687380	8386	1.100
OOTEN WILLIAM H	005374778	8311	.000
OPDAHL DAVID A	005386188	8316	.000
OPHEIM JAMES A	003115958	4005	.000
OPITZ STEPHEN J	000060940	4005	.050
OPPELT ROBERT E	006432620	8341	.000
OPPELT WILLIAM C	277165237	8500	.130
OPPLE ROBERT L	004730349	8318	.024
ORSETH DON E	003902988	8316	.000
ORBAS RONALD R	018605025	8273	.000
ORCHARD JOHN R	005379836	8316	.000
ORCUTT REX L	004295535	8373	.000
ORDINARIO MAURO O	005441200	8375	.122
ORDONEZ BIENVENIO A	005441201	8316	.000
ORDWAY L M	003911123	8366	.000
ORE JAMES R	005222804	8323	.031
OREMDOR GERRY W	005466231	8375	.200
ORGAN RAYMOND E	005852090	8375	.050
ORKISH JOHN M	001521868	8364	.000
ORMAN JESSE D	005499700	8309	.051

Individual Film Badge Report
Pacific Proving Grounds
1962

DRP ACCOUNT NO - 91264 CURRENT NAME - OLSON RUDOLPH F SSN -

NTPR-TABLE

	NAME		S C	M C	ADDRESS		S C	M C	TELEPHONE	S C	M C
PERSONNEL	OLSON	RUDOLPH F	12	6							

NEXT OF KIN

RESPONSIBILITY FOR THIS RECORD CLAIMED BY (F) REECO ORIGINAL SOURCE OF THE RECORD REECO

SOURCE OF MOST RECENT UPDATE COOTH

		S C	M C			S C	M C			S C	M C		S C	M C
REECO ACCESS	0074086000			PERS CATEGORY	30	34	6	TASK FORCE	8.5	34	6	RACE		
SERVICE ASGN				PART CATEGORY	002	34	6	SERIES NAME	05	34	6	SEX		
SSN 1	470260967	12		DOSIMETER NO	16655	34	6	EVENT NAME				SOURCE REF		
SSN 2				EXP SUM EXPL				EXP SOURCE				PROG CODE		
MIL SRV NO 1				DT TURNED IN				MULTI SERIES				VA CLAIM NO		
MIL SRV NO 2				DT PROCESSED	19620726	34	6					VA REGION OF		
MIL SRV NO 3				DOS PERF BY	02	34	6					JAYCOR NO		
MIL SRV NO 4														
NTS NUMBER				GAMMA	000079	34		BODY PART 1				STUDY SEL 1		
ASSIGNED NO				GAMMA TYPE 1	01	34	6	BODY CODE 1				STUDY SEL 2		
ASSIGNED CD				GAMMA EXPL 1				BODY PT TYPE				STUDY SEL 3		
FOREIGN ID				GAMMA TYPE 2				BODY PART 2				STUDY SEL 4		
REECO RANK				GAMMA EXPL 2				BODY CODE 2				STUDY SEL 5		
LAST MIL GRD												STUDY SEL 6		
GRD AT EVENT				BETA				INT NUCLIDES				STUDY SEL 7		
ATTACH DATES				BETA TYPE				BIOASSAY PERF				STUDY SEL 8		
DATE/ENTRY				BETA EXPL				BIOASSAY COMM				STUDY SEL 9		
DATE/SEPAR				THERM NEUTRON				OTHER NEUTRON				STUDY SEL 10		
UNIT NUMBER				THERM NEU TYPE				OTHER NEU TYPE						
ORG CODE	8500	12		THERM NEU EXPL				OTHER NEU EXPL				DELETE CODE		
CIV TITLE												DATE LAST TR	198815	6
CIV GRADE				NEXT/KIN REL								DRP ACNT NO	00091264	
OCCUP CODE				DATE OF DEATH								UNDEFINED NO		
EXP PERIOD	19620416	34	6	CAUSE/DEATH								OTHER NO		
EXP YEAR	1962			PLACE/DEATH								PROC BATCH		
EXP LOCATION	11		6	DATE OF BIRTH	19290601					34	6			
FACILITY TYP	01	34	6	PLACE/BIRTH										
				PERM UNIT										
				PART UNIT	HOLMES + NARVER					12				
				NOTES										

DRP ACCOUNT NO - 91264 CURRENT NAME - OLSON RUDOLPH F SSN -

NAME TABLE
NO DATA IN THIS TABLE MATCHED THE SELECTION CRITERIA FOR THIS ACCOUNT NUMBER

SSN TABLE
NO DATA IN THIS TABLE MATCHED THE SELECTION CRITERIA FOR THIS ACCOUNT NUMBER

MILITARY-NO TABLE
NO DATA IN THIS TABLE MATCHED THE SELECTION CRITERIA FOR THIS ACCOUNT NUMBER

NTS TABLE
NO DATA IN THIS TABLE MATCHED THE SELECTION CRITERIA FOR THIS ACCOUNT NUMBER

DOSIMETER TABLE
NO DATA IN THIS TABLE MATCHED THE SELECTION CRITERIA FOR THIS ACCOUNT NUMBER

SERIES TABLE
NO DATA IN THIS TABLE MATCHED THE SELECTION CRITERIA FOR THIS ACCOUNT NUMBER

ORG-NAME TABLE
NO DATA IN THIS TABLE MATCHED THE SELECTION CRITERIA FOR THIS ACCOUNT NUMBER

ORGANIZATION TABLE
NO DATA IN THIS TABLE MATCHED THE SELECTION CRITERIA FOR THIS ACCOUNT NUMBER

BIRTH TABLE
NO DATA IN THIS TABLE MATCHED THE SELECTION CRITERIA FOR THIS ACCOUNT NUMBER

PERS-INFO TABLE
NO DATA IN THIS TABLE MATCHED THE SELECTION CRITERIA FOR THIS ACCOUNT NUMBER

BIOASSAY TABLE
NO DATA IN THIS TABLE MATCHED THE SELECTION CRITERIA FOR THIS ACCOUNT NUMBER

DLO TABLE
NO DATA IN THIS TABLE MATCHED THE SELECTION CRITERIA FOR THIS ACCOUNT NUMBER

PAY-PER TABLE

OFFICIAL USE ONLY

DRP ACCOUNT NO - 91264 CURRENT NAME - OLSON RUDOLPH F SSN -

NO DATA IN THIS TABLE MATCHED THE SELECTION CRITERIA FOR THIS ACCOUNT NUMBER

OFFICIAL USE ONLY

Rudolph F. Olson SSN: 470-26-0967

Internal Dosimetry Statement:

There are no internal dosimetry data, bioassay data, or whole-body counts for this individual.

Rudolph F. Olson SSN: 470-26-0967

Medical Records Statement:

There are no medical records for this individual.

Rudolph F. Olson SSN: 470-26-0967

Investigations Statement:

There are no records of any investigations or incidents for this individual.

Rudolph F. Olson SSN: 470-26-0967

Other Monitoring Statement:

Attached are additional monitoring records for this individual.

NSTec

HISTORICAL RECORDS CENTER REQUEST

(PLEASE PRINT)

REQUESTER: M. E. DeMarre	DATE: 6/2/09
TITLE: MANAGER	PHONE: 794-5106
ORGANIZATION OR UNIT:	
MAILING ADDRESS:	
SEND DATA TO: M. E. DeMarre	

REQUESTED Information CONCERNING

NAME OR SUBJECT: OLSON, RUDOLPH F.			BIRTH DATE: 06-01-1929
SOCIAL SECURITY NUMBER: 470-26-0967	MILITARY NUMBER:		SERVICE BRANCH:
SITE EMPLOYER(S): H&N PPG			EMPLOYMENT NUMBER:
EMPLOYMENT DATE(S):			JOB TITLE(S):
EVENT NAME(S):			YEAR(S): 1947-2009

REQUESTED INFORMATION TO BE USED FOR:

☐ NV-1 85 ☐ LEGAL ☐ TORT ☐ COHORT ☒ OTH E R (SEE COMMENTS)

T	DATA REQUESTED	DESIGNATE SPECIFIC KIND (Use Comments for Additional Space)	NO. OF COPIES WANTED
	RADIATION SURVEYS		
	PERSONNEL EXPOSURES		
	BIOASSAY RECORDS		
	CLOTHING/EQUIPMENT DISPOSITION		
	VEHICLES (Type)		
	LOG BOOKS		
	TELEMETRY		
	ENVIRONMENTAL SURVEILLANCE		
	LABORATORY ANALYSIS RESULTS		
	MAPS		
	PHOTOGRAPHS		
	REPORTS		
	CORRESPONDENCE		
	AREA ACCESS REGISTERS		
	OTHERS, PROCEDURES & SCHEDULE		
	OTHER (See Comments)		

TECHNICAL INFORMATION USE ONLY:

Request Number: 09-3159c

Chg. #:

Hours Charged:

Date & Time Received: 06/02/09

Completed: 06/02/09

Work Performed by: A. Abramowitz

REFERENCE SOURCES USED IN COMPLETION OF REQUEST	T
HISTORICAL TOPICAL INDICES	—
ALPHABETIC NAME INDICES	—
1955-1963 BIOASSY INDEX	
COMPANY PHOTOGRAPH INDEX	
APERTURE CARD INDEX	
NVO-209 CROSS INDEX	
RADIOLOGICAL OCCURRENCE REPORTS INDEX	—
INDIVIDUAL SEARCH REQUESTS INDEX	—
OTHER	

COMMENTS:

NIOSH

No Record Information Found

FRM-0189 (11/06)