Joint Task Force SEVEN
TASK GROUP 7.3
Washington 25, D. C.

RCS-JTF SEVEN - H-1 FF3/7.3/001:jmt A-12 Ser 1001394



SUBJECT: Historical Installment Number 3: submission of

79980

TO:

Commander
Joint Task Force SEVEN
Washington 25, D.C.

- 1. Reference is made to CJTF SEVEN letter SGS/314.7 of 9 Oct 1953, serial O-7467 and CJTF SEVEN Standing Operating Procedure Number 172-701.
- 2. Commander Task Group 7.3 Installment Number 3 of the History of Operation CASTLE is submitted.

H. C. BRUTON

Rear Admiral, U.S. Navy

Commander

Incl:

1. Historical Installment No. 3

Copies furnished:

CTG 7.1

CTG 7.2

CTG 7.4

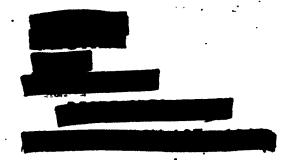
CTG 7.5

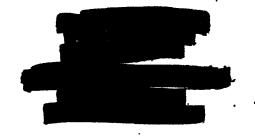
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JOINT TASK FORCE SEVEN COMMANDER TASK GROUP 7.3

HISTORY OF OPERATION CASTLE

INSTALLMENT NUMBER 3

RCS-JTF SEVEN H-1

Period ending 7 April 1954

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COLLIANDER TASK GROUP 7.3

HISTORY OF OPERATION CASTLE

INSTALLMENT NUMBER 3

Period ending 7 April 1954

Submitted:

REmaller

R. F. MADDEN

Lieutenant Commander, USNR-R

Approved:

At Bruln

HI C. BRUTON

Rear Admiral, U.S. Navy Commander, Task Group 7.3

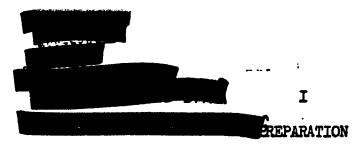
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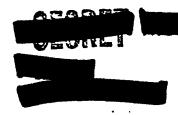
OUTLINE

I. Preparation

- a. Deployment
- b. Disposition of Forces
- c. Initial Operational Period
- d. Exercises and Rehearsals
- II. Pre-ERAVO Evacuation
- III. BRAVO ROLEO KOON
 - IV. Radiological Safety
 - V. Adjustment to Afloat Operations at Bikini
- VI. Evacuation of Natives
- VII. Statistics



1. This installment covers the period commencing with the arrival of CTG 7.3 in the forward area on 24 January 1954, and ending after the third CASTLE shot, KOON, detonated at Bikini on 7 April 1954. It omits coverage of special problems in security, operations, communications and logistics, which will be treated for the entire operational period in a subsequent installment.



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a. DEPLOYMENT

2. During this period ships and units of Task Group 7.3 arrived in and departed from the forward area in the following order:

26 January - USS PC 1546 arrived at Eniwetok. She had sailed from Pearl Harbor on 5 January but was delayed at Johnston Island by an engineering breakdown. With the arrival of the 1546, USS PC 1172, her temporary replacement, was released, and departed Eniwetok 27 January for her base at Kwajalein.

31 January - USS APACHE (ATF-67) arrived at Bikini from Subic Bay.

3 February - USS ESTES (AGC-12), flagship of Commander

Joint Task Force SEVEN, arrived at Eniwetok from San Diego and Pearl

Harbor.

6 February - Task Unit 7.3.6, the Atomic Warfare Countermeasures Unit, composed of YAG 39, YAG 40, and USS MOLALA (ATF-106) with CTU 7.3.6 in YAG 40, arrived at Bikini from San Francisco and Pearl Harbor. This unit reached Eniwetok the following day and began preparations for the first shot.

8 February - USS COCOPA (ATF-101)(LT W. O. Wilson, USN) with YC 1081 (barge for Project 1.4) in tow, and USS GYPSY (ARSD-1) (LT R. O. Wilson, USN) arrived at Bikini from Pearl Harbor and commenced operations in support of Project 1.4 the following day.

12 February - USS LST 825 (LT K. W. Laughlin, USN), relief

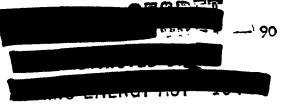
for the damaged LST 551 undergoing repairs at Pearl Harbor, arrived at Bikini from San Diego. She beached on Eninman Island the same day, loaded cargo and sailed for Eniwetok on 13 February.

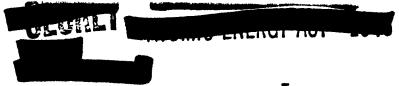
25 February - USNS FRED C. AINSWORTH (TAP-181)(C. W. Hutcheson, liaster) arrived at Bikini from San Francisco, in time to participate in the first scheduled CASTLE shot.

26 February - USS LST 551 (LT R. G. Kanzenbach, USN), her repairs completed, returned to Bikini from Pearl Harbor. She sailed the following day for Eniwetok. Upon her arrival there LST 825 was released, and sailed for the Far East on 28 February.

27 February - The two PHIs, BUNO 122468 (LT W. A. Jeffers, USNR) and BUNO 122471 (LCDR M. Irwin, USNR), specially configured for inter-atoll passenger lift, arrived at Eniwetok after several weeks delay on the West Coast due to unfavorable weather conditions. Because their special configuration had reduced their fuel capacity, they were forced to wait out a lengthy period of adverse winds before departing San Diego for Hawaii.

13 March - USS LST 1146 (LT T. R. Larson), arrived at Eniwetok from Guam. She had been delayed two days enroute by high winds and heavy seas. The 1146 had been ordered into CASTLE as a temporary relief for LST 762. Upon her arrival the 762 was placed in upkeep status for replacement of a generator and other necessary and overdue repairs. The 762 completed her upkeep period 5 April and returned to duty. LST

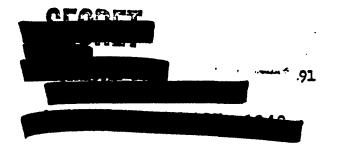


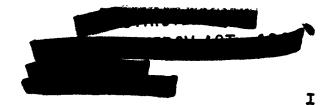


1146 departed Eniwetok for Pearl Harbor on 4 April.

23 March - USS MENDER (ARSD-2)(LCDR L. Jones, USN) arrived at Eniwetok from Guam. She had been ordered in as replacement for USS GYPSY for the remainder of CASTLE operations due to GYPSY's wrgent need for hull repairs. MENDER, after a brief indoctrination in the tasks that would be required of her in support of Project 1.4, relieved GYPSY on 26 March and GYPSY departed for Kwajalein and Pearl Harbor.

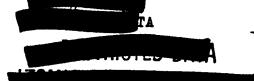
29 March - USS SHEA (DM-30)(CDR J. W. Reed, USN) and USS LST 1157 (LCDR R. S. Scott, Jr., USNR), arrived at Rikini from Pearl Harbor. LST 1157 had departed San Diego for Pearl Harbor on 16 February. SHEA was based at Pearl Harbor. These two ships were a part of the forces assigned for the Bureau of Ordnance's mining project.

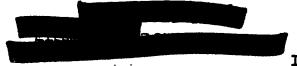




b. <u>DISPOSITION OF FORCES</u>

- 3. Eniwetok Atoll was the Task Force base of operations for CASTLE. There, on Parry Island, were the permanent headquarters of CJTF SEVEN, CTG 7.1 (Scientific Task Group) and CTG 7.5 (Base Facility Task Group). On Eniwetok Island itself were the permanent headquarters of CTG 7.2 (Army Task Group) and CTG 7.4 (Air Force Task Group). Eniwetok was the principal port of entry for ships and aircraft arriving in the area. It was the main assembly point for the test devices, and for the preliminary assembly and testing of experimental equipment. The principal machine shop, laboratory, photographic, warehouse and stockroom facilities were there, with only limited facilities at Bikini.
- Rikini Atoll, 186 miles to the East of Eniwetok. On Enimman Island at Rikini was the base camp for Task Group 7.1 and 7.5, from which their on-site operations at Rikini were conducted. Small camps were operated on several other islands of the atoll, to support scientific and construction personnel who were establishing and servicing stations for recording scientific data. The peak shore-based population at Rikini Atoll was approximately 1600 persons. Air transportation between the two atolls for personnel and high priority cargo was provided by 20 to 24 C-47 flights weekly, operated by the Air Force Task Group. Interatoll surface transportation was provided by the Navy.
 - 5. Units of Task Group 7.3 were disposed at Rikini, Eniwetok and





Ewajalein, with the major strength at Bikini:

a. TU 7.3.0 Special Devices Unit

CURTISS, after unloading her cargo of special devices at Eniwetok, proceeded to Bikini and anchored near the BRAVO shot site. There she furnished shop, laboratory and living facilities for the Scientific Task Group, principally for device assembly personnel.

b. TU 7.3.1 Surface Security Unit

When performing normal patrol operations, two DDEs and PC 1546 were based at Bikini. The remaining two DDEs were stationed at Eniwetok. These craft were rotated from time to time, usually incident to escorting a device movement from Eniwetok to Bikini.

c. TU 7.3.2 Carrier Unit

BATROKO, upon her arrival at Eniwetok, discharged her cargo of Air Force aircraft, and placed three of her FAUs, with operating and maintenance personnel, ashore at Eniwetok airstrip. Proceeding to Bikini, she placed ashore there a detachment of HAR-362, with six helicopters. HAR-362, augmented by 3 Air Force helicopters, operated the inter-island and ship to shore airlift at Bikini. Also transferred ashore were the remaining three fighter aircraft and personnel of VC-3, controlled and operated from BAIROKO's CIC.

d. TU 7.3.3 Patrol Plane Unit

Patrol Squadron Twenty-Nine was based at Kwajalein.

Four special aircraft, attached to the squadron for Operation CASTLE,

were operated from Eniwetok. They were the two PHIs on loan to CTG 7.4

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for passenger service, and the PAT2 and P2V5 assigned to the support of scientific projects.

e. TU 7.3.4 JTF Flagship Unit ESTES, the Task Force Commander's flagship, was based at Eniwetok.

f. TU 7.3.5 Utility Unit

This unit was composed of GYPSY (ARSD-1) and five ATFs.

GYPSY was based at Bikini in support of Project 1.4. The ATFs shifted
between Eniwetok and Bikini according to the requirements of their
assigned tasks. COCOPA was normally at Bikini with Project 1.4.

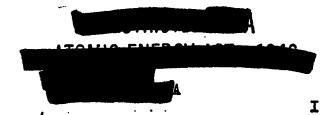
MOLALA was usually employed in Project 6.4, with the drone ships YAG
39 and YAG 40. APACHE and SIOUX were usually engaged in assisting
Project 2.5a, the fallout collector buoy project. TAWAKONI was employed as required in all three projects. Since preliminary work on projects 6.4 and 2.5a was done at Eniwetok the assigned ATFs spent a
large part of the time there.

g. TU 7.3.6 Atomic Warfare Countermeasures Unit

The drone ships, YAG 39 and YAG 40, with assigned ATFs
were based at Eniwetok.

h. TU 7.3.7 Bikini Harbor Unit

This unit; headed by BAIROKO, was comprised in addition of BELLE GROVE and the Navy Boat Pool, less three LCMs and one LCPL stationed at Eniwetok. When BELLE GROVE was absent from Bikini on a device movement responsibility for the Boat Pool was normally assumed



directly by BAIROKO.

i. TU 7.3.8 Eniwetok Harbor Unit

ESTES, with the Eniwetok LCMs and LCPL, and YO-120,
YOG-61 and YOG(N)-82, normally headed this unit. During ESTES absences the in-port DDE at Eniwetok functioned as the harbor unit.

j. TU 7.3.9 Transport Unit

This unit was assigned the task of transporting between Eniwetok and Bikini all cargo except a small amount moved by air. It was composed of BELLE GROVE, the LSTs, and the MSTS Transport, AINSWORTH. BELLE GROVE and AINSWORTH were based at Bikini, the LSTs operated on a continuous shuttle between the two atolls.

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c. INITIAL OPERATIONAL PERICO

- 6. The period from 24 January until EX day, the Task Force shot day rehearsal, conducted on 22/23 February, was spent in shaking down the task group organization, getting it into operation, and preparing it for the initial shot, scheduled for 1 March.
- 7. As units arrived they unloaded any cargo or passengers they had aboard and went to work. BAIROKO proceeded to Bikini where her Commanding Officer, Captain Emmet O'Beirne, USN, took charge of Navy operations until the arrival there of the Task Group Commander. The Boat Pool and the Marine helicopter squadron commenced operations, the security DDEs and patrol squadron aircraft began their patrols of the area surrounding the two atolls. IST 762 continued shuttling large amounts of cargo to Bikini. GYPSY and the ATFs began their support tasks.
- 8. On Parry Island conferences were a daily occurrence. All major headquarters were within speaking distance of one another for the first time, and there was much to be accomplished. As units arrived at Eniwetok their commanding officers came ashore and were briefed on the Operation. There was considerable travel to Bikini by staff personnel to confer with ships' personnel on the scene. The Task Group Commander visited units at Bikini on several occasions and visited Pearl Harbor on one occasion for a conference at CinCPac headquarters. Security badges were issued to authorized personnel to permit their

movement into sensitive areas. Administrative procedures were developed and placed in operation. Detailed plans for the first shot were worked out and published. It was a busy period, with many problems to be solved before the task organization could function smoothly.

9. The task group units meanwhile were preparing for the first shot day. Crews were briefed on security and radiological safety.

RadSafe organizations continued the training begun months earlier. The staff Atomic Defense section moved to Rikini where they supervised the installation of washdown gear to protect ships from radioactive fallout, and conducted atomic defense exercises and inspection. HELLE GROVE and LST 762 made preparations to carry the test devices from Eniwetok to Rikini. ESTES and other units took part in preliminary shot rehearsals and communications check-outs. All units were doubly busy during the period, performing their assigned tasks while they prepared for the ERAVO shot.





d. EXERCISES AND REHEARSALS

ing various Task Group units, culminating in the Task Force shot rehearsal conducted 21 and 23 February 1954. ESTES left Eniwetok 9
February and again on 16 February to participate in CTG 7.4 shot rehearsals off Bikimi. These were similar to the one conducted in October 1953 off San Diego, Operation TIGERCAT. On the 16 February exercise she was joined by CURTISS and RENSHAW. The RayDist unit installation in CURTISS had been completed 13 February. Coincident with these TG 7.4 rehearsals all shot time communications in ESTES were checked out, with CTG 7.1 and CJTF SEVEN representatives participating. RENSHAW took part as aircraft control DDE, on station midway between Bikini and Eniwetok, operating an automatic keyed homing device for aircraft navigational use, and serving as a communications relay station.

11. From 11 to 16 February APACHE and SIOUX rehearsed their tasks in support of Project 2.5a laying fallout collector buoys in patterns off both Eniwetok and Rikini, then locating and recovering them. The exercise brought out the fact that this program would have difficulty operating to the extent that had been planned, because the rough seas made the laying and recovery of buoys difficult, damaged the collector and electronic equipment in many of the buoys, and greatly complicated the task of finding them after the shot.

- 12. On 16 February MCLALA and TAWAKONI put to sea with YAGS 39 and 40 for an embarking and towing exercise, with the project aircraft participating.
- Three trial or dummy runs were made by LST 762 and BEILE CHOVE prior to actual movement of the first test device from Eniwetok BELLE GROVE, on 28 January, pumped down and loaded in her well deck a shot barge complete with a dummy device and associated equipment and took it to Bikini where it was offloaded, positioned on the UNION shot site and used for preliminary sighting in. On 18 February LST 762, beached on Parry Island, received aboard and secured for sea a dummy device loaded in its special trailer, and transported it to Bikini. The 762 beached on Eninman Island and discharged the dummy, which was then taken to the shot site by LCU, off-loaded, placed in position and used to sight in test equipment. When 762 later brought the device for BRAVO to Bikini, she returned the dummy to Eniwetok. These two lifts provided 762 and BEILE GROVE the opportunity to check out loading and securing the devices, although that was not the primary reason the lifts were made.
- Parry Island, moved aboard BAIROKO with his staff, and shifted to Bikini Atoll for the Task Force shot rehearsal. 23 February had been designated as the simulated shot day. All activities conducted a rehearsal of shot day minus one and shot day procedures, except those whose operations could not bear interruption without interference with



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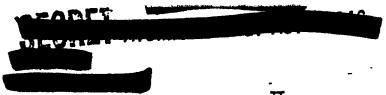
their final readiness for the shot. Those not actually taking part simulated participation to the extent practicable. The LSTs, REILE GROVE and the Boat Pool, GYPSY and COCOPA did not take part in the operation. APACHE simulated AINSWORTH, not yet arrived in the area. Ships anchored in the lee of Enyu Island for evacues embarkation. sortied from the lagoon and took their evacuation stations at sea. returning to the lagoon later in the day. As a drill for the coming ERAVO shot day it was a valuable preparation, very profitable to participating ships. It pointed out existing flaws in the basic naval plan for the shots and permitted their correction. These were largely in connection with communications, and in reporting by task group units as they completed scheduled events. It had been assumed up to this time that ships would be able to proceed in accordance with their. schedules as laid down in the operation plan for the shot. found that they were often delayed in executing scheduled movements because of their project support tasks. A complete operation order had been issued for the rehearsal. For actual shots this was supplanted by an extensive and detailed check list of events leading up to and following the shot, supplemented by instructions concerning any special procedures. This check list called for prompt reporting by any unit falling behind schedule, to permit early corrective action and readjustment of schedules if necessary. Since MOLALA, APACHE and SIOUX were employed up to a few hours before shot time in areas of expected heavy fallout, their adherence to the schedule was of particular interest

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from the point of view of safety of personnel. The check list also lightened the communications load and speeded up shot time communications by permitting the use of brief plain language reports referring to event numbers from the list. Although the rehearsal was successful and profitable, it would have been more so had all units been able to take part. The chance to test units not participating did not come until the actual operations in firing the initial shot; they would have benefited from the rehearsal. As it was, the rehearsal probably interfered with the work of those not participating to such a considerable extent that in the long run more might have been gained by a complete rehearsal with all taking part.

loaded, in her well deck for a sea trial. The actual device was loaded and taken to sea to determine its reaction in a seaway. HELLE CROVE was escorted by EPPERSON and RENSHAW, with a patrol aircraft of VP-29 providing air cover. The task unit maneuvered off Eniwetok during daylight 21 February and returned to the lagoon where the device was offloaded. HELLE CROVE experienced no difficulty in handling the barge.

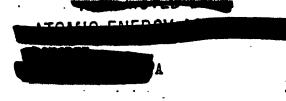




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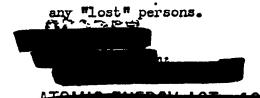
PRE-BRAVO EVACUATION

All personnel, except for the members of a small firing party, were evacuated from Bikini Atoll prior to the detonation of " BRAVO. During the forty-eight hours preceding shot day some fourteen hundred persons departed the island camps and were shuttled by LCM, LCU and helicopter to ships in the lagoon. Prior to the personnel embarkation all valuable material at the small camps and work sites nearer the shot island had been shifted to Eninman and Enyu for safekeeping. The amount of material at the atoll was too great to permit its temporary evacuation for a shot; stowage on the two southern islands was considered to give adequate removal to protect it from heat, blast and water wave action, with the chance of any significant contamination unlikely. Small craft that could not be accommodated on board BELLE GROVE were moored or anchored in deep water in the lee of The LCUs were anchored with the smaller craft. As an experi ment one manned LCU had been taken to sea in the ERAVO rehearsal. its performance in a moderately rough sea was not satisfactory, it had been decided to anchor all LCUs in the lagoon for the shot (as there was no indication the sea would not still be rough). To insure the safety of personnel their removal to a greater distance was advisable. This could be accomplished only by their movement aboard ship, and the subsequent movement of the ships to a safe distance at sea. The small firing party remained ashore for the shot, sheltered in the especially constructed bunker on Enyu from which the actual detonation of the



device was controlled.

- evacuation from ERAVO. It was necessary, first of all, to reduce the number of persons involved, because of shipboard space limitations, and to simplify and shorten the actual embarkation process. To this end personnel were transferred from Rikini in advance of the evacuation period, as soon as their services there were no longer required. They were shifted to Eniwetok and there reassigned, or returned to the United States. Surplus equipment and stores were lifted to Eniwetok by LSTs 762 and 551. This by no means denuded Bikini of equipment and supplies, for reoccupation of the base camp at Enimman and resumption of work on other islands were intended as soon as possible after the shot. Evacuees were permitted to bring with them only a small amount of hand luggage.
- 3. A series of four evacuation conferences was conducted at CJTF SEVEN Headquarters, with CDR Daniel Bontecou, U.S. Navy, Staff Logistics Officer, representing the Task Group Commander. From these conferences resulted the final evacuation plan. The plan was based upon four premises:
- a. No major ship would be in the vicinity of the device after it had been armed.
- b. The majority of passengers would be embarked in ships on BRAVO-1 day, sufficiently early to conduct a thorough muster of all personnel in the Bikini Area, with time remaining before dark to locate



- c. Evacuees would embark initially in ships moored or anchored nearest to the islands on which they were based.
- d. Passenger ships would shift to the comparatively smooth waters off Enyu by 1300 on ERAVO-1 day, and anchor there while the final evacuation was carried out, and personnel initially embarked in the other ships shifted to the ones to which they had been assigned.
- The capacity of each major ship was set off against the requirements to be placed upon it, and spaces were allocated to the various task groups. BAIROKO was to carry personnel scheduled for early reentry by helicopter, including the Task Force RadSafe organization. Scientific and technical personnel were on board CURTISS, while AINSWORTH would accommodate the majority of construction person-ESTES, as the headquarters ship, would carry the commanders and staffs of the Joint Task Force, and of the Scientific, Base Facility and Air Force Task Groups. Special arrangements were made, principall in BAIROKO, for the temporary accommodation of passengers in excess of normal capacity. The movement times of various ships were adjusted to meet the needs of the other task groups. Officers on ESTES, BAIROKO, CURTISS, BELLE GROVE and AINSWORTH were designated troop quartermasters and briefed in their duties. / A system for strict personnel accounting was set up, providing for the submission of accurate passenger lists to the troop quartermasters, two complete sight musters aboard ship of all personnel in the Bikini area, and the submission of muster reports to the JTF SEVEN Transportation Officer in ESTES, to insure that the

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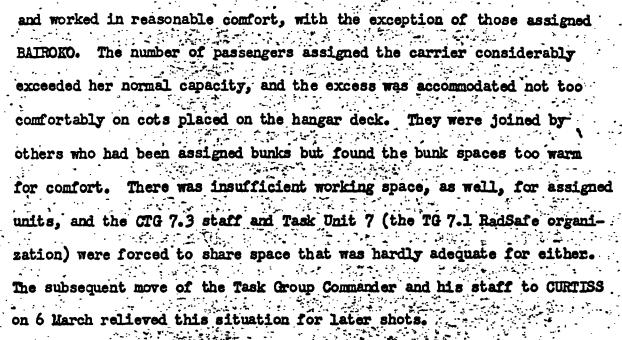
evacuation would be complete and the whereabouts of every person in the area positively established. Total accuracy of these musters and reports was required, to ensure that no one was stranded ashore during the shot. The plan for reentry called for aerial RadSafe surveys in BATROKO's helicopters, followed by the return of ships to the lagoon when it had been declared safe from harmful radiation. The Boat Pool and helicopters would then return to operation, personnel move back ashore, and recovery of ERAVO data and preparations for the next shot commence.

- 5. An evacuation rehearsal was conducted in conjunction with the shot-day rehearsal 22/23 February. On the simulated minus-one day a token evacuation was carried out with boats making dummy runs to the major ships, and the ships moving on schedule to their anchorages off.

 Enyu and thence to sea. USNS AINSWORTH had not yet arrived in the forward area; her movements were simulated by the APACHE. Simulated musters were held and drill message reports were submitted to the task force command post in ESTES.
- 6. For the actual shot the evacuation was effected with little difficulty. On ERAVO minus two the Bikini fighter detachment (3 F4Us) moved aboard BAIROKO, together with the six Marine helicopters and the Air Force helicopters and L-13 that comprised the Bikini inter-island airlift. The Marine helicopters continued operations from the carrier. On the morning of ERAVO minus-one day CURTISS took aboard personnel

evacuating the shot site and departed her station there. She proceeded down the lagoon and anchored off Enyu. ESTES, BAIROKO, AINSWORTH and BEILE GROVE, anchored or moored off Eninman, received personnel evacuating that island and other islands in the atoll, and shifted to the Enyu anchorage. Evacuees initially embarked in ships other than those to which they were assigned were transferred to their assigned ships. Boating was secured; the LCUs were anchored and the Holmes and Narver LCUs were moored in the Enyu anchorage and their crews taken aboard BEILE GROVE. BEILE GROVE loaded the 15 Navy LCMs, 3 Holmes and Narver LCMs and the AVR in her well deck and proceeded out of the lagoon, only slightly behind schedule. The final muster was completed as task units moved to sea. BAIROKO delayed her departure until she had recovered her two helicopters after their flight with the firing party from the shot island to Enyu, and then proceeded to sea leaving the stoll evacuated and ready for the shot.

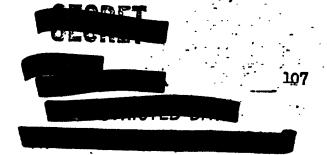
- 7. The final muster was complete, with one exception. On BRAVO minus-two a destroyer had placed a man ashore on Bikini Island for helicopter pickup, air lift to Eniwetok and eventual transfer to the United States for emergency leave. In her muster report the destroyer was unable to account positively for his location and there was considerable concern until the man was located already enroute to Hawaii from Eniwetok by air. On subsequent shots transfers of this type were prohibited on or after minus 2 day.
- 8. During the period of evacuation, personnel aboard ship lived



9. The planned post-shot reentry was not effected due to the heavy radioactive contamination of Rikini that resulted from ERAVO.

Instead all major units except BELLE GROVE proceeded to Eniwetok and there disembarked their passengers. BELLE GROVE remained behind:

waiting at sea until she could enter the lagoon safely. She re-entered next morning and commenced decontamination of craft that had been left moored in the lagoon at Eniwetok. The task groups reorganized their Bikini units for the resumption of operations from shipboard, and on 3 March BAIRONO and other units returned to Bikini and commenced the recovery of test data by helicopter.



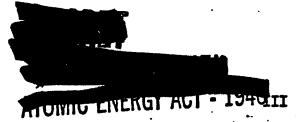


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- 1. The first three CASTLE test shots were detonated at Bikini Atoll. BRAVO was fired at 0645, 1 March 1954, on the reef about $\frac{1}{2}$ mile west southwest of Namu Island. ROMEO was a barge shot fired at 0630, 27 March 1954, in the BRAVO crater. KOON was set in place on the eastern end of Eninman Island and fired at 0620, 7 April 1954.
- 2. This was not the firing order planned for CASTIE and the time interval between the first and second shots was considerably longer than had been intended. Radioactive fallout on the Bikini islands from BRAVO was so severe in intensity that it necessitated the abandonment of the shore bases there, with a shift of operations to a base afloat on Task Group 7.3 vessels. The winds during BRAVO carried relatively heavy fallout to such an unexpectedly great distance from Bikini that ROMEO was long postponed to guard against a recurrence. It was not fired until favorable winds finally assured that its detonation would not result in contamination of the Task Force Eniwetok base to the West, or of the populated atolls to the East and South of Bikini.

 When ROMEO was fired the resultant contamination did not hinder subsequent operations. KOON actually caused less damage than had been expected, and did not impede preparations for the next Bikini shot at all
- 3. Up to about 12 hours after the detonation, BRAVO may be taken as typical of the Bikini shots, insofar as Navy preparations and shot time operations are concerned. The principal change after BRAVO,

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namely, the shift to an afloat operation, actually somewhat simplified the Navy's operations on the day preceding subsequent shots, since it was no longer necessary to evacuate large numbers of shore based personnel.

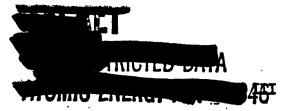
In preparing for a shot at Bikini, the Navy had certain standard tasks to be performed. The naval forces themselves had to be ready for their scheduled operations. HELLE GROVE. or an LST. transported the shot device to the scene, escorted by DDE's and patrol aircraft. The security forces had to guard against the presence in the Danger Area, or in the downwind sector from the shot site, of any ships or aircraft that might attempt to observe or interfere with the test operations, or be endangered by fallout after the DDE's patrolled around Bikini, concentrating on the lagoon entrances and the sea area off the shot site, and VP 29 patrol air craft searched the outlying areas. Units assigned to assist scientific projects completed their extensive preshot activities. SIOUX, supporting project 2.5a, loaded fallout collector buoys at Eniwetok, and during the twenty-four hours preceding the shot, laid them in the prescribed downwind pattern, and then steamed to a safe sector before zero hour. GYPSY, later replaced by MENDER, and COCOPA planted buoys for project 1.4's underwater pressure tests prior to evacuation of the lagoon. Boat Pool small craft and HMR 362 helicopters operated intensified schedules to transport scientific persoppel completing last minute preparations at their stations throughout



the atoll. The MOIAIA, with YAG's 39 and 40, left the Eniwetok base and joined the ships at Bikini, preparatory to putting to sea to set up their drone ship operation in the fallout area. CJTF SEVEN, TG 7.1, TG 7.4 and TG 7.5 command posts opened in ESTES. CTG 7.1 opened his RadSafe center on BAIROKO. IST's completed loading, retracted from The Enimena beach, and departed for Eniwetok to be clear of the area before shot time. Fueling and replenishment operations were scheduled around the shot to keep transient vessels out of the area.

Two days before BRAVO, shore based personnel at Bikini began to move aboard ship. BAIROKO took aboard her shore based aircraft, fighters and helicopters, the Air Force I-13, and H-19 helicopters. Sight musters of personnel began, the first step in the evacuation process of an exact accounting for the whereabouts of each individual present in the area. Starting on shot day minus-one, communications were restricted to essential traffic. Final evacuation of Bikini As small craft were no longer needed they were loaded in BELLE GROVE's well deck or run into the lee of Enyu Island, anchored or moored and their crews moved aboard ship. The boat pool's coverage barge, and the helicopter landing barge, were unmoored and taken to sea, towed by an ATF. In the late morning ships left their regular anchorages and anchored off Enyu to complete the evacuation. The last boats left shore and delivered their passengers aboard ship. Another sight muster was held to insure the evacuation was complete. Boating

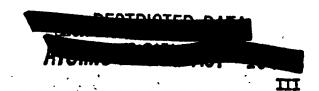
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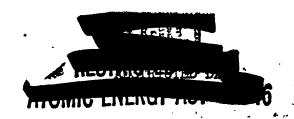
was stopped and REIJE GROVE completed loading and pumped her well deck dry. The firing party departed for the shot site by helicopter to make final preparations and arm the device. Ships began their movement to sea.

6. By 1900M on BRAVO-one day all ships had cleared Bikini Lagoon except BAIROKO. She was still at anchor off Enyu awaiting return of two helicopters. They were waiting at the shot site to evacuate the firing party to the bunker on Enyu. The ISTs were not in the Bikini area. IST 825 had sailed at 1600 on B-one day for the Far East, on a course to take her well clear of radioactive fallout. ISTs 762 and 551 were at Eniwetok. NICHOIAS was out of the area, employed in the search for a a missing British air craft. EPPERSON was on patrol at Eniwetok. CURTISS, ESTES, HELLE GROVE, PC 1546. GYPSY, TAWAKONI, and COCOPA, with her tow, were all on their evacuation stations. RENSHAW was on station as aircraft control DDE, 90 miles southwest of Bikini. PHILIP was on her assigned patrol north of the shot island. MOIAIA, with YAG 39 and YAG 40, was at the drone ships initial station, awaiting the time to remove personnel and surrender control of the drones to the project aircraft. APACHE and SIOUX had finished laying fallout collector buoys and were enroute south to their evacuation stations, keeping well clear of the shot site. Project aircraft were on the ground at Eniwetok, awaiting time for their





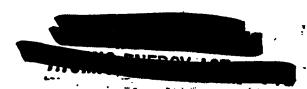
- 7. One VP-29 aircraft had completed the final daylight search of the ocean area out to 800 miles from Bikini along the forecast track of the radioactive cloud, to warn any ships out of the area. The prescribed sector was clear of shipping except for USNS GENERAL PATRICK, contacted by the aircraft 415 miles from ground zero. Since the PATRICK would clear the designated danger sector by 1800 of B-one if her present course and speed were continued, she was not diverted.
- 8. At approximately 2000 PHILIP ended her patrol off the shot island and proceeded south, keeping well to the west of the atoll, to join BAIROKO on station as plane guard. By 2230 BAIROKO's two helicopters, with firing party on board, had departed the shot island for Enyu. At 2305 they returned to the ship and BAIROKO got underway and proceeded out of the lagoon. Bikini Atoll was clear of ships and personnel, except for the firing party in the Enyu bunker, and ready for the detonation of BRAVO.
- 9. At 0030 BAIROKO reached her assigned station. At 0130 the P2V5 aircraft (IT R. BORGSTROM, Jr, USN) assigned to Project 6.4 (drone ships YAG 39 and 40) took off from Eniwetok airstrip. By 0200 APACHE and SIOUX had reported ETA's that would place them on station by 0400. At 0300 the Project 6.4 P2V5 arrived in the Bikini area and control of it was assumed by BAIROKO CIC. At 0445 CJTF SEVEN issued his final confirmation that the shot would be fired on schedule.



At 0330 the PAY2 (ICDR W.R. HAHN, USN) assigned to Project 1.4 took off from Eniwetok airstrip. At 0505 all ships reported on station except MOIAIA. At 0510 MOIAIA had taken all YAG personnel aboard and was preparing to turn over control of the drone ship to the P2V5. At 0520 VP-29 reported all patrol aircraft on the ground at Kwajalein. By 0525 MOIAIA, with YAG personnel aboard, was proceeding south, out of the downwind danger area. She was then over 40 miles from the shot site and on a safe bearing, and was reporting her position, course and speed each half hour. At 0550 CTG 7.3 reported to CJTF SEVEN that all ships, except MOIAIA, were on station, and that MOIAIA was clear.

10. Shortly after 0500, CJTF SEVEN authorized the movement of minor units to new stations at any time, and of BAIROKO, ESTES and CURTISS after H-hour plus thirty minutes. These movements were to be made at the Task Group Commander's discretion, with ESTES required to remain on her assigned bearing but permitted to move out to a distance not to exceed 50 miles. After consideration of the predicted winds, it was decided to reorient some of the smaller and slower ships to guard against the possibility of radioactive fall-out in their areas. At 0600 APACHE, SIGUX, GYPSY and COCOPA, with her tow, were directed to open their range from Bikini, and began moving to new positions fifteen to twenty miles south of their original shot time stations. At 0645, as MOLALA reported well clear of the fallout area and COCOPA reported on station, BRAVO was





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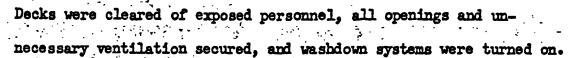
without ill effect.

11. At 0655 the P4Y2 departed her shot station for Eniwetok, At 0715 TAWAKONI proceeded west from her station to join MOLAIA, to transfer the YAG 40 crew and assist in recovering the YAGs. BAIROKO, ESTES and CURTISS remained on their shot time stations, to facilitate scheduled helicopter operations and to keep in communication with the firing party in the Enyu bunker. At 0725, upon orders of CJTF SEVEN, BAIROKO launched a helicopter with six airstrip operations personnel aboard bound for Eninman Island to man essential airstrip stations, and was prepared to launch other helicopters. Five minutes later the aircraft was recalled, upon advice from CTG 7.1 that the island was probably heavily contaminated. Meanwhile the P2V5 was having difficulty maintaining control of the YAG craft since his antenna had carried away. He had not yet succeeded in turning on the washdown system on YAG 39. Preparations were made on BAIROKO to launch a helicopter equipped for radio control of the drones, but at 0734 CJTF SEVEN directed that it not be launched.

12. Up to this point operations were normal, and as expected. However, at about 0800, CJTF SEVEN advised that all major units open to a 50 mile range to avoid radioactive fallout. About this time, ships' damage control parties began to report considerable radioactive contamination on deck. All ships were directed by CTG 7.3 to proceed south at best speed to a fifty mile range, to activate

washrown systems, and to use maximum damage control measures.

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 Washdown systems were operated generally until about 0930. Most ships received at least some contamination from fallout: BAIROKO and PHILIP, her plane guard, received the heaviest. By 0840 flight deck readings of 1000 mr/hr had been reported by HAIROKO, and dosimeters worn by personnel in the forward ready room indicated dosages Intensity readings in the enclosed bridge varied from 200 to 2000 mr/hr, with an average of 800 mr/hr. Intensities on deck later reached a maximum of 5000 to 25000 mr/hr in flight deck drains. PHILIP reported average-intensity readings of 5000 mr/hr on deck, with a highest reading 20000 mr/hr. After the fallout had ceased, ships carried out standard shipboard survey procedures and proceeded immediately with rough decontamination of hot areas. The highest individual dosage recorded for shot day among TG 7.3 personnel, by film badge, was 6000 mr, most of which was received while the wearer was engaged in topside decontamination on the BATROKO. Other shot day dosages were under 3000 mr. with the majority considerably lower.

14. At 0830 the P2V5 had completed rigging a new antenna and succeeded in turning on the YAG washdown system. At 0840, when it became evident that ESTES was not in the heavy fallout area, she was ordered to remain in her present position, to keep in communication with the firing party in the Enyu bunker. At 0915, CJTF SEVEN

with the firing party in the E

requested CTG 7.3 to launch two helicopters to proceed to Enyu and evacuate the firing party. BAIROKO secured her washdown system, shifted two uncontaminated helicopters to the flight deck and began closing Enyu. The helicopters were launched at 1015 and evacuated the party successfully, returning to BAIROKO at 1230.

15. Following the detonation, a VP-29 aircraft took off at 0830 to search out along a track bearing 065° true from ground zero for a distance of 600 miles from Bikini. This aircraft was directed to take departure from a position 50 miles bearing 065° true from ground zero in order to avoid fallout. However, this was a miscalculation, for by 1000 this aircraft had become so contaminated it had to return to base. A relief aircraft was ordered to search the same bearing taking departure from a position 180 miles bearing 065° true from ground zero. (The approximate position where the previous search had terminated). The only contact reported by these two search a ircraft was the PATAPSCO (AGO-7) contacted at 12° 31'N, 170° 48'E, at 1925, course 030°, speed 10 knots. As the PATAPSCO was heading into the danger sector designated by CJTF SEVEN, the aircraft turned the ship to an easterly heading.

16. At 1100, after air sampling had indicated that the fallout had ended, all ships were ordered to close Bikini Atoll to a range of ten miles. The next few hours were relatively uneventful. The P2V5



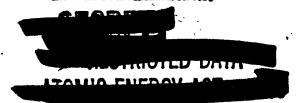
returned control of the drone ships to MOIAIA, and departed for Eniwetok. CTG 7.4 reported that he had no further positioning requirements for ESTES. Ships were reassigned new stations at sea south of Enimman Island.

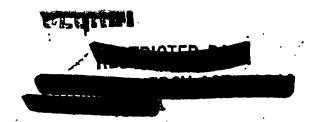
The Task Group Commander transferred to ESTES by helicopter and took part in a conference, where plans for reentry into the lagoon were revised. Ordinarily, had the ships themselves not been contaminated, and had contamination on the islands not been so extreme, RadSafe surveys of the atoll would have been flown by BAIROKO's helicopters, carrying TG 7.1 monitors. When the survey was complete, and water samples had shown the lagoon waters were safe for entry, ships would have reentered the lagoon and commenced recovery operations. -By boat and by helicopter, scientific parties would return to their stations throughout the atoll, to recover film, instruments and other data, their movements into contaminated areas controlled by CTG 7.1's RadSafe Unit. But the ships were contaminated, and radiation intensities on most islands were too high for early reentry. A new plan was indicated. It called for, BAIROKO, ESTES, CURTISS and AINSWORTH to return to the Eniwetok base, to permit the Task Force to reorganize and prepare to resume Bikini operations based afloat. BELIE GROVE, with a TG 7.1 RadSafe representative on board as advisor, would remain outside

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the lagoon until daylight, reenter and survey the lagoon water for contamination. If the lagoon was safe for general reentry BELLE GROVE would order ships not occupied on project support tasks back into the lagoon, and begin survey and decontamination of small craft moored and anchored off Enimman and Enyu. MOLAIA and TAWAKONI would tow the YAGs to Eniwetok. APACHE and SIOUX would commence the fallout collector buoy recovery.

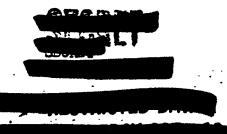
Commencing about 1530, a second, comparatively mild fallout was experienced, with readings in the order of 50 to 300 mr/hr reported by various ships. IG 7.1 RedSafe personnel advised that the particles composing this fallout were of a size that might be inhaled by exposed personnel. Ships were directed to keep only essential personnel topside, and to take necessary damage control measures, including the operation of washdown gear. By 1800 CURTISS, AINSWORTH and ESTES were enroute to Eniwetok. BAIROKO departed at 1915 after completing transfer of the RadSafe advisor to BELLE GROVE. All arrived at Eniwetok the following morning and disembarked Eniwetok-based staffs and their evacua tion passengers. MOLAIA and TAWAKONI took YAG 39 and 40 in tow late on shot day and proceeded to Eniwetok. The YAGs had not succeeded in their attempt to receive heavy contamination. APACHE and SIOUX commenced the search for fallout buoys. Next day BELLE GROVE carried out the reentry plan, found the lagoon waters safe, and started the small craft survey and decontamination.





III

19. On 2 March personnel of other task groups began moving aboard CURTISS, AINSWORTH, BAIROKO and ESTES and as they were loaded, the ships sailed for Bikini. Upon BAIROKO's arrival at Bikini 3 March, complete RadSafe surveys were flown by her helicopters, and recovery operations were commenced, almost exclusively by helicopter since the islands were too radioactive to permit reentry by LCM or DUKW. Bikini based personnel began to shake down to conduct their future operations from shipboard.



III

ROMEO

20. ROMEO had originally been scheduled as the sixth shot; it was now advanced to the number two position on the schedule. Despite the time consumed in recovering from the effects of BRAVO, it was possible to reschedule ROMEO for 13 March, with the interval between the first two shots only two days longer than had been called for in the original pre-BRAVO schedule.

21. On 12 March all was in readiness, and the shot-day minus one schedule was begun. At noon CJTF SEVEN indicated that there was some uncertainty as to whether the winds would permit firing and the sortie was delayed. Shortly after 1600 word was received to resume the schedule, and ships began moving out of the lagoon to their stations. MOIAIA and the YAGs sailed at 1700, with others following as they completed their tasks. By 1900 the lagoon was clear. At 1928 word was received that the shot had been postponed because of unfavorable weather Thus began a two week long delay while the Task Force waited for the winds to change so that ROMEO could be safely fired. On this first abortive attempt the formation remained at sea through the night and returned to the lagoon the following morning, backing up the shot-day minus one procedure until the minus two day disposition had been reformed. The Task Force remained in a readiness condition varying from minus one to minus three until the shot was finally fired. Minus one day was again declared on 19 March. Once more the movements began, and



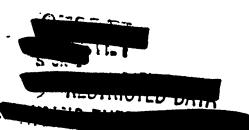
anchored off Enyu Island waiting for the last personnel to return aboard ship, with APACHE and SIGUX at sea to lay their fallout buoy pattern, and RENSHAW, GYPSY, and COCOPA was the YFN barge in tow proceeding to their shot stations. At 1900 CJTF SEVEN directed that the task group sortise be delayed; at about 2000 word was received that the shot had again been postponed. Next day the ships again returned to their minus two day positions. On 21 March the minus one day pattern was started again. This time the sortis was complete except for ESTES and BAIROKO, when another two day postponement was announced. Ships returned to the lagoon and resumed their minus two day status. Postponements continued from day to day, until 27 March was designated as shot day. This time the winds were favorable, and the shot was fired.

22. On 26 March, with the ease born of long practice, task group ships sortied from Bikini lagoon for ROMEO. The only mishap occurred when COCOPA, with the YCV 9 in tow, in attempting to take the YFN 934 in tow, fouled the YCV tow wire in her screw. To minimize delay in sortie, the YCV was anchored, the YFN was placed alongside COCOPA and TAWAKONI was directed to take COCOPA in tow. Immediately before this was accomplished COCOPA succeeded in clearing her screw sufficiently to permit operation and proceeded to sea with the YFN in tow. After return to port several turns of wire still wound on the shaft were removed.

III

23. Events up to shot time were generally conducted much as they had been in BRAVO. The disposition of ships off Eikini was substantially the same. The coverage of the pre-shot air search had been enlarged greatly, and five planes were now required to search the new Danger Area and the downwind sector, as against three during ERAVO. The firing bunker and four hundred foot photographic tower on Enyu Island were now used as a radio relay point, and the firing party was embarked in ESTES in which special equipment was used to send out the firing signals by radio. The firing party was evacuated from the shot barge by 2 ICMs, rather than by helicopter.

24. The shot was fired on time. There was no fallout on task group ships. Shortly after 0900 two helicopters left BAIROKO for the initial radiological survey, and two more proceeded to the airstrip with personnel to clear it of debris that had been deposited by the blast. Reentry was tentatively scheduled for 1200, pending a survey of the lagoon water. BELLE GROVE entered to test for water contamination. All ships left their evacuation stations and closed on Bikini. Shortly after 1100 word was received that fallout on Bikini was not significant, except in the shot crater area. BELLE GROVE reported the lagoon clear, and 1300 was set as R-hour. APACHE and SIOUX began their search for fallout collector buoys. YAG 39 and 40 were reported dead in the water in the fallout area. MOIAIA and TAWAKONI were proceeding to an area south of them, to gain radar contact and stand by to recover them when

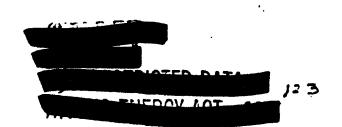


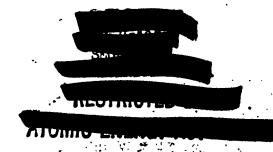
III

when they left the Thot's area. At 1315 ships began to enter the largem, and by 1600 reentry was complete and normal operations bed been resumed. The Inimum siretrip was quickly restored to operation.

25. During the might and on 28 March, the day following the shot, three ships scarching for fallout collector buoys morth of Fikini Atoll, AFACHE, EFFERGUE and SICTX in succession experienced fallout, the maximum being 42 mm/hm. They retired to the southeast. A light fall—sut was experienced generally throughout the Bikini area. Ships did not leave the lageon, but cleared their decks, secured ports and hatches, and eporated washlown systems intermittently throughout the might. The fullout almost ceased by about 0400 the morning of 29 March, but a very slight arount continued for the remainder of the day. The highest intensity during this period was 30 mm/hm reported by SICCE. Average topside contamination levels aboard ship reached highest values around 20 mm/hm, but were below 10 mm/hm in most cases by 0800 of 30 March, and around 5 mm/hm by 0800 of 31 March.

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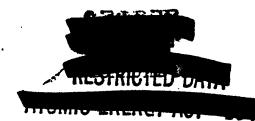
III

KOON

After ROMEO, KOON was scheduled for detonation on 2 April 1954. This shot was postponed briefly awaiting favorable winds, and the Task Group did not sortie from Bikini Lagoon until 5 April. Since the site of this shot was close to both lagoon entrances, the device was not armed until after the lagoon was The firing party and firing party boat crews were clear of ships. transported from the shot island, Eninman, to the firing bunker on Enyu, and thence to the ESTES, at sea, by helicopter. The drone ships, YAG-39 and 40, since they were still contaminated from their successful operations in ROMEO, did not participate in KOON. The sea phase of Project 2.5a, and project 1.4 also did not participate. APACHE, SIOUX, MOLAIA, TAWAKONI and the two special project aircraft therefore were not required to perform their usual tasks for KOON. PC 1546 had been assigned a special mission in support of Scripps Institute of Oceanography personnel, standing by near Ailingnae to give warning if a tidal wave developed from the shot.

27. This shot was fired on Eninman where the main Bikini camp had been located. All material had to be removed from the island prior to the shot. The time permitted by the postponement of both ROMEO and KOON had been used to great advantage in removing equipment from the island and evacuating it to Eniwetok. This task kept

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the ISTs fully employed during the period between shots.

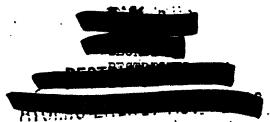
On 5 April 1954, the shot day minus one procedure commenced. Bosts made their last trips to the islands, delivered their passengers to their assigned ships, and then were loaded in BELLE GROVE, or left anchored or moored off Enyu. The sortie began at noon. By 1400 all ships except BELLE GROVE had cleared the lagoon, and she was under way. By 1600 the device had been armed, BAIROKO's helicopters were all aboard, and the ships were on their evacuation stations. SHEA and IST 1157 arrived from Eniwetok and joined the formation at sea to view their first shot and be prepared to commence laying the Project 3.4 mine pattern as soon as KOON was detonated. At 1900 all ships evacuation stations were shifted 200 toward the south, and their distances from ground zero opened by 2 miles. Shortly before midnight the last VP-29 aircraft reported completion of his search and arrival at Kwajalein. Of the five aircraft making the day's search, two reported no contacts the other three had discovered two Japanese fishing boats one at a. distance of 330 miles, the other 570 miles northeast of Bikini, near the edge of the Danger Area, at the northeastern end of the downwind danger sector. The presence of these craft was reported to CJTF SEVEN. No significant fallout was likely to occur so far from Bikini, and the boats were on courses that, if maintained, would place them in even safer positions before shot time.

29. Shortly before 0200 CJTF SEVEN announced postponement of KOCN for twenty-four hours to await a predicted wind change that would be

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more favorable.



It was decided that the ships would not reenter the lagoon, but would remain at sea through the day to await the firing Scheduled shot day flights by VP-29 were cancelled, and a new five plane search of the Danger Area and downwind sector ordered. At about 0900 ESTES, BAIROKO and EPPERSON closed on Eninman Island and the firing party was picked up off ESTES and landed on Enyu and Enimman by helicopter. Resupply of fuel to generator sets and the rechecking and repair of scientific install'ations was also performed by helicopter. All ships moved closer to Bikini where they remained during the day. At 1900, with the firing party again evacuated, the ships re-opened the range and returned to their shot time stations. The search aircraft reported no contacts. Everything proceeded satisfactorily, and KOON was detonated at 0620, 7 April. PC 1546 signalled from Ailingnae that no Tsunami effect had been detected. At 0640 the formation headed south at 15 knots, to increase their range from the radioactive cloud, but at 0700 this movement was cancelled when it became apparent from the plot of actual shot time winds and the small size of the detonation that they were already in an area entirely safe from fallout. ESTES, BAIROKO and EPPERSON then approached Enyu and commenced helicopter operations.

31. By 0900 the RadSafe survey reports were in and 1045 was established as reentry hour. The ships returned to the lagoon on schedule and resumed operations. No ships or boats received any contamination during KOON.





- A primary mission of Task Group 7.3 on shot day and the day preceding was the evacuation of personnel and material from the shot atoll, to whatever extent was dictated by the size of the shot, and deployment of task group ships to sea to avoid damage to the ships and injury to personnel embarked. The responsibility for radiological safety of task force personnel during periods afloat was placed upon CTG 7.3., To escape the effects of instantaneous radiation from the fireball, and to minimize the blast and heat effects, ships were assigned shot-time operating areas at a safe distance from ground zero The distance was usually a minimum of from 25 to 30 miles. To avoid contamination from radioactive fallout, ships were assigned to operate in a sector assigned by CJTF SEVEN, where the predicted winds were not likely to carry the radioactive cloud, and if necessary maneuvered after the shot to a safer bearing and distance. considerations required that the ships be positioned at a distance greater than was required for safety, and demanded that some ships be stationed until after shot time on bearings involving a slight risk of being in the fallout area. To maintain voice communications and thereby tactical control, all operating areas had to be adjacent to one another.
- 2. A positive program had been carried out to insure that all ships nominated to participate in Operation CASTLE attained a high
 - 1. CUTF SEVEN OpPlan No. 3-53 Annex H, para "o".

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degree of Atomic Defense readiness before the first CASTLE shot. August 1953 type commanders had been informed of the special Atomic Defense preparations that would be required of ships and units nominated for CASTLE., Before BRAVO all units had completed satisfactory radiological safety exercises and inspections, conducted by the Staff Radiological Safety Officer, LCDR D. A. Pickler, USN., Water spray equipment devised and supplied by the Bureau of Ships to minimize contamination of a ship subjected to fallout had been assembled for all ships and installed with BuShips technical assistance. A BuShips representative, Mr. Seymour Gordon, had been assigned to the Task Group Commander's staff to assist in this program. Standard Atomic Defense Bills were modified to provide for operation of the water spray equipment. Decontamination stations prescribed in Navy directives were ready for use. Allowances of protective clothing and radiac instruments filled, the latter with considerable difficulty due to the comparative scarcity of instruments. RadSafe personnel completed Atomic Defense and monitoring courses at training schools, and ships crews were indoctrinated in basic Radiological Safety. CTG 7.3 established and oper ated a radiac instrument pool in the forward area, to assist ships personnel to repair and calibrate their instruments.

3. These extensive preparations proved their worth when, in the first CASTLE shot on 1 March 1954, the ships deployed off Bikini were

^{2.} CTG 7.3 1tr serial 00440 of 24 August 1953

^{3.} TG 7.3 Instruction 03440.1A

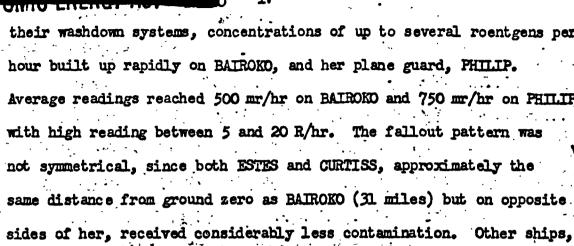
^{4.} TG 7.3 Instruction 3440.2A

subjected to extensive radioactive fallout, three of them, BAIROKO,

ESTES and PHILIP, on a relatively heavy scale. Prior to the detonation
the ships had been deployed at sea generally in the southeast quadrant
from ground zero, at distances ranging from 30 to 40 miles. This
disposition and its location were based on four principal factors:
the latest CJTF SEVEN radex; the requirements of CTG 7.1 and CTG 7.4
that ESTES and CURTISS be positioned about 12 miles from Enyu Island
for reliable UHF communications, and Raydist and aircraft control
purposes; the necessity that ships be at safe distances from the shot
site; and the requirement of reasonable concentration for communications and ship control purposes. When wind data began to indicate
an easterly component just before the shot, some of the smaller, slower
units were moved to the south. The larger ships were not moved because of their positioning requirements.

- 4. About OSOO, just as BA_ROKO was launching helicopters to begin the initial reentry schedule, sudden and rapidly increasing radioactive fallout was detected on several ships. All ships steamed south at their best speeds, cleared personnel from their weather decks, closed ports and hatches, secured unnecessary ventilation and turned on washdown systems.
- 5. Highly radioactive, visible white particles, about the size of pinheads, fell on the ships. In spite of the continuous use of

^{5.} CTG 7.3 ltr ser 00666 of 22 March 1954 6. Encl (5) to CTG 7.3 ltr ser 00419 of 26 Feb 1954



including those which had been moved southward before the shot, re-

ceived none of this early fallout, which ended about 0930.

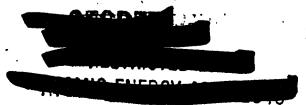
- 6. In the afternoon and early evening of shot day, light, invisible fallout was detected by all ships in the area. Again damage control measures were employed. This fallout commenced about 1300, reached a maximum about 1800 and decreased to almost zero by 2400.

 Average readings during this period reached 300 mr/hr, with maximum concentrations up to 475 mr/hr.
- 7. After each fallout period had ended, ships decontamination crews turned to to reduce the inter ity levels. The heavy, visible material deposited on deck during the early morning was concentrated by the washdown systems in and around drains and in places where water did not flow off readily. It was cleared away quickly when the decks were hosed down with heavy streams of water under pressure and intensities dropped rapidly. Continued application of water under pressure, and scrubbing, plus natural radioactive decay, gradually reduced the invisible contamination and brought the average topside



intensities down still further. By 36 hours after the first contamination was received, topside intensities on all ships averaged less than 25 mr/hr.

- Three barges, ten LCUs and ten LCUs had been anchored or moored in the southeast portion of Bikini Lagoon, off Enyu Island, prior to the shot. It was not considered practicable or safe to take them to sea in the prevailing weather. BEILE GROVE was loaded to capacity with 18 LCMs and the Rikini based AVR. Since these craft left in the lagoon were about 20 miles from ground zero, they suffered no damage from blast, heat or wave action. But they were all heavily contaminated. Twelve hours after shot time they had radioactive intensities averaging several mentgens per hour. On the day following the shot, when ships reentered the lagoon, decontamination of the small craft was begun. They were first hosed down by other vessels, notably GYPSY who was thus employed for several days, then hosed and scrubbed by decontamination personnel when they could get aboard. Work continued throughout the daylight hours until by 6 March intensity levels were reduced to the point where all boats were back in operation.
- 9. After the shot there was considerable contamination of the lagoon water, but it was concentrated in the northwestern end of the lagoon. Ships were able to enter and anchor in the lower lagoon without danger. A period of light winds left the lagoon waters calm, with less than normal circulation, while the radioactive solids in the water settled to the bottom, and intensities were reduced by decay.



By three days after the shot, all the lagoon water had become alightly contaminated, in the order of one microcurie per liter. Water samples were taken and tested at frequent intervals and salt water systems and adjacent engineering spaces monitored continually. condensors and fire mains on most ships gradually became contaminated. At one time it was feared this might become a major problem, and require ships to evacuate the lagoon, at least at night. However, 10 days after the shot the intensities of salt water system contamination began to drop steadily and there was no need for ships to leave the The highest shipboard intensity resulting from intake of lagoon. contaminated lagoon water was 30 mr/hr, detected on the exterior of an auxiliary condenser on CURTISS. The average intensity in the engineering space where this commenser was located was only 2 mr/hr. Drinking water produced from lagoon water by ships! evaporators showed no activity and was completely safe for use. One alarming report of a contaminated drinking water sample turned out to be due to contamination taken into the testing laboratory by its ventilation system, and not to contamination present in the sample.

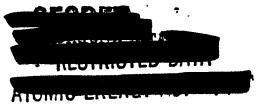
10. Nost Navy Task Group personnel present at Bikini for shot

ERAVO received at least some radiation; a considerable number received

dosages that were considered heavy by laboratory standards. Three

may have received substantial dosages by tactical standards. The

^{8.} CTU 7 ltr "Report of Water Samples" dated 10 March 1954



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^{7.} CTG 7.3 ltr ser 0560 of 14 March 1954

Maximum Permissible Exposure (MPE) for any individual (other than Air Force cloud sampler pilots) was established by CJTF SEVEN at 3.9 roentgens for the entire operation. By 20 March 1954 approximately 144 Naval personnel had received dosages between 3 and 3.9 roentgens, 123 had dosages exceeding 3.9 roentgens. The latter figure includes 3 man comprising an LCM crew, whose film badges read approximately 90 roentgens. All these represent somewhat less than 5% of total task group personnel. Almost 70% of total task group personnel received dosages of less than

BESTAVACHARITE COPY skin irritations which appeared to be minor radiation burns. They were in the form of minute, scattered inflamed lesions, appearing usually on the waistline, scalp or neck.

The burns were treated and studied, and did not appear to be serious.

II. Thorough investigation failed to explain how the three men in the LCM crew could have received the high dosages indicated by their film badges; they were transferred to Naval Station, Evajalein and later to Tripler Army Hospital for observation. They have revealed no symptoms of radiation sickness. The less severe dosages approaching or exceeding the MPE were received by members of BAIROKO's flight deck crew, and by personnel stationed in the CVE's island at shot time; by boat crew personnel of the Navy Boat Pool; by helicopter pilots and crew chiefs who flew many missions into contaminated areas; and by PHILIP personnel, due to PHILIP's relatively heavy contamination, and her later visit to the contaminated atolls of Rongelap and Ailingnae to evacuate the

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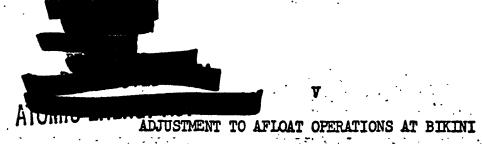
natives living there. To permit continued operations in support of CASTLE, CJTF SEVEN, at the request of CTG 7.3, doubled the MPE for all U.S. Marine Corps helicopter pilots and plane captains, all boat operating personnel of Task Group 7.3 Boat Pool, the entire flight deck crew of BAIROKO and all personnel attached to PHILIP. A system was established whereby MPEs for other essential personnel with accumulated dosages in excess of 3.5 roentgens could be increased to 7.8 roentgens on an individual basis.

10. The wideennest evenouse to estation eventeened by More

Unit 7, which was responsible for film badge processing for the entire Task Force. CTG 7.3 directed Navy Task Group units to assist CTU 7.1.7 by submitting rosters and film badge data forms for use in reporting film badge readings, and by maintaining their own individual dosage records. A system was devised to furnish CTG 7.3 weekly reports of each unit's situation with respect to dosages, and to provide close control of further dosage accumulations. Wherever practicable personnel with high dosages were shifted within their units, to duties where they were less likely to be exposed to additional extensive radiation. PHILIP was employed at Eniwetok during the second and third shots, while BATROKO remained at Bikini Atoll, but was stationed in areas clear of radiation, insofar as possible.10

^{9.} CTG 7.3 ltr ser 0593 of 18 Mar 1954

^{10.} TG 7.3 Instruction 6470.3 of 2 Apr 1954



- 1. After BRAVO the radiological situation at Bikini required that the shore bases there be abandoned, as far as full-time occupancy was concerned. This fact became apparent on shot day, and the headquarters staffs immediately developed plans for continuing operations at the heavily contaminated atoll, with all personnel permanently based aboard ship. On the afternoon of shot, ESTES, BAIROKO, CURTISS and AINSWORTH, with most of the 1400 evacuated personnel aboard, left Bikini and steamed for Eniwetok. They arrived there next morning and disembarked their passengers.
- 2. While the Bikini contingents of the Scientific and Base
 Facility Task Groups made preparations for an extended stay aboard ship,
 the ships prepared to receive them. BAIROKO, in addition, prepared to
 conduct all Bikini helicopter operations from afloat. The three Bikini
 fighter aircraft were barged ashore to Eniwetok Island, and personnel of
 the VC-3 detachment moved with them. The Air Force helicopters and I-13
 were flown ashore to the Eniwetok airstrip. Providing local air transportation at Bikini thereafter was solely a Navy/Marine Corps responsibility. BAIROKO received her new permanent residents that afternoon and
 sailed for Bikini before nightfall. Before the week was out AINSWORTH,
 CURTISS and ESTES were anchored in Bikini Iagoon, with BAIROKO and BELIE
 GROVE, all fully engaged in their new support task.



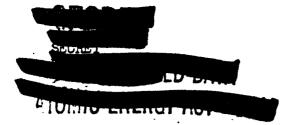
most urgent task then at hand, the recovery of scientific data from stations on the contaminated islands. This was largely a helicopter operation, with the recovery parties! movement into hot areas controlled by the Task Unit 7 RadSafe Center, working out of BAIROKO's forward ready room. The ship was so jammed with personnel that it soon became apparent that something had to give. To provide some relief. the Navy Task Group Commander and his staff, on 6 March, moved to CURTISS, thereby freeing a portion of BAIROKO's limited personnel and working spaces for the use of other task groups. CURTISS' excellent living and office, facilities were not being used to capacity in her primary support function of tending the shot site, and with minimum increase in her communications capability, she served successfully as the permanent task group-flagship throughout the remainder of the opera-After the return of ESTES and AINSWORTH to Bikini, additional personnel moved from BAIROKO in numbers sufficient to permit the restoration of at least adequate if not entirely comfortable living and working conditions for those remaining on board.

4. AINSWORTH, with the largest passenger capacity, and the best large scale living facilities of any ship in the task group, became the Bikini base for Task Group 7.5, the contractor's group who performed all necessary construction work in the area, and operated the civilian manned boat pool. She accommodated an average of 450 personnel throughout the remainder of the period. Since she was fitted out as a passenger vessel, with facilities for 317 cabin class and 685 troop

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class passengers, she assumed her new function with a minimum of difficulty. Her working force of cooks and stewards was supplemented with a small number of contractor employees to assist with the long term housekeeping task. The radiation levels on the islands dropped from day to day due to natural decay, and soon were low enough to permit the gradual resumption of work ashore. As soon as AINSWORTH's passengers returned to work, a shortcoming in her equipment became obvious. She had no accommodation ladder. Since MSTS transports in their customary employment receive and discharge passengers alongside a pier, AINSWORTH ordinarily used a brow for the purpose. Personnel could board or leave the ship at anchor only by Jacobs ladder. In the normally choppy and often rough lagoon waters this was a time consuming and often hazardous procedure, particularly when ICMs were the mode of transportation. As a partial remedy ICUs were pressed into service for AINSWORTH passenger runs, since they provided a steadier platform when alongside than did the smaller ICMs and the brow could be used to onload and offload passengers. Partially to solve this problem, and partially to provide an off-ship RadSafe center and change station for the workmen returning to the ship from the contaminated islands, Holmes and Narver provided a barge equipped with personnel decontamination facilities that was stationed permanently alongside AINSWORTH when she was anchored. The presence of the barge greatly simplified the movement of personnel on and off the transport but did cause some minor damage to AINSNORTH's hull.

5. It had been planned to station ESTES, the Task Force Commander's



required at Bikini after BRAVO and provide command facilities for CTG 7.1 it was necessary to revise this plan and shift the AGC to Bikini. She was used there primarily as the headquarters ship for the Scientific Task Group's Bikini staff, continuing to serve as the Task Force flagship during shots. Her planned function as Eniwetok Harbor Control was assumed by the senior vessel present at that atoll, usually one of the security DDEs.

6. Use of the ships as the full time base for operations at Bikini increased some of the Navy's problems there. Where planning had called for only temporary and occasional occupancy of the ships by Bikini personnel, they were now on board permanently. This caused greatly increased consumption of stores and fresh water, placed a strain on ships facilities, particularly laundries and messes, and in general led to long and arduous hours of labor for ships crews. The necessity for ships to remain immobilized at Bikini complicated the logistics problem, especially in refueling operations. It was occasionally necessary to get ships underway despite the interference with operations ashore, and send them to sea for refueling. Training, except RadSafe training, suffered seriously during the period. The Boat Pool felt the change to a considerable degree, in the form of a sharply increased workload. BRAVO cost naval personnel their recreation facility ashore on Bikini Island. The area remained too "hot" for use. Since the major ships were required to remain at Bikini, there was no opportunity for

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them to grant liberty, or send recreation parties ashore. Despite this unfortunate circumstance, as well as the depressing effect of delays between shots, and difficulties in obtaining prompt delivery of mail, the morale of naval personnel was not seriously affected.

Since the airstrip at Bikini was closed due to contamination. it was necessary to institute, for several weeks, a nightly inter-atoll ferry run with one ship leaving each atoll each night, carrying passengers, light cargo and mail. Whenever possible this requirement was met by using a ship scheduled for the trip for other reasons. Frequently, however, it was necessary to schedule a ship out specifically for this purpose, usually one of the security DDEs. This was at a time when the DDEs were often engaged in other non-security employment such as the evacuation of natives, SAR missions and surveys of the atolls to the East. As a result of the additional tasks assigned the DDEs the effectiveness of surface security measures was severely curtailed for The removal of the Bikini fighter aircraft to Eniwetok contributed to this situation. There was no complete device at Bikini when the security situation was at its lowest efficiency. While the reduction in security was undesirable, it was a necessary evil, with the somewhat increased risk acceptable under the circumstances.

8. The abandonment of the Bikini Island bases, and a revision in the shot schedule that moved KOON, the Eniman Island shot, from the final shot to third place on the schedule, placed a considerable task on the LSTs and BELLE GROVE. There was several million dollars worth

of equipment on Eniman Island, to be returned to Eniwetok as soon as radiation levels permitted, and before the third shot.

IST 762 took the first load out on 5 March. Fourteen IST round trips were completed between BRAVO and KOON, with 2765 tons of valuable equipment evacuated. RELIE GROVE made one trip, carrying LCUs loaded with mobile construction equipment. All equipment and material of any value had been removed by 31 March, prior to KOON.

9. In one respect the afloat operation eased a Navy task. On shots subsequent to BRAVO, no large scale shot time evacuation of personnel was necessary. The Task Force at Bikini lived and worked in a state of continual evacuation.

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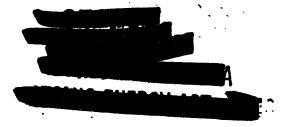


EVACUATION OF NATIVES

- and between 5° and 14° north latitude, are some 30 atolls and islands of the Marshall chain. Of these, 25 support native populations, varying in size from an estimated 30 persons on Wotho Atoll, south and slightly east of Bikini, to over 1000 persons each on Kwajalein, Jaluit, Majuro and Arno Atolls. At Kwajalein, in addition to the native population, is a considerable force of U.S. military personnel, predominantly Navy, based at U.S. Naval Station, Kwajalein. To the west and south of Bikini and Enivetok lie a number of stells with even larger native populations. All of these are at a considerably greater distance than the eastern islands, however, except Ujelang Atoll, which lies about 125 miles to the southwest of Eniwetok.
- 2. The atolls are administered by the U.S. Department of the Interior through the High Commissioner of the Trust Territory, Pacific Islands, in Honolulu. The Marshall Islands are under the District Administrator whose headquarters is at Majuro. At Kwajalein Atoll is a District Administrator's Representative, located on Ebeye Island.
- 3. The safety of these populated atolls has always been an important factor for consideration during tests at the Pacific Proving Grounds. As the size of devices detonated has increased, the possible hazard to the natives from radioactive fallout has become a matter of increasing concern. Prior to MIKE shot, during Operation IVY, the natives at Ujelang Atoll were taken on board an LST as a

precautionary measure. When no significant fallout occurred at Ujelang, the evacuation was not completed, and the Marshallese were returned to their homes.

- 4. Preliminary evacuation of natives during CASTLE was not considered necessary nor desirable. The possibility that evacuation of some atolls might be necessary after a shot was recognized, and plans were made to insure that the Task Force was capable of effecting such an evacuation on short notice. The Navy Task Group was assigned the responsibility of providing ships for this purpose. A task group representative was sent to Kwajalein before BRAVO for discussions with Trust Territory officials and Naval Station personnel to insure that interpreters, Trust Territory representatives and air transportation would be available, should evacuation become necessary. During the period preceding BRAVO, the weather picture created the most concern for Ujelang Atoll, southwest of Eniwetok. As it developed after the shot, the crucial area lay almost in the epposite direction to the east of Bikini.
- 5. Lying almost on a line slightly south of east from Bikini are Ailingnae, Rongelap, Rongerik, Taka, and Utirik Atolls. Information available to the Joint Task Force prior to BRAVO indicated that only Rongelap and Utirik were populated. It later developed that there was a small number of natives on Ailingnae. On Rongerik CTG 7.4 operated a weather station manned by Air Force personnel.



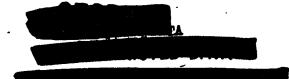
Distances in nautical miles from Bikini are: Ailingnae: 73.
Rongelap: 98, Rongerik: 134, Taka: 263, and Utirik: 273.

6. Late on the evening of 2 March 1954, BRAVO + one day, the Task Force Commander directed that a DDE be dispatched to Rongelap, to arrive there at daylight 3 March prepared to evacuate the native population because the atoll had received considerable fallout. USS PHILIP (DDE 498) was ordered to Rongelap, and departed Bikini at 2145 on 2 March. Commanding Officer, Naval Station Evajalein. RADM Ralph S. CLARKE, U.S. Mavy, arranged for an interpreter and a Trust Territory official to proceed to Rongelap by air, and set up PBM flight to arrive there at daylight 3 March. After the initial arrangements had been completed, CJTF SEVEN provided additional instructions, indicating that all possible measures should be taken to make the natives comfortable and happy during the evacuation and directing that PHILIP work closely with the Trust Territory representative on the scene. He also requested that PHILIP obtain drinking water samples from the Rongelap living areas. directed PHILIP to embark and evacuate all natives from Rongelap te Evajalein, when requested to do so by the Trust Territory official arriving by FBM. PHILIP arrived and anchored off Rongelap Island, in the lagoon, at 0730 on 3 March. The Kwajalein PBM, with Mr. Marion Wilds, civilian representative of the Marshalls! District Administrator, and Oscar DeBrum, Marshallese interpreter, aboard,

landed and anchored off Eongelap Island shortly before 0730. Prior to landing, the PBM, in good radio communication with the PHILIP, made a thorough reconnaissance flight around the atoll. Radiation readings taken by the PBM at a 200 foot altitude over Eongelap Island averaged 250 MR/HR with a high reading of 400 MR/HR.

- 7. A party from PHILIP, consisting of the Commanding Officer, the Executive Officer, the RadSafe Officer and a three man monitoring team, put off in a motor whale-boat, picked up Mr. Wilds and the interpreter from the FBN, and landed on Rongelap Island. The party was met at the beach by John, the Magistrate of Rongelap. Monitoring of the island was begun immediately. On the basis of the initial ground survey it appeared obvious that evacuation was necessary. Mr. Wilds, when he was advised of the RadSafe situation, requested that the evacuation be carried out, and removal of the natives was begun at once. Survey intensities recorded by PHILIP's monitors on Rongelap Island at 1000 on 3 March averaged 1550 mr/hr, with a highest intensity of 1900 mr/hr indicated.
- 8. Meanwhile, about 0200 on 3 March, CJTF SEVEN advised that the evacuation of Utirik Atoll might be necessary, and directed that a DDE be dispatched to arrive there at sunrise on 4 March. Commanding Officer, Naval Station Ewajalein again arranged for the transportation of the necessary civil efficial and interpreter. USS HENSHAW (DDE-499)

^{11.} C.O. USS PHILIP 1tr ser 001 of 5 Mar 1954



was ordered to Utirik, and departed Eniwetok at 0600 3 March. It had been learned that the Air Force personnel at Rongerik weather station had been evacuated by PBM. During the morning of 3 March CinCPacFlt made available to CTG 7.3 two DEs of Escort Division 112 USS MUNRO (DE-422) and USS SILVERSTEIN (DE-534), to assist if required. CTG 7.3 accepted this offer of assistance and assumed operational control of both vessels. MUNRO was ordered to Utirik to assist HENSHAW. Later in the day, after the situation cleared, operational control of SILVERSTEIN was returned to Commander, Hawaiian Sea Frontier, since her services were not needed.

9. The evacuation at Rongelap Island proceeded rapidly. By 1045 on 3 March all natives had been removed from the island. The PBM was used to move the elderly and sick to Kwajalein. The island Magistrate designated 16 persons in this category; they were embarked in the aircraft and departed for Kwajalein at 0935. The remaining 48 Marshalless were placed aboard FHILIP. With Rongelap cleared, a search party, including John, the Magistrate, and the interpreter, was sent to Eniaetok Island, across the lagoon, where the FBM had reported seeing people. The party landed there at 1245 and after a thorough search determined that there was no one on the island. It was fortunate that Eniaetok was uninhabited, since radiation intensities there exceeded 3000 mr/hr. PHILIP personnel shifted and reanchored in a better lee a 30 foot sloop belonging to the Magistrate, and PHILIP then departed Rongelap. Upon the advice of the

Rongelap magistrate the ship proceeded to Ailingnae Atoll, 25 miles to the west. John believed that a party of seventeen natives was there on Enibuk Island. PHILIP found no one on Enibuk, but sighted a sloop in the lagoon off Sifo Island. Her two whale boats were dispatched to Sifo, and brought off 18 Marshallese. Members of this party and the Rongelap Magistrate assured Mr. Wilds and the Commanding Officer, PHILIP, that there were no more natives on either atoll, and PHILIP departed at 1800, with an ETA at Evajalein of 0830 4 March.

10. At 0735 on 4 March RENSHAW arrived at Utirik and hove to 500 yards south of Utirik Island. She could not enter the lagoon; it was necessary to evacuate the natives over the reef to the ship laying off shore. RENSHAW's two motor-whaleboats were launched. One, with the beach party aboard, proceeded inshore to attempt a landing, the other departed to search along the reef for a break that would offer a favorable spot for safe boat handling in the evacuation.

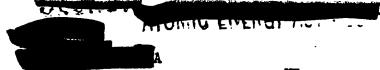
ll. The beach party boat approached the south shore of the island to the edge of the reef, which extended about 40 yeards off shore.

Since a sizable surf was breaking, it was decided not to attempt a
landing in the boat. Instead a small rubber raft was launched, secured
to the boat by a line, and in it RENSHAW's Executive Officer, LCDR W. R.

Easton, USNR, paddled shoreward. After considerable difficulty he
reached the island, assisted by several natives who swam out to meet
him. At about this time a Navy UFI arrived from Ewajalein, first landed
in the lagoon, then took off and landed again in the open sea near RENSHAW.

Aboard waste Trust Territory official, an interpreter and two CJTF SEVEN

DESTRICTS



representatives.

- 12. Meanwhile the remainder of the beach party had succeeded in landing on the island by wading over the reef. Their boat returned, picked up the aircraft's passengers and placed them ashore. The plane departed shortly for Kwajalein. The whaleboat reconnoitering the reef had been unable to find a break in it, so it was decided that the evacuation would be carried out by shuttling the natives over the reef on a liferaft, where they would be transferred to the whaleboats and taken to the ship.
- 13. The RadSafe team in the beach party surveyed the island and found radiation intensities of from 100 to 150 mr/hr over the entire area. Four drinking water samples were collected. The movement to the ship was begun at 1050. With considerable assistance from the native men, the Marshallese were taken to the ship in ten whaleboat trips. 1200, with the evacuation half completed, the wind, began to freshen, and the raft in use nearly upset. A second raft was brought in, the number of persons in each raft trip reduced, and the evacuation speeded up. Most of the women, children and aged were already aboard RENSHAW, no one had been injured beyond a few coral cuts. The last raft left the beach at 1245. A total of 154 persons were taken aboard RENSHAW: 55 women and 52 children under 16. At 1300 RENSHAW departed Utirik for Kwajalein. At 1345 USS MUNRO joined RENSHAW, and accompanied her to Kwajalein, where she was returned to her normal duties.
- 14. PHILIP arrived at Kvajalein at 0830 on 4 March, and RENSHAW

 12. CO RENSHAW ltr serial 038 of 18 March 1954

at about the same time the following day. Upon the arrival of each ship the evacuees were disembarked and turned over to the Commanding Officer of the Naval Station, Trust Territory officials and representative of CJTF SEVEN on the scene.

15. Throughout the evacuation, and during their time aboard ship, the Marshallese were most cooperative. In addition to the assistance rendered by the Trust Territory official and interpreters, each ship was fortunate to have in its company a former member of the Navy island government program who had seen duty in the Pacific islands. PHILIP's Executive Officer, LCDR V. L. MIRTHA, had been stationed at Majuro in the Marshalls, and E. K. TRYBA, Chief Boatswain's Mate on the RENSHAW had served in the islands to the west.

16. The ships provided the Marshallese the best accommodations they could. Considering that a destroyer type vessel is hardly ideal for carrying large numbers of Passengers, the natives spent a comparatively comfortable period on board. Those on PHILIP brought only small bundles of their personal belongings, leaving their sleeping mats behind since they were likely to be heavily contaminated. Cots, stretchers and kapok lifejackets served for sleeping. All natives took showers immediately after coming aboard, and their clothing was washed in the ship's laundry. The crew of the PHILIP donated clothing for the natives' use during the laundering. The women and children were billeted in the torpedo room, with the after officers' head set aside for their use. The men slept on the fantail under the awming, and used the after crew's head and washroom. natives went through the regular mess line for meals and had the same ratior the crew. The meat course was the least popular, with hot soup, bread,

vegetables and ice cream the most in demand. RENSHAW's evacuees brought aboard their sleeping mats as well as small amounts of personal gear. They were reluctant to take showers, although most of them were persuaded to do so, and they objected successfully to giving up their clothing for decontamination. Since the fallout had been much lighter en Utirik than it was on Rongelay and Ailingnae, their bodies and clething were not heavily contaminated and a complete decontamination aboard ship was not essential. RENSHAW's passengers showed contamination levels below 7 mr/hr when they first came aboard. while PHILIP's averaged 50 mr/hr before and 20 mr/hr after decontamination. RENSHAW billeted all her passengers en the fantail, roped off and rigged with awnings for privacy and shelter. The after crew's head and washroom was assigned for their use. After the natives were aboard the women's side of the head was partitioned eff for privacy upon the recommendation of the Trust Territory representative on board. RENSHAW set up a special mess line on the fantail. The Utirik natives showed the same food preferences as did those from Rongelap and Ailingnae. RENSHAW gave them an evening meal of beiled fish and rice, with vegetables, which was very well received. All the natives watched the evening movie programs.

17. The evacuation of the Marshallese from their homes was a successful operation. The natives themselves played no small part in this success. This is attested to by Commanding Officer, USS PHILIP

when he says in his report of the operations "The Marshallese were excellent passengers, most cooperative, never demanding and exemplary in conduct. It was a distinct pleasure for the crew of the PHILIP to have been afforded the opportunity to assist these quiet people in the evacuation."

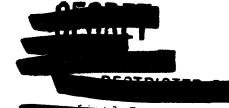
18. After the evacuation, Task Group 7.3 DDE's made three additional trips to the eastern atolls. A ground survey of all inhabited atolls and islands contaminated in excess of 10 mr/hr 24 hours after shot time was directed by CJTF SEVEN. Commanding Officer, Naval Station, Kwajalein provided air transportation for this survey. Since seaplane landings at Idkiep, Jemo, Ailuk and Mejit would have been extremely hazardous, RENSHAW, with a survey party on board, was dispatched to them on 5 March. Between 8 and 11 March USS NICHOLAS (DDE-449) called at Rongelap, Utirik, Bikar, Rongerik and Ailingnae. She carried Dr. Herbert Scoville, technical director, AFSWP, and a party of scientific The party made a detailed survey of the evacuated atolls, personnel. plus Bikar, to obtain data for the evaluation of radiation effects on the evacuees and to collect ground readings from which to estimate how soon they would be able to return to their homes. NICHOLAS working parties assisted scientific personnel in making the survey and in collecting water and soil samples. Under the direction of Mr. Wilds of the Trust Territory organization, they secured the natives' personal property. They moved into native houses articles that had been left in the open, closed up the houses, cared for pigs and chickens, which

Date 2

¹³ Of Complication KHAT Rispatch 050644Z of March 1954.

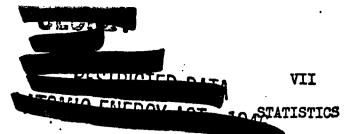
lest they harm the pigs and chickens when food became scarce. They beached native cances above high water and re-anchored a thirty foot sailing schooner at Ailingnae in a lee, and over a sand bottom in case it should sink before the natives returned. They helped Air Force personnel to test and secure against the weather the weather station equipment at Rongerik. MICHOLAS made a second expedition, this time to Rongelap on 25 March, carrying a party of Task Group 7.1 scientists headed by Dr. Leuren R. Doneldson. They were met at Rongelap next morning by a party arriving from Kwajalein by air. This group captured animals, birds and fish, and collected samples for radiation effects study purposes. NICHOLAS rejoined the Task Group at Bikini on 27 March in time for shot ROMEO.

19. In addition to the DDE based surveys, a VP-29 aircraft made a special air survey of the Gilbert Island chain to insure that these islands had escaped any significant contamination.



^{14.} CO NICHOLAS 1tr ser 049 of 20 March 1954

^{15.} CJTF SEVEN Dispatch 040435Z of March 1954

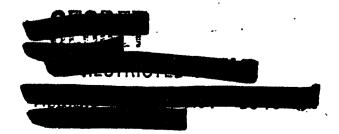


Personnel Clearance Status
Helicopter Operations
Boat Pool Operations

BRAVO Contamination

BRAVO Dosages
Inter-Atoll Surface Lift
Communications
Costs

Status of Allotments



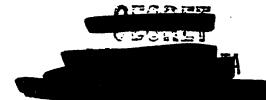


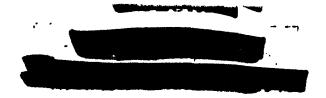
VII

PERSONNEL CLEARANCE STATUS OF SHIPS AND UNITS OF TASK GROUP 7.3 AS OF 7 APRIL 1954

SHIP OR UNIT	"Q" GRANTED	"Q" PENDING	NAC COMPLETED	NAC PENDING	To Lat
USS COCOPA USS IST 1157 USS PHILIP USS ESTES VP TWENTY-NINE VC THREE USS TAWAKONI YAG 40 USS IST 1146 USS PC 1546 Underwater Detection Unit- USS IST 762 USS EPPERSON HMR 362 USS BAIROKO USS IST 551 USS MOLALA USS RENSHAW USS BELLE GROVE USS NICHOLAS USNS FRED C. AINSWORTH USS CURTISS TG 7.3 BOAT POOL COMCORTDESDIV TWELVE MARINE DETACHMENT YAG 39 USS APACHE USS SIOUX STAFF, TG 7.3 USS MENDER TOTAL	0 6 5 13 16 4 9 15 0 6 19 26 11 39 63 7 16 10 29 12 2 65 32 3 37 16 0 7 48 0 629 1	04012004002331333409228617304502	14 175 175 175 175 175 175 175 175 175 175	21/* 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	228 81 180 270 593 406 8 79 99 57 22 125 392 183 269 336 277 6,114

^{*} All personnel hold Interim Secret Clearances or Access to Secret pending results of NAC's.





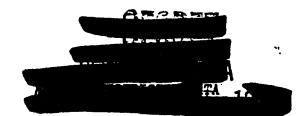
VII

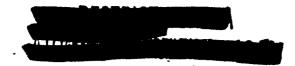
HELICOPTER OPERATIONS AT BIKINI ATOLL - HMR 362 - U.S. MARINE CORPS

20 JANUARI - 1 APRIL 1934

	January	February	March	Average
Aircraft assigned Average Aircraft Available	12 11.5	11 10.7	n	11.3
	•		•	<u>Total</u>
Flights Hours flown Passengers carried	220 169•3 766	903 746 5288	730 733.6 4819	1853 1648.9 10873
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1				
Accidents Casualties	*1 *1	0	0	1

* Note: On 28 January 1954, a helicopter took off on a routine ship to shore flight. Immediately upon becoming airborne, and at an altitude of approximately two (2) feet, the aircraft crashed to the deck on its right side as a result of a mechanical failure. A fragment of the rotor blade struck the left knee of the Landing Signal Officer, Technical Sergeant Eldon R. LARAWAY, 520276, USMC who sustained mild lacerations, moderate contusions, and moderate abrasions.





VII

TASK GROUP 7.3 BOAT POOL LCM OPERATIONS BIKINI ATOLL

20 JANUARY - 7 APRIL 1954

• • • • •			7.7		_	7.3			7.5	
			TONS) (A)		TONS	S. S.	, ac	TONS	SEBA
BOAT	TOTAL	TRIPS,	CARGO	PASSENGEDS	TRIPS	CARGO	PASSENGERS	TRIPS F	CARGO 1	PASSENGERS
LCM 33	762	25	0.1	61	560	63.6	2501	177	267.5	651
ICM 34 ICM 35	510 577	100	24.0 87.0	303 80	342	57.5	979 1516	68 117	82.0	180 106
ICM 36	661	95.	19.0	328	372 484	34.0 38.0	2669	82	83.5	104
LCM 37	354	205	2.0	279	149	1.0	130	-		
LCM 38	516	- 44	22.0	106	374	67.4	1178	98	198.0	121
ICM 39	485	49	20.0	217	363	27.0	3023	73	5.5	156
LCM 40	337	17	•••	40	229	75.0	1251	91	140.0	93
LCM 41	. 504	. 122)	29.0	331	305	72.0	1552	77	163.0	176.
ICH 42	926	150	63.0	516		100.2	1670	208	244.5	199
ICM 43	636	81	45.0	310	358	73.0	1416	197	311.0	460
ICM 44	684	:: <u>`</u> -`.	-	-	597	56.5	1493	87	88.5	57
ICH 45.	482	23	7.3		397	., 7 . 0	1093	62	65.0	82
ICM 46	507	155	.	536	233	34.0		119	181.0	148
ICH 47	588	_40	9.7	125	314	44.4	1443	234	273.0	880
ICM 49	371	40	14.0	96	219	20.5	701	112	145.0	<u> 117.</u>

TOTALS 8900 1234 342.1 3352 5864 771.1 23822 1802 2353.0 3530



BRAVO CONTAMINATION

Average topside radioactive intensities (in mr per hour) of Task Group 7.3 ships at various times following BRAVO

• .	The state of the s	, ,,, ,			Eq	\$40ag			. •		•	
Pate MAR.	Local T	CURTISS	STES	ADISTOR	BELLE		APAGE	STOTE	A STORY	BAIRON	PHILLP	G Per
1	0900 1000 1100 1200 1300 1400 1500	8 5 2 5 18 25	400 (e) 200 (e) 150 (e) 100 100 110 120	1 2 10	- - 4 5 12 20	5 10 14	372	489	1 3 6 15	500 500 500 350 300 240 200	750 265 196 145 147 138 134	- - - 7 30
	1600 1700 1800 1900 2000	45 55 50 40 37	140 120 120 120 120	16 22 19 20 20	35 75 150 190 300	18 20 75 75 110	12 50 17 20 30	10 22 50 34 15	21 25 80 90 85	170 140 200 180 180	180 225 262 194 199	200 230 250 200 150
2	0000 0400 0800 1200 1600 2000	30 25 20 15 10	120 120 80 50 30 20	20 20 20 20 12 10	80 60 60 50 50 20	75 70 30 20 20 18	30 30 25 10 10	40 30 12 10 9	80 50 40 30 20 15	160 145 134 108 36 30	188 156 111 78 60 47	130 110 80 45 40 35
3	0000 0400 0800	9 8 7	20 18 16	8 7 6	20 15 12	15 12 7	8 3 3	6 6 5	14 13 12	27 25 22	39 41 34	35 35 25
4	0800	3.2	7	5	8	5	2	4	6	14	17	20
5	0800	1.2	4/	4	7	3	2	4	3	9	8	14
.6 <u>.</u>	0800	1	4	3	. 5	2	2	.4	. 2	6	7	12
7	0800	1	2.7	2	3	2	1	4	1	4	5	10
8 .	0800	1	2.1	1.5	2	1.5	1	4	1	3	4	8

All ships other than those listed in this enclosure received negligible contamination.

Note: (e) = estimated

ATOMA FRIEDOV LOT



VII

BRAVO DOSAGES

TABULATION OF ACCUMULATED RADIOLOGICAL EXPOSURES OF TASK GROUP 7.3 PERSONNEL BY SHIPS AND UNITS AS OF 7 APRIL 1954.

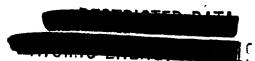
EXPOSURE IN ROENTGENS

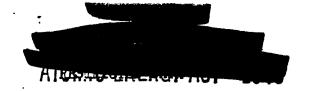
	0	1.900	2.0, to 2,990	3.0 £0.5	4.0 to 1.000	46899	6.0 to 6	664.	8.	ģ
	3	\$	Ş	٩	ું હ		2		3 ,	-
UNIT	0.0	1.0	2.0,	3.0	4.0	5.0 to	0.0	7.0.7	Over 7	
TG 7.3 STAFF USS BAIROKO HMR-362 USS CURTISS VP-29 USS ESTES USS HELLE GROVE TG 7.3 BOAT POOL USS IST 762 USS IST 551 USS IST 1157 USS EPPERSON USS NICHOLAS USS PHILIP USS SHEA USS PC 1546 USS GYPSY USS MENDER USS RECLAIMER USS APACHE USS APACHE USS SIOUX USS TAWAKONI USS COCOPA USNS AINSWORTH YAG 39 YAG 40 TG 7.3 UDU PROJ. 1.4 AIRCRAFT PROJ. 6.4 AIRCRAFT	10 466 7032 1456 187 181 268 223 265 55 1 653 84 81 23 8 7 9 159 423 22 8 8 20	47 228 80 376 148 85 29 8 306 532 2 2 2 55 1 39 6 19	17 12 115 22 56 7 16 103 29 5	51 18 3 22 1	71 4 5 11 32	8 7 3	2	1	The state of the s	
VC-3	20 1		23					!		Ţ

TOTAL

4210 1228 439 184 123 20 4 2 3



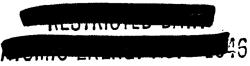


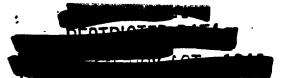


VII .: INTER-ATOLL SURFACE LIFT

SHIP	DATE	FROM	<u>10</u>	PAY	<u>.</u>	M/T	CARGO	LIFTED
IST 762	l Jan	Bikin i	Eniwetok	_		** * * * >	582	
LST 762	5 Jan	Eniwetok	Bikini	_	• •	•	448	
LST 762	7 Jan	Bikini	Eniwetok	_			474	
LST 762	10 Jan			_	-		525	1
LST 762	13 Jan		Eniwetok				423	•
IST 762	16 Jan			_	•	•	504	•
LST 762		Bikini	Eniwetok	_			291	•
LST 762	26 Jan		Bikini				405	•
IST 762	4 Feb		Eniwetok			•	438	
IST 762	7 Feb	Eniwetok	Bikini	_			168	
IST 762	9 Feb	Bikini	Eniwetok		•		862	
IST 762	18 Feb	Eniwetok	Bikini				83	•
BELLE GROVE	20 Feb	Bikini	Eniwetok	· Ξ		. •	125	•
IST 825	20 Feb	Eniwetok	Bikini				172	;
IST 762	21 Feb	Bikini	Eniwetok			•	748	
BELLE GROVE		Eniwetok				`:	675	
IST 762	23 Feb	Eniwetok	Bikini				54	
IST 825		Bikini	Eniwetok		•		740 .	_
LST 762	25 Feb	Bikini	Eniwetok			•	394	
IST 762 +	2 Mar	Eniwetok		_			104	
IST 551	3 Mar	Eniwetok		31			37	
AINSWORTH	4 Mar	<u>K</u> niwetok		167	•••		. 5 .	•
LST 762	5 Mar	Rikini	Eniwetok	9			`112 `	
NICHOLAS	5 Mar		Eniwetok	_2Ó				
CURTISS	5 Mar	Eniwetok	Bikini	99 :			20	
BELLE GROVE	6 Mar	Bikini	Eniwetok	17	٠		~~~	
BELLE GROVE	7 Mar	Eniwetok		13		· ····è	_	
COCOPA	8 Mar	Eniwetok	, .	46	•	* * *		
RENSHAW	8 Mar	Bikini	Eniwetok	22		Z		
PHILIP	8 Mar	Eniwetok		32				
PHILIP	9 Mar	Bikini	Eniwetok	16				• • • • • • • • • • • • • • • • • • • •
RENSHAW	10 Mar	Bikini	Eniwetok		. :.		_	
PHILIP	10 Mar	Eniwetok	Bikini	20		•	-	• •
IST 551	11 Mar	Eniwetok	Bikini	21		•	10.	
IST 762	11 Mar	Eniwetok	Bikini	55			3	•
EPPERSON	11 Mar /	Eniwetok	Bikini	27	•		_	•
PHILIP	11 Mar	Bikini	Eniwetok	22		• .	_	
LST 762	13 Mar	Bikini	Eniwetok	6			748	
LST 551	13 Mar	Bikini	Eniwetok	· 3			78	
RENSHAW	13 Mar	Eniwetok	Bikini	48			3	•
LST 551	14 Mar	Eniwetok	Bikini	-,-			68	•
IST 1146	14 Mar	Bikin i	Eniwetok	-			127	
•	-							

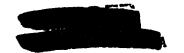


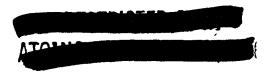




VIT

SHIP	DATE	FROM	<u>10</u>	PAX	M/T CARGO LIFTED
LST 762	15 Mar	Eniwetok	Bikini	6	•
IST 762	16 Mar	Bikini	Eniwetok		- 115
IST 551	17 Mar	Bikini	Eniwetok	9	103
IST 1146	18 Mar	Bikini	Eniwetok	1	
IST-1146	19 Mar	Eniwetok	Bikini	2	5
LST 551	19 Mar	Eniwetok	Bikini	1	141
LST 1146	20 Mar	Bikini	Eniwetok	-	120
NICHOLAS	23 Mar	Eniwetok	Bikini :	-	2
IST 551		Bikini (Eniwetok	5	198
IST 1146	26 Mar		Bikini	_	25
CURTISS	27 Mar	Bikini	Eniwetok .	81.	-
IST 1146 ´		_Bikini	Eniwetok		207
IST 1146	29 Mar			-	110
BELLE GROVE	29 Mar		Eniwetok	12	500
IST 551	30 Mar		Bikini .	. 3	1
NICHOLAS	31 Mar		Bikini .	17	
RENSHAW	31 Mar		Eniwetok	10	
BELLE GROVE	31 Mar		Bikini 🦾	10	60
IST 551	2 Apr	Bikini	Eniwetok		155
IST 1146	2 Apr	Bikini	Eniwetok	7	153
TAWAKONI	3 Apr	Bikini :	Eniwetok .	4	• ·
IST 762.	7 Apr -	. Eniwetok	Bikini	32.	72







COSTS OF TASK GROUP 7.3, PERIOD 1 JANUARY 1954 - 7 APRIL 1954

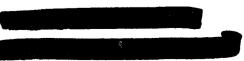
Travel and Per Diem	\$ 2,596.00
Telephone and Utilities	500.00
Military Pay	2,714,951.00
Office Supplies .	1,030.00
Alterations of Ships	10,000.00
Radiological Defense	
Land Improvement	
Buoy Project (Coast Guard)	
Documentary Photography	
Transportation of Baggage	375.00
General Stores Items for Ships	198,870.00
Fuel and AvGas	655,258,00
Provisions (Food), General Messes	495,885.00
	\$ 4,079,465.00

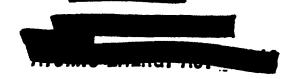
CUMULATIVE COST OF TASK CROUP 7.3 FROM 1 JANUARY 1954 - 7 APRIL 1954

Travel and Per Diem	\$	8,524,00	(\$35,374.0 obligated
Telephone and Utilities		3,500,00	obligate
Military Pay		3,360,241.00	
Office Supplies		2,655.00	
Alteration of Ships		85,200.00	
Radiological Defense		11,600.00	ارد. معالم المعالم
Land Improvement		4,500.00	
Buoy Project (Coast Guard)		12,000,00	
Documentary Photography .		2,700.00	
Transportation of Baggage		375.00	
General Stores for Ships		198,879.00	
Fuel and AvGas for Ships		655,258.00	
Provisions (General Mess)		495,885.00	
110,727	\$	4,841,308.00	
	▼	4,042,000,00	

* Note 1. Indicates funds obligated for per diem but not actually expended.







VII

STATUS OF ALLOTMENTS RECEIVED FROM JOINT TASK FORCE SEVEN AS OF

1 APRIL 1954

ARMY APPROPRIATION 2142020 M&OA 1954

DESCRIPTION	RECEIVED	OBLIGATED EXPENDED U	NOBLIGATED
Travel	\$ 46,000.	35,374.50 8,524.58	10,625.50
Transportation of Things	500.	375.00	125.00
Communications	2,000.		2,000.00
Task Group Overhead	400.		400.00
Modification of Ships	85,200.	85,200.00 80,200.00	
Land Improvement	4,500.	4,500.00	
Documentary Photography	3,000.		300.00
Radiological Defense	13,300.	12,500.00 11,600.00	800,00
Buoy Project (Coast Guard)_	12,000.	12,000.00 12,000.00	-
	\$ 166,900.	152,649,50 112,509.83	14,250.50

STATUS OF BUSHIPS FLAG ALLOTMENT NUMBER 42299/54 HELD BY THE SUPPLY

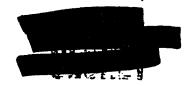
OFFICER, USS BAIROKO (CVE-115) AS OF 1 APRIL 1954

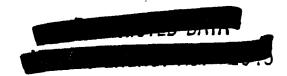
Received		•	4,800.
Obligated		-	3,630.
Expended	د. د في		459.
Unobligated	Balance .		711.

STATUS OF THE BUREAU OF SHIPS BOAT POOL OUTFITTING ALLOTMENT HELD BY SUPPLY OFFICER, U.S. NAVAL AMPHIBIOUS BASE, CORONADO, SAN DIEGO, CALIFORNIA. AS OF 1 APRIL 1951 - ALLOTMENT NUMBER 44002

Received	165,000.00
Obligated.	64,082.45
Expended	96,449.55
Unobligated Balance /	5,468.00

Note: This allotment will be reported to CJTF SEVEN by BuShips and is not reflected in CTG 7.3 Cost Report







COMMUNICATIONS

The following figures represent traffic handled by the CTG 7.3 Communication Section for writeup and staff routing. They do not reflect traffic handled for flagships on which the staff was embarked nor do they include messages handled as relays by staff facilities.

	January	'February	<u>March</u>
Incoming Messages Outgoing Messages Total	948 264 1212	1497 625 2122	2095 1204 3299
Daily Average Incoming Daily Average Outgoing	31 8	54 22	68 39
Classified Messages	46%	30%	48%
Emergency Precedence Operational Immediate Priority Routine and Deferred	00% 5% 27% 68%	00.6% 9 % 29 %	00.5% 16 % 39 % 44.5%

SHOT TIME TRAFFIC HANDLED

	INCOMING	OUTGOING
ERAVO - 1 ERAVO BRAVO / 1 Total	78 56 100 234	61 40 54 155
ROMEO - 1 ROMEO / 1 Total	67 87 61 215	44 42 43 129
KOON - 1 KOON KOON / 1 Total	57 59 57 173	43 38 27 108
ROMEO - reduction over BRAVO KOON - reduction over BRAVO	• • • • • • •	14%



