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HISTORY

INSTALLMENTS 1, 2, [redacted] 3, and 4

RESTRICTED DATA

ATOMIC ENERGY ACT - 1946

93-54

DOCUMENT NO: 92HD/CIC/DNA/[redacted]/635-1

DOCUMENT CONSISTS OF 39[redacted] PAGES

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TF3/7.3/CRL:jmt
A-12
Ser: CC1095

17 NOV 1953

SUBJECT: Historical Installment Number 1; submission of

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 0-7467 and CJTF SEVEN Standing Operating Procedure Number 172-701.

2. Commander Task Group 7.3 Installment Number 1 of the History of Operation CASTLE is submitted.

1 Incl
Historical
Installment No. 1

H. C. BRUTON
Rear Admiral, U.S. Navy
Commander

Copies furnished:
CTG 7.1
CTG 7.2
CTG 7.4
CTG 7.5

RCS-JTF SEVEN -H1

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Joint Task Force SEVEN

TASK GROUP 7.3

COMMANDER TASK GROUP 7.3

HISTORY OF OPERATION CASTLE

INSTALLMENT No. 1

RCS: JTF-7-H-2

Period ending 30 September 1953

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COMMANDER TASK GROUP 7.3

HISTORY OF OPERATION CASTLE

INSTALLMENT NUMBER 1

Period ending 30 September 1953

Submitted:

R. F. MADDEN
Lieutenant, USNR-R
Historian

Approved
17 November 1953:

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H. C. BRUTON
Rear Admiral, U.S. Navy
Commander, Task Group 7.3

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OUTLINE

I. Background - assignment of the CASTLE mission to Task Group 7.3 including, where appropriate, the transition from IVY to CASTLE activities.

II. Development of the Task Group organization.

III. Problems encountered in planning and their solutions, in the following order:

   a. Administrative

   b. Security

   c. Operational

   d. Logistical

   e. Communications

   f. Comptroller

IV. Pertinent statistical material.

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I

BACKGROUND - ASSIGNMENT OF THE CASTLE MISSION TO TASK GROUP 7.3, INCLUDING, WHERE APPROPRIATE, THE TRANSITION FROM IVY TO CASTLE ACTIVITIES

1. On 31 January 1953, Commander Joint Task Force 132 announced the redesignation of the Task Force effective 1 February 1953, as Joint Task Force SEVEN, and of the Navy Task Group as Task Group 7.3.[1] The Navy Task Group had been activated as Task Group 132.3 on 8 February, 1952 to perform the Navy mission assigned in Operation IVY at Eniwetok Atoll September to November, 1952.

2. In April 1953, CJTF SEVEN announced that by decision of the Joint Chiefs of Staff, the Joint Task Force then in being would remain a permanent organization for overseas atomic tests.[2] The Executive Agent and the Joint Task Force Commander would rotate when considered appropriate by the Joint Chiefs, with the Chief of Staff, U. S. Army designated to continue as Executive Agent for the next test series. The Chief of Staff, U. S. Army, in coordination with the Chief of Naval Operations and the Chief of Staff, U.S. Air Force, was directed to continue Joint Task Force SEVEN as a permanent atomic test force, with reduction of personnel of the organization between tests to a minimum number required to insure continuity and provide the nucleus of a planning staff. Task Group 7.3 thus became the permanent Naval organization for overseas atomic tests.

3. Throughout Operation IVY, and until February 1953, the Navy Task Group was commanded by Rear Admiral C. W. WILKINS, U. S. Navy. On 8 February 1953, Rear Admiral WILKINS was detached to assume command of Amphibious Group FOUR.

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1. CJTF SEVEN General Orders number 5 dated 31 January 1953
2. CJTF SEVEN letter file AG 321 dated 24 April 1953

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[redacted] INFORMATION

Rear Admiral WILKINS was relieved by Captain J. R. PAHL, U. S. Navy, who assumed command of Task Group 7.3 as additional duty to his regular assignment as Deputy Commander/Navy, on the Staff of Commander Joint Task Force SEVEN. Captain PAHL remained in command of the Task Group until 1 June 1953, when Rear Admiral B. C. BRUTON, U. S. Navy assumed his duties as Commander Task Group 7.3.

4. At the time Rear Admiral BRUTON took command, Task Group 7.3 consisted only of the Commander and his staff, and two detached units, Task Group 7.3 Boat Pool and Task Group 7.3 Underwater Detection Unit. After IVY, the staff had been reduced by normal attrition and rotation, and by the loan of personnel for temporary duty in the spring test series in Nevada. Plans had been made to return the staff to full strength by 1 June 1953, and this was done, except that the Atomic Defense Officer's reporting was deferred until July, and the Assistantt Communication Officers' until late August and early September. The staff was based in Washington, D. C., occupying Building #126 at the Naval Gun Factory. The Boat Pool and Underwater Detection Unit, at the conclusion of IVY, had been placed under the command of Commander Amphibious Training Command, U. S. Pacific Fleet, reporting in addition to CTG 7.3, and were based at the Naval Amphibious Base, San Diego, California, where they spent the interim period in training and the overhaul of their boats and equipment. They too underwent a strength reduction by attrition and rotation and contributed personnel to the Nevada spring tests, with their personnel build up effected substantially by June 1953.

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5. All ships and aircraft which had comprised the Task Group for IVY had been released from the operational control of the Task Group Commander as they completed their IVY assignments, and were dispersed to other duties with one exception. LST 1126, upon the completion of IVY, reported to Commander Task Group 7.2 (the Army Task Group based at Eniwetok) and remained in the forward area in support of the build up for the next test series. On 13 July 1953, LST 1126 was relieved by LST 762, scheduled to remain in the forward area until completion of the next tests. Two ships which had been modified extensively for participation in atomic tests, while they were returned to their normal duties, were earmarked for eventual reassignment to the Task Group. They were USS CURTISS (AV-4), modified to transport special devices and provide shipboard facilities to the Scientific Task Group for device assembly, and USS ESTES (AGC-12), which in IVY had served as the Task Force Commander's flagship, providing extensive command, control and communications facilities.

6. First word on the next overseas test series after IVY, its identification as Operation CASTLE, and its original schedule for September-October 1953, reached the Task Group in May 1952. As a result, the Navy Task Group planning for CASTLE began at an early date. Copies of early CJTF 132 internal staff correspondence, furnished to CTG 132.3 in late May and early June 1952, provided a general concept of CASTLE operations sufficient to permit informal planning coincident with IVY planning and preparation.[3]

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3. CJTF 132 letter to Dr. Graves file 02251 of 26 May 1952 and Chief of Staff CJTF SEVEN memorandum subj: "Preliminary Planning for CASTLE" of 2 June 1952.

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[redacted] INFORMATION I

The Task Force Commander's call for study and comment on the early drafts of his report to the Joint Chiefs of Staff on Operation CASTLE stimulated thinking,[4] and the report itself, released in final form on 7 August 1952, constituted a firm base, as a result of which, CASTLE planning became a background activity of the Task Group staff throughout the remainder of the IVY operation. The report outlined a general concept of CASTLE operations, assigned in general terms the Navy mission and described the probable requirements for supporting units, vessels and aircraft (subject to modification or adjustment after the evaluation of IVY results) and directed preliminary Task Group planning pending its approval by the Joint Chiefs. It called for the retention of the Navy Task Group Staff, Boat Pool and Underwater Detection Unit between IVY and CASTLE, (prior to designation of the Task Group as a permanent organization) and indicated that command relationships and responsibilities would remain substantially the same as for IVY.

7. In September, after the arrival of CTG 132.3 in the forward area, CTG 132.1 (The Scientific Task Group) proposed steps for the initial development of Bikini Atoll for CASTLE, and after approval of his recommendation by the Task Force Commander, commenced work at that site.[5] Naval support for this project was called for in the form of diversion of LST 1126 from a portion of her planned IVY mission, and her assignment to inter-atoll cargo lifts in support of the Bikini buildup, two round trips between Eniwetok and Bikini by the IVY LSD, and weekly FEK flights between the atolls. This was the Navy's first operational effort in support of CASTLE.

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4. CJTF 132 J3 memorandum to Chief of Staff CTG 132.3 of 16 June 1952 [redacted] 132.1 letter file JT-257 of 20 September 1952 and CJTF 132 J3 [redacted] memorandum for the record of 24 September 1952

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8. Upon completion of Operation IVY in November 1953, disposition of the naval forces, personnel and material employed was made with a view to the need to assemble a similar organization for CASTLE at an early date. As a part of this disposition, the Task Group Commander and his staff returned to their Washington headquarters and commenced the concurrent tasks of clearing up the loose ends left from IVY and planning for CASTLE. At this time the postponement of CASTLE until early 1954 became known, with consequent modification of the planning effort. As a result of this postponement, CASTLE activity was at a very low level for the next few months. The principal effort was in the overhaul of aids to navigation at Bikini Atoll. Typhoon Hester hit Eniwetok in December 1952, resulting in the loss of an AVR in the custody of CTG 132.2. This loss pointed up the need for inspection and possible renewal of mooring buoys at both Eniwetok and Bikini.

9. The CASTLE mission assigned to CTG 7.3, as it developed throughout the period January to June 1953, was similar to that for Operation IVY. In June 1953, CJTF SEVEN issued his Operation Order No. 1-53, in which he formalized previous directives and correspondence concerning CASTLE missions. CTG 7.3 was directed to assure, by liaison with appropriate parent commands, the proper organization, training, equipping and timely reporting of elements to the Task Groupp to provide CTG 7.2 with forces to operate a boat pool element at Eniwetok and an inter-atoll surface lift in the forward area during the Bikini buildup, assuming operational control of these forces upon

commencement of the operational phase; to prepare to provide an inter-island helicopter air lift system at Bikini; to assure the readiness of naval aircraft and vessels to conduct the technical missions assigned; to plan for the execution of the CASTLE missions, this to include delivery of significant device components to the forward area and between atolls, extended shipboard operations of the Joint Task Force while at Bikini, and control of drone vessels.

10. Noteworthy here, and a distinct change in concept from the previous operation, was the plan to conduct test detonations at Bikini, with Eniwetok as the base of operations. This concept had appeared as early as the first word that CASTLE was to take place, and has colored planning throughout. Major problems were presented or aggravated by the split operation. Enlargement of the Danger Area to include two atolls 180 miles apart would increase the problem of maintaining the security of the area. There were now two atolls to protect and two lagoons whose security must be maintained. The operation of the Boat Pool would be complicated if it was necessary to furnish small boat transportation simultaneously at Eniwetok and at Bikini, particularly in regards to maintenance of the boats and berthing and messing for the crews. This was further complicated by the need to use the LST, which would serve as mother ship for the Boat Pool, for several trips transporting devices between Eniwetok and Bikini. Transportation of other cargo, and of personnel, in considerable volume, by air and water, would be required. Logistics problems in provisioning, supply and fuel replenishment of naval forces would be increased. These enlarged tasks all became imminent

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at a time when economy had begun to assume greater proportions than it had in previous operations, and a program of austerity had been directed throughout the armed forces. Throughout the planning phase the effort has been to provide for the accomplishment of required tasks at minimum expense.

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XI

DEVELOPMENT OF THE TASK GROUP ORGANIZATION

1. As the mission of the Task Group, and the tasks derived from it, developed, naval units to support these tasks were designated by the Chief of Naval Operations and type commanders. At a January 1953 conference between Captain PAUL as Task Force Navy Deputy and Rear Admiral WILKINS, the first detailed information concerning the proposed schedule of test detonations based on the new operation dates, January-April 1954, and the naval forces to be required were made known. Four shots at Bikini and one at Eniwetok were then contemplated. No evacuation of Eniwetok Atoll would be necessary but it appeared that at Bikini all personnel but a small firing party would go aboard ship and withdraw to a safe distance for each shot. At this conference it was learned that the Task Group staff would be retained subject to normal rotation. This was considered to be a more economical move than inactivation and later formation of a new staff, because of the time required to prepare personnel assignments, effect security clearances, etc. A partial list of ships and units that would be required and of their probable reporting dates was established. It included:

1 AGC	1 February 1954	(Presumably USS ESTES AGC-12)
1 AV	1 January 1954	(Presumably USS CURTISS AV-4)
1 LST	1 January 1954	
1 LST	1 December 1953	
1 LST	Already in forward area	

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2	ATF	1 February 1954
1	AE	1 February 1954
1	CVE with 4 TBM-3W3S	15 January 1954
2	FBM-5A	15 January 1954
	Boat Pool To consist of 2 AVR, 21 LCM, 4 LCPL, 5 LCU and 1 YCV (barge for helicopter landings)	1 January 1954
	Security forces	To be determined later

2. At the same time the Department of Defense portion of the test program for CASTLE had been approved by the Research and Development Board. An outline of this program revealed several instances wherein specific naval support would be required for scientific projects. These included the need for the AE type vessel and one ATF to support an Office of Naval Research project on underwater pressure - time measurements, and a DE type ship, one ATF and aircraft to assist in a Naval Radiological Laboratory study of radioactive fall-out distribution. Information was also received on a Bureau of Ships project for study of ships' washdown decontamination systems, involving two drone ships (AK type), control aircraft and two ATF's. This project had not yet been approved for inclusion in CASTLE.[6]

3. Designation of ships and units to fill these requirements and changes in requirements continued throughout the next nine months, until by 30 September, a tentative task organization had been outlined in preparation for the first draft of CTG 7.3 Operation Order No. 1-53.

6. CJTF 132 J3 Memo for the Record of 5 January 1952

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The tentative outline of this organization, which was by no means firm, provided for ten task units as follows:

a. Special Devices Unit. This unit would be composed of USS CURTISS (AV-4), and escorts, with the task of transporting certain of the test devices to the forward area and support of the device assembly group and other scientific personnel in the forward area.

b. Surface Security Unit. This unit, composed of Escort Division TWELVE (USS KEPPLER (DDE-719), USS PHILIP (DDE-498), USS NICHOLAS (DDE-449), USS RENSHAW (DDE-499)) and possibly an additional ASW vessel, would accomplish the Task Group's surface security mission, provide SAR capabilities, and furnish a control homing ship for TG 7.4 aircraft at shot times.

c. Carrier Unit. This unit, USS BAIROKO (CVE-115), with 10 HRS helicopters (USMC) and Air Force helicopters as assigned, would operate a ship to shore and inter-island helicopter lift system at Bikini, and assist CTG 7.4 in operating an inter-island system at Eniwetok by assigning helicopters to CTG 7.4 operational control; with 6 F4U-5N aircraft, would provide fighter defense at Bikini and Eniwetok; would act as flagship for CTG 7.3, furnish office, laboratory, and trailer space to CTG 7.1 radiological safety unit, obtain data for JTF SEVEN Weather Central, and provide transportation to and from the forward area for TG 7.1 personnel and TG 7.4 aircraft and personnel.

d. Patrol Plane Unit. This unit, VP-29, based on Kwajalein, with 6 P2V-6 (12 at shot times only), would accomplish the Task Group's air security mission, furnish air escort for special device movements, and assist in post-shot location of fall-out collector buoys; with

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4 PBM-5A would provide inter-atoll airlift; with 1 P2V-5 and 1 P4Y-2 would support the drone ship and underwater pressure-time measurement projects.

e. Task Force Flagship Unit. This unit, USS ESTES (AGC-12), would provide shipboard command, control and communications facilities to CJTF SEVEN, CTG 7.1 and CTG 7.4, and furnish facilities and personnel for the JTF Weather Central.

f. Utility Unit. This unit, composed of USS GYPSY (ARSD-1), USS COCOPA (ATF-101), USS MOLALA (ATF-106), USS APACHE (ATF-67), USS SIOUX (ATF-75) and USS TAWAKONI (ATF-114), would provide general tug services, assist CTG 7.5 in mooring shot barges and in preventing loss of barge loaded devices in heavy weather or other emergencies, assist CTG 7.1 in scientific projects, including positioning and recovery of test equipment and free floating buoys, and plant small craft mooring buoys for TG 7.3 Boat Pool.

g. Atomic Warfare Countermeasures Unit. This unit, composed of YAG-39 and YAG-40 (drone ships) and assigned ATF's of the Utility Unit, would carry out the BuShips test program of ships' washdown decontamination systems, which had now been approved.

h. Bikini Harbor Unit. This unit, under the Commanding Officer, USS BAIROKO (CVE-115), (with USS BELLE GROVE (LSD-2) and the Task Group 7.3 Boat Pool comprised of 19 LCM, 1 LCPL, 1 26' MkB, 1 AVR, 5 LCU, YC-120, 1 YCV, and 1 YFN) would control harbor operations at Bikini, assist in cargo handling as requested, conduct coordinated boat pool operations at Bikini, and provide SAR surface craft facilities and POL replenishment services at Bikini.

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i. Eniwetok Harbor Unit. This unit, under the Commanding Officer, USS ESTES (AGC-12), with YOG-61, YOGN-82, 1 AVR and the Underwater Detection Unit, would control harbor operations at Eniwetok, assist in cargo handling as requested, operate and maintain units of TG 7.3 Boat Pool at Eniwetok in coordinated boat pool operations, provide SAP surface craft facilities and POL replenishment services at Eniwetok, and provide warning of surreptitious entrance of ships or boats into Eniwetok Lagoon.

j. Transport Unit. This unit, composed of USS BELLE GROVE (LSD 2), LST 762, LST 551 and 1 MSTS TAP (undesignated), would transport the devices, barges and personnel between Eniwetok and Bikini, provide other surface transportation between atolls, evacuate Bikini at certain shot times, and provide administrative space to CTG 7.5 (the AEC Base Facility Task Group).

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III

PROBLEMS AND THEIR SOLUTIONS

a. ADMINISTRATIVE

STAFF LOCATION

1. In CJTF SEVEN's Operation Plan 1-53, it was indicated that CTG 7.3 and his staff, when in the forward area, would operate from a headquarters ashore on Parry Island, Eniwetok adjacent to headquarters of CJTF SEVEN, CTG 7.1 and CTG 7.5. The Task Group Commander and an operational staff would embark briefly only during Bikini shot periods. The merit of this plan was the opportunity it would give for close liaison between CTG 7.3 and the other commands located on Parry Island, as well as with CTG 7.2 and CTG 7.4 on adjacent Eniwetok Island. However, as the concept of operations developed, and it became evident that the major portion of CTG 7.3 would be at Bikini Atoll most of the time, with Bikini the scene of the major naval effort, doubts arose within the Task Group staff as to the wisdom of maintaining an ashore headquarters during the entire operational phase. While it would certainly facilitate coordination of the scientific support mission, the conviction grew that the advantages to be gained would be far outweighed by the disadvantages caused by the separation of the Task Group Commander and his staff from the units under his command, and from their scene of operations. Not only would unacceptable loss of control in carrying out the security mission ensue, but the scientific support mission itself would be likely to lose more because of this separation, than it would gain through location of CTG 7.3 on Parry. Accordingly, plans were revised to provide for a CTG 7.3 headquarters on Parry from

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arrival in the forward area until approximately one week prior to the first shot, when CTG 7.3 and his staff would embark in his flagship, USS BAIROKO (CVE-115) for the remainder of the operational period. The early period ashore would permit close liaison with CJTF SEVEN and the other Task Groups during the early operational period, with travel to Parry by TG 7.3 staff officers for later liaison whenever the situation required.

STAFF MOVEMENT

2. A related subject, the manner of movement of CTG 7.3 and his staff to the forward area, was also resolved during this period. The Task Group Commander desired to perform that portion of the trip from the West Coast to Eniwetok in USS CURTISS (AV-4), for reasons similar to those which led to the partial abandonment of the plan to maintain his headquarters ashore. CURTISS, however, would presumably sail with conditions of radio silence imposed. For the period enroute, because of this radio silence, together with the lack of opportunity to receive and send mail, CTG 7.3 would be largely cut off from his administrative responsibilities. It was therefore decided to split the staff during the movement. It is planned that the Task Group Commander and an operational staff proceed in CURTISS, while the Chief of Staff, as CTG 7.3 Administration, with most of the remaining staff personnel, would travel by air to Eniwetok, there to establish a headquarters on Parry Island and carry on administration functions pending the arrival of CURTISS. The Atomic Defense Officer would proceed from San Diego in USS BAIROKO (CVE-115), with TG 7.3 RadSafe equipment aboard, and in company with the TG 7.1 Radiological Safety Unit.

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PERSONNEL

3. The Navy personnel accounting system has been devised to maintain records used in the preparation of personnel strength, statistical, and distributional reports. The central recording and reporting activities are Personnel Accounting Machine Installations (PAMI), whose function is to prepare personnel accounting reports from source documents furnished by activities of the Naval establishment. These source documents are entitled "Personnel Diaries", which can be described briefly as reports submitted by naval activities showing personnel gains, losses and changes in status, such as promotions or changes of qualifications of personnel attached to the activity under its personnel allowances. The diaries are submitted monthly to the PAMI having cognisance of the reporting activity.

4. For the majority of the Task Group, since they join and depart the organization as self-contained commissioned units, the assignment of personnel and accounting for them presents only a routine problem. But for the Task Group Commander's staff and enlisted allowance, for the Boat Pool and Underwater Detection Unit, and for personnel newly assigned in CASTLE for special duties or projects under the direct cognisance of CJTF SEVEN or CTG 7.1 this has been a troublesome matter. The difficulties arise in determining where to allocate personnel allowances, to whom the personnel should report, and who should account for them.

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5. This Task Group is unique in the Navy, with its operations largely concealed by security measures. It is involved in command and personnel relationships with a large number of other naval commands.

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This derives from the fact that, while CTG 7.3 reports for duty to CJTF SEVEN, he also reports to CINCPACFLT. The Task Group will be a unit of the U. S. Pacific Fleet. While all of his staff officers are physically present in Washington, D. C. during the planning phase, only a portion of his headquarters enlisted personnel are there. The remainder are in San Diego, California, under the command of COMPHIBTRAPAC, until they go forward. During the planning phase of IVY, CTG 132.3 staff officer diaries were submitted to FMMC FAMI as the most expeditious solution for the accounting problem. When theystaff moved forward the accounting was shifted to COMSERVPAC, since, as a PACFLT activity the staff officer allowance of CTG 7.3 was a SERVPAC allowance. Since the conclusion of IVY, this phase of the reporting has remained with COMSERVPAC. The Boat Pool and Underwater Detection Unit officers, on the other hand, are physically present in San Diego under the command of COMPHIBTRAPAC, reporting in addition to CTG 7.3. In the forward area, during IVY, they were under the immediate command of the Commanding Officer, USS OAK HILL (LSD-7). At the end of IVY, they were first ordered to CTG 132.3, but later to COMPHIBTRAPAC in San Diego, in their present status. Their personnel accounting is currently accomplished by COMPHIBTRAPAC.

6. The enlisted personnel of CTG 7.3 flag allowance are divided into two groups. One, the clerical staff, is in Washington. The other, for shipboard augmentation in the forward area, is in San Diego under COMPHIBTRAPAC, along with enlisted personnel of the Boat Pool and Underwater Detection Unit. The clerical group is under the command of Commanding Officer, U. S. Naval Receiving Station, Washington, as are all Navy enlisted personnel in the Washington area, for duty with

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CTG 7.3 under a personnel allowance assigned CJTF SEVEN. During IVI, all these enlisted personnel were transferred on permanent change of station orders to appropriate ships of the Task Group, flag personnel to USS BENNINGTON (CVS-114), the Task Group flagship, Boat Pool and Underwater Detection Unit personnel to the USS OAK HILL (LSD-7), with consequent shifts in personnel accounting responsibility to, and later from, those commands.

7. To avoid the need for such shifts, and to clarify the situation in general, it is planned to order all personnel, officers and enlisted, of CTG 7.3 staff and flag allowance, Boat Pool and Underwater Detection Unit, to duty in the forward area at the appropriate time, in a temporary additional duty status, with return to their present stations upon completion of CASTLE, and as a consequence, without any changes in present personnel accounting responsibilities.

8. The personnel newly assigned for special duties or projects are of several varieties. One group consists of aviation personnel, required as plane crews for the P4Y2 designated for the Office of Naval Research's project 1.4, and for the P2V-5 assigned to BuShips project 6.4.[7] The personnel allowances for these plane crews were assigned to CTG 7.3 in Washington despite the fact that the P4Y2 is at NATC, Patuxent River, Maryland, and the P2V5 is assigned to FASRon 116, NAS, Alameda, California. Following establishment of these allowances, the P4Y2 crew was ordered, and actually reported to CTG 7.3 in Washington. To provide for the physical location of the crews near their aircraft, it is planned to recommend that the plane crews be disposed of, personnel-wise, in this fashion: The personnel allow-

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7. CJTF SEVEN letter AG 452 File C3578 to CNO of 4 June 1953

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ance for the P4Y2 be reassigned to Commander Naval Air Test Center, Patuxent River, and that for the P2V5 to Commanding Officer, Fleet Aircraft Service Squadron 116; the personnel be ordered to these activities, reporting in addition, by letter, to CTG 7.3; their movement to the forward area accomplished by their then parent commands, at the request of CTG 7.3, ordering them and their assigned aircraft to Commanding Officer, U.S. Naval Station, Kwajalein for administration, and to the Commanding Officer, Patrol Squadron 29 (the Task Group Patrol Squadron) for additional (Operational) duties.

9. Another special group of personnel is comprised of the two aerologists and seven aerographer's mates requested by CJTF SEVEN for duties in USS [redacted], his flagship.[8] The timing of this request was such that the possible difficulties that might result were foreseen, and recommendations were made, and approved, that the personnel be ordered from their present stations to USS [redacted] for temporary additional duty for the required period without involving CTG 7.3 staff allowance. A similar problem, and a similar solution, are anticipated for a special communications unit required for the MSTS TAF which has been requested by CJTF SEVEN.[9]

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8. CJTF SEVEN letter J3/220.3I 000.93 serial 06402 of 4 September 1953

9. CJTF SEVEN letter AC 620 x 360 serial 0-5656 of 10 August 1953

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XII

b. SECURITY

TRAINING AND INDOCTRINATION

1. The security violations that occurred in IVY, and the determination to prevent such during CASTLE, have resulted in the planning of extreme precautions to insure absolutely that each person participating in CASTLE completely understands the need to keep silence concerning the operation, is familiar with the pertinent security regulations, and is fully aware of his personal responsibility for observing them. The Task Force Commander established a program of Security training and indoctrination, prescribing for each member of the Task Force, lectures and study of security regulations, and a written examination. A perfect score is required as a passing grade in the examination, with removal from the Task Force the alternative. The Task Force directives, plus CTG 7.3 supplementary material, were being prepared for distribution to all prospective units to get the program underway. When this material has been presented, it is believed that CASTLE participants will be as security conscious as it is reasonably possible to make them.[10]

2. CJTF SEVEN prescribed the requirements for clearing personnel in sensitive billets under the standards established by the Atomic Energy Act of 1946. He further directed that each person not considered to require such a clearance ("Q" Clearance) be cleared under the regulations of his particular military service for access to matter classified Secret.[11] This has led to the submission of applications, either

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10. CJTF SEVEN Security Memos No. 2 and No. 3
11. CJTF SEVEN Security Memo No. 4, Section II, Para 3. of 15 August 1953.

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for "Q" clearances, or for National Agency Checks (for subsequent Secret Clearance), by over 5500 Naval personnel. The "Q" clearance applications are received and screened in Task Group headquarters before they are forwarded to JTF SEVEN headquarters for further checking, and action by the Atomic Energy Commission. Despite the most detailed instructions, many applicants persist in forwarding incomplete application forms, which must be returned, or held pending the receipt of data necessary to complete them. The time and effort expended in the preparation of this corrective correspondence, as well as that of original preparation and routine checking and forwarding of the forms, has created an extremely heavy work load.

3. The time loss in obtaining corrected forms is also of importance and will soon become critical, as the time remaining approaches the time required for investigation and reply by the Atomic Energy Commission, usually about 90 days. However, despite the delays, an early start on "Q" clearance applications due to the early assignment of ships and units to the Task Group permits the prediction that the "Q" clearance program will be substantially completed by 1 February 1954, with the extra tasks of correction an annoying but not a fatal problem.

4. The Office of Naval Intelligence, where requests for National Agency Checks are submitted direct, reports that many incomplete NAC request forms are received there as well, but that despite the consequent delays, all checks should be completed by 15 December 1953.

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5. The requirement for the minimum of Secret clearance for all personnel has resulted in transfer from prospective task group units of a small number of aliens or non-nationals, particularly Filipino

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[redacted]

stewards who have not acquired U.S. citizenship, in compliance with regulations prescribed by the Secretary of the Navy, precluding granting them Secret clearance.[12]

12. SECNAV Instruction 5510.6

[redacted]

[redacted]

III

e. OPERATIONAL

AIDS TO NAVIGATION

1. Bikini Atoll has seen little use by any shipping since Operation CROSSROADS, the first off-continent atomic test series, in 1946, and since then there has been no maintenance of the buoyage system there. As a result, extensive rehabilitation of aids to navigation at Bikini has been necessary for Operation CASTLE. In November 1952, USS OAK HILL and USS LST 1126 called at Bikini in the initial buildup for CASTLE. They found the entrances to Bikini Lagoon to be dangerous, and aids to navigation nonexistant.[13] CTG 132.3 reported these conditions to CINCPACFLT and recommended survey and buoying of the main entrances and channels into the lagoon.[14] CINCPACFLT passed this information on to Commander, Fourteenth Coast Guard District, with the request that the action recommended be taken.[15] The Coast Guard in turn came to CTG 132.3 with a request for further information and a series of conferences began in late January between the Task Group Commander's staff and Coast Guard representatives.[16] It was determined first that the buoyage system at Eniwetok should be maintained in good repair, second that the Coast Guard Cutter BASSWOOD (WAGL 388) should mark ENIBURIKKU Pass, Bikini, with obstruction buoys and third, that the BASSWOOD should conduct a survey of Bikini Atoll to determine the exact condition of navigation aids there. These tasks were accomplished in March 1953. The concept of CASTLE operations

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13. Commanding Officer, USS OAK HILL letter ser 0106 of 29 November 1952
14. CTG 132.3 letter serial 00648 of 15 December 1952
15. CINCPACFLT letter serial 178 of 9 January 1953
16. COMFOURTEEN COD letter serial 0020196 of 21 January 1953

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[redacted]

was now taking shape and, based upon this plan and the BABBWOOD's report, a buoyage system for Bikini Atoll was outlined to the Coast Guard. This system has been revised and enlarged as the changing concept required. In general, buoyed channels were requested from ENIBAIKEU Pass and ENIU Pass to the northern islands with a connecting channel in the northern lagoon.[17] In May 1953, CTG 7.5 requested additional lighted buoys for night boat operations.[18] There were no Coast Guard funds available for this installation.[19] In August, because the cost of this requested buoyage system to C/TF SEVEN would have been excessive, it was determined that lighted range markers would be installed on three islands instead, at a fraction of the cost of installing the additional buoys. CTG 7.5 was so informed and is presently installing these aids.[20] In September, the Coast Guard Cutter BUTTONWOOD pointed out the existence of numerous uncharted shoals in Bikini Lagoon. CTG 7.3 requested the Chief of Naval Operations to initiate operations to wire drag all Bikini channels to a 30 foot depth and a 1000 feet width, together with operating basins at the ends of the two north/south channels to a diameter of 1½ miles.[21]

MOORING BUOYS

2. On 27 December 1952, during Typhoon HESTER, the mooring buoy chain of the AVR assigned to CTG 132.2 at Eniwetok parted, and the AVR was lost. The parting of this chain indicated that other moorings

17. CTG 132.3 Memo for the Record of 29 January 1953
18. CTG 7.5 letter FG-2-2214 of 22 May 1953 with C/TF SEVEN endorsement AG 829.1 of 11 June 1953
19. Acting Secretary Treasury ltr to Secretary of Defense of 10 March 1953
20. CTG 7.3 letter ser 258 of 30 June 1953 & CTG 7.5 letter FG-2-2669 of 16 July 1953
21. CTG 7.3 spdltr serial 00620 of 23 September 1953

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[redacted]

at Eniwetok might be unsafe. With this in mind CTG 132.3 requested CJTF 132 to direct the inspection of all mooring buoys at Eniwetok, and such repairs or replacements as might be necessary to prevent recurrence of such an accident.[22] During April 1953, recommendations were made for the installation of 5 large type ship mooring buoys at Bikini, three of these buoys for the LSD, AGC and CVE, the others for YAG 39 and YAG 40,[23] as well as two buoys for the YAG's in berths Baker Three and Charlie Three in Anchorage Able, at Eniwetok.[24] The requirement for the two YAG buoys at Bikini was later cancelled. In July CTG 7.3 resubmitted to CJTF SEVEN a more detailed request for the inspection and overhaul of large ship and small craft mooring buoys at both Eniwetok and Bikini since only a few small craft buoys had been overhauled as a result of the April request.[25] This work was beyond the capacity of CTG 7.5 (Holmes and Narver). CJTF SEVEN advised the Chief of Naval Operations of CASTLE mooring requirements, with the request that the necessary work be undertaken by the Navy, to be completed by 1 January 1954.[26] USS GYPSY (ARSD-1) commenced pulling and inspecting moorings at Eniwetok on 12 September 1953, assisted by Task Group 7.5.

22. CTG 132.3 letter serial 821 of 14 January 1953
23. CTG 7.3 spltr serial 00148 of 24 April 1953
24. CTG 7.3 spltr serial 00193 of 22 May 1953
25. CTG 7.3 letter serial 0301 of 13 July 1953
26. CJTF SEVEN letter AG 829.1 serial 05524 of 6 August 1953

[redacted]

XII

SMALL CRAFT MODIFICATIONS

WORK BOAT FOR UNDERWATER DETECTION UNIT

3. In January 1953, the Officer in Charge of TG 7.3 Underwater Detection Unit, which will operate a hydrophone system in the entrances to Eniwetok Lagoon to detect any attempts at enemy entry by unauthorized vessels, requested that an "L" boat (64 foot Distribution Box Boat) be procured for use by his unit during CASTLE. The boat was requested for diving operations in the maintenance of the underwater hydrophone system. An LCM, the type craft used for this purpose during IVY, was considered unsatisfactory because of its sailing characteristics in a high wind and its lack of proper lifting equipment. There were no "L" boats in stock and the intermittent nature of the operations would not justify reassignment of one already in use. Substitution of an LCM fitted with an "A" frame and a powered cable reeler was authorized.[27] The modification of an LCM in the custody of TG 7.3 Boat Pool was undertaken by U.S. Naval Station, San Diego. The work was scheduled for completion in time to put the LCM at Eniwetok on 15 October 1953 for use by the Underwater Detection Unit in inspecting and servicing the hydrophone system prior to the arrival of other CASTLE units.[28]

LCM'S FOR SPECIAL PROJECTS

4. In July 1953, CTG 7.1 requested modification of an LCM by the addition of a wooden platform deck, for use in laying and recovering

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27. CNO letter serial 0219P43 of 30 March 1953
28. CTG 7.3 letter serial 0219 of 17 April 1953 with BuShips endorsement serial 519-048 of 5 May 1953, CNO 2nd endorsement serial 0343P43 of 22 May 1953, DuStandA 3rd endorsement serial 01272 of 28 May 1953 and BuShips 4th endorsement serial 519-074 of 26 June 1953

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[redacted]

buoys in underwater pressure time-measurement studies by the Office of Naval Research. This LCM would be used with [redacted] (ARSD-1) and and ATF in this project.[29] In August 1953, CTG 7.1 requested modification of a second LCM by addition of a wooden deck, a work bench and canvas cover, davits to tend skiffs, anchor tackle suitable for anchoring in up to 180 feet of water and a portable fathometer. This LCM would be used in Scripps Institution of Oceanography studies of water wave action.[30] Both of the boats to be modified would be TG 7.3 Boat Pool LCM's. Modification of the boats, when all specifications are known, is being accomplished by Boat Pool personnel.

LCU FOR SPECIAL PROJECT

5. On 8 September 1953, CJTF SEVEN advised the Chief of Naval Operations of requirements for an additional LCU, especially modified by installation of a fathometer and gyro compass, and with special equipment for jetting and sounding operations of ONR Project 3.2, suggesting that the availability of LCU-1363 in Long Beach, California be investigated since this LCU was already equipped with a gyro compass.[31] LCU-1363 was not available, and plans were made to install a gyro and repeater system, and a fathometer, in LCU-1348 of TG 7.3 Boat Pool. The jetting and coring phase of the project were cancelled.

LSD PROBLEMS

6. In CASTLE, USS BELLE GROVE (LSD-2) has been assigned a dual mission, tender for the TG 7.3 Boat Pool operating at Bikini, and

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29. CTG 7.1 letter J-19209 of 29 July 1953 & CJTF SEVEN letter J-3/560 serial 05651 of 11 August 1953
30. CTG 7.1 letter J-19777 of 25 August 1953 & CJTF SEVEN letter J-3/560 serial 07136 of 28 September 1953
31. CJTF SEVEN letter J-3/560 serial 06471 of 8 September 1953

[redacted]

transportation of barge loaded special devices between Eniwetok and Bikini. Her task as Boat Pool tender would require her full time presence at Bikini, but the transportation of special devices would necessitate several round trips between the atolls and result in her separation from the Boat Pool for a total period of about three weeks. To permit continued operation and maintenance of the Boat Pool during BELLE GROVE's absences from Bikini, it is planned to assign overall responsibility for its support to the Bikini Harbor Unit, USS BAIROKO. BELLE GROVE would perform the supporting task when not transporting special devices. As further assistance to the Boat Pool, a YFN (covered barge) has been procured for use at Bikini. This barge will be equipped with cots, work benches, two diesel motor generators for battery charging and other power needs, and other equipment.[32]

7. The loading of special device barges in BELLE GROVE presents a problem. In order to load them into the well deck it is necessary to remove a portion of the super deck. The super deck is designed for easy removal, but it is questionable whether any of its sections can be removed without outside crane assistance. Since it is desirable that the deck be in place during the LSD's movement to the forward area and for a part of the time while in the forward area (the after portion of the deck is a helicopter landing platform), it is planned to explore the capability of BELLE GROVE's ship's force to remove the

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32. CTG 7.3 letter serial 0447 of 24 August 1953

after sections of the deck, the necessity for crane assistance, and the availability and capability of TG 7.5 cranes in the forward area, if required.

[redacted]

III

ARSD MODIFICATIONS

8. USS GYPSY (ARSD-1) will position buoys in the Office of Naval Research underwater pressure studies (Project 1.4). As a result of September conferences between Task Group staff officers, representatives of ONR, NRL, and BuShips, and the prospective Commanding Officer of GYPSY, it developed that improvement in GYPSY's lifting capabilities would be highly desirable. Specifically, accomplishment of ShipAlt 45, the installation of more powerful winches and relocation of control wires and control positions, was desired. While this installation can be accomplished quickly, it must be done by a naval shipyard, and GYPSY is currently in the forward area overhauling mooring buoys.[33] CTG 7.3 requested Commander Service Forces, U.S. Pacific Fleet and the Chief of the Bureau of Ships to effect the installation prior to GYPSY's reporting for CASTLE about 10 January 1954, if it can be done without interference with her current mooring buoy task.[34] If the installation cannot be completed, the services of two ATF's instead of one probably will be required to assist during the recovery phases of the operation. GYPSY reports slow progress on the mooring buoy project, and her availability for this installation is in doubt. A trial of Project 1.4 mooring methods and equipment will be held in Chesapeake Bay from 1 to 15 October. This trial may indicate need for additional equipment.

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LCU TRIPS IN OPEN SEAS

9. During June 1953, consideration had been given to obtaining an LSM in addition to ships already designated for CASTLE, to increase

33. Chief of Naval Research letter serial 00847 of 29 September 1953 with enclosures

[redacted] serial 0628 of 25 September 1953

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inter-atoll lift capabilities. CTG 7.5 considered that the LSK could be dispensed with, provided occasional trips might be scheduled between Eniwetok and Bikini by LCU's carrying heavy equipment, and requested that CJTF SEVEN obtain Navy approval for such trips under escort.[35] CJTF SEVEN requested that CTG 7.3 determine the feasibility of this employment of LCU's.[36] After consultation with BuShips and CNO representatives, and with the provisional concurrence of CINCPACFLT, CTG 7.3 advised CJTF SEVEN that no objection to such trips would be made, provided certain safety precautions were rigidly adhered to. These, interposed by CINCPACFLT concerned suitable escort of the LCU, a favorable weather prediction and compliance with current Navy instructions for safe guarding LCU stability and buoyancy.[37] CJTF SEVEN authorised the desired trips subject to compliance with CTG 7.3 recommendations.[38]

SECURITY OF THE AREA

10. In December 1952, CINC AC, in exercising his security responsibility for the Pacific Proving Grounds requested CJTF 132's report on the security aspects of Operation IVY, and recommendations for Operation CASTLE. In January 1953, CJTF 132 requested CTG 132.3's opinions and recommendations,[39] which were forwarded the same month.[40] The basic recommendation was for security forces for CASTLE of the same strength and composition as for IVY, with an augmented Underwater Detection Unit and other measures for the protection of Bikini Lagoon.

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35. USAEC SPOO message 032228Z August 1953
36. CJTF SEVEN cite 803
37. CTG 7.3 letter serial 422 of 19 August 1953
38. CJTF SEVEN letter J-3/560 serial 06089 of 21 August 1953
39. CJTF 132 letter AC 371.2 serial 079 of 6 January 1953
40. CTG 132.3 letter serial 00830 of 19 January 1953

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Alternate recommendations for lesser forces were made, to meet the contingency that the desired forces might not be available, or in case economy considerations should require a reduction. In August 1953, when the strength of the security forces planned by CINCPACFLT was known, and the concept of operations had reached an advanced state, CTG 7.3, with the concurrence of CJTF SEVEN, recommended to CINCPACFLT that the planned forces be increased slightly over the then planned security forces of 1 VP squadron (12 P2V-6's), 4 DDE, and 4 F4U-5N's. CTG 7.3 stated that while it would be possible to perform the security tasks with these forces, the degree of security that could be maintained would be substantially less than during IVY, when the test operations were confined to one atoll and the prescribed danger area was only about 60% the size of that prescribed for CASTLE; and that by a slight augmentation of the planned forces a significantly greater degree of security could be maintained. CTG 7.3 therefore recommended the assignment of an additional ASW ship (DDE or smaller) to assist in guarding Bikini Lagoon, unless the Underwater Detection Unit could be augmented for that purpose. Assignment of the additional ship appeared the more desirable alternative, in view of the cost, scarcity of trained personnel and of equipment, and installation problems for a hydrophone system at Bikini. In addition, an increase in F4U's from four to six was recommended, to permit assignment of three each at Bikini and at Eniwetok CAP, with a resultant greater probability of having a ready two plane fighter unit at each atoll. It was stated that the three Bikini F4U's and two ASW ships could be released at the conclusion

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of the Bikini phase of the Operation.[41] CINCPACFLT assigned the two additional fighter aircraft, and has indicated the probable assignment of a PC as an additional ASW vessel.

FALL-OUT AND COLLECTOR BUOYS

11. Radioactive fall-out studies were planned for CASTLE, involving the use of about 100 dan buoys planted over 360° out to a radius of 90 miles from ground zero. This is a Naval Radiological Defense Laboratory project. Free floating buoys, equipped with recording devices, will be planted just prior to shot-time and recovered afterwards. During the period the buoys are in the water, security forces on their assigned patrols will be conducting radar search of the area, with particular interest in detecting submarines. Scattering a large number of small buoys over the critical area, thus setting up radar targets that could easily be mistaken for submarine snorkels, would complicate accomplishment of the security mission to such an extent as to make it well-nigh impossible. CINCPAC/CPFLT strongly objected to the project for this reason, unless a method could be found to permit the buoys to be positively identified by search aircraft or destroyers. This same program had been planned for IVY but was severely curtailed because of this security interference. NRDL therefore devised a new buoy designed and equipped to overcome CINCPACFLT's objections, and, in conjunction with CJTF SEVEN, requested that tests be conducted at an early date.[42] A test in the San Diego area was scheduled for late July, using the services of USS CONNECK (DD-886) and a P2V-6 aircraft from VP-29, with NRDL providing the

41. CTG 7.3 ltr ser 00392 of 6 August 1953 with CJTF SEVEN 1st endorsement J3/380.01 ser Ø 5-0196 (1) of 14 August 1953
42. CJTF SEVEN ltr AG 903 ser 02146 of 17 April 1953

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buoys and instrumentation. The results of this test, carried out from 20 to 24 July, were inconclusive,[43] and NRDL requested a second and final test in late September.[44] This test was set up by COMAIRPAC for the week of 26 September, with USS MARSHALL (DD-676) and a VP-29 aircraft participating. The objective was to complete the test successfully prior to a 1 October deadline established by NRDL. The test was conducted on schedule and the buoys as then constructed were found still unsatisfactory. However, a solution was proposed at the time, which would provide the necessary means of identification by radio signals transmitted from the buoys, and despite the passage of the deadline date further development and testing were planned.

HELICOPTER PILOTS

12. The initial requirement for helicopters placed upon the Task Group was for six HRS. Subsequently this number was increased to ten. Commander Air Force, Pacific Fleet directed that Marine Corps aviation provide this requirement, and HMR 362 was designated to participate in CASTLE. Since the helicopters will be employed in flights over radioactively contaminated areas, special arrangements will be necessary to insure against overexposure of pilots to radiation. The maximum permissible exposure of 3.9 roentgens for the operation, generally applicable for CASTLE participants, applies likewise in the case of the helicopter pilots.

13. To guarantee continued helicopter operations as the operation progresses, without overexposing pilots, it is planned to provide a greater number of them than would ordinarily be required.[45]

43. CTG 7.3 letter serial 00372 of 3 August 1953
44. [redacted] USNRDL letter 3-905C-277A of 4 September 1953
45. CTG SEVEN letter 13/200.3 ser 05996 of 21 August 1953

[redacted]

Estimates of the number necessary, based on expected radiation exposures, varied from twenty-four to forty-eight. It has been decided to "C" clear forty pilots, with twenty reporting initially for duty in CASTLE, and the remaining twenty held in reserve on the West Coast, to be ordered to the forward area as replacements, should their services be required.[46]

46. CTG 7.3 letter serial 00499 of 2 September 1953

[redacted]

d. LOGISTICAL

PROCUREMENT

1. TG 7.3 Boat Pool and Underwater Detection Unit did not have official allowances of spare parts and special equipment during Operation IVY. This made procurement of these items extremely difficult. At the conclusion of IVY, recommended allowance lists were prepared, and submitted to the Bureau of Ships and the Bureau of Ordnance in January 1953, and subsequently approved.[47] With these allowance lists in effect, procurement for these two units has been greatly simplified. In general, no problems of major significance have been encountered in the procurement of special items for ships and units of the Task Group. Cooperation of the various material bureaus and supply activities has been excellent.

POL

2. During CASTLE, it will be necessary to provide adequate amounts of black oil, diesel fuel, aviation and motor gasoline at both Bikini and Eniwetok Atolls. Transportation of these fuels to the area is a task well within the capability of Service Force Pacific Fleet tankers. SERVPAC AO's and AOG's will visit the area monthly and resupply the Task Force from stocks maintained at Pearl Harbor and Kwajalein. The matter of storage and delivery of the fuels to users presented certain problems. Permanent ashore storage is available at both Eniwetok and Bikini for diesel fuel, aviation and motor gas in amounts that will be adequate provided frequent replenishment is possible. Major ships

47. CTG 132.3 letter serial 0838 of 23 January 1953

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of the Task Group will have considerable storage capacity for black oil, but there are no shoreside facilities for its storage. It is planned to base at Eniwetok, YOG 61, with a capacity of 6800 barrels of diesel fuel and motor gas, and YOGN 82, with a capacity of 90,000 barrels of aviation fuel, to supplement the ashore storage. At Bikini ESTES, CURTISS and BAIROKO will supplement ashore storage for these fuels. Stocks of Navy Special Fuel Oil will be maintained afloat at both atolls, by utilising the storage capabilities of the major ships, supplemented at Bikini by YO-120, with a capacity of 6500 barrels of black oil. The storage problem is eased considerably by the presence of the CVE, with fuel tanks of 66,280 barrels capacity. Largest users of black oil will be the security DDE's. ESTES and CURTISS will be prepared to fuel them on short notice, being replenished as necessary between monthly AO fuelings by YO-120, which in turn will draw on BAIROKO's fuel supply as required.

RECREATION

3. It was realised very early in planning for CASTLE that at Bikini, the recreation facilities for naval personnel were almost zero. Permission was obtained from the Task Force Commander for Navy development and use of Bikini Island for recreation. To permit unrestricted use of the planned facility, CJTF SEVEN waived all "Q" clearance requirements for landing on Bikini Island.[48] Commanding Officer, USS BAIROKO was designated to take charge of the recreation activity.[49] Originally

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48. CTG 7.3 letter serial 0276 of 3 July 1953 with CJTF SEVEN 1st endorsement AG/3-1 383.3 x 380.01
49. CTG 7.3 letter serial 0572 of 16 September 1953

it appeared that considerable recreation facilities would also be required at Eniwetok. Japtan Island had been the naval recreation island during IVY, supplemented by limited use of the facilities established by CTG 132.2 on Eniwetok Island. A plan was developed for increased use of Eniwetok Island by naval personnel, calling for rehabilitation of a recreation building there.[90]

SPACE REQUIREMENTS FOR BAIROKO

4. During this period, planning of the various Task Groups indicated that 91 officers and 219 men, in addition to the ships company, were scheduled to move to the forward area. BAIROKO has reported that she is capable of lifting only 64 officers and 257 men in addition to ship's company. This discrepancy in the number of officers to be carried by the BAIROKO was pointed out to headquarters Joint Task Force SEVEN personnel who stated that they will make arrangements with other Task Groups for reduction of planned passenger lift in BAIROKO.

90. CTG 7.3 letter serial 0669 of 15 September 1953

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e. COMMUNICATIONS

USS ESTES (AGC-12)

1. Considerable effort has been made to improve the communication performance of the Task Force Commander's flagship. Operational difficulties were experienced in IVY attributable to the failure of equipment and lack of qualified personnel. Study of IVY reports indicated that much improvement could be made by the installation of additional equipment and alteration of some existing equipment, by the procurement and training of an adequate number of competent communications operational and maintenance personnel, and by complete and repeated tests of equipment to improve reliability and readiness. Some of the IVY deficiencies are not capable of complete correction due to inherent shipboard limitations, e.g., interference difficulties due to large numbers of transmitters, receivers and antennas located in close proximity to each other. Others could be corrected only at excessive cost and at the expense of unacceptable interference with the ship's primary mission as an amphibious flagship, e.g., replacement of master oscillator controlled transmitters by crystal controlled equipment. In addition, the Navy has a critical shortage of qualified communications personnel. But within these limitations, every effort is being made to overcome ESTES' deficiencies.[51]

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2. Extensive alterations, including antenna relocation, cable rerouting and general corrective survey to locate and eliminate local interference, were made during ESTES yard overhaul January to March

51. CTG 7.3 memo for Major General Clarkson serial 00517 of 6 September 1953

[redacted]

1953. Through subsequent months, CASTLE planning made firm the requirements to be placed upon the flagship, and plans to meet them were projected, taking into account the lessons learned during IVY. In August 1953, CJTF SEVEN called attention to the IVY experience and suggested that measures be taken to avoid similar difficulties in CASTLE.[52] CTG 7.3 had prepared a request that CJTF SEVEN provide a review and summary of the communication support required of ESTES by CJTF SEVEN, JTF SEVEN Weather Central, Task Groups 7.1 and 7.4 and other elements of the Joint Task Force to be embarked, together with information concerning equipment required and responsibility for procurement, installation, maintenance and operation of additional equipment installed.[53]

3. When the desired information was received,[54] it was dispatched to Commander Amphibious Force and Commander Amphibious Training Command, U.S. Pacific Fleet, and USS ESTES, accompanied by all available information on ESTES IVY experience, the CTG 7.3 tentative frequency plan and a brief of special training considered essential for ESTES personnel. Also incorporated was a strong request for special consideration for ESTES with respect to the assignment of communications and electronics personnel during the operational phase of CASTLE.[55] The staff Communication Officer then visited the three commands concerned to follow-up and discuss ESTES problems.

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52. CJTF SEVEN memo to CTG 7.3 and CJTF SEVEN ACofS-J-5 undated
53. CTG 7.3 letter serial 0420 of 18 August 1953
54. IBID with CJTF SEVEN 1st endorsement serial 06247 of 31 August 1953
55. CTG 7.3 letter serial 00575 of 16 September 1953

[redacted]

4. The planned participation of ESTES in Operation TIGERCAT in October 1953 will provide an extensive operational test for ESTES. Scheduling of this test prior to the commencement of the ship's restricted availability at San Diego from 14 November to 11 December 1953 will provide the opportunity to correct deficiencies noted. Operation TIGERCAT will be an air rehearsal exercise in the San Diego area conducted by CTG 7.4 at CJTF SEVEN's direction, to test planned operational procedures and communications for CASTLE. ESTES will serve as CTG 7.4's command post on this simulated shot day. Participation in this and a possible later test should assist materially in readying her for her CASTLE mission.

HEADQUARTERS ASHORE

5. Planned establishment of CTG 7.3 headquarters ashore on Parry Island during CASTLE will require installation of communication equipment to provide for the Task Group Commander, channels for the operational control of TG 7.3 aircraft and ships.[56] Space for such a facility on Parry Island has been assigned in CJTF SEVEN headquarters building. Suitable transmitters and other equipment have been ordered for installation in the forward area. Present planned capabilities of the facility will permit:

a. Net control of the Task Group common and VHF Administrative nets.

b. Ability to guard air/surface patrol and contact coordination nets.

c. Continuous HOK FOX coverage.

56. CTG 7.3 letter serial 0431 of 20 August 1953

In addition a visual signal station on Parry Island is planned.[57] Personnel to man this station, and a CTG 7.3 crypto facility, will be provided from the staff and flag allowance, augmented if necessary by personnel from other Task Group units.

PROJECT 6.4 COMMUNICATIONS

6. In communication planning for TAG's 39 and 40 of Project 6.4, it was necessary to advise the project officer of their communications requirements, to assist in the procurement of equipments to be installed, to establish allowances of registered publications and crypto aids, and to insure, by providing guidance during the rehearsal stage under the operational control of COMTHELVE, that all project units would be adequately prepared for their CASTLE communication tasks.[58]

7. A series of conferences developed the basic needs of the project vessels. Staff Communications determined the minimum requirements for the noncommissioned ships, and enlisted the aid of MSTS in obtaining manuals and operating instructions for the merchant marine communication equipments installed. A voice capability will be provided between units by the procurement and installation of 10 watt Motorola equipments. A recommended allowance of RPS distributed publications and a comprehensive communication plan are under preparation based on the CTG 7.3 tentative communication plan.

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57. CTG 7.3 letter serial 00226 of 8 June 1953
58. CTG 7.3 Memo for the Record 14 April 1953

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f. COMPTROLLER

During the build-up phase of Operation CASTLE the majority of the expenditures of Task Force funds were made to alter and outfit the ships of the Task Group for their mission during the Operation. A total of about $35,000.00 was expended for this purpose while the remaining expenses for travel, utilities and office supplies totaled only about $6,000.00. Expenditure of Task Force funds during the operational phase should be minor and will be used mostly to finance CTG 7.3 staff overhead expenses. It is interesting to note that the financial support of this Task Group from Task Force funds is relatively small, only about $42,000.00, as compared to the overall costs of about $600,000.00, which are financed by the Navy in accordance with Assistant Secretary of Defense (Comptroller) Memorandum dated 9 March 1953.

A detailed report of these expenditures for the period ending 30 September 1953 is contained in Section IV.

[redacted]

XV

PERTINENT STATISTICAL MATERIAL

[redacted]

[redacted]

IV

OFFICER ALLOWANCE CONFORMING TASK GROUP 7.3

BILLET TITLE	CODE	FLAG	CAPT	CDR	LCDR	LT	LTJG	ENS	WO	TOTALS
UNIT (1) - Commander's Staff										
ComTaskGroup 7.3	*1100	1								1
Chief of Staff	*1300		1							1
Flag Lieutenant	1100					1				1
Flag Secretary	1100				1					1
Personnel Officer	1100					1				1
Plans & Operations Officer	1100			1						1
Asst Plans & Operations Off	1300			1						1
Asst Plans & Ops Officer	1100					1				1
Asst Plans & Ops Off (Atomic Defense)	1100				1					1
Security & Intelligence Off	1100				1					1
Logistics Officer	1100			1						1
Communication Officer	1100				1					1
Asst Communication Officers	1100						3			3
Supply Officer	3100			1*						1
Medical Officer	2100				1**					1
Sub Total		1	1	4	5	3	3			17

[redacted]

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[redacted] INFORMATION

IV

OFFICER ALLOWANCE COMBINED TASK GROUP 7.3 (CONT'D)

BILLET TITLE	CODE	FLAG	CAPT	CDR	LCDR	LT	LGJG	ENS	MO	TOTAL
UNIT (2) - Boat Pool										
Officer in Charge	1100				1					1
Asst CinC	1100					1				1
Eng & Maint Off	7130								1HOSP	1
Eng & Maint Off	7740								1CARP	1
Sub Total					1	1			2	4
UNIT (3) - Underwater Demolition Unit										
Officer in Charge	1100					1				1
Sub Total						1				1

* Corps Codes may be interchanged as required.

GRAND TOTALS	1	1	4	6	5	3	0	2	22

[redacted]

[redacted]

IV

COMMANDER TASK GROUP 7.3 WAVE ALLOWANCE AT WASHINGTON, D. C.

Rating	Rating Code	Pay Grade 2	3	4	5	6	7	Total
QM	0200	1						1
ET	1000		1		1			2
TM	1300		1					1
RM	1900		1					1
YN	1700	1	2	4	3			10
SK	2000		1					1
SN	3600					1	1	2
SN	8000		1					1
	TOTAL	2	7	4	4	1	1	19

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ALLOWANCE FOR NAVAL RELATED PERSONNEL COMMANDER TASK GROUP 7.3

EMC Code	Rating	Rating Code	Pay Grade 7	6	5	4	3	2	Total
UNIT (1) - FLAG ALLOWANCE FOR FLAGSHIP									
	BM	0100			1				1
	QM	0200		1	1	2			4
	ET	1000			1	3			4
	RM	1500	1		1	3			5
	SK	3600						1	1
	EM	3800				1			1
	SD	8500	1		1	1	2	2	7
		Sub Total	2	1	5	10	2	3	23
UNIT (2) - BOAT POOL									
	BM	0100	8	2	5	29			34
	QM	0200			7				7
	ET	1000		1	1	1			3
	RM	1500				7			7
	YN	1700			1	1			2
	SK	2000		1		1			2
3022	CS	2290		1	6				7
	SN	3600					48	19	67
	EM	3800	2	8	14	15			39
	EM	4100	1		8	2			11
	ME	4300	1	1	2	2			6
	DC	4500		1	1	2			4
	FN	9000					21	12	33
8402	EM	8000		1					1
	SD	8500				1			1
		Sub Total	12	16	45	51	69	31	224
UNIT (3) - UNDERWATER DETECTION UNIT									
	BM	0100	1		1				2
	SO	0400		2		10			12
	ET	1000			1				1
	EM	4100		1	2	3			6
		Sub Total	1	3	4	13			21
		GRAND TOTAL	15	20	54	74	71	34	268

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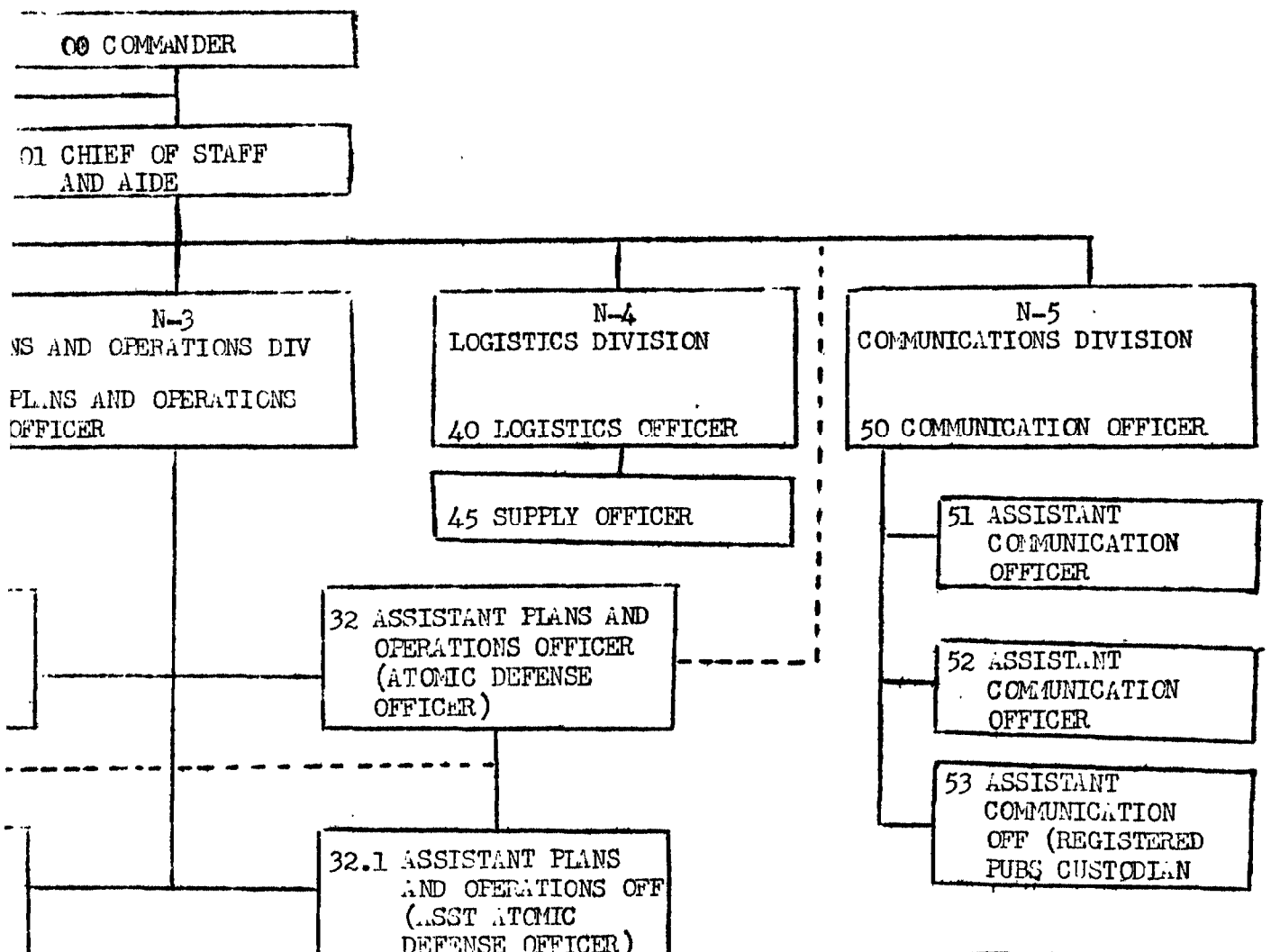
CHART COMMANDER TASK GROUP 7.3 STAFF

PRIMARY DUTIES



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PERSONNEL CLEARANCE STATUS OF SHIPS AND UNITS OF TASK GROUP 7.3 AS OF 30 SEPTEMBER 1953

SHIPS	"C" GRANTED	"C" PENDING	NAC COMPLETED	NAC PENDING	TOTAL
USS BAIROKO	0	76	7	829	912
USS ESTES	9	9	290	158	540
USS BELLE GROVE	0	39	3	316	358
COMCORTDESDIV 12	0	4	2	1	7
USS PATTERSON	1	13	217	68	299
USS NICHOLAS	0	16	146	104	266
USS RENSHAW	0	10	170	123	302
USS PHILIP	0	14	89	180	303
USS MOLALA	3	18	47	18	86
TG 7.3 BOAT POOL	3	19	277	50	349
TG 7.3 UDU	14	11	0	0	25
HELICOPTER TRANSRON 362	0	54	0	145	199
TG 7.3 (FLAG ALLOW B.P.)	0	15	6	7	28
TG 7.3 STAFF	32	2			34
TOTALS	66	414	1208	2029	3708

Personnel clearance status reports have not yet been received from the following ships and units:

USS CURTISS
PATROL SQUADRON 29
COMPOSITE SQUADRON 3
USS LST 762
USS LST 551
USS GYPSY
USS APACHE
USS SIOUX
USS TAMARCWI
USS COCOPA
TG 7.3 PROJECT 1.4
MAG-36

[redacted]

XV

STAFF TRAVEL ON TASK FORCE BUSINESS FOR THE PERIOD ENDING 30 SEPTEMBER 1953

		DESTINATION		
DATE	OFFICER	WEST COAST	PEARL HARBOR	FORWARD AREA
6-2-53	CTG 7.3	X	X	X
6-2-53	OPERATIONS OFFICER	X	X	X
6-2-53	LOGISTICS OFFICER	X	X	X
7-6-53	ASST OPERATIONS OFFICER (AIR)	X		
7-16-53	ASST OPERATIONS OFFICER (AIR)	X		
8-5-53	CTG 7.3	X		
8-26-53	SUPPLY OFFICER	X		
8-27-53	ASST OPERATIONS OFFICER (AIR)	X		
9-4-53	ATOMIC DEFENSE OFFICER	X	X	X
9-15-53	COMMUNICATIONS OFFICER	X		
9-24-53	CHIEF OF STAFF	X		

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This document consists of Enclosure 2 page(s)
No. 1 of copies

Enclosure (2) 55

[redacted] IV

CUMULATIVE COSTS OF TG 7.3 1 JANUARY - 30 SEPTEMBER 1953

Travel and Per Diem	$ 3950.00
Telephone and Utilities	1459.00
*Military Pay	436,797.00
Office Supplies	1380.00
Building Maintenance	300.00
Alterations to ships	29,200.00
TOTAL	$473,086.00

*Includes pay of Task Group 7.3 Boat Pool and Underwater Detection Unit

STATUS OF ALLOTMENTS RECEIVED FROM COMMANDER JOINT TASK FORCE SEVEN AS OF 30 SEPTEMBER 1953

DESCRIPTION	RECEIVED	EXPENDED
Travel	$ 4683.00	$ 4000.00
Communications	2000.00	
Task Group Overhead	400.00	
Ship Modifications	32,000.00	29,200.00
Land Improvement	4500.00	
Documentary Photography	500.00	
Radiological Defense	12,000.00	9000.00
	$56,083.00	$42,200.00

STATUS OF THE BUREAU OF SHIPS BOAT POOL OUTFITTING ALLOTMENT HELD BY THE SUPPLY OFFICER, U. S. NAVAL AMPHIBIOUS BASE, CORONADO, SAN DIEGO, CALIFORNIA AS OF 30 SEPTEMBER 1953

Received	$140,348.00
Obligated	68,478.00
Expended	59,609.00
Balance	$ 12,261.00

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for LCOR Madden

Joint Task Force SEVEN
TASK GROUP 7.3
APO 187 (HON), c/o Postmaster
San Francisco, California

RC3-JTF SEVEN - H-1
TG7.3/CHL:jm
A-12
Ser: 00272

10 FEB 1954

[redacted]

SUBJECT: Historical Installment Number 2; submission of

TO: Commander
Joint Task Force SEVEN
APO 187 (HON), c/o Postmaster
San Francisco, California

1. Reference is made to CJTF SEVEN letter 535/XL4.7 of 9 Oct 1953, serial 0-7467 and CJTF SEVEN Standing Operating Procedure Number 172-70.

2. Commander Task Group 7.3 Installment Number 2 of the History of Operation CASTLE is submitted.

H. C. BENTON
Rear Admiral, U.S. Navy
Commander

1 Incl
Historical
Installment No. 2

Copies furnished:
CTG 7.1
CTG 7.2
CTG 7.4
CTG 7.5

RG 374 DEFENSE NUCLEAR AGENCY
Location WNRC
Access No. 61A1740 Box 1/19
Folder HISTORY-VOLUMES I+II-INSTALLMENTS 1,2,3+4-53-54

[redacted] SEPARATED FROM ENCLOSURES, HANDLE THIS DOCUMENT AS [redacted] (If unclassified, so state)

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[signature] 3/17/92
REVIEWED BY DATE
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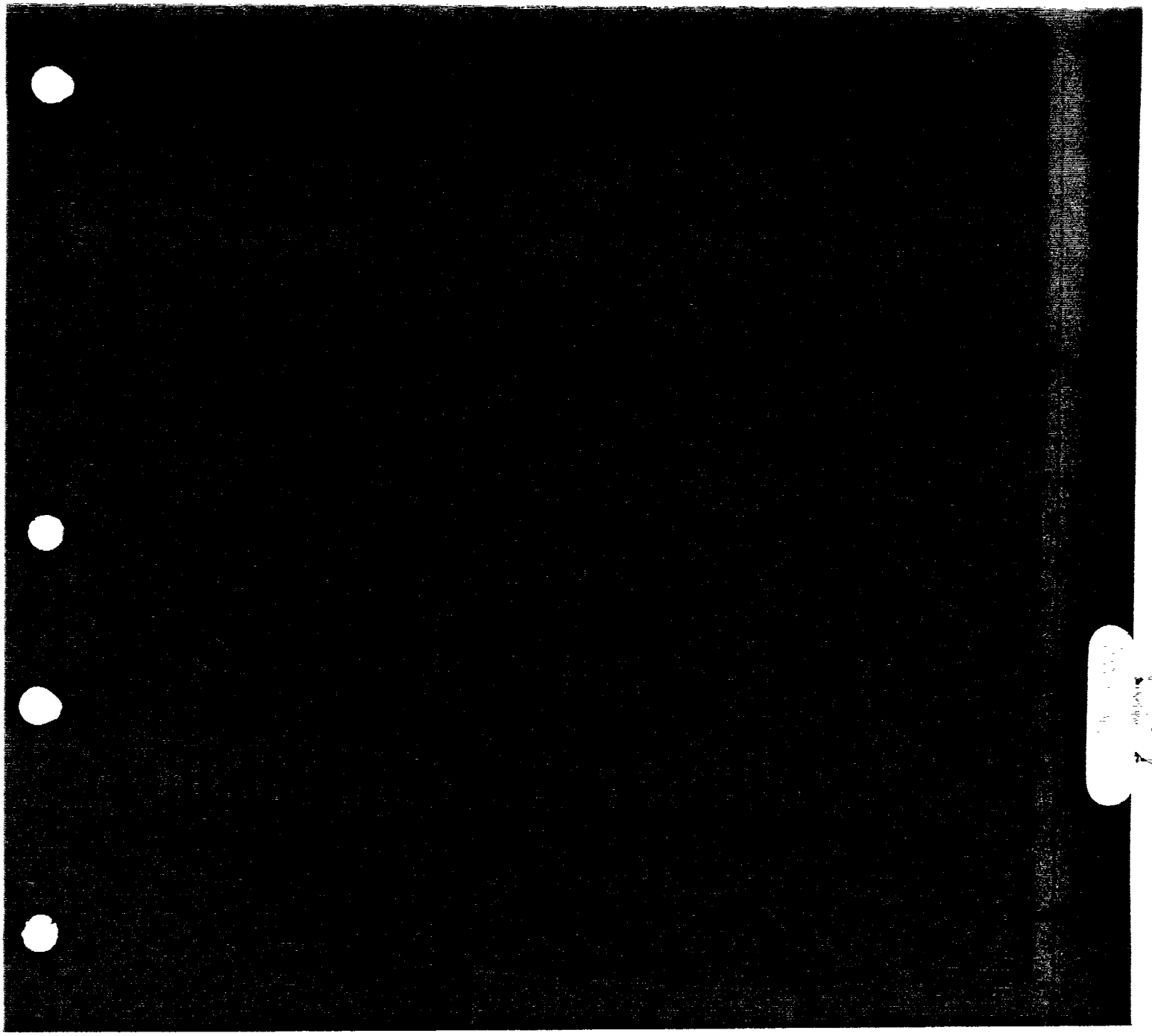

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RG 374 Defense Nuclear Agency
Location WNRC
Access No. 61A1740 Box 119
Folder History Volumes I & II -
Installments 1, 2, 3 & 4 - 53-54

COMMANDER TASK GROUP 7.3

HISTORY OF OPERATION CASTLE

INSTALLMENT NUMBER 2

Period ending 24 January 1954

Submitted:

R. F. MADDEN
Lieutenant Commander, USNR-R

Approved
10 February 1954:

H. C. BRUTON
Rear Admiral, U.S. Navy
Commander, Task Group 7.3

CLASSIFICATION CANCELLED*
BY AUTHORITY OF DOE/OC
L. Diaz 3/17/92
REVIEWED BY DATE

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* Ltr. DNA Swisher to DoE, Cooling, 9-27-91

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OUTLINE

I. Preparation

II. Deployment

III. Problems encountered and their solutions, in the following order:

   a. Administrative

   b. Security

   c. Operational

   d. Logistical

   e. Communications

   f. Comptroller

IV. Pertinent statistical material

[redacted]

[redacted]

II.

PREPARATION

1. The Navy Task Group's overall operation plan for CASTLE was published on 7 December 1953.[1] It summarized the missions assigned the Navy in this test series, set forth the organization that would carry it out and laid out their assigned tasks. The basic mission was essentially unchanged from that outlined earlier; the organization had been modified and somewhat expanded; the tasks had grown more numerous and more complex, as the various scientific projects requiring direct Navy support developed their own plans and made their needs known. It became more and more apparent that the two-atoll concept of operations would add to this complexity.

2. The mission as assigned by CJTF SEVEN still involved, basically, two main responsibilities, for the security of the area, and for the support of scientific projects.[2] The augmented forces recommended by the Task Group Commander had been assigned by CinCPacFlt. This augmentation was small in size, consisting only of two more fighter aircraft (F4D-5N) and an additional ASW vessel (PC 1546). It would nevertheless permit some fighter protection at both atolls, with the capability of scrambling two plane interceptors at both locations, and a reasonable ASW capability on a 24 hour basis in the vicinity of both atolls.

3. In November, 1953, the USNS FRED C. AINSWORTH (T-AP 181) was designated to join the Task Group for a part of CASTLE, primarily to

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1. CTG 7.3 Operation Plan Number 1-53
2. CJTF SEVEN OpPlan 3-53, pp 3-4 and Annex HOW

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augment the evacuation capability at BIKINI. Two LST's, the 825 and the 1146, were directed to be ready to relieve the LST's already assigned, in the event of a serious breakdown. One, the LST 825, was ordered into the Operation in January 1954 to replace the 551 which was forced to return to Pearl Harbor for repairs. A barge, YC-1061, was assigned to support Project 1.4, following completion of tests conducted in Chesapeake Bay in October 1954. Early in January, 1954 the Task Group staff learned of the probable approval of a new project sponsored by the Bureau of Ordnance that was likely to add to the Task Group USS SHEA (DM-30), USS RECLAIMER (ARS-42), LST 1172, small craft, and personnel of Naval Beach Group ONE and Explosive Ordnance Disposal Unit ONE. The units to be employed in CASTLE will be considerably greater in number and more diverse in type than those employed in IVY.

4. In October 1953 Rear Admiral Bruton participated in the Task Force Commander's presentation of CASTLE plans to CinCPac and members of CinCPac and CinCPacFlt staffs. At this time he and his Plans and Operations Officer, Commander M. S. Schmidling, U.S.N., conferred with members of CinCPacFlt staff at Pearl Harbor, with a first draft of CTG 7.3 Operation Plan Number 1-53 as the basis for discussion. Upon completion of this series of conferences and the return of the party to Washington headquarters, revision and refinement of theplan went forward with an early December 1953 production date the target.

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5. At the same time preparations were continued by the various units scheduled to participate in CASTLE. The procurement, installation and operational testing of special equipment, the procurement and training of specialized personnel, the indoctrination of ships' and aircraft crews in radiological safety and in security measures, and the never-ending job of obtaining necessary security clearances were accomplished concurrently with units' employment in routine operations. The Task Group staff, in addition to its planning task, was occupied in coordinating these diverse preparations, and in expediting the procurement, delivery and installation of needed items on less than normal notice. Numerous staff visits were made to West Coast and Hawaiian commands as well as to the forward area.

6. In October 1953, CJTF SEVEN, after coordinating the requirements of TG 7.1 with the capabilities of TG 7.3, recommended to CinCPacFlt a tentative schedule for the movement of CASTLE units to the forward area.[3] In late November 1953, after various revisions and readjustments of this schedule, CTG 7.3 forwarded to CinCPacFlt a request for the forward movement of all units, indicating desired movement dates, routings, destinations, and dates for change of operational control to CTG 7.3.[4] These recommendations took into consideration a revision in CASTLE shot dates, and in the shot schedule. This revision, involving a two weeks' delay, regardless of other consequences, had a beneficial effect on Navy morale, in that it assured several ships' companies the opportunity to spend the Christmas holidays at home.

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3. CJTF SEVEN ltr J-3/565.1 of 2 Oct 1953 ser 07253.
4. CTG 7.3 ltr A4-3 ser 00113 of 20 Nov 1953.

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7. At the end of November 1953, the Navy Task Group Commander introduced the question of the early release of naval units after the last shot, to permit their prompt return to other scheduled operations.[5] CJTF SEVEN indicated in reply that the planned complete roll-up of all activities at BIKINI would probably require the retention of the Navy Boat Pool there for thirty days after the last shot and of BAIROKO with her helicopters for half of this period. Other vessels, except small craft for CTG 7.2 boat operations at ENIWETOK, would probably be released soon after the last shot.[6]

8. In December 1953, with the distribution of CTG 7.3 Secret Operation Plan Number 1-53, there occurred what could have been a serious compromise of plans for CASTLE. A package containing five copies of the plan reached USS CURTISS by U.S. registered mail with its wrappings in badly damaged condition. Investigations were ordered by CTG 7.3 in Washington, by Commander, Air Force, U.S. Pacific Fleet in San Diego, and by the Post Office Department. It was concluded that the damage to the wrapping was not the result of tampering, and that it was highly unlikely that any compromise had occurred.[7]

5. CTG 7.3 ltr A4-3 ser 001186 of 30 Nov 1953.
6. CJTF SEVEN ltr J-3/3004 of 14 Dec 1953 ser 08988.
7. Investigative report of 8 Jan 1954 with CTG 7.3 1st. End, file A-17 ser 0056 of 23 January 1954

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XI

DEPLOYMENT

1. In December 1953, Commander in Chief, U.S. Pacific Fleet approved the recommendation for the forward movement of CASTLE units, and directed type commanders to implement it. The movement began somewhat inauspiciously with the sailing of LST 551 (LT R. G. Kanzenback, USN) from Pearl Harbor 13 December 1953, for BIKINI via MAJURO, KUSAIE, PONAPE, ENIWETOK and RONGERIK to establish weather stations. At BIKINI she was to join LST 762 (LT J. O. Bachert, USN), already on the scene, in the inter-atoll lift. At RONGERIK, however, on 10 January 1954, she sustained severe hull damage in beaching and returned to ENIWETOK where inspection revealed that it would be necessary for her to return to Pearl Harbor for repairs. CTG 7.3 requested Commander, Amphibious Force, U.S. Pacific Fleet to order up a replacement LST.

Commencing in early January 1954, other movements followed in quick succession:

2 January - USS BELLE GROVE (LSD-2) (CDR R. K. Cooley, USN) sailed from San Diego with the major part of the Navy Boat Pool embarked, and arrived at BIKINI 19 January. There she offloaded 3 LCU's and 3 LCM's, plus part of the Boat Pool detachment. She then proceeded to ENIWETOK, arriving 20 January, and loaded the advance Boat Pool detachment and 15 LCM's. Returning to BIKINI on 21 January she placed the TG 7.3 Boat Pool in operation.

2 January - USS TAWAKONI (ATF-114) (LT R. A. Mowrer, USN) departed Pearl Harbor with YCV-9 (helicopter landing barge) and YFN 934 (covered lighter for Boat Pool) in tow, arriving at BIKINI 13 January. She moored the YFN at a place convenient for the Boat Pool, and took

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the YCV to the general area of shot number two.

4 January - USS APACHE (ATF-67) (LT T. A. Casey, USN) sailed from Subic Bay and is scheduled to arrive at BIKINI 30 January.

5 January - Patrol Squadron 29 (CDR W. Arnold, USN) departed its base at Whidbey Island, Washington, and completed deployment to KWAJALEIN 14 January. VP-29 provided air cover for CURTISS as she approached within 500 miles of ENIWETOK.

5 January - USS PC 1546 (LT R. B. Garlinghouse, USN) sailed from Pearl Harbor, but experienced an engineering breakdown and put in at Johnston Island for repairs. Commander, Service Force, U.S. Pacific Fleet made USS PC 1172, based at KWAJALEIN, available as a temporary replacement, and the 1172 was ordered to ENIWETOK. She arrived there 22 January and assumed the 1546's duties pending completion of repairs.

9 January - USS BAIROKO (CVE-115) (CAPT R. O'Beirne, USN) sailed from San Diego with Task Group 7.4 sampler aircraft (F-84's), L-13's, 12 HRS-2 (helicopters) of HMR 362, 6 F4U-5N (fighter aircraft) of VC-3 and the AUW detail of VP-29 on board. She stopped at KWAJALEIN on 21 January to offload the AUW detail, with its mark 34 mines, and sailed for ENIWETOK via BIKINI. As she passed near BIKINI she flew off 6 HRS-2. She arrived ENIWETOK 22 January. On 23 January she offloaded 15 F-84's and other gear. She sailed 24 January for BIKINI, arrived there and established the helicopter pool on the following day.

9 January - USS SIOUX (ATF-75) (LT T. B. Hartt, USN) left San Diego for Pearl Harbor, and sailed from Pearl Harbor 17 January with

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her arrival at BIKINI scheduled for 25 January.

9 January - YAG -39 (LCDR H. W. Ansell, Jr. USN), and YAG -40 (LCDR J. S. Mafayter, USN) sailed from San Francisco in company with USS MOLALA (ATF-106) (LT R. F. Reed, USN) with CTU 7.3.6 (CAPT G. G. Malumphy, USN) as OTC, in YAG-40, arriving Pearl Harbor 18 January where they were scheduled for five days availability prior to departure for BIKINI.

10 January - USS CURTISS (AV-4) (CAPT R.E.C. Jones, USN), after loading AEC cargo, sailed from Port Chicago, California, with CTG 7.3 (RADM H. C. Bruton) embarked as OTC. The movement was conducted under radio silence, with ships darkened at night, on a route away from normal ocean traffic. She was escorted from San Francisco by Destroyer Division 172, composed of USS TWINING (DD-540), USS COLOHAN (DD-658), USS SHIELDS (DD-596) and USS KRAKEN (DD-631). Air cover was provided during periods when the formation was within 500 miles of San Francisco, Hawaii and Eniwetok. Off Hawaii, CURTISS was refueled by USS MISPILLION (AO-105), and DesDiv 172 was relieved as escort by Escort Destroyer Division 12 (CAPT J. E. Smith, USN). This is the CASTLE Escort Destroyer Division, consisting of USS EPPERSON (DDE-719) (CDR N. B. Davis, Jr., USN), USS PHILIP (DDE-498) (CDR G. W. Albin, Jr. USN), USS NICHOLAS (DDE-449) (CDR J. C. Eliot, USN) and USS RENSHAW (DDE-499) (CDR L. H. Alford, USN). MISPILLION joined the task group enroute to ENIWETOK. Each destroyer type was refueled once from CURTISS or MISPILLION during the passage. CURTISS arrived at

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ENIWETOK 24 January, and CTG 7.3 moved to his headquarters ashore on PARRY Island.

18 January - USS ESTES (AGC-12) (CAPT J. W. Waterhouse, USN) departed San Diego, with her arrival at ENIWETOK scheduled for 3 February, after a two day stop over at Pearl Harbor.

20 January - USS LST 825 (LT K. W. Laughlin, USN) sailed from San Diego as relief for LST 551.

2. Prior to embarking in CURTISS at Port Chicago, CTG 7.3 closed his Washington, D.C. headquarters on 8 January 1954, travelling by air to NAS Alameda accompanied by a part of his staff. During the passage of the CURTISS, CAPT R. Rutherford, USN, Chief of Staff, in his capacity as CTG 7.3 Administration, proceeded to ENIWETOK by air, accompanied by the remainder of the staff. Upon arrival there he established the staff headquarters and communication station on PARRY Island and commenced operations. On 14 January 1954, CTG 7.3 (ADMIN) assumed operational control of LST 762, YOG-61, YO-120, and YGG(N)-82 at ENIWETOK, the LST 551 at RONGERIK, CGC BUTTONWOOD (WAGL-306) at BIKINI and VP-29 at KWAJALEIN.

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XXI

PROBLEMS ENCOUNTERED AND THEIR SOLUTIONS

a. ADMINISTRATIVE

PROJECT 6.4 PERSONNEL

1. Project 6.4, involving the testing of ships' water spray equipment for protection against radioactive fallout, presented certain administrative problems. As a scientific project sponsored by the Department of Defense it forms a part of Task Unit 13 of Task Group 7.1. At the same time the project's two ships, YAG 39 and YAG 40, Liberty type hulls reactivated for Operation CASTLE from the Maritime Service reserve fleet, are Navy-manned, each under an Officer-in-Charge, and as naval vessels, are a part of Task Group 7.3. In the forward area they are under the operational control of CTG 7.3. Commander, Service Force, Pacific Fleet, is the type commander. The project is sponsored by the Navy Bureau of Ships; the Project Officer is CAPT G. G. Malumphy, USN, of that Bureau.

2. Since two Task Groups are directly involved, it was necessary that agreement be reached on the administrative responsibilities of each. The following agreements and understandings were reached:

a. Officers and men of the YAG crews are part of Task Group 7.3 at all times, just as are their ships. The Project Officer is ordered by the Bureau of Naval Personnel to additional duty under the operational control of CTG 7.3. He has been designated within the Task Group 7.3 task organization as Commander, Task Unit 7.3.6. Health, service and pay records will be retained in the ships. Personnel accounting will be by the type commander. When ships'

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company personnel are required ashore, CTG 7.3 will either issue TAD orders or authorize the Project Officer to issue them. Billets which they will occupy ashore will be considered TG 7.3 billets.

b. CTG 7.1 will be responsible for the administration and billeting of other project personnel, military or civilian, including the Project Officer.

c. Since the YAG Officers-in-Charge do not have authority to convene special courts-martial without express authorization by the Secretary of the Navy, CTG 7.3 has requested such authorization be made, and it is expected this request will be granted.

d. Officers-in-Charge of the YAG's will handle emergency leave just as would the Commanding Officers of any Task Group Units.

e. As regards security clearances, requests for National Agency Checks will be forwarded from the YAG's directly to the Office of Naval Intelligence; applications for "Q" clearances will be forwarded to CNP BUPERS via the Project Officer and CTG 7.3. Officers-in-Charge will grant military security clearances in accordance with the U.S. Navy Security Manual, OpNav Instruction 5510.1

f. Security training and indoctrination of YAG personnel is a CTG 7.3 responsibility, exercised through the Officer-in-Charge, with reports submitted by them via the Project Officer.

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b. SECURITY

1. The security indoctrination and training program prescribed by CJTF SEVEN was instituted in October in all units then designated for the Task Group, and in additional units as they were nominated. Upon the arrival of CTG 7.3 in the forward area, all ships and units then in the area, without exception, reported full compliance with the requirements of CJTF SEVEN Security Memoranda Numbers 2 and 3. No difficulties are anticipated from units which have not yet arrived.

2. Similar success cannot be claimed for the clearance program. The units nominated for CASTLE at an early date have their "Q" clearances and National Agency Checks substantially completed and present no problem, other than the routine one of badging the required personnel after their arrival at ENIWETOK or BIKINI. Units assigned later, however, have not had sufficient time to obtain all desired "Q" clearances. Some of them have already arrived in the area. As an interim measure, to permit necessary personnel to enter restricted areas and carry out their planned tasks, it will be necessary to grant interim Top Secret clearances to those who are considered eligible for them, and badge them on this basis pending receipt of their "Q" clearances.

3. The Bureau of Ordnance project which will bring USS SHEA, USS REXLAIMER, and other units into the Task Group will present an extreme example of the clearance problem. To date no clearance

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applications for personnel of these units have even been received in staff headquarters, and it is likely that Operation CASTLE will have been completed before more than a token number, if any, of their "Q" clearances have been granted.

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III

e. OPERATIONAL

AIDS TO NAVIGATION

1. Upon approval of CTG 7.3's request to the Chief of Naval Operations for wire-dragging BIKINI channels and operating basins, Mine Division 74, USS CHIEF (AM-315) and USS COMPETENT (AM-316), was diverted to BIKINI enroute WestPac to accomplish the task. Hydrographic Office technicians travelled to the forward area to assist. MinDiv 74 completed the wire-dragging operations, marked the channel with dan buoys, and departed for WestPac on 6 November 1953. The Hydrographic Office technicians and the AEC representative at ENIWETOK reported that the wire-dragging had revealed previously unknown shoals whose location made the channels as then buoyed hazardous for ships of 30 foot draft. They recommended that some of the permanent buoys then in place be moved to new locations, and that additional permanent buoys be installed to replace the dan buoys laid by MinDiv 74.[8] Since USS GYPSY, which had been employed in overhauling mooring buoys in the area, was required to depart for her base at Pearl Harbor by 10 December 1953, and in any event could not do the job without considerable assistance from the AEC contractor at BIKINI, which he was not in a position to give, the U.S. Coast Guard was requested to install and move the necessary buoys.[9] The Cutter BUTTONWOOD (WAGL-306) proceeded to BIKINI, and, between 10 and 20 January 1954, planted eight new buoys and moved six to mark the wire-dragged channel, checked

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8. USAEC ENIWETOK Dispatch 230710Z of Nov 53 cite RENG 1060
9. USAEC ENIWETOK Dispatch 230615Z of Nov 53 cite RENG 1059

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other channel buoys for proper operation, and installed telephone type mooring buoy "TZ" as well.[10] On 22 and 23 January 1954, she checked all buoys and lights in ENIWETOK Lagoon, repairing and re-timing them as necessary. She re-established the 4½ fathom obstruction buoy in the seadrome area, and departed for KWAJALEIN late on 23 January 1954.

2. Meanwhile, the Coast Guard had reported in October 1953, the completion of the original buoyage system requested and provided to CTG 7.3 information concerning the candlepower and characteristics of the lighted aids installed. This information was passed to the Hydrographer who issued a specially corrected chart of BIKINI Atoll which was distributed to CASTLE participants. The changes and additions accomplished by BUTTONWOOD in January 1954, were published to Task Group ships from PARRY Island headquarters.

3. In December 1953, having learned that the removal of several hydrographic survey towers and others left on BIKINI from Operation CROSSROADS was planned, CTG 7.3 requested that certain towers, 13 in number, be retained in place to serve as landmarks for use in ship navigation at the atoll.[11]

10. CGC BUTTONWOOD ltr ser: 00689 of 20 Jan 1954
11. CTG 7.3 ltr H-2 ser: 001359 of 21 Dec 53 with CJTF SEVEN First Ind.

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XII

MOORING BUOYS

4. The overhaul of mooring buoys at BIKINI and ENIWETOK was begun by USS GYPSY (ARSD-1) in September 1953. In general she was to lift, inspect, and replant buoys scheduled for use at ENIWETOK, and to plant three large ship, telephone type, mooring buoys at BIKINI. Holmes and Narver, the AEC contractor, was to furnish assistance in the form of cranes and barges, and repair and sandblast the lifted moorings prior to re-planting.

5. The task proved to be difficult and GYPSY's progress was slow. The support furnished GYPSY by Holmes and Narver Marine Department was necessarily intermittent because the contractor often had to pull his equipment away from the buoy task in order to offload stores ships. The sandblasting of chain and buoys was slowed up by the necessary use of the soft coral sand available locally.

6. To meet the allotted deadline for the job, Commander, Service Force, Pacific Fleet Ordered USS ELDER (AN-20) to assist GYPSY. She went to work on 3 October 1953. The two ships finally completed the job by early December 1953, with the exception of buoy "TZ" off ENIBMAN Island, which was later planted by CGC BUTTONWOOD.

7. The major buoys planted, in good condition, were:

a. At ENIWETOK: Buoy L-2, telephone type buoy N-3, the AVR and YO buoys, and the POL buoy off ENIWETOK Island; telephone type buoy B-1, buoys B-3 and C-3, and the POL buoy off PARRY Island.

b. At BIKINI: Buoys TX, TY and TZ.

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XII

SMALL CRAFT MODIFICATIONS

8. Small craft modifications requested during the planning phase of the operation, to craft designated for support of scientific projects, were completed, as follows:

a. Project 1.6 - LCM modified by addition of a wooden platform deck and covered working space, davits for small boats used in shallow water diving, a stern anchor, and a portable fathometer.

b. Project 1.4 - LCM modified by addition of a partial wood deck. Project personnel have requested installation of additional decking, a guard rail, and a small crane which the project will provide. These installations will be made by Boat Pool personnel.

c. Project 3.2 - LCM 1348 modified by installation of a portable fathometer, a gyro-compass with three repeaters and a taut wire sounding reel.

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XXI

BARGE TRANSPORTATION IN LSD

9. A vital task assigned USS BELLE GROVE (LSD-2) in CASTLE, is the inter-atoll transportation of special device barges. Comparison of the dimensions of the barges with those of the LSD well-deck indicated that the barges could be loaded singly provided a portion of the LSD super-deck (over the well) were removed.[12] As a result of conferences between representatives of CTG 7.1, CTG 7.3, CTG 7.5 and the Commanding Officer, USS BELLE GROVE, and of a test in San Diego in December 1953, performed with a crane similar to that which will be available in the forward area, it was decided that the after section of the super-deck would be removed and stored in San Diego prior to the ship's departure, that two more sections of the super-deck will be removed in the forward area to permit lifting the barges, and that these sections will then be reinstalled after the last barge movement. This will permit the planned transportation of the barges without decreasing seriously the LSD's carrying capacity during her voyages to and from the forward area.[13]

12 CTG 7.3 ltr Sl ser 01089 of 17 November 1953
13 CTG 7.3 dispatch 3116445Z of December 1953

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XXI

ARSD MODIFICATION

10. Accomplishment of ShipAlt ARSD-45 in USS GYPSY prior to CASTLE was considered highly desirable. This alteration would greatly improve her lifting capability, and enable her to support Project 1.4 much more effectively. There was doubt, however, whether GYPSY could complete the overhaul of buoys at ENIWETOK and BIKINI, which she began in September 1953, in time to return to Pearl Harbor, undergo the alteration, and return to BIKINI by 10 January 1954, her CASTLE reporting date.

11. Several factors combined to permit time for this and other work on GYPSY. USS ELDER (AN-20) was ordered to assist her in the buoy overhaul. GYPSY began to experience difficulties with her main propulsion plant during November 1953, accompanied by excessive vibration when underway over 2/3 speed. The Project 1.4 test conducted in Chesapeake Bay in October 1953, indicated need for a barge in addition to craft already requested for the project, including GYPSY, and YC 1081 was made available. With the presence of the YC barge assured, GYPSY's reporting date for CASTLE was postponed to early February 1954. She completed her buoy overhaul duties and sailed for Pearl Harbor on 3 December 1953. During her period there it was planned to accomplish the ShipAlt, install high pressure tanks to permit her divers to work at depths up to 200 feet, and remedy her main propulsion difficulties.

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XII

FALL-OUT COLLECTOR BUOYS

12. At the end of September 1953, tests of equipment which would permit positive identification of fall-out collector buoys of Project 2.5a had been unsatisfactory. The project planned to place the buoys in the area which would be patrolled by surface and air security forces, and CinCPacFlt withheld approval of the plan unless a means of positive identification could be devised. The presence of these radar targets, unidentified, would make the task of the security forces next to impossible to perform. A system was devised involving the installation of low frequency radio transmitters in the buoys, within the frequency range of radio direction finders installed or to be installed in the DDE's, patrol aircraft, the PC, and in the ATF's likely to be employed in Project 2.5a.[14] Tests of this equipment were conducted successfully in early November 1953, the system was approved by CinCPacFlt as meeting his requirements, and manufacture and installation of the gear was commenced.[15] In late December 1953, CTG 7.3 informed CTG 7.1 that two of the three ATF's especially equipped for the project would normally be used in recovery of the buoys, with assistance from security ships and aircraft if necessary, and if practicable without interfering with their primary mission.[16]

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14. ComAirPac dispatch 020154Z of October 1953
15. CinCPacFlt dispatch 202205Z of November 1953
16. CTG 7.3 ltr A-1 ser 001393 of 24 December 1953

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LST BEACHING

13. LST beaching conditions at BIKINI (ENIMAN Island) have been a problem since June 1953, and have been aggravated to a serious degree in recent months by seasonal weather conditions. The original LST pier on ENIMAN was constructed of wooden pilings, plank faced and filled with coral lumps and aggregate. It extends only 100 feet from the beach line. LST's beach port side to the pier. The normal wind is from the port quarter of a ship alongside or approaching. A channel to the pier, and alongside it, had been blasted out of the coral bottom. It was essentially a narrow trough which allowed only about ten yards clearance to starboard of a beached LST. The starboard side of the channel was a coral shelf. The Commanding Officer of LST 1126, LT John H. Mahus, USN, which was engaged in the inter-atoll lift from December 1952 to July 1953, had expressed considerable concern because of the beaching conditions. In his opinion, if he lost control during his approach, and the wind carried him to starboard, he would strike the coral shelf and probably incur serious damage. In addition, the trough-like channel continually filled with sand carried in by wave action. Before each beaching it was necessary for Holmes and Narver, the AEC contractor (TG 7.5), to remove large amounts of sand from the channel to provide a proper beaching gradient.

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14. To remedy the situation Holmes and Narver widened the channel alongside the pier to about 150 feet. While this eliminated the danger of a beaching LST being blown off and gashing its side

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on the coral shelf, it had an entirely unexpected, and detrimental, effect. The wave action now removed the sand, and left the coral bottom substantially bare. It now became necessary for Holmes and Narver to put sand in the channel before each beaching, to provide a cushion and a proper gradient for the LST bottom. Furthermore, the constant water action began to cause the pier to deteriorate. Chunks of coral from the fill began to fall out into the channel alongside the pier, requiring inspection of the bottom by a diver and removal of the coral chunks before each beaching. In late December 1953, a typhoon hit near BIKINI, and the waves and swells were of such proportions that they practically demolished the pier. Approximately half of the fill was washed out into the LST berth. Holmes and Narver undertook repair of the pier, installing new piling and new facing, and dredged out the berth, dumping the material removed back inside the facings as fill. The addition of large quantities of sand, and inspection of the bottom by a diver, remain a necessity prior to each beaching.

15. In spite of the great care exercised in beaching at ENIWETOK, LST 762 has thus far suffered three holes in her hull, into a small diesel fuel tank. While the damage reduces her total fuel capacity by 15%, this is not a vital loss because of the large fuel capacity of the LST type. She has also received punctures in her forefoot, which have been repaired by Holmes and Narver. Her bow has been filled with cement as a precautionary measure. When opportunity permits it is planned to repair her hull punctures by welding an underwater

patch. While there is continuing concern over the hazard faced in each beaching at ENIWETOK, out of operational necessity the beachings are being continued, with the sand fill and diver inspection a prerequisite in each case.[17]

17. LST 762 dispatch 100055Z of Dec 53 (CJTF SEVEN cite 1660)
LST 762 dispatch 222239Z of Dec 53
CTG 7.2 dispatch 230455Z of Dec 53
Admin ComPhibPac dispatch 232011Z of Dec 53
CTG 7.3 dispatch 301726Z of Dec 53
ComPhibPac dispatch 312011Z of Dec 53
CJTF SEVEN dispatch 042146Z of Jan 54
CTG 7.5 ENIWETOK dispatch 061953Z of Jan 54 Cite RRG 1167

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XXI

UNDERWATER DETECTION UNIT

16. The Task Group 7.3 Underwater Detection Unit (LT Bruno Muzzetto, USNR) arrived at ENIWETOK in early November 1953, to test and, if necessary, repair the ENIWETOK hydrophone installation which had been left in place at the end of Operation IVY. The Unit made an early start because there was considerable doubt that the underwater portion of the installation had survived its period of long exposure, which had been extended due to the postponement of CASTLE. Tests of the circuits made in October 1953, by TG 7.2 Navy Detachment ENIWETOK had confirmed this doubt.

17. Further circuit tests made by UDU personnel indicated the need for lifting the hydrophones and cables for repair and reinstallation. Continual bad weather through the month of November 1953, made recovery of the cables and hydrophones impossible. Sufficient equipment to replace the entire underwater system was procured and shipped to the UDU and a new installation was laid. The shore installation had survive the period since IVY with only slight deterioration, and the full system is now in good operating condition

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FIGHTER AIRCRAFT

18. CinCPacFlt provided 6 F4U-5N aircraft from VC-3, NAS Moffett, California, as interceptor forces for CASTLE. During November 1953, his CASTLE team conducted carrier qualification exercises aboard USS BAIROKO. Following these exercises it was decided to restrict the operation of these aircraft off BAIROKO during CASTLE to the minimum consistent with operational necessity, and, as an alternative, to base the aircraft ashore in the forward area whenever practicable.

19. BAIROKO is equipped with Mark IV arresting gear. The gear is not strong enough to withstand the weight of the F4U-5N aircraft in landing. The high accident rate due to this, coupled with the lack of facilities to conduct field landing carrier practice and frequent carrier qualification exercises in the forward area, made the likelihood of landing damage to one or more of the six assigned aircraft very great, if normal carrier operations were followed. With only six aircraft, and no replacements available, damage to even one would seriously reduce interceptor capabilities during CASTLE. In the forward area, then, fighter aircraft will be based ashore, three on ENIUMAN Island at BIKINI Atoll, three on ENIWETOK Island a ENIWETOK Atoll, except during BIKINI shot periods when BIKINI fighters will be operated from BAIROKO.

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20. To permit shore-base operations at night, CTG 7.3 in November 1953, requested CJTF SEVEN to effect the lighting of ENIUMAN airstrip.

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22. At BIKINI the BAINEKO will control the fighter aircraft; at ENIWETOK one of the security DEE's will exercise fighter control, assisted by a Navy liaison officer on duty in CTG 7.4 Air Operations Center on ENIWETOK Island. This officer will also assist the BIKINI operation by providing information to BAINEKO on the movements of friendly aircraft in the area

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4. LOGISTICAL

AVIATION SUPPLY

1. On 24 December 1953, it was learned that HMR-362, the U.S. Marine Corps Helicopter squadron designated to participate in CASTLE, had been unable to obtain six new tail rotors required for their aircraft. The squadron, based at MCAS, El Miramar, California, was scheduled to move aboard USS BAIROKO in San Diego 4 January 1954. The tail rotors in six of their HRS-2 aircraft required replacement prior to that date.

2. Production had been stopped on the type rotor needed, and replacements were in very short supply. At the request of CTG 7.3, the Aviation Supply Office, Philadelphia; Commander, Air Force, U.S. Pacific Fleet; and Commander, Air Force, U.S. Atlantic Fleet screened the entire aviation supply system. Three rotors in ready for issue condition, and three requring emergency overhaul, were located at east coast naval and Marine Corps aviation activities. They were shipped by air to the west coast, NAS San Diego overhauled the three rotors requiring repair, and all six were delivered to HMR 362 in time for installation prior to the squadron's deployment date.

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III

e. COMMUNICATIONS

USS ESTES (AGC-12)

1. Operation TIGERCAT was conducted off San Diego in mid-October 1953, with Maj Gen P. W. Clarkson, CJTF SEVEN; Brig Gen H. M. Estes, Jr., CTG 7.4; and RADM H. C. Bruton, CTG 7.3, embarked in ESTES. Participating, in addition to USS ESTES, were sixteen Air Force aircraft of various types, operating temporarily out of NAS, San Diego. The operation simulated a CASTLE shot, following shot time procedures, with San Nicolas Island representing ENYU at BIKINI Atoll. The results of the tests conducted again emphasized that VHF and direction finder antenna needed relocating, and pointed out the need for thoroughly checking out all VHF receivers and transmitters.

2. Subsequently, the following was accomplished on ESTES:

a. Installment of one additional multi-plex equipment (multiple teletype channel) as a spare for the one already installed.

b. Installment of one additional VHF equipment. Additional VHF units were procured for use as immediate replacements in the event of failures.

c. Installment of VHF ciphony equipment (ESTES-ENYU scrambled Top Secret voice circuit)

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d. Installation of one additional AN/TRC-3 equipment. The number of telephone switchboard positions was also increased from four to eight. (trunk-lines)

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e. Relocation of VHF, AN/TRC and direction finder antenna for optimum performance.

f. Testing and calibration of all equipment after installation had been completed.

3. A second test was conducted in mid-December 1953, and proved very satisfactory with the exception that five of the eight VHF receivers were not then in optimum operating condition.

4. In January 1954, SIGTOT-SAMSON equipment (CJTF SEVEN teletype circuit crypto device, ESTES to ENIWETOK) was installed in ESTES.

5. Personnel were ordered to various points for training in the use and maintenance of new equipment. An officer and seventeen men of ESTES ship's company were ordered to TAD with CTG 7.2 on ENIWETOK for the month preceding ESTES scheduled arrival there, for familiarization and special training on circuits that would be jointly operated by CTG 7.2 and ESTES. ESTES operating and maintenance personnel have been augmented for CASTLE by the assignment of approximately eight electronics technicians, ten radiomen, and three telemen in addition to her normal personnel allowance, plus a U.S. Marine Corps signal detachment of two officers and fifteen men.

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6. ESTES sailed from San Diego 18 January 1954, fully ready to accomplish her CASTLE communications mission

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XII

TEMPORARY HEADQUARTERS ASHORE

7. CTG 7.3 Administration, (CAPT Rutherford, Chief of Staff) arrived on PARRY Island 12 January 1954, accompanied by a portion of the staff, and opened CTG 7.3 temporary headquarters ashore. In the next several days equipment to provide CTG 7.3 the necessary communications facility was installed. The station was activated 14 January 1954, except for some high frequency receivers which had not been received. Replacement receivers were requisitioned from Commander, Service Force, Pacific Fleet on an emergency basis and were received and installed on 22 January 1954. Current average daily traffic for this station is 135 messages sent and received.

8. Earlier plans for construction of a visual signal tower on PARRY Island have been cancelled, since only a few Task Group ships will normally be present at ENIWETOK, and since CTG 7.3 plans to move afloat prior to the first shot.

9. Staff communications personnel have been augmented by the assignment of five Boat Pool radiomen, and an assistant Communication Officer on TAD from ESTES. It is planned to bring three additional radiomen ashore from ESTES after her arrival in the forward area. ESTES personnel will be returned aboard when CTG 7.3 goes afloat.

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ESTABLISHMENT OF CIRCUITS IN FORWARD AREA

10. In general Task Group circuits have been successfully established in accordance with plans. Only one is not operating at the present time: USS BAIROKO has not succeeded in establishing the off line SIGTOT teletype circuit with TG 7.2 on ENIWETOK. Some circuits with

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Task Group 7.4 have not been fully activated due to Air Force transmitter difficulties. Successful operation of AN/TRAC circuits with BIKINI has been delayed pending installation there by Task Group 7.2 of non-directional antennae.

11. The installation of 42 VRC-10 and 3 VRC-18 radios in ships and boats of the Task Group, for Boat Pool operations, has been essentially completed.

12. In order to provide machine cryptographic systems to expedite traffic delivery and reduce the crypto workload, the cryptographic allowances for all ships except the USNC SGT. FRED C. AINSWORTH, YAG-39 and YAG-40 have been raised to class 3 afloat allowances.

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f. COMPTROLLER

1. Although the last three weeks of this period cover the operational phase, the majority of the costs were incurred during the build-up phase. These costs were based on outfitting and procurement of special items and continue on the same trend as established during the preceding period.

2. A detailed report of these expenditures for the period ending 31 January 1954 is contained in Section IV.

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IV

PERTINENT STATISTICAL MATERIAL

CUMULATIVE COSTS OF TASK GROUP 7.3 FROM 1 JAN 1953 TO 31 JAN 1954

Travel and Per Diem	$5,927.00
Telephone and Utilities	3,000.00
Military Pay	443,290.00
Office Supplies	1,425.00
Alteration of Ships	75,200.00
Radiological Defense	11,600.00
Land Improvement	4,500.00
Buoy Project (Coast Guard)	12,000.00
Documentary Photography	2,700.00
Transportation of Baggage	300.00
Total:	$762,142.00

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 31 DECEMBER 1953. - ALLOTMENT NUMBER 44002

Received	$165,000.00
Obligated	69,154.61
Expended	87,149.45
Unobligated Balance	8,695.45

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

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CUMULATIVE COSTS OF TASK GROUP 7.3 FROM 1 OCT 1953 - 31 JAN 1954

Travel and Per Diem	$1,977.00
Telephone and Utilities	1,541.00
Military Pay	208,493.00
Office Supplies	245.00
Alteration of Ships	44,000.00
Radiological Defense	11,600.00
Land Improvement	4,500.00
Buoy Project (Coast Guard)	12,000.00
Documentary Photography	2,700.00
Transportation of Baggage	300.00
	$289,356.00

x Includes pay of Task Group 7.3 Boat Pool and Underwater Detection Unit.

Note: The above report does not reflect costs for the month of January 1954 of all ships and units attached to Task Group 7.3. Their reports for January 1954 are not due until 25 February 1954.

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STATUS OF ALLOTMENTS RECEIVED FROM JOINT TASK FORCE SEVEN AS OF 31 JANUARY 1954

ARMY APPROPRIATION 21A2020 RDTA 1954

DESCRIPTION	RECEIVED	OBLIGATED	EXPENDED	UNOBLIGATED
Travel	$46,000.	$24,842.	$5,927.	$21,158.
Transportation of Things	500.	300.	--	200.
Communications	2,000.	--	--	2,000.
Task Group Overhead	400.	--	--	400.
Modification of Ships	85,200.	85,200.	80,200.	--
Land Improvement	4,500.	4,500.	--	--
Documentary Photography	3,000.	2,700.	--	300.
Radiological Defense	12,000.	11,600.	9,600.	400.
Buoy Project (Coast Guard)	12,000.	12,000.	12,000.	--
Totals:	$165,600.	$141,142.	$107,727.	$24,458.

STATUS OF BUSHIPS FLAG ALLOTMENT NUMBER 42299/54 HELD BY THE SUPPLY OFFICER, U.S.S. BAIROKO (CVE-115) AS OF 31 JANUARY 1954.

Received	$1,000.
Expended	450.
Balance on Hand	550.

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STAFF TRAVEL ON TASK FORCE BUSINESS FOR THE PERIOD ENDING 24 JANUARY 1954

		DESTINATION		
DATE	OFFICER	WEST COAST	PEARL HARBOR	FORWARD AREA
10-1-53	LCU BOAT OFFICER	X		
10-17-53	ASST OPERATIONS OFFICER (AIR)	X		
10-20-53	CTG 7.3		X	
10-20-53	OPERATIONS OFFICER		X	
10-25-53	COMMUNICATIONS OFFICER	X		
11-1-53	ATOMIC DEFENSE OFFICER	X		
11-3-53	COMMUNICATIONS OFFICER			X
11-16-53	LOGISTICS OFFICER	X		
11-16-53	ASST ATOMIC DEFENSE OFFICER	X		
11-22-53	ASST OPERATIONS OFFICER (AIR)	X		
11-30-53	CHIEF OF STAFF			X
12-9-53	INTELLIGENCE & SECURITY OFFICER	X		
1-4-54	ASST COMMUNICATIONS OFFICER	X		
1-8-54	CTG 7.3			X
1-8-54	CHIEF OF STAFF			X
1-8-54	OPERATIONS OFFICER			X
1-8-54	LOGISTICS OFFICER			X
1-8-54	ASST OPERATIONS OFFICER (AIR)			X
1-8-54	SUPPLY OFFICER			X
1-8-54	INTELLIGENCE & SECURITY OFFICER			X
1-8-54	ATOMIC DEFENSE OFFICER			X
1-8-54	COMMUNICATIONS OFFICER			X
1-8-54	FLAG SECRETARY			X
1-8-54	MEDICAL OFFICER			X
1-8-54	ASST ATOMIC DEFENSE OFFICER			X
1-8-54	FLAG LIEUTENANT			X
1-8-54	ASST ATOMIC DEFENSE OFFICER			X
1-8-54	ASST COMMUNICATIONS OFFICER			X
1-8-54	PERSONNEL OFFICER			X
1-12-54	ASST COMMUNICATIONS OFFICER			X

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PERSONNEL CLEARANCE STATUS OF SHIPS AND UNITS OF TASK GROUP 7.3 AS OF 24 JANUARY 1954

SHIPS	"Q" GRANTED	"Q" PENDING	NAC COMPLETED	NAC PENDING	TOTAL
USS RAIROKO	1	76	754	78	909
USS ESTES	74	68	449	81	672
USS BELLE GROVE	24	16	293	24	357
CONCORTDESDIV TWELVE	3	1	3	0	7
USS EPPERSON	11	3	264	21	299
USS NICHOLAS	12	4	234	35	285
USS RENSHAW	8	2	246	0	256
USS PHILLIP	9	5	237	29	280
USS MOLALA	2	18	63	5	88
USS TAWAKONI	0	13	24	46	83
USS COCOPA	0	10	52	18	80
PATRON TWENTY-NINE	0	6	329	66	401
YAG 40	4	17	24	6	51
YAG 39	8	12	25	6	51
USS CURTISS	52	21	516	55	644
USS GYPSY	4	6	56	3	69
USS SIOUX	6	5	69	3	83
USS LST 762	19	15	88	0	122
USS LST 551	6	15	86	2	109
USS PC 1546	0	8	20	31	59
HMR 362	28	26	61	4	119
TG 7.3 BOAT POOL	9	11	14	0	34
TG 7.3 USN	17	5	0	0	22
TG 7.3 STAFF	33	1	0	0	34
TOTALS:	330	364	3,907	513	5,114

Personnel clearance status reports have not yet been received from the following ships:

USS APACHE (enroute from WestPac)

[redacted]

CLASSIFICATION CANCELLED *
WITH DELETIONS
BY AUTHORITY OF DOE/OC
J Diaz 3/17/92
REVIEWED BY DATE
* LTR DNA SWISHER TO
DOE COORDINATING, 9-27-91
Kahn 3/18/92

[redacted]

Kahn DNA 6/6/90

[redacted]

RG 374 DEFENSE NUCLEAR AGENCY

Location WNRC

Access No. 61A1740 Box 1/19

Folder HISTORY. VOLUMES I & II - INSTALLMENTS 1, 2, 3 & 4 - 53-54

[redacted]

DRAFT

Joint Task Force SEVEN
TASK GROUP 7.3
APO 187, c/o Postmaster
San Francisco, California

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

[redacted]

SUBJECT: Historical Installment Number 3: submission of

TO: Commander
Joint Task Force SEVEN
APO 187 (HOW), c/o Postmaster
San Francisco, California

1. Reference is made to CJTF SEVEN letter SGS/314.7 of 9 Oct 1953, serial 0-7467 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.

OK H. C. BRUTON
Rear Admiral, U.S. Navy
Commander

1 Incl:
Historical
Installment No. 3

Copies furnished:
CTG 7.1
CTG 7.2
CTG 7.4
CTG 7.5

RG 374 DEFENSE NUCLEAR AGENCY
Location WNRC
Access No. 6141740 Box 1/19
Folder HISTORY-VOLUMES I+II-INSTALLMENTS 1,2,8,+4-53-54

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[redacted] SEPARATED FR[redacted]
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(ins[redacted] classification)
(declassifica[redacted] or state)

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No. [redacted] of [redacted]

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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: 01894

16 JUN 1954

SUBJECT: Historical Installment Number 3: submission of

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 0-7467 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

[redacted]

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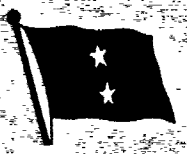
[redacted]



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

3

[redacted]

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COMMANDER TASK GROUP 7.3

HISTORY OF OPERATION CASTLE

INSTALLMENT NUMBER 3

Period ending 7 April 1954

Submitted:

R. F. RUDDER
Lieutenant Commander, USNR-R

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Approved:

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H. C. BRYTON
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-[redacted] Evacuation
III. [redacted]
IV. Radiological Safety
V. Adjustment to Afloat Operations at Bikini
VI. Evacuation of Natives
VII. Statistics

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[redacted]

[redacted]
RESTRICTED DATA
[redacted]

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[redacted]

1

PREPARATION

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, [redacted], 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.

[redacted]

[redacted]

[redacted]

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A. [redacted]

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 Kwajalein. 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 Kwajalein 27 January for her base at Eniwetok.

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

1 February - USS MOTES (AGC-12), flagship of Commander Joint Task Force SEVEN, arrived at Kwajalein from San Diego and Pearl Harbor.

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

6 February - USS CHOWOK (ATF-108)(LT E. C. Wilson, USN) with YC 1481 (barge for Project 1.4) in tow, and USS CHEROKEE (ATF-1) (LT E. C. 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 E. M. Laughlin, USN), relief

[redacted]

[redacted]

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

24 February - USNS FRED C. AINSWORTH (TAP-154)(C. W. Hutchason, Master) arrived at Bikini from San Francisco, in time to participate in the first scheduled CASTLE shot.

26 February - USS LST 551 (LT R. G. Kannenbach, USN), her repairs completed, returned to Bikini from Pearl Harbor. She sailed the following day for Eniwetok. Upon her arrival there LST 625 was released, and sailed for the Far East on 28 February.

27 February - The two YFNs, NAVY 122468 (LT R. A. Jeffers, USN) and NAVY 122471 (LCdR E. 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 Kwadi.

11 March - USS LST 1146 (LT T. H. Larsen), 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

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1146 departed Eniwetok for Pearl Harbor on 4 April.

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

22 March - USS SHEA (DE-30)(CDR J. W. Reed, USN) and USS LST 1197 (LCDR R. S. Scott, Jr., USNR), arrived at Bikini from Pearl Harbor. LST 1197 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.

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b. DISPOSITION OF FORCES

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.

4. All test shots except one were scheduled to be detonated at Bikini Atoll, 186 miles to the East of Eniwetok. On Enjuman Island at Bikini was the base camp for Task Group 7.1 and 7.5, from which their on-site operations at Bikini 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 Bikini 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. Inter-atoll surface transportation was provided by the Navy.

5. Units of Task Group 7.1 were disposed at Bikini, Eniwetok and

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Kwajalein, 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 EASY 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

BAIROKO, upon her arrival at Eniwetok, discharged her cargo of Air Force aircraft, and placed three of her F4Us, with operating and maintenance personnel, ashore at Eniwetok airstrip. Proceeding to Bikini, she placed ashore there a detachment of HMR-362, with six helicopters. HMR-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.

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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 PBMs on loan to CTG 7.4

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[redacted]

for passenger service, and the PAY2 and PCE5 assigned to the support of scientific projects.

e. TU 7.3.4 ATF 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. CHOWAN was normally at Bikini with Project 1.4. MIKALA 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

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This unit, headed by [redacted], was comprised in addition of [redacted] and the Navy Boat Pool, less three LCMs and one LCM stationed at Eniwetok. When [redacted] was absent from Bikini on a device movement responsibility for the Boat Pool was normally assumed

[redacted]

[redacted]

directly by [redacted].

i. TU 7.3.8 Eniwetok Harbor Unit

ESTES, with the Eniwetok LCMs and LCPL, and YO-120, YOG-61 and YO(H)-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.

[redacted]

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I

e. INITIAL OPERATIONS PERIOD

6. The period from 24 January until Ki day, the Task Force shot day rehearsal, commenced 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. MANSFIELD 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 boats and patrol squadron aircraft began their patrols of the area surrounding the two atolls. LST 762 continued shuttling large amounts of cargo to Bikini. CURTISS and the ATFs began their support tasks.

8. On Kwajalein 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

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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 Bikini where they supervised the installation of washdown gear to protect ships from radioactive fallout, and conducted atomic defense exercises and inspection. BELLE GROVE and LST 762 made preparations to carry the test devices from Eniwetok to Bikini. [redacted] 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 BRAVO shot.

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d. [redacted]

10. A number of exercises were conducted prior to BRAVO involving various Task Group units, culminating in the Task Force shot rehearsal enacted 22 and 23 February 1954. [redacted] left Eniwetok 9 February and again on 16 February to participate in CTG 7.4 shot rehearsals off Bikini. 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 [redacted]. The RayDirt unit alteration in CURTISS had been completed 13 February. Coincident with these CTG 7.4 rehearsals all shot time communications in [redacted] were checked out, with CTG 7.1 and CJTF SEVEN representatives participating. [redacted] 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 Bikini, 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.

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12. On 16 February [redacted] and [redacted] put to sea with YAGs 39 and 40 for an embarking and towing exercise, with the project aircraft participating.

13. Three trial or dummy runs were made by LST 762 and BELLE GROVE prior to actual movement of the first test device from Eniwetok to Bikini. BELLE GROVE, on 26 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 off-loaded, 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 Eniaman 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 KOA to Bikini, she returned the dummy to Eniwetok. These two lifts provided 762 and BELLE GROVE the opportunity to check out loading and securing the devices, although that was not the primary reason the lifts were made.

14. On 20 February CTG 7.3 closed his headquarters ashore on Parry Island, moved aboard [redacted] with his staff, and shifted to Bikini Atoll for the Task Force shot rehearsal. 28 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, BELLE GROVE and the Boat Pool, GYPSY and COCOPA did not take part in the operation. APACHE simulated [redacted], not yet arrived in the area. Ships anchored in the lee of Kuya Island for evacuee 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 [redacted] 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. It was 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 [redacted], 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.

15. On 21 February BLUE GENE received the [redacted] device, barge 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. BLUE GENE was escorted by [redacted] and RIBBON, 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. BLUE GENE experienced no difficulty in handling the barge.

[redacted]

[redacted]

II

PRE-BRAVO EVACUATION

1. 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 Eniaman and Nuyn for safekeeping. The amount of material at the atoll was too great to permit its temporary evacuation for a shot; storage 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 Nuyn. The LCUs were anchored with the smaller craft. As an experiment one manned LCU had been taken to sea in the BRAVO rehearsal. Since 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 that 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 Nuyn from which the actual detonation of the

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device was controlled.

3. Extensive preparations and planning preceded the successful evacuation from BRAVO. 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 Bikini in advance of the evacuation period, as soon as their services there were no longer required. They were shifted to Kwajalein and there reassigned, or returned to the United States. Surplus equipment and stores were lifted to Kwajalein by LSTs 752 and 531. This by no means denuded Bikini of equipment and supplies, for reoccupation of the base camp at Eniwetok and resumption of work on other islands were instituted 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 Beckman, 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 any "lost" persons.

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XI

b. Evacuees would embark initially in ships moored or anchored nearest to the islands on which they were based.

c. Passenger ships would shift to the comparatively smooth waters off Kwa by 1300 on [redacted] 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.

d. The capacity of each major ship was cut 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 Radiafa organization. Scientific and technical personnel were on board CURTISS, while ALMENDRON would accommodate the majority of construction personnel. 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, principally 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 ALMENDRON 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 posture and reports was required, to ensure that no one was stranded ashore during the shot. The plan for yesday called for aerial RadSafe surveys in [redacted]'s helicopters, followed by the return of ships to the lagoon when it had been declared safe from harmful radiation. The boat pool and helicopter would then return to operation, personnel move back ashore, and recovery of BRAVO 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 taken evacuation was carried out with boats making dummy runs to the major ships, and the ships moving on schedule to their anchorages off Lujo and thence to sea. USS [redacted] had not yet arrived in the forward area; her movements were simulated by the [redacted]. Simulated posture were held and drill message reports were submitted to the task force command post in [redacted].

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6. For the actual shot the evacuation was effected with little difficulty. On BRAVO minus two the Bikini fighter detachment (3 F8Us) moved aboard [redacted], together with the six Marine helicopters and the Air Force helicopters and L-5's that comprised the Bikini inter-island airlift. The Marine helicopters continued operations from the carrier. In the morning of BRAVO minus-one day CURTISS took aboard personnel

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evacuating the shot site and departed her station there. She proceeded down the lagoon and anchored off Bogn. ESTES, BAIROKO, AIRSWEEP and BELLE GROVE, anchored or moored off Kalamua, received personnel evacuating Shot Island and other islands in the shell, and shifted to the Bogn anchorage. Evacuees initially embarked in ships other than those to which they were assigned were transferred to their assigned ships. Boating was secured; the LCMs were anchored and the Holmes and Narver LCMs were moored in the Bogn anchorage and their crews taken aboard BELLE GROVE. BELLE GROVE landed 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 last 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 Bogn, and then proceeded to sea leaving the shell evacuated and ready for the shot.

7. The final muster was complete, with one exception. On H+40 minus-two a destroyer had placed a man ashore on Nikini Island for helicopter pickup, air lift to Kwajalein 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 Kwajalein from Enivetok by air. No subsequent shore transfers of this type were prohibited on or after minus 2 day.

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8. During the period of evacuation, personnel aboard ship lived

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and worked in reasonable comfort, with the exception of those assigned BAIROKO. The number of passengers assigned the carrier considerably exceeded her normal capacity, and the excess was accommodated not too comfortably on cots placed on the hangar deck. They were joined by others who had been assigned berths but found the bunk space too warm for comfort. There was insufficient working space, as well, for assigned units, and the JTG 7.3 staff and Task Unit 7 (the TG 7.1 Radiate organization) were forced to share space that was hardly adequate for either. The subsequent move of the Task Group Commander and his staff to CURTISS on 6 March relieved this situation for later shots.

9. The planned post-shot reentry was not effected due to the heavy radioactive contamination of Bikini that resulted from BRAVO. Instead all major units except BAIROKO proceeded to Kwajalein and there disembarked their passengers. BAIROKO 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 BAIROKO and other units returned to Bikini and commenced the recovery of test dubs by helicopter.

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BRAVO-ROMEO-KOON

BRAVO

1. The first three CASTLE test shots were detonated at Bikini Atoll. BRAVO was fired at 0645, 1 March 1954, on the reef about ½ 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 Eniuman Island and fired at 0620, 7 April 1954.

2. This was not the firing order planned for CASTLE 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 1½ 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.

4. 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. BELLE 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 shot. DDE's patrolled around Bikini, concentrating on the lagoon entrances and the sea area off the shot site, and VP 29 patrol aircraft searched the outlying areas. Units assigned to assist scientific projects completed their extensive preshot activities. APACHE and SIOUX, supporting project 2.3a, 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 personnel completing last minute preparations at their stations throughout

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the atoll. The MOLALA, 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. LST's completed loading, retracted from Enimman 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.

5. 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 L-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 commenced. 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 covered 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 BELLE GROVE completed loading and pumped her well dock 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 1900K 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 LSTs were not in the Bikini area. LST 825 had sailed at 1600 on B-one day for the Far East, on a course to take her well clear of radioactive fallout. LSTs 762 and 551 were at Eniwetok. NICHOLAS was out of the area, employed in the search for a missing British aircraft. EPPERSON was on patrol at Eniwetok. CURTISS, ESTES, BELLE GROVE, PC 1546, GYPSY, TAWAKONI, and OCCOPA, with her tow, were all on their evacuation stations. HENSHAW was on station as aircraft control DDL, 90 miles southwest of Bikini. PHILIP was on her assigned patrol north of the shot island. MOLALA, 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 take-offs.

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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 D-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 (LT 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 [redacted] final confirmation that the shot would be fired on schedule.

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At 0330 the P4M2 (LCDR W.R. HAHN, USN) assigned to Project 1.4 took off from Eniwetok airstrip. At 0505 all ships reported on station except MOLALA. At 0510 MOLALA 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 MOLALA, 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 GTG 7.3 reported to CJTF SEVEN that all ships, except MOLALA, were on station, and that MOLALA 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 fallout in their areas. At 0600 APACHE, SIOUX, 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 detonated. Some three minutes later the shock wave passed the formation

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without ill effect.

11. At 0655 the P4I2 departed her shot station for Eniwetok. At 0715 TAWAKONI proceeded west from her station to join MOLALA, 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.

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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 washdown systems, and to use maximum damage control measures.

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Decks were cleared of exposed personnel, all openings and unnecessary ventilation secured, and washdown systems were turned on.

13. 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 BAIROKO, and dosimeters worn by personnel in the forward ready room indicated dosages of 140 mr. 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 BAIROKO. 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 Eryu bunker. At 0915, CTF SEVEN

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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 aircraft was the PATAPSCO (AGC-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 PZ75

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returned control of the drone ships to MOIALA, 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 Eninman Island.

17. 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. BELLE 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 Runit and Engya. MOLALA and TAWAKONI would tow the YAGs to Eniwetok. APACHE and SIOUX would commence the fallout collector buoy recovery.

18. 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. TG 7.1 RadSafe 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 adviser to BELLE GROVE. All arrived at Eniwetok the following morning and disembarked Eniwetok based staffs and their evacuation passengers. MOLALA 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.

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29. On 2 March personnel of other task groups began moving aboard CURTISS, AINSWORTH, BAIROKO and YSTES 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.

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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. MOIALA 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 29 March. Once more the movements began, and

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this time they progressed to the point where the major units were anchored off Enyu Island waiting for the last personnel to return aboard ship, with APACHE and SIOUX at sea to lay their fallout buoy patterns, and BURTON, GYPSY, and COCOPA with the YFN barge in tow proceeding to their shot stations. At 1900 CJTF SEVEN directed that the task group sortie 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 sortie 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 sorties 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.

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23. Events up to shot time were generally conducted much as they had been in BRAVO. The disposition of ships off Bikini 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 BRAVO. 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 LCMs , 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 H-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. MOLALA and TAWAKONI were proceeding to an area south of them, to gain radar contact and stand by to recover them when

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when they left the "hot" area. At 1315 ships began to enter the lagoon, and by 1600 reentry was complete and normal operations had been resumed. The Eniuman airstrip was quickly restored to operation.

25. During the night and on 28 March, the day following the shot, three ships searching for fallout collector buoys north of Bikini Atoll, APACHE, JEFFERSON and SIOUX in succession experienced fallout, the maximum being 42 mr/hr. They retired to the southeast. A light fallout was experienced generally throughout the Bikini area. Ships did not leave the lagoon, but cleared their decks, secured ports and hatches, and operated washdown systems intermittently throughout the night. The fallout almost ceased by about 0400 the morning of 29 March, but a very slight amount continued for the remainder of the day. The highest intensity during this period was 30 mr/hr reported by SIOUX. Average topside contamination levels aboard ship reached highest values around 20 mr/hr, but were below 10 mr/hr in most cases by 0800 of 30 March, and around 5 mr/hr by 0800 of 31 March.

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[redacted] KOON

26. 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 clear of ships. The firing party and firing party boat crews were transported from the shot island, Eniumaan, to the firing bunker on Engya, 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, MOLALA, 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 Ailinginae to give warning if a tidal wave developed from the shot.

27. This shot was fired on Eniumaan 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 LSTs fully employed during the period between shots.

28. On 5 April 1954, the shot day minus one procedure commenced. Boats 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 LST 2157 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 20° 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 370 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 KOON [redacted] twenty-four hours to await a predicted wind change that would be more favorable. [redacted]

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30. It was decided that the ships would not reenter the lagoon, but would remain at sea through the day to await the firing next day. 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 Eniuman Island and the firing party was picked up off ESTES and landed on Enyu and Eniuman by helicopter. Resupply of fuel to generator sets and the rechecking and repair of scientific installations 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 ROCK 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.

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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 ROCK.

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RADIOLOGICAL SAFETY

1. 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 shell, 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.[1] 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 were maneuvered after the shot to a safer bearing and distance. Operational considerations required that the ships be positioned at a distance no 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.

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2. A positive program had been carried out to insure that all ships nominated to participate in operation C [illegible] attained a high

1. CJTF SEVEN Operation No. 3-53 Annex H, para "o".

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degree of Atomic Defense readiness before the first CASTLE shot. In August 1953 type commanders had been informed of the special Atomic Defense preparations that would be required of ships and units nominated for CASTLE.[2] Before MIKE-2 all units had completed satisfactory radiological safety exercises and inspections, conducted by the Staff Radiological Safety Officer, LCDR D. A. Pickler, USN.[3] 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.[4] 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 were 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 operated a radiac instrument pool in the forward area, to assist ships' personnel to repair and calibrate their instruments.

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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 ltr serial 0344 of 24 August 1953
3. TG 7.3 Instruction 0344.1A
4. TG 7.3 Instruction 3440.2A

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subjected to extensive radioactive fallout, three of them, BAIROKO, ESTES and PHILIP, on a relatively heavy scale.[5] Prior to the detonation the ships had been deployed at sea generally in the southeast quadrant from ground zero, at distances ranging from 3[illegible] to 4[illegible] 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 CURTIS 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.[6]

4. About 0800, just as BAIROKO 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

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their washdown systems, concentrations of up to several roentgens per hour built up rapidly on BAIROKO, and her plane guard, PHILIP. Average readings reached 500 mr/hr on BAIROKO and 750 mr/hr on PHILIP, with high readings between 5 and 20 R/hr. The fallout pattern was not symmetrical, since both ESTES and CURTISS, approximately the same distance from ground zero as BAIROKO (31 miles) but on opposite sides of her, received considerably less contamination. Other ships, including those which had been moved southward before the shot, received 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 intensity 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

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

8. Three barges, ten LCMs and ten LCMs had been anchored or moored in the southeast portion of Bikini lagoon, off Eneu Island, prior to the shot. It was not considered practicable or safe to take them to sea in the prevailing weather. MOUNT OLIVE was loaded to capacity with 18 LCMs and the Bikini vessel ATA. Since these craft left in the lagoon were about 20 miles from ground zero, they suffered no damage from blast, heat or were action, but they were all heavily contaminated. Twelve hours after shot time they had radioactive intensities averaging several roentgens per hour. On the day following the shot, when ships reentered the lagoon, decontamination of the small craft was begun. They were first towed down by other vessels, notably CARE 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.

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By three days after the shot, all the lagoon water had become slightly 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. Evaporators, condensers 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 lagoon. The highest shipboard intensity resulting from intake of contaminated lagoon water was 30 mr/hr, detected on the exterior of an auxiliary condenser on CURTISS. The average intensity in the engineering spaces where this condenser 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.[1], [2]

10. Most Navy Task Group personnel present at Bikini for shot [redacted] 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

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1. CTG 7.3 ltr ser 0360 of 14 March 1954
2. CTG 7 ltr "Report of Water Samples" dated 30 March 1954

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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 men 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 1 roentgen. In the latter part of March sixteen RAINIER personnel, and twenty-one men on PHILIP, developed 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.

11. 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, Kwajalein 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 RAINIER's flight deck crew, and by personnel stationed in the CVA'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 Ailinginae 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.[9] 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.

12. The widespread exposure to radiation experienced by Navy personnel placed a heavy load on the Scientific Task Group's Task 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 BAIROKO remained at Bikini Atoll, but was stationed in areas clear of radiation, insofar as possible.[10]

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9. CTG 7.3 ltr ser 0393 of 18 Mar 1954
10. TG 7.3 Instruction 6470.3 of 2 Apr 1954

[redacted]

[redacted]

ADJUSTMENT TO AFLOAT OPERATIONS AT BIKINI

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 L-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 Lagoon, with BAIROKO and ESTES GROVE, all fully engaged in their new support task.

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3. BAIROKO was first to return to Bikini in order to support the

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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 operation. 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 [redacted] 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 LCMs were the mode of transportation. As a partial remedy LCUs were pressed into service for AINSWORTH passenger runs, since they provided a steadier platform when alongside than did the smaller LCMs 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 AINSWORTH's hull.

5. It had been planned to station [redacted] Eniwetok between shots. To accommodate all the personnel

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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 DD's.

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 work-load. 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.

7. 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 a time. 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 Eninman 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

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of equipment on Enimman Island, to be returned to Eniwetok as soon as radiation levels permitted, and before the third shot. LST 762 took the first load out on 5 March. Fourteen LST round trips were completed between BRAVO and KOON, with 2765 tons of valuable equipment evacuated. BIRCH 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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VI

EVACUATION OF NATIVES

1. To the east of Bikini, between 160° and 173° east longitude 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 Eniwetok lie a number of atolls 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

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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 opposite direction to the east of Bikini.

5. Lying almost on a line slightly south of east from Bikini are Ailinginae, 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 Ailinginae. On Rongerik CTG 7.4 operated a weather station manned by Air Force personnel.

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

6. Late on the evening of 2 March 1954, BRAVO + one day, the Task Force Commander directed that a DE 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 (DER 498) was ordered to Rongelap, and departed Bikini at 2145 on 2 March. Commanding Officer, Naval Station Kwajalein, [redacted] Ralph E. CLARK, U.S. Navy, arranged for an interpreter and a Trust Territory official to proceed to Rongelap by air, and set up a PBM flight to arrive there at daylight 3 March. After the initial arrangements had been completed, CTF [redacted] 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. CTG 7.3 directed PHILIP to embark and evacuate all natives from Rongelap to Kwajalein, when requested to do so by the Trust Territory official arriving by PBM. PHILIP arrived and anchored off Rongelap Island, in the lagoon, at 0735 on 3 March. The Kwajalein PBM, with Mr. Marion Wilds, civilian representative of the Marshalls' District Administrator, and Oscar deBrum, Marshallese interpreter, aboard,

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landed and anchored off Rongelap Island shortly before 0730. Prior to landing, the PBM, in good radio communication with the PHILIP, made a thorough reconnaissance flight around the shoal. Radiation readings taken by the PBM at a 500 foot altitude over Rongelap Island averaged 295 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 PBM, 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.11

8. Meanwhile, about 0220 on 3 March, CTF SEVEN advised that the evacuation of Uterik Atoll might be necessary, and directed that a PBM be dispatched to arrive there at sunrise on 4 March. Commanding Officer, Naval Station Kwajalein again arranged for the transportation of the necessary civil official and interpreter. USS SEMINOLE (ATF-91)

11. C.O. USS PHILIP ltr ser 001 of 5 Mar 1954

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was ordered to Utirik, and departed Rainetok 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 Sheffield made available to CTG 7.3 two ASW of Escort Division 112, USS SEMMES (DE-342) and USS SILVERSTEIN (DE-534), to assist if required. CTG 7.3 accepted this offer of assistance and assumed operational control of both vessels. SEMMES was ordered to Utirik to assist RENIMAN. 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 sent 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 Marshallese were placed aboard PHILIP. With Rongelap cleared, a search party, including John, the Magistrate, and the interpreter, was sent to Rainetok Island, across the lagoon, where the PBM had reported moving 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 Rainetok was uninhabited, since radiation intensities there exceeded 3000 mr/hr. PHILIP personnel shifted and remembered in a better lee a 35 foot sloop belonging to the Magistrate, and PHILIP then departed Rongelap. Upon the advice of the

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Rongelap magistrate the ship proceeded to Ailinginae 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 Kwajalein of 0930 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 lying 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.

11. The beach party boat approached the south shore of the island to the edge of the reef, which extended about 4 yards 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. B. Easton, USN, 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 Kwajalein, first landed in the lagoon, then took off and landed again in the open sea near RENSHAW. Aboard was a Trust Territory official, an interpreter and two CJTF SEVEN

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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 15[illegible] mr/hr over the entire area. Four drinking water samples were collected. The movement to the ship was begun at 1[illegible]. With considerable assistance from the native men, the Marshallese were taken to the ship in ten whaleboat trips. About 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 [redacted], and 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 [redacted]: 47 men, 55 women and 52 children under 16. At 1300 [redacted] departed Utirik for Kwajalein. At 1345 [redacted] joined [redacted], and accompanied her to Kwajalein, where she was returned to her normal duties.[12]

14. [redacted] arrived at Kwajalein at 0830 on 4 March, and [redacted]

12. [redacted] ltr serial [redacted] of 16 March 1954

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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 representatives of CJTF [redacted] 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. [redacted], had been stationed at Majuro in the Marshalls, and E. I. [redacted], Chief Boatswain's Mate on the [redacted] 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 awning, and used the after crew's head and washroom. The natives went through the regular mess line for meals and had the same ration as the crew. The meat course was the least popular, with hot soup, bread,

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vegetables and ice cream the most in demand. REHEMAN'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 on Utirik than it was on Rongelap and Ailingnae, their bodies and clothing were not heavily contaminated and a complete decontamination aboard ship was not essential. REHEMAN'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. REHEMAN billeted all her passengers on 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 woman's side of the head was partitioned off for privacy upon the recommendation of the Trust Territory representative on board. REHEMAN set up a special mess line on the fantail. The Utirik natives showed the same food preferences as did those from Rongelap and Ailingnae. REHEMAN gave them an evening meal of boiled 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

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whom he says in his report of the operation: "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 Likiep, Jemo, Ailuk and Mejit would have been extremely hazardous, REHOBOTH, 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 Wilingame. She carried Mr. Herbert Seaville, technical director, AFSWP, and a party of scientific personnel. The party made a detailed survey of the evacuated atolls, 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

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[redacted] J.T. [redacted] Dispatch 050642 of March 1954 [redacted]

[redacted] ED DATA VI

were found to be in good condition, and destroyed dogs and cats lest they harm the pigs and chickens when food became scarce. They beached native canoes above high water and re-anchored a thirty foot sailing schooner at Ailinginae 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. NICHOLAS made a second expedition, this time to Rongelap on 25 March, carrying a party of Task Group 7.1 scientists headed by Dr. Lauren R. Donaldson. 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 WP-29 aircraft made a special air survey of the Gilbert Island chain to insure that these islands had escaped any significant contamination.[15]

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14. CO NICHOLAS ltr ser 049 of 20 March 1954
15. CJTF SEVEN Dispatch 0404352 of March 1954

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VII

STATISTICS

Personnel Clearance Status

Helicopter Operations

Boat Pool Operations

[redacted] Contamination

[redacted] Damages

Inter-Atoll Surface Lift

Communications

Costs

Status of Allotments

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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	TOTAL
USS SHEA	0	0	14	214*	228
USS COCOPA	6	4	71	0	81
USS LST 1157	5	0	175	0	180
USS PHILLIP	13	1	256	0	270
USS ESTES	113	24	476	0	593
VP TWENTY-NINE	6	0	350	50*	406
VC THREE	4	0	4	0	8
USS TAWAKONI	9	4	66	0	79
YAG 40	15	10	24	0	49
USS LST 1146	0	0	99	0	99
USS PC 1546	6	2	49	0	57
Underwater Detection Unit	19	3	0	0	22
USS LST 762	26	3	96	0	125
USS EPPERSON	11	1	380	0	392
MMR 362	39	13	62	0	114
USS BAIROKO	63	13	781	26*	883
USS LST 551	17	3	85	0	105
USS MOLALA	16	4	66	0	86
USS RENSHAW	10	0	259	0	269
USS BELLE GROVE	29	9	298	0	336
USS NICHOLAS	12	2	258	0	272
USNS FRED C. AINSWORTH	2	2	166	21*	191
USS CURTISS	65	8	565	0	638
TG 7.3 BOAT POOL	32	16	169	0	217
COMCORTDESDIV TWELVE	3	1	3	0	7
MARINE DETACHMENT	37	7	22	0	66
YAG 39	16	3	24	3*	46
USS APACHE	0	0	71	0	77
USS SIOUX	7	4	74	0	98
STAFF, TG 7.3	44	5	0	0	53
USS MENDER	0	0	17	50	67
TOTAL	639	142	4,980	364	6,114

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* All personnel held Interim Secret Clearances or Access to Secret pending results of NAC's.

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VII

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

20 JANUARY - 1 APRIL 1954

	January	February	March	Average
Aircraft assigned	12	11	11	11.3
Average Aircraft Available	11.5	10.7	11	11.1
				Total
Flights	220	903	730	1853
Hours flown	169.3	746	733.6	1648.9
Passengers carried	766	5288	4819	10873
Accidents	*1	0	0	1
Casualties	*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.

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VII

TASK GROUP 7.1 BOAT POOL LCM OPERATION, BIKINI ATOLL

20 JANUARY - 7 APRIL 1954

BOAT	TOTAL TRIPS	TRIPS FOR TG 7.1	CARGO TONS	PASSENGERS	TRIPS FOR TG 7.3	CARGO TONS	PASSENGERS	TRIPS FOR TG 7.5	CARGO TONS	PASSENGERS
LCM 33	762	25	0.1	41	560	63.6	2501	177	267.5	651
LCM 34	520	100	24.0	303	342	57.5	979	68	82.0	180
LCM 35	577	88	87.0	80	372	34.0	1516	117	83.5	106
LCM 36	661	95	19.0	328	484	38.0	2669	82	105.5	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
LCM 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
LCM 42	926	150	63.0	516	568	100.2	1670	208	244.5	199
LCM 43	636	81	45.0	310	358	73.0	1416	197	311.0	460
LCM 44	684	-	-	-	597	56.5	1493	87	88.5	57
LCM 45	482	23	7.3	24	397	7.0	1093	62	65.0	82
LCM 46	907	155	-	536	233	34.0	1207	119	181.0	148
LCM 47	588	40	9.7	125	334	44.4	1443	234	273.0	880
LCM 49	371	49	14.0	96	219	20.5	701	112	145.0	117
TOTALS	8900	1234	342.1	3352	5864	771.1	23822	1802	2353.0	3530

[redacted]

[redacted]

[redacted]

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

Date MAR.	Local Time	CURTISS	ESTES		AINSWORTH	BELLE GROVE	COCOPA	APACHE	SIOUX	PC 1546	BAIROKO	PHILIP	GYPSY
1	0900	8	480	(e)	-	-	-	-	-	-	500	750	-
	1000	5	200	(e)	-	-	-	-	-	-	300	265	-
	1100	3	150	(e)	-	-	-	-	-	-	300	196	-
	1200	2	100		-	4	-	-	-	1	350	145	-
	1300	5	100		1	5	5	3	4	3	300	147	-
	1400	18	110		2	12	20	7	8	6	240	138	7
	1500	25	120		10	20	14	2	9	15	280	134	30
	1600	45	140		16	35	18	12	20	21	170	180	200
	1700	55	120		22	75	20	90	22	25	140	225	230
	1800	50	120		19	150	75	17	50	80	200	262	250
	1900	40	120		20	190	75	20	34	90	180	194	200
	2000	37	120		20	300	110	30	15	85	180	199	150
2	0000	30	120		20	80	75	30	40	80	160	188	130
	0400	25	120		20	60	70	30	30	50	145	156	110
	0800	20	80		20	60	30	25	12	40	134	111	80
	1200	15	50		20	50	20	10	10	30	108	78	45
	1600	10	30		12	30	20	10	9	20	36	60	40
	2000	10	23		10	20	18	10	7	15	30	47	35
3	0000	9	20		8	20	15	8	6	14	27	39	35
	0400	8	18		7	15	12	3	6	13	25	41	35
	0800	7	16		6	12	7	3	5	12	22	34	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	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

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[redacted]

[redacted]

[redacted]

[redacted]

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VII

[redacted]

TABULATION OF [redacted] EXPOSURES OF TASK GROUP 7.3 PERSONNEL BY SHIPS AND UNITS AS OF 9 APRIL 1954.

EXPOSURE IN ROENTGENS

UNIT	0.0 to 0.999	1.0 to 1.999	2.0 to 2.999	3.0 to 3.999	4.0 to 4.999	5.0 to 5.999	6.0 to 6.999	7.0 to 7.8	Over 7.8
TG 7.3 STAFF	10	47							
USS BAIROKO	466	228	47	51	71	8	1		
HMR-362		80	12	18	4				
USS CURTISS	703								
VP-29	432								
USS ESTES	145	376	115	3	5	7			
USS BELLE GROVE	166	148	22						
TG 7.3 BOAT POOL	34	85	56	22	11	3	2	1	3
USS LST 762	85	29	7	1					
USS LST 551	206								
USS LST 1157	187								
USS EPPERSON	281	8							
USS NICHOLAS	268		1						
USS RENSHAW	223	30	6						
USS PHILIP		36	103	87	32	2	1		
USS SHEA	265								
USS PC 1546	55	5							
USS GYPSY	1	32	29	1					
USS MENDER	65								
USS RECLAIMER	93								
USS MOLALA	84	2							
USS APACHE	81	2							
USS SIOUX	23	55	5						
USS TAWASONI	78	1							
USS COCOPA	79								
USNS AINSWORTH	159	39							
YAG 39	40	6	4	1					
YAG 40	23	19	9				1		
TG 7.3 UDU	22								
PROJ. 1.4 AIRCRAFT	8								
PROJ. 6.4 AIRCRAFT	8								
VC-3	20		23						
TOTAL	4210	1228	439	184	123	20	4	2	3

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VII

INTER-ATOLL CARGO LIFT

SHIP	DATE	FROM	TO	PAX	M/T CARGO LIFTED
LST 762	1 Jan	Bikini	Eniwetok	-	582
LST 762	5 Jan	Eniwetok	Bikini	-	448
LST 762	7 Jan	Bikini	Eniwetok	-	478
LST 762	10 Jan	Eniwetok	Bikini	-	525
LST 762	13 Jan	Bikini	Eniwetok	-	423
LST 762	16 Jan	Eniwetok	Bikini	-	504
LST 762	21 Jan	Bikini	Eniwetok	-	291
LST 762	26 Jan	Eniwetok	Bikini	-	495
LST 762	4 Feb	Bikini	Eniwetok	-	438
LST 762	7 Feb	Eniwetok	Bikini	-	168
LST 762	9 Feb	Bikini	Eniwetok	-	862
LST 762	18 Feb	Eniwetok	Bikini	-	83
BELLE GROVE	20 Feb	Bikini	Eniwetok	-	125
LST 825	20 Feb	Eniwetok	Bikini	-	172
LST 762	21 Feb	Bikini	Eniwetok	-	748
BELLE GROVE	21 Feb	Eniwetok	Bikini	-	675
LST 762	23 Feb	Eniwetok	Bikini	-	54
LST 825	23 Feb	Bikini	Eniwetok	-	740
LST 762	25 Feb	Bikini	Eniwetok	-	394
LST 762	2 Mar	Eniwetok	Bikini	-	104
LST 551	3 Mar	Eniwetok	Bikini	31	37
AINSWORTH	4 Mar	Eniwetok	Bikini	167	5
LST 762	5 Mar	Bikini	Eniwetok	9	112
NICHOLAS	5 Mar	Bikini	Eniwetok	20	-
CURTISS	5 Mar	Eniwetok	Bikini	99	20
BELLE GROVE	6 Mar	Bikini	Eniwetok	17	-
BELLE GROVE	7 Mar	Eniwetok	Bikini	13	-
OCCOPA	8 Mar	Eniwetok	Bikini	46	-
HENSHAW	8 Mar	Bikini	Eniwetok	22	-
PHILIP	8 Mar	Eniwetok	Bikini	32	-
PHILIP	9 Mar	Bikini	Eniwetok	16	-
HENSHAW	10 Mar	Bikini	Eniwetok	17	-
PHILIP	10 Mar	Eniwetok	Bikini	20	-
LST 551	11 Mar	Eniwetok	Bikini	21	10
LST 762	11 Mar	Eniwetok	Bikini	55	3
JEFFERSON	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
HENSHAW	13 Mar	Eniwetok	Bikini	48	3
LST 551	14 Mar	Eniwetok	Bikini	-	68
LST 1146	14 Mar	Bikini	Eniwetok	-	127

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[redacted]

[redacted]

[redacted]

SHIP	DATE	[illegible]	[illegible]	[illegible]	[illegible]
LST 762	15 Mar	Eniwetok	Bikini	6	-
LST 762	16 Mar	Bikini	Eniwetok	-	-
LST 551	17 Mar	Bikini	Eniwetok	9	115
LST 1146	18 Mar	Bikini	Eniwetok	1	103
LST 1146	19 Mar	Eniwetok	Bikini	2	-
LST 551	19 Mar	Eniwetok	Bikini	1	5
LST 1146	20 Mar	Bikini	Eniwetok	-	141
NICHOLAS	23 Mar	Eniwetok	Bikini	-	120
LST 551	25 Mar	Bikini	Eniwetok	5	2
LST 1146	26 Mar	Eniwetok	Bikini	-	198
CURTISS	27 Mar	Bikini	Eniwetok	41	25
LST 1146	28 Mar	Bikini	Eniwetok	-	-
LST 1146	29 Mar	Eniwetok	Bikini	-	207
BELLE GROVE	29 Mar	Bikini	Eniwetok	12	110
LST 551	30 Mar	Eniwetok	Bikini	3	500
NICHOLAS	31 Mar	Eniwetok	Bikini	17	1
RENSHAW	31 Mar	Bikini	Eniwetok	10	-
BELLE GROVE	31 Mar	Eniwetok	Bikini	10	-
LST 551	2 Apr	Bikini	Eniwetok	-	60
LST 1146	2 Apr	Bikini	Eniwetok	7	255
TANAKOKI	3 Apr	Bikini	Eniwetok	4	153
LST 762	7 Apr	Eniwetok	Bikini	32	-
					72

[redacted]

[redacted]

[redacted]

VII

COSTS OF TASK GROUP 7.3, [redacted] 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	1,090.00
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 GROUP 7.3 FROM 1 JANUARY 1954 - 7 APRIL 1954

Travel and Per Diem	$ 8,524.00	($35,374.00)* obligated
Telephone and Utilities	3,500.00	
Military Pay	3,360,241.00	
Office Supplies	2,655.00	
Alteration of Ships	85,200.00	
Radiological Defense	11,600.00	
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	198,870.00	
Fuel and AvGas for Ships	655,258.00	
Provisions (General Mess)	495,885.00	
	$ 4,841,308.00	

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

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VII

STATUS OF ALLOTMENTS RECEIVED FROM JOINT TASK FORCE 3 VIA CJTF SEVEN AS OF

3 APRIL 1954

ARMY APPROPRIATION 21X2020 NROA 1954

DESCRIPTION	RECEIVED	OBLIGATED	EXPENDED	UNOBLIGATED
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.	2,700.00	185.25	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 A2299/54 HELD BY THE SUPPLY OFFICER, USS BAIROKO (CVE-115) AS OF 1 APRIL 1954

Received	4,800.
Obligated	3,630.
Expended	459.
Unobligated Balance	711.

STATUS OF THE BUREAU OF SHIPS BOAT POOL OUTFITTING ALLOTMENT HELD BY SUPPLY OFFICER, U.S. NAVAL AMPHIBIOUS BASE, CO ORADO, SAN DIEGO, CALIFORNIA, AS OF 1 APRIL 1954 - ALLOTMENT NUMBER A4002

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

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

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VII

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	March
Incoming Messages	968	1497	2095
Outgoing Messages	244	625	1204
Total	1212	2122	3299
Daily Average Incoming	31	54	68
Daily Average Outgoing	8	22	39
Classified Messages	46%	30%	48%
Emergency Precedence	00%	00.6%	00.5%
Operational Immediate	5%	9 %	16 %
Priority	27%	29 %	39 %
Routine and Deferred	68%	61.4%	44.5%

SHIP TIME TRAFFIC HANDLED

	INCOMING	OUTGOING
BRAVO - 1	78	61
BRAVO	56	40
BRAVO + 1	100	54
Total	234	155
ROMEO - 1	67	44
ROMEO	87	42
ROMEO + 1	61	43
Total	215	129
KOOK - 1	57	43
KOOK	59	38
KOOK + 1	57	27
Total	173	108

ROMEO - reduction over BRAVO 14%
KOOK - reduction over BRAVO 30%

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NO DOE CLASS. INFO COORDINATOR DNA
Bahn 6/6/90

RG 374 DEFENSE NUCLEAR AGENCY

Location WNRC

Access No. 61A1740 Box 1/19

Folder HISTORY-VOLUMES I-III-
INSTALLMENTS 1,2,3,4-53-54

CLASSIFICATION CANCELLED
BY AUTHORITY OF DOE/OC
J. Diaz 3/27/92
REVIEWED BY DATE
* LTR DNA SWISHER TO DOE-COOLING, 9-27-91

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[redacted]

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

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

[redacted]

SUBJECT: Historical Installment Number 4, (Final Installment): submission of

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 0-7467 and CJTF SEVEN Standing Operating Procedure Number 172-701.

2. Commander Task Group 7.3 Installment Number 4,(Final Installment), of Operation CASTLE is submitted:

OK Harry

H. C. BRUTON
Rear Admiral, U.S. Navy
Commander

1 Incl
Historical
Installment No. 4

Copies furnished:
CTG 7.1
CTG 7.2
CTG 7.4
CTG 7.5

RG 374 DEFENSE NUCLEAR AGENCY
Location WNRC
Access No. 61A1740 Box 1/19
Folder HISTORY-VOLUMES I+II-INSTALLMENTS 1,2,3-4-53-54

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[redacted] This document consists of [redacted] pages
No. [redacted] of [redacted] copies
Series A

[redacted]

JOINT TASK FORCE SEVEN
COMMANDER TASK GROUP 7.3

COMMANDER TASK GROUP 7.3

HISTORY OF OPERATION CASTLE

INSTALLMENT NUMBER 4

(Final Installment)

RCS-JTF SEVEN H-1

Period 8 April through 15 May 1954

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[redacted]

[redacted]

FTG/7.3/003.1/jeh
A-22
RCS-JTF SEVEN H-1
Ser: 001570
12 JUL 1954

SUBJECT: Historical Installment Number 4, (Final Installment); submission of

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

1. Reference is made to CJTF SEVEN letter 503/314.7 of 9 Oct 1953, serial O-32/87 and CJTF SEVEN Standing Operating Procedure Number 170-7C1.

2. Commander Task Group 7.3 Installment Number 4, (Final Installment), of Operation CASTLE is submitted:

H. C. BRUTON
Rear Admiral, U.S. Navy
Commander

1 Incl
Historical
Installment No. 4

Copies furnished:
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WHEN SEPARATED FROM [illegible] THIS DOCUMENT [illegible]
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[illegible] page(s)
No. 1 of 1 [illegible]

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[redacted] TASK GROUP 7.3

HISTORY OF OPERATION CASTLE

ENCLOSURE NUMBER 4

(Final Installment)

Period 8 April through 15 May 1954

Submitted

R. F. KAGEN
Lieutenant Commander, USNR

Approved:

R. C. BENSON
Rear Admiral, U.S. Navy
Commander, Task Group 7.3

[redacted]

[redacted]

OUTLINE

I. Deployment

II. [redacted] - TAKEM - [redacted]

III. Effect of delays

IV. Security

V. Operations

VI. Logistics

VII. Communications

VIII. Roll-up

IX. Re-deployment

X. Statistics

XI. Personnel Roster

[redacted]

[redacted]

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2. The last ship of Task Group 7.3 to arrive in the the forward area, USS REGLAINER (AKA-42)(LCDR R. E. Smith, USN), reached Bikini on 8 April, the day following the ECHO shot. She had arrived at Kwajalein on the morning of 7 April and was held there until after the ECHO Redwafe picture had cleared. At Bikini she joined SHELL and LST 1157 in support of the Bureau of Ordnance's Project 3.4.

[redacted]

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XX

UNION - YANKEE - BRONAR

1. Task Group ships made two sorties from Bikini Lagoon for UNION, the fourth shot fired. The first took place on 15 April, 8 days after the KOON shot, in more or less routine fashion. Ships had been received early on minus-one day that an attempt would be made to fire the shot, permitting ship movements to begin on schedule. By 1500 the lagoon was clear of shipping, except for several small craft and two manned Navy LCMs standing by at the shot buoys to remove the firing party. At 1515 all ships reported their positions at a safe distance from the zero point, including PC 1556, stationed at Rongerik Atoll with Air Force weather observers aboard. The firing party armed the devices and boarded the LCMs for Aomoen Island where they were picked up by helicopter and flown to Engu to command the firing circuit. After disembarking the firing party, the LCMs run down the lagoon, moored to buoys off Engu, the crews launched a DUKW carried in one LCM and proceeded to Engu for helicopter transportation to BAIROKO. During the arming operation ESTES, BAIROKO, [redacted] (as plane guard) and BELLE GROVE remained within ten miles of Engu to shorten the helicopter flights and to be easily available in case an emergency developed. At 1615 the LCM crews arrived on board BAIROKO. At 1630 the firing party helicopter reached ESTES, BAIROKO recovered her helicopters, and the four ships headed out to sea to join the rest of the formation.

2. At 1515 CURTISS departed her station at sea and headed

[redacted]

[redacted]

XI

up-wind preparatory to launching a high altitude balloon. She completed her up-wind run, reversed course and at 2150 launched the balloon and returned to her station. A little over an hour later word was received from the Joint Task Force command post in [redacted] that the shot had been delayed for twenty-four hours. All ships were notified of the delay and directed to remain at sea through the night. At 0830 [redacted], [redacted] and [redacted] closed on [redacted] to transport the firing party in by helicopter to disconnect the firing circuit and disarm the device, but this action was delayed in the hope that a better weather situation might be developing. By 1500 it had become apparent that the weather would not permit firing next day, and the disarming process was begun. Word was received at 1730 that disarming was completed when the ships headed into the lagoon. By 2010 all were anchored.

3. A shot for [redacted] was not again attempted until 25 April. Throughout the period between shots the task group remained in an advanced state of readiness, prepared to move out again on short notice, with each day designated as minus-two or minus-three depending on the weather outlook. It became apparent that to fire the remainder of the CASTLE series, the Joint Task Force had to be prepared to take advantage of favorable weather based on short range forecasts. To meet the situation the alert status of the Navy Task Group was further increased so that all ships were required to be ready to commence their minus-one day events at noon on any day. Plans were made for carrying out the shots after dark, in case such

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XX

a movement should become necessary to take advantage of a sudden weather change. News was received of the cancellation from the schedule of the shot designated [redacted]. To clean up the remaining three shots it had been decided to fire one shot, [redacted], at Eniwetok, and two, [redacted], at Bikini. While the Joint Task Force waited for the weather to permit them to fire [redacted] at Bikini, scientific personnel made preparations for [redacted] at Eniwetok. When it began to appear that [redacted] would be ready before [redacted] could be fired, an alternate firing plan was made, under which either shot would be fired whenever the weather permitted. To fire at Bikini the winds had to be from a quarter that would not deposit fall-out on Eniwetok to the west, or the shells to the east and southeast. [redacted] could be fired at Eniwetok only when the winds would prevent any appreciable fall-out on the two heavily populated islands at the southern end of the shell, Parry and Eniwetok, and on Ujelang Atoll, 125 miles to the southwest. Either shot would be fired when the weather first permitted it, with [redacted] receiving priority should the weather be favorable for both shots on the same day, to clear the way for [redacted], the remaining Bikini shot.

4. On 22 April, with [redacted] still unfired, [redacted] was ready, and the task group was prepared to commence execution on the schedule of events for either shot with minimum warning. APACHE and [redacted] were sent to their initial stations off Eniwetok to lay fallout collectors for Project 4.5a. On the morning of 23 April APACHE experienced a serious casualty to her electrical control boards for

[redacted]

[redacted]

main propulsion. She was returned to Eniwetok to offload project personnel and equipment and was then sent to Majuro to effect repairs.

5. On Sunday, 25 April, at about noon, word was received from CTF SEVEN at Eniwetok that, with a break in the weather imminent, the detonation of UNION next morning would again be attempted. Ships prepared to sortie and awaited the arrival of the Eniwetok staffs. Boats in the lagoon with fishing and diving parties were recalled. A decision had been made that morning that the EnCom project would plant all its mines on UNION rather than spread the participation over two shots; REDLAMER and SWIA were planting the two strings of mines that had been intended for a later shot. By 1700 they had laid all mines in the previously designated pattern and proceeded out of the lagoon. The firing party arrived from Eniwetok at 1300. CTF SEVEN and his staff landed on the Enjuman airstrip and were flown to ESTES by helicopter. At 1730 the firing party reached the shot barge, and CURTISS got underway for the Naya anchorage. As they received their passengers, ships hoisted anchor and left the lagoon. The sortie was accomplished by changing event times as necessary to meet the situations which resulted from late arrival of the Eniwetok groups. Despite the late start all preparations were completed by 2240 when ESTES, with the firing party aboard, got underway and proceeded to sea, leaving the lagoon empty except for moored boats and barges. BELLE CHEVA and BAIRD, with PHILIP

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XX

as plane guard, left their temporary stations close in to command of Enya and, with ESTES, joined the formation at sea. At 2300 NICHOLAS reported on station as aircraft control ship, and a half hour later, all ships were on station at a safe range from the shot barge, with onboard personnel keeping a wary but hopeful eye on the weather.

6. Events throughout the night continued without a hitch. CURTISS launched her weather balloon at 2250. Aircraft No. 1 of VP-29, on patrol, reported sighting a Japanese fishing boat and a freighter, but their location did not place them in any danger from fall-out. At 0220, following a weather briefing, the Task Force Commander directed that all ships except ESTES be moved south to a position 50 miles from the shot barge, with ESTES to open the range immediately after the shot. PC 1546 at Rongerik was alerted to have all her passengers on board and be ready to get underway by noon. At 0300 ships began their southward movement. The last VP-29 patrol aircraft landed at Kwajalein, with no additional contacts reported. The sea area in the fall-out path was clear of friendly shipping. At 0310 MYLALA reported that she was underway out of the expected fall-out area with the crew of YAG 40 aboard, leaving YAG 39 manned with a minimum crew in a well-shielded location, and in control of the YAG 40 drone. SIOUX was not at Bikini during this period Project 2.5a had committed themselves to participate on HECTAR rather than on UNION. By 0330 the ships had completed their move to the southward with CURTISS in an intermediate position to maintain UHF communications with ESTES and with the remainder of the task group. MYLALA reported well clear of the danger sector,

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[redacted]

[redacted]

proceeding toward the formation at 15 knots. The two project aircraft reported on station. Ships took up their shot time headings as the final phase of the voice time broadcast was piped out over voice circuits. Personnel assembled topside to view the shot. There was still a feeling of doubt among them; a last minute delay would not have come as a surprise. Shot at GMT on 26 April [redacted] was detonated. Shot number four was finished, with only two to go.

7. The shock wave passed without harmful effect; the formation was well clear of the radioactive cloud. [redacted] left her shot station and headed south. At 1000, with the cloud dispersed to the northward, the ships moved in toward Bikini and [redacted] prepared to launch helicopters for the initial RadSafe survey. The survey was completed in the early afternoon. By 1500 the lagoon was declared safe for re-entry and the ships entered and anchored. The airstrip was debris-ridden to such an extent that flight operations could not be resumed, so at 1830 [redacted] sailed for Eniwetok with CTF SEVEN and staff on board. The other task group units remained behind to resume work next morning to recover [redacted] data and prepare for [redacted].

8. With [redacted] fired, [redacted] was scheduled for detonation two days later, on 28 April. [redacted] arrived at Eniwetok the morning of 27 April and disembarked the Task Force Commander and headquarters staffs. The weather held, and when the 27th. was confirmed as [redacted] minus-one day, CTG 7.3 with a small operational staff left Bikini by PBM and flew to Eniwetok, moved aboard [redacted], established

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a watch and commenced the [redacted] schedule. Few task group units were present. The plan for [redacted] did not call for a pre-shot personnel evacuation; Eniwetok based personnel would view the shot from Ferry and Eniwetok Islands, with the actual firing done from the control room on Ferry. It was necessary only that [redacted] be present to assist CTG 7.4 in aircraft positioning, that a DDE be near Bjelong Atoll at shot time should evacuation there become necessary, and that sufficient vessels be in the vicinity to carry out an emergency personnel evacuation of Eniwetok Atoll should the need develop after the shot. Only SIOUX and YAG 39 were required in support of a scientific project, laying fall-out buoys for Project 2.5a. One itinerant vessel, USS LEO (T-AKA-60), was present at Eniwetok unloading cargo. To provide the necessary evacuation potential, it was planned to use [redacted], LEO, YAG 39, PHILIP (enroute from Kwajalein on a scheduled ferry trip) and the small craft present in the area. Since additional capacity was required, [redacted] was ordered to Eniwetok. She departed from Kwajalein at 1800 with orders to join the formation at sea.

9. All ships sortied from the lagoon before dark and took up stations southeast of the atoll. At midnight [redacted] departed her patrol off Wide Entrance and set a course for Bjelong. The first VP-29 patrol aircraft reported negative search results and landed at Kwajalein. At 0200 NICHOLAS reported on station as aircraft control ship, 50 miles southeast of the shot atoll. By 0330 all five VP-29 aircraft had completed their searches of the area and

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reported no contacts. SIOUX and TAG 39 finished laying buoys and reported on their shot stations. The task group was ready for the shot, but to no avail, for the weather was deteriorating. At 0312 word was received from the Task Force headquarters on Parry that HECTAR had been cancelled for the day. Thus began a series of five serties in all before HECTAR was detonated, three before YANKEE, and two afterward, with HECTAR the final shot despite the early readiness.

10. EPPERSON was recalled from Ujelang. AINSWORTH was ordered back to Bikini. After daylight the ships re-entered the lagoon and anchored. CTG 7.3 and his staff left ESTES and, after conferences on Parry Island, boarded an aircraft for return to Bikini. Just prior to take-off word was received that the weather forecast had improved, and an attempt would be made again to fire HECTAR next morning. The TG 7.3 operations center in ESTES was reopened, AINSWORTH ordered to turn around and steam for Eniwetok again and the HECTAR schedule repeated. SIOUX and TAG 39 laid another string of fall-out buoys to windward of those laid the day before, still unrecovered. By 2000 all ships were again clear of the lagoon. PHILIP had sailed for Bikini on the ferry run and MENKAR was now making the westbound trip from Bikini to Eniwetok. Again VP-29's aircraft searched the area. Shortly after midnight EPPERSON had barely taken her departure for Ujelang, when the word came "HECTAR delayed 48 hours". AINSWORTH was again turned around and sent back to Bikini, and EPPERSON recalled. Patrol aircraft were op-

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[redacted]

dered to return to base where the last one landed at 0200. At daylight BROOK and EPPERSON commenced to search for fall-out buoys, to be joined later by TARAKNI when she had returned the "test" drone ship, YAG 40, to her mooring in the lagoon. At daylight other units re-entered and anchored. CTG 7.3 and his partial staff returned to the CURTISS at Bikini, where preparations for YANKEE were continuing. It was now 30 April and YANKEE was scheduled to be ready on 5 May.

11. On 3 May a third sortie for REDTAG was carried out. This time ESTES was required at Bikini for tests in connection with readying YANKEE, so CTG 7.3 set up a temporary command post ashore on Parry Island. Two of ESTES' air controllers were transferred to the TG 7.4 ADC on Eniwetok Island to assist in control of the TG 7.4 aircraft from that point rather than ESTES. USS LEO was still in the area, and had been joined by two other itinerants, USS ARIKIPA (AF-54) and USS MANASOTA (AO-106). These, coupled with LST 551, were considered capable of carrying out the emergency evacuation of Eniwetok should it become necessary. No fall-out buoys were laid; Project 2.5a had exhausted its supply on the two previous REDTAG attempts and efforts to recover the buoys had not been successful. The ships departed the lagoon by 2300 and proceeded to their shot time stations, except EPPERSON who took up her patrol of Wide Entrance. Patrol aircraft searches were underway. At 2130 it was learned that two LCMs, manned by naval personnel attached to TG 7.2 and under control of the Army Task Group, were missing. LCM 46 had

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failed to return from a sweep of the chain of islands begun earlier in the day, and was long overdue. She was still afloat; her commanding could be heard repeatedly broadcasting requests for a radio check, but his radio receiver apparently was not functioning, and he did not give his position. Because of a report that a vessel, possibly an LCM, had been observed in Wide Entrance, LCM 46 had been dispatched by the Army to search there for the 46. It in turn got into difficulties and radio contact with it was lost. An all hands effort to locate the two boats was begun. At 2300 EFFINGER, ordered in for her patrol to search the Wide Entrance, found LCM 46 and towed it to the mooring. At midnight an Air Force helicopter passed over LCM 46 and the boat commander reported the fact on his radio and finally gave his approximate position. The helicopter was advised and orbited over the boat until another TG 7.2 LCM took it in tow. Two TG-3 aircraft, scrambled to aid in the search, returned to base, and EFFINGER left the lagoon and headed for Ujelang. A few minutes later BECTAR was again postponed when the weather forecast became unfavorable. All units were directed to discontinue the schedule for the night. The ships remained at sea and returned to the lagoon after daylight. It was now 4 May, YANKEE minus-one day, and the weather, while not favorable for a shot at Eniwetok, appeared suitable for one at Bikini. Plans were made for an early trip to Bikini and the Task Group Commander and his BECTAR staff left Eniwetok at 0800 to return to CURTISS for YANKEE.

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XI

16. The [redacted] sortie was conducted without untoward incident, but on a delayed basis. By 1830 4 May all ships except [redacted] were at sea and on their shot time stations. [redacted] was anchored off Bayn awaiting the arrival of the LCMs carrying the firing party from the shot barge. They were experiencing difficulties with the firing circuit to [redacted] and delayed their departure to remedy the trouble. [redacted] was in position to the northwest of the shoal with the two LCMs, preparing to debark the TAG 40 crew and leave TAG 39 manned and in control. VP-29 aircraft were airborne and carrying out the pre-shot search plan. By 1930 the firing party was aboard [redacted], the LCMs moored to buoys off Bayn and their crews picked up. [redacted]' sailing was still delayed while work continued on the firing circuit; at 2100 she was underway, and left the lagoon. By midnight all patrol aircraft had landed at Kwajalein, reporting the search sector clear of shipping. At 0140 two C-97s, ordered to VP-29 for a special fall-out path laying project for the AEC, took off at Kwajalein. About an hour later CJTF [redacted] requested that ships move out to 50 miles from the detonation point, with a change of bearing to the eastward, except for [redacted], who was to remain in her assigned station and move after the shot. [redacted], acting as aircraft control ship 50 miles from Bikini and slightly north of west, was shifted south to a westerly bearing and moved out to a range of 90 miles. At 0330 the TAG detachment was completed and [redacted] headed south to join the task group. The formation steamed

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on station, the weather remained favorable, and at 0810 5 May, YAMEES was fired.

13. At about 0900, when the danger of immediate fall-out had passed, the ships were ordered to close their range to Bikini and stand by for re-entry. When BAIROKO reached a point ten miles from Bayo she launched helicopters and the initial RadSafe survey began. When reports of the survey were in it appeared that the lagoon water was too "hot" to permit a general return of the ships that night and a conference was called in ESTES to discuss the situation. The Task Group Commander and his Operations Officer transferred to ESTES by highline for the conference. There it was decided that ESTES would return to Eniwetok that night, first making an exchange of passengers with the other major ships, and that other units would spend the night at sea. At 1600 BAIROKO, CURTISS, ESTES and BELLE GROVE entered the lagoon and anchored off Bayo. BELLE GROVE put boats in the water and commenced the passenger transfer. At 1930 ESTES was underway and left the lagoon, followed by the other units. By 2040 the lagoon was again empty. The ships remained at sea until daylight, when they closed the atoll and carried out the re-entry plan. By 0815 the last ship was in. The day was spent in conferring with commanding officers on their roll-up responsibilities, and that night CURTISS sailed for Eniwetok. Upon her arrival there next morning, the Task Group Commander and his staff moved ashore to Parry Island and reopened the headquarters there for the final phase of CASTLE.

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XI

14. There followed a week of roll-up planning and activity while the Task Force again waited for the weather to permit firing HECTOR. On 11 May the fourth HECTOR sortie was made. CTG 7.3 and a partial staff returned aboard CURTISS in the late afternoon. The sortie began a few minutes later, and by 2130 all ships had cleared the lagoon. They had no pre-shot scientific support tasks, so all proceeded directly to their shot time stations. USS MAKAKAKE (ARG-53), present as an itinerant, was assigned a station well clear of the shoal. ALMENDEN and BELLE GROVE, enroute from Midni, were ordered to join the formation at once upon their arrival. At 2400 EPPERSON departed for Ujelang. At 0045 the last search aircraft landed at Enejelein and the expected fall-out area was reported clear. At 0100 CJTF SEVEN advised that the weather outlook was poor. At 0500 he announced that the shot had been delayed. The ships returned to the lagoon at daylight. On 13 May HECTOR events were again begun, and carried out on substantially the same schedule. MAKAKAKE had departed for Enejelein that day. This time the favorable weather held, and at 0520 on 14 May, HECTOR, the final shot in the CASTLE series, was detonated. When the shock wave had passed, units closed Eniwetok, re-entered and by 0745 had anchored in their evacuation stations. Before nightfall all danger of heavy fall-out had passed and CURTISS and ESTES, released from Operation CASTLE, departed Eniwetok for San Francisco. SIREN and BELLA put to sea that afternoon and, with VP-29 aircraft, engaged in a special water survey and sampling program for the AEC.

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The rest of the tank group was diligently clearing up its roll-up banks with a view to early departure.

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XII

EFFECTS OF DELAYS

1. The last shot in the CASTLE schedule as it was contemplated at the commencement of the operational period was to be detonated on 22 April. ROMEO, the last shot actually fired, was detonated approximately three weeks after that date, on 14 May. In retrospect the extension of the operation for three weeks beyond its planned length was not a considerable delay. A delay approaching that length of time was not entirely unexpected. Perhaps the most significant effects that the element of delay had upon the Navy Task Group were attributable more to the lack of any firm knowledge as to when the Operation would end, than to the delay that actually occurred. The added factor of the delays on individual shots contributed substantially to the Navy's problems during CASTLE.

2. As the Operation continued on with its end not in sight, and shots were postponed again and again because of unsatisfactory weather, apprehensions were felt for a number of reasons. Many task group ships were due for shipyard overhaul in late May or early June. Some were scheduled for other employment, notably the four DDRs of Escort Destroyer Division Twelve who were to deploy to the Far East in June. The material condition of all units was deteriorating. Lack of repair facilities and the impossibility of scheduling adequate periods of upkeep, due in part to the many shot postponements, began to be felt in April and had an increasing effect as time went on. Ships began to suffer mechanical failures: LST 761 was released from CASTLE

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majority of [redacted] to leave for their home bases much sooner [redacted] after the final shot them had been planned. All were in need of

and liquor boom for repairs; the ATFs and DDEs began to report difficulties. Many had minor gear that was inoperative and not repairable until spares could be obtained. Aircraft engine hours built up and approached allowable operating limits. Stores laid on for a 120 day operating period began running low. Logistics problems multiplied. Enlistments and obligated active duty periods for a substantial number of essential task group personnel were close to running out. The lack of recreation for the large numbers of naval personnel whose ships seldom left Eniwetok except to go to sea had an adverse effect on morale which, though slight, threatened to become a major problem.

3. As it turned out most of the difficulties that the delay brought into sight were never actually realized. The weather permitted the shots to be fired before the problems reached a serious magnitude. Most ships were able to sail in time to meet their commitments; by utilization of the delay periods for partial roll-up the majority of them were able to leave for their home bases much sooner after the final shot them had been planned. All were in need of extended periods of continuous upkeep upon arrival at their bases. A few personnel were flown to the United States for discharge; the numbers due for release did not become significant until June and most ships had completed redeployment early that month. The lack of recreation ceased to be felt on 14 May with [redacted] fired and the prospect in sight of a quick departure from the forward area.

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4. The delays on individual shots, accompanied as they were by frequent sorties followed by postponement, multiplied the tasks of many task group units. A considerable number of them had to commence scheduled operations on minus two day or early on minus one to permit completion before shot time, notably the ATFs supporting scientific projects, and the patrol squadron at Enajelain. All ships had to prepare early on minus one day for sortie from the lagoon. Sometimes actual sorties were carried out in getting off the six CASTLE shots; preparations were carried out to a considerable extent on several other occasions. To meet the situation the task group was maintained in a state of constant readiness, and preparatory operations originally scheduled for minus two day were modified so that they could be commenced on minus one. The constantly changing situation required extreme flexibility of the task group. Logistics were complicated. Supply ships and tankers carrying task force cargoes had to put in at Enajelain to permit a break in the schedule to permit them to proceed to Eniwetok without getting involved in shot operations. Unloading at Bikini had to be carried out hurriedly; complicated fueling plans were necessary to keep ships supplied and ample stocks on hand. Proper upkeep became impossible. The task group successfully accomplished its CASTLE mission only by virtue of long hours of hard labor, and the determination, reflected throughout all units, that no CASTLE shot would be delayed on account of the Navy.

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IV

SECURITY

BADGES

1. The security badges system for controlling the entry of personnel to sensitive areas at Enivetok and Bikini went into effect on 23 January 1954. The areas of particular interest to Task Group 7.3 where badges were required for admission were Parry Island at Enivetok Atoll and Engebi Island (and the smaller islands joined to it by a causeway and forming the airstrip) at Bikini Atoll.

2. Ideally, no one was to be permitted entry to either of these islands without a badge. Actually, since the Task Group 7.3 security office where the badges were made and issued was located on Parry Island, Task Group security officers were authorized to issue temporary permits to personnel without badges permitting them to land on the island and proceed under escort to the badge office. There a temporary badge, good for a maximum of five days, was issued to an eligible individual pending completion of his permanent CASTLE badge. To be eligible for a badge an individual had to hold a valid AEC "Queen" clearance, or have been granted an interim military clearance for access to Top Secret material, pending processing of his "Queen" clearance application. Military Police personnel of Task Group 7.2 enforced the badge system, controlling the movements of personnel to and from sensitive areas.

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3. The number of Task Group 7.3 personnel who would require continuous or frequent access to Parry or Eniwetok Islands was estimated before the deployment of naval units. To the extent that time permitted arrangements were made for them to receive their badges prior to departure from the United States, or immediately after their arrival at Eniwetok. In many cases however, such advance arrangements were not possible, due largely to the late nomination of some ships and units for CASTLE, and to the delays inherent in the task of assembling and mailing clearance applications and clearances, badge requests, photographs and badges, at a time when many task force units were in the process of departing for the forward area. As a result a substantial number of naval personnel arrived in the forward area with "Queen" clearances not yet completed, and their badges not yet requested. In most cases the lack of a "Queen" clearance was remedied temporarily by granting an interim military Top Secret clearance. But the lack of badges placed a heavy workload on the Task Group 7.5 Badge Office, in issuing both temporary and permanent badges to the same individuals. As the Operation progressed it became apparent that too many "Queen" clearances had been requested for task group personnel, and that there was much inconsistency in the number requested by ships of the same type. Recommendations to remedy this situation have been incorporated in the CTG 7.3 Final Report.

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4. A number of incidents arose during the early operation of the badge system in which the necessary movement of naval personnel in the forward area was severely, and unnecessarily, hindered. One affected the operation of the Bikini fighter aircraft detachment, three aircraft and personnel of VC-3, attached to BAIROKO. The three aircraft were flown off BAIROKO as she was arriving at Bikini. They landed on the Bikini airstrip, where the pilots were met by security Military Police. VC-3 was one of the units nominated too late to complete all security requirements, and the pilots did not have badges. They were placed under restraint and, after interrogation, escorted from the island and returned by boat to BAIROKO, which had by then entered and anchored in the lagoon. The pilots and squadron maintenance personnel were then denied access to their aircraft. This stringent enforcement of the security system was due to a local interpretation of Commander Joint Task Force SEVEN security regulations by military police personnel at Bikini. Since the personnel involved had been granted interim Top Secret clearances pending processing of their "Queen" clearances, the Task Group Security Officer, CDR R. A. Klare, USNR, obtained badges for them at Parry, flew with them to Bikini and resolved the situation by issuing the badges.

5. A similar situation developed with respect to transient naval personnel attempting to rejoin or report to their units at Bikini. They arrived in the area, usually by air, on Eniwetok Island. From

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there they travelled by ship, or on the C-47 air shuttle, to Bikini. If they travelled by ship, there was no problem, since they could reach their ships without any need to land on Kwajalein Island. However, many of them rode the C-47 shuttle to Bikini. Most were not badged, nor were they eligible for badges, since they held only Secret military clearances. Again, when the first unbadged transient personnel began arriving at Bikini airstrip they were placed under restraint, interrogated, and finally escorted, under guard, to the boat landing. This situation was resolved by mutual agreement between the headquarters concerned that transient naval personnel travelling under orders, but without badges, would as a routine matter be escorted between Bikini airstrip and the boat landing without being viewed with suspicion.

WAIVERS

6. Several Task Group 7.3 units were nominated for CASTLE so late as to render futile any attempt to obtain "Queen" clearances for their essential personnel. These were the relief LSTs, 825 and 1146, ordered up as temporary replacements for the two regularly assigned LSTs when they were laid up for repairs, and the units connected with Project 3.4, the Bureau of Ordnance mining project, a late addition to the CASTLE program. These latter were USS SHEA, USS RECLAIMER, LST 1157, Explosive Ordnance Disposal Unit One (EODU-1), and a detachment of Naval Beach Group One. All were ordered to participate in CASTLE well after deployment of the task group had begun. Since it was recognized that "Queen" clearance processing normally requires a

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minimum of 90 days, and usually 120 days. CTG 7.3 decided, with concurrence by CINCPAC, to waive the "Queen" clearance requirements for personnel of these units. Secret clearances were issued, and for those who qualified and required badges, interim or de facto Top Secret clearances were granted. No attempt was made to process them for "Queen" clearances.

7. After the operation was well under way, CINCPAC requested that Task Group Commanders cause still pending "Queen" clearance requests from their personnel be reviewed with a view to possible cancellation, on the possible premise that it might now have become evident that some of the individuals did not require "Queen" clearances. The Task Group was canvassed and some twenty-five such persons were located. However, before agreeing to cancellation of their requests, CTG 7.3 stipulated that the initial investigation, consisting of the agency record check, first be completed in each case, and the individual's command notified of the result. If this were not done the cancellation would leave the individual present in the area in violation of the Task Force requirement that all personnel be cleared at least through Secret. His Commanding Officer would not have a favorable National Agency Check on which to base the required Secret clearance.

SECURITY RISKS

8. As clearance requests which were still pending when their subjects arrived in the forward area were processed, a small number of personnel considered to be potential security risks were discovered and transferred from the Task Force. An unfortunate and important instance of this type occurred in the case of the Commanding Officer

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of one of the ships. After operations had commenced a report was received from the ANC indicating possible suspect activity on the part of a relative, together with indications that a "Queen" clearance would not be granted. Due to the highly sensitive nature of the ship's mission, CTG 7.3 had no alternative but to request the Chief of Naval Personnel to order the Commanding Officer's immediate transfer from his command and from the area. This was done, and the ship's Executive Officer assumed command until the arrival of the ship's new Commanding Officer. In a later case of a similar nature, involving an Assistant Communication Officer of another ship, the situation was resolved by his transfer to less sensitive duties in his ship, rather than from the area.

9. The discovery of a diary belonging to an enlisted man attached to one of the ships brought about his prompt removal from the area. While diaries were not specifically banned by CTF SEVEN directives, the entry in them of data of a classified nature was prohibited, at least implicitly. The diary in question was discovered in a crews' compartment and turned in to the Commanding Officer. While the diary as yet contained no prohibited statements beyond the projected date for the first thermonuclear shot, its owner had stated in it his intention to record whatever events of Operation CASTLE he would witness or otherwise learn about. Basing his action on this expressed intention, his Commanding Officer transferred him immediately upon arrival at Eniwetok, as a poor security risk, after

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revoking his Secret clearance and obtaining a signed termination statement. The man departed the area under orders to report to the nearest Naval Receiving Station in the continental United States. Since he had been certified as a good security risk earlier to Commander in Chief, U.S. Pacific Fleet, CinCPacFlt was notified of his changed status and transfer. CinCPac directed that the man be transferred to a station remote from the U.S. until the end of CASTLE, to guard against any possible security violation. The man reached Receiving Station, San Francisco before he could be intercepted, but was immediately moved again, this time to a Naval activity on Guam.

10. Because of alleged homosexual tendencies of five enlisted personnel, it became necessary to revoke their security clearances and transfer them to Naval Station, Kwajalein, pending completion of the operational phase and review of the investigations.

SECURITY VIOLATIONS

11. Early in February a member of CURTISS' ships company, on temporary duty with CTG 7.5, reported that during the fueling of a BDE by CURTISS in Bikini Lagoon he had observed two individuals on the BDE photographing the operation. When a check revealed that no photographing had been authorized at this time, CTG 7.3 reported the alleged incident to ComCortDesDiv 12 and requested an investigation. A board was convened on USS JEFFERSON. The findings of the board were that there was no basis in fact for the charge, no evidence could be found to substantiate the report of unauthorized photography. Incl-

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dent to the investigation a surprise locker inspection was conducted on [redacted] and some film, exposed and unexposed, was found in an enlisted man's locker. The film was delivered to [redacted] developed and found to contain no classified information.

12. Transient vessels entering the area to supply the Task Force were briefed on security requirements before arrival. Two minor security incidents arose aboard them early in the operation, both involving the sale of cameras in ships' stores. On one ship a camera was actually sold to a crew member of a task group ship. When the man turned in the camera to his Commanding Officer for custody until the end of [redacted], the sale was reported to the Task Group Commander. Another transient ship entered the area with cameras on display in its ships store. Arrangements were made to supplement the pre-arrival briefings by a briefing by the Boarding Officer upon each transient vessel's arrival at Eniwetok, and no further incidents of this kind occurred.

13. The security program within the task group was most successful. Only one letter was referred to in the press. It was written by a Corporal Don Whitaker of the Marine Corps. Whitaker viewed shot [redacted] from Kwajalein and the subsequent arrival there of natives evacuated from Rongelap, Utirik and Ailingnae. Since he was at no time a member of Task Group 7.3; his letter cannot be attributed to any failure in the security indoctrination program.

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OPERATIONS

SECURITY FORCES

1. A primary mission of Task Group 7.3 was to provide for the security of the Eniwetok/Bikini Danger Area. Forces assigned to accomplish this mission were the four DDEs of Escort Destroyer Division Twelve augmented by PC 1546, Patrol Squadron Twenty-Nine, a six fighter aircraft detachment of Composite Squadron Three, and the Eniwetok Underwater Detection Unit.

2. CTG 7.3's ability to perform the security mission was limited by the strength of the forces provided for the purpose, and was still further reduced by the frequent diversion of security units to other duties as the Operation progressed. Within these limits, effective security measures were carried out on very nearly the level planned for the Operation, although often at the expense of adequate upkeep and training.

Surface Security Forces

3. [redacted] JEFFERSON, NICHOLAS, PHILIP, RINEHART and PC 1546, under Commander Escort Destroyer Division Twelve, formed the Surface Security Unit. It was this unit's mission to prevent unfriendly forces from gaining intelligence of Operation CASTLE and to detect and counter hostile action against any unit of Joint Task Force SEVEN. Patrol and escort were the basic means by which the mission was accomplished. The surface craft were responsible for conducting

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patrols in the ocean area near the two atolls against any submarine or surface penetration. Continuous patrol coverage around both atolls was not possible with the number of ships available. As the most effective alternative the ships conducted intermittent patrols, varying the pattern of their movements so that hostile forces, if any were present, could not take advantage of an established but incomplete patrol pattern. The patrols were centered about the more sensitive areas at each atoll, i.e., near shot sites and off lagoon entrances. Whenever possible an in-port vessel was stationed as a sonar picket inside a lagoon entrance. The frequent absence of one or more ships on other missions made this practice irregular. In addition to their own patrols these insure, the DDEs and PC were available to develop contacts further out in the danger area when reported by patrolling aircraft of VP-29. Early in the Operation a DDE intercepted and diverted a Japanese fishing vessel approaching Eniwetok. Other than this, no unauthorized surface vessels were detected in the surface patrol area during the Operation. Several sonar contacts were made; all were classified, after investigation, as non-submarine.

4. Surface escorts were provided in all inter-atoll movements of AEC devices, utilizing one or two screening ships, depending upon the number available. The escort destroyer division's initial task in CASTLE had been to screen CURTISS on her January voyage into the forward area, from a position off Kwajalein to Eniwetok. No other ship movements were escorted.

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[redacted]. The surface security ships regularly performed a variety of minor functions concurrently with their patrol and escort tasks. They furnished the primary search and rescue surface potential at both atolls, although never called upon to effect any rescues. On each shot one DDE, usually [redacted], was stationed approximately midway between the two atolls with Air Force Task Group personnel and a homing device aboard, to act as control ship for Task Group 7.3 aircraft, and as a communications relay. One DDE served as plane guard for RAINIER at sea during shot periods. Fighter aircraft at Eniwetok were controlled in flight from one of the DDEs stationed there.

6. The Surface Security Unit experienced a loss in effective strength throughout the Operation of about 25 percent due to the necessity of diverting its ships to duties unrelated to security. The first such incident took place when NICHOLAS was dispatched on 28 February, just prior to BRAVO, to assist in the search for a Canberra bomber lost between Kwajalein and Los Negros. She was returned to CTG 7.3 operational control on 3 March. For a considerable period after BRAVO some of the DDEs were temporarily relieved of their security duties and assigned a variety of tasks necessitated by the extensive post-BRAVO contamination in the area. PHILIP evacuated the natives from Rongelap and Ailinginae. [redacted] was sent to Utirik where she performed the same task, and then was returned to the contaminated atolls to conduct a radiological survey at locations where seaplane landings were impracticable. All DDEs, in their turn,

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were utilized as ferry craft, carrying passengers and light cargo between Eniwetok and Mitini during the several weeks the Mitini airstrip was closed or operating on a restricted basis after BRAVO. NICKLAS was sent into the contaminated atoll area east of Mitini on a special survey mission. After the BRAVO effects had lessened, surface security operations were returned to a nearly normal basis, except for the occasional employment of a DUK to assist in the search for Project 2.5a fallout collector buoys. As noted earlier, PC 1546 spent considerable time at Ailinginae and Rongerik on ROOK, UNION and YANKEE performing duties not connected with security. On all five EASTAR sorties, SUPPENSOR was assigned the duty of standing by near Ujelang Atoll to evacuate the natives there if severe radioactive fallout was received. The effects of over-employment of the DUKs during the period following BRAVO was felt throughout the remainder of the Operation. The time lost from planned upkeep and maintenance schedules was never made up, and as operations continued over a longer period than had been planned originally the ships began to suffer engineering derangements of a serious nature. All were repaired, however, without outside assistance, and little operational time loss resulted.

Fighter Aircraft

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7. Six F4U-5N day and night fighter aircraft were assigned to the task group for intercept duties. The aircraft with operating and support personnel were a part of Composite Squadron Three and tem-

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porarily attached to BAIRDKO for CASTLE. To provide intercept capabilities at both atolls three aircraft were assigned to each. The Eniwetok element was based on the airstrip there with a MEW at that atoll performing fighter control duties. Until BRAVO the Bikini element was based on the Bikini airstrip under control of BAIRDKO's CIC. CIC officer personnel from both BAIRDKO and CURTISS were assigned temporary duty throughout the Operation in the Task Group 7.4 Air Operations Center at Eniwetok, with the function of providing to BAIRDKO and the Eniwetok fighter control MEW up-to-date information on flights transiting the area.

5. For BRAVO the Bikini element was moved back aboard BAIRDKO, and prepared to conduct flight operations from the CVE during the period the ship was outside the lagoon for the shot. This element was never returned to Bikini. After BRAVO it was impossible for the aircraft to operate from the heavily contaminated airstrip. BAIRDKO was needed inside the lagoon to conduct helicopter operations that were absolutely essential to continuation of the tests. It was concluded that the intercept capability at Bikini could not be maintained without seriously hindering the CASTLE program, and the three Bikini aircraft with their personnel were placed ashore at Eniwetok and joined with the three aircraft originally based there. The probable ineffectiveness of these propeller driven aircraft had modern enemy planes entered the area contributed to this decision. After BRAVO all six fighters continued to operate from Eniwetok.

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9. Fighters were scrambled on four occasions, all in February, to identify air contacts that could not be readily identified as friendly. In each case the unidentified aircraft was on a prescribed flight path, but no flight plan information was available at the time of scramble. Two on the prescribed air route from Eniwetok to Kwadi failed before intercept could be made. One was identified as friendly almost immediately after the scramble. One was intercepted and proved to be a VP-29 aircraft on patrol.

Patrol Aircraft

10. VP-29, with its 12 PBY-6 patrol aircraft, was deployed to Kwajalein for a dual mission, as the Pacific ready duty mining squadron, and as part of the CASTLE security forces. Under this arrangement CTG 7.3 was to have operational control of 6 of the aircraft at all times, and of all 12 during the 48 hours preceding CASTLE shots. The 6 aircraft thus freed from CASTLE periodically were to train at Guam for their mining mission. This was done until BRAVO when intensified CASTLE duties placed upon the squadron precluded continuation of the training at Guam.

11. VP-29's primary mission in CASTLE was to conduct search and anti-submarine patrols in the Eniwetok/Bikini Danger Area to detect and assist in denying entry to any unauthorized vessels or aircraft. Added to this mission, and supplanting it to some extent in relative importance after BRAVO, was the one to conduct reconnaissance flights to detect shipping in expected or actual radioactive fallout areas during shot periods and warn it out of danger.

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12. To meet this combined requirement standard armed ASW patrols were flown in the Ranger Area throughout the Operation averaging one patrol every other night. In addition reconnaissance flights were flown preceding and following shots. The reconnaissance patrols covered two sectors; the Ranger Area, and the sector along the bearing of the predicted path of the radioactive cloud, i.e. the significant sector. Initially the first reconnaissance flights took off from Kwajalein early on shot day minus two. One aircraft searched the Ranger Area continuously, relieving on station, until a few hours before shot time. One aircraft searched the significant sector on minus two day, returning to base upon completion of the search. This flight was repeated on minus one day. A third significant sector search was made by one aircraft on shot day, after the shot, if it was requested by CJTF SEVEN. This was the general pattern of flights conducted for the first shot.

13. As a result of the contamination of the Japanese fishing vessel Lucky Dragon which was caught in the widespread BRAVO fallout despite its position outside the predicted fallout area, the VP-29 reconnaissance task was greatly increased on subsequent shots. The Eniwetok Ranger Area, which before CASTLE had been enlarged to include Bikini Atoll, was further expanded, with a different area prescribed depending upon whether the shot was to occur at Bikini or Eniwetok. The number of aircraft to search the new areas was increased to three. The significant sector was now to be searched by two aircraft, bringing to a total of five the number of planes VP-29 had to put in the

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air for each shot time reconnaissance. The frequent delays and postponement of shots and the short notice on which they were so often fired made searches on minus two day impractical; the task force sometimes remained in minus two day status continually for days while awaiting a break in the weather. Consequently the five plane intensified searches were made on minus one day only, and after a shot if required. Even then aircraft commenced many searches that were called off after late shot postponements. To reduce unnecessary flights to the greatest possible extent reconnaissance takeoffs were deferred until about 1330 on minus one day. No further contamination of itinerant vessels near the danger area occurred during CASTLE. As a precautionary measure CTG 7.3 was authorized to assume operational control of naval vessels passing through the fallout area to divert them if necessary before or after a shot.

14. Along with the increase in reconnaissance flights BRAVO effects brought additional employment to the patrol squadron in the form of three radiological survey flights over the atoll area to the eastward on BRAVO plus one day and a similar flight through the Gilbert Islands on BRAVO plus five days. These flights, combined with a shot day significant sector search employing two aircraft, a flight in support of Project 2.5a on shot day plus two and the task of furnishing aerial escort for a device movement from Eniwetok to Bikini on BRAVO plus two days required that CTG 7.3 retain control of more than the six aircraft originally intended for full time CASTLE employment.

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Continued greater employment of the squadron after BRAVO led to abandonment of the 6 plane concept, and all 12 aircraft were operated thereafter in support of CASTLE.

15. As an additional phase of its security mission the patrol squadron provided continuous aerial escort of all AEC device movements between Eniwetok and Bikini. VP-29 aircraft escorted CURTISS on the last leg of her January voyage to Eniwetok.

16. A special mission was assigned the squadron in support of the AEC World Wide Fallout monitoring program. It required extended flights over the downwind atoll areas both before and after each shot for airborne monitoring purposes. In addition eight special flights were made in support of an AEC Health and Safety Laboratory project instituted after the BRAVO fallout experience.

Underwater Detection Unit

17. Harbor entrance protection in the form of an underwater hydrophone installation was provided only at Eniwetok Atoll. The high cost of time guarding the two Bikini entrances plus shortage of equipment and trained personnel led to a decision not to establish such a system at Bikini. The Eniwetok installation functioned efficiently throughout the Operation with no attempts at unauthorized entry into the lagoon detected. The frequent diversion of surface security vessels to other employment somewhat vitiated the UDU's effectiveness, since such a system can only detect and partially evaluate suspect contacts. At times no surface vessel with ASW capabilities was available to support the UDU.

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SCIENTIFIC SUPPORT

28. Seven scientific projects included in the Task Group 7.1 effects test program received individual support from units of the Navy Task Group in addition to the general support rendered by the Test Pool, the helicopter squadron and all ships. Four projects required substantial support involving the almost exclusive use of specific task group units and often intermittent support from others; three were supported only by minor forces. All the projects requiring major support were Navy sponsored, included in the Department of Defense effects test program.

Project 1.4

29. Project 1.4 was an Office of Naval Research sponsored study of the behavior of a shock wave in water by means of underwater pressure vs. time measurements. It participated in every shot except KOON. Navy Task Group assistance was required to lay buoys, moor, service and recover instrument cans and record data telemetered to an aircraft at shot time. CHPSL, a salvage lifting vessel constructed on an LCM hull, a Navy manned PBY-5 aircraft equipped with telemetering devices, one of the five task group ATFs and a barge, YC 1068, were assigned to the task group to support this project. A Test Pool LCM was modified for the Project's use by addition of wooden decking, a guard rail and a small crane. By a special effort Shipalt ASSD-45 was completed to improve CHPSL's lifting capability before the operation.

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Project personnel requested that a barge be made available for their use, after they had completed preliminary mooring and recovery tests in Chesapeake Bay in October 1954. [redacted] was assigned to the task group for this purpose. [redacted] was the ATF usually assigned to the Project, although [redacted] and [redacted] assisted upon occasions. [redacted], whose primary function was support of Project 2.4, rendered some last minute assistance when it became necessary for the Project to make an all out effort on [redacted].

20. Soon after her arrival in the forward area [redacted] reported that she was developing severe and extensive cracks in hull and bulkheads with the result that she had only one fresh water tank still capable of carrying potable water. She continued working with the Project while her difficulties were studied. A representative of Pearl Harbor Naval Shipyard flew to the forward area to inspect [redacted]. It was finally decided that she should be replaced, and another ATF, the [redacted], was ordered in to relieve her. [redacted] arrived on 23 March and [redacted] departed the 26th. for shipyard repairs. Ironically, it was considered likely that the shipalt installation was partially responsible for her difficulties.

21. In the rough lagoon waters supporting units experienced considerable difficulty in handling the moorings and five ton instrument cans and in working alongside the cans in small boats. [redacted]'s lack of the lift capability that the shipalt provided to [redacted] was partially responsible, and the design of the moors made them difficult to handle.

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Project 2.5a

22. Project 2.5a, involving radioactive fallout studies conducted by the U.S. Naval Radiological Defense Laboratory, received heavy and exacting support from the task group. Two ATFs, ARAGE and ACME, were employed almost full time in the Project. It was their task to lay free floating dan buoys equipped as fallout collectors downwind from the detonation point outside the lagoon, then relocate them after the shot and recover them. In case of a shot postponement it was necessary that the buoys be recovered, serviced and replanted, immediately if the postponement was a brief one. With the great number of postponements that occurred in CASTLE this task became a heavy one. Even though the buoys were equipped with special radio transmitters, and the ATFs with special radio direction finder equipment, the buoys were hard to locate. The radio signal emitted by the buoys weakened greatly after several hours in the water, and was not of very great assistance in the hunt. VP-29 aircraft and the security ZEBs were often called upon to help in the search when they could be spared from other, more pressing duties. Once located, the buoys were hard to handle in the rough seas. The hand

ling problem was made more difficult by the design of the antennae that projected from the tops of the buoys; shaped like short umbrella spokes the antennae endangered the eyes of personnel handling the buoys and were themselves easily damaged. Fallout studies inside the lagoon were made by means of raft-borne collectors. A crane-equipped LCU handled the rafts. Despite the difficulties involved every effort

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was made to assist this Project in the successful accomplishment of its mission. It was considered the most vital of those sponsored by the Department of Defense.

23. An interesting development involving this Project was the discovery by many landing ships as the operation progressed that sharply defined patterns of low level radioactive contamination existed in the ocean area far downwind after a shot, in the water itself. On the BRAVO shot, with all their fallout buoys expended, personnel of this Project assisted ARC Health and Safety Laboratory personnel in a study of the phenomenon, with the aid of HUEY, HULA and VP-29 aircraft, monitoring and plotting the contaminated areas and obtaining water samples for analysis.

Project 3.4

24. The Navy Bureau of Ordnance had obtained approval late in the CASTLE planning period for inclusion of a program to test the neutralizing effect of high yield detonations on naval mines, - Project 3.4. The ships SHEA, a light minelayer; RECLAIMER a salvage vessel; and LST 1157, with two LCMs from Naval Beach Group One, and Explosive Ordnance Disposal Unit One were assigned to the task group specifically to support the Project. Arriving late in the Operation, the project participated in only one shot, UNION. The initial intention was to make a preliminary test by planting a few mines on one shot with the main effort on a later one. Uncertainty over the shot schedule led to the decision to dispense with the initial test, and on UNION the

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ships laid inside the lagoon seven strings of mines (123 in all), plaster filled but with complete mechanisms. One hundred mines were recovered after the shot, many of them contaminated. All obviously damaged mines were jettisoned after careful examination and photography; forty-eight in good condition were returned to Pearl Harbor for study. All recovery work was completed before YANKEE.

25. Project 6.4, the Navy Bureau of Ships sponsored project for proof testing atomic warfare countermeasures, has received extensive coverage in CEC 7.3 Final Report, and some in the Radiological Safety chapter of this installment, so a description of the Project is omitted here. The drone ships, YAG-39 and YAG-40, especially reactivated from the Maritime Administration "mothball" fleet, were necessarily devoted nearly exclusively to this Project. They were however used for another purpose, at least in planning, when their evacuation potential was depended upon in some of the earlier REDTAR sorties, thereby permitting other units to continue essential work at Bikini. YAG 39 was actually employed in an early REDTAR sortie laying fallout buoys for Project 2.5a. As tender to the YAGs, MELVILLE was employed almost exclusively on Project 6.4, assisted at shot times by YANCHEL. A PBM3 especially equipped to control the drones was used entirely on this Project. Two helicopters of HMR-362 were also fitted with drone control gear to back up the PBM if necessary.

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Minor Support

26. Boat Pool boats assisted two of the three projects requiring minor support. Project 1.6, a [redacted] study of water waves sponsored by the

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Scripps Institution of Oceanography, required an LCU especially equipped with decking, davits, a stern anchor and a fathometer to lay pressure-time gauges on submerged coral heads in Bikini Lagoon. Stanford Research Institute's Project 3.2 used an LCU modified by installation of a portable fathometer, a gyro-compass with three repeaters and a hand wire sounding reel to make accurate fathometer surveys of the KOA, UNION and KOON craters. This LCU was also used in rocking duties with the portable special equipment temporarily removed. A Project 6.6 station at Rongerik Atoll was operated during UNION and YANKEE by Project personnel who lived on PC 1546 and serviced the station during brief periods ashore on contaminated Eniaetok Island. PC 1546 was stationed at Rongerik on these two shots with personnel of this Evans Signal Laboratory Project aboard, together with Air Force personnel who operated the Rongerik weather station in the same manner.

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27. BELLE GROVE moved three barge loaded devices from Eniwetok to Bikini: those for KOA, UNION and YANKEE. LST 762 moved the device for KOA, and LST 551 portions of the one for KOON, since they were not mounted on a barge and, as equipped, could be better transported by LST. CERTIFIED, especially modified to transport and store material of this sort, carried portions of several devices between the two shells.

LST

28. A study of the shot barges' configuration as compared to BELLE GROVE's well dimensions conducted long before the operational

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period began had led to the conclusion that movement of the barges in BELLE GROVE was practicable. Some adaptation was necessary, and since the design of the barges was already fixed, the adaptations were made in BELLE GROVE. Prior to her departure from San Diego the after section of her super-deck (over the well), was removed and left behind. Two more sections of this deck were taken off at Eniwetok and stored on Parry Island until the end of the Operation. By retaining these two sections until her arrival in the forward area BELLE GROVE was able to carry a larger portion of the Boat Pool's spares and equipment. A special cribbing and shoring had to be installed in the well before each barge was loaded, and removed after the barge was discharged. The removal of the superdeck throughout most of the Operation handicapped personnel based on BELLE GROVE, since by its removal she lost her helicopter landing platform.

29. Before BELLE GROVE loaded a barge for actual detonation purposes she had benefitted by the experience gained in rehearsals described in an earlier installment. As a result of this experience a standard pattern was evolved for device movements in BELLE GROVE. On a typical movement mission she transferred her Boat Pool personnel and boats to BAIROKO at Bikini, received cargo laden LCMs in her well and left for Eniwetok during the afternoon two days before the device was required at Bikini. Upon arrival at Eniwetok next morning she anchored off Parry Island on a berth close in and well sheltered, flooded down and discharged her LCMs, pumped up and installed the

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special cribbing, assisted by 20 7.5 personnel. When the cribbing was complete she again flooded down, took aboard up to two LCMs loaded with cargo, and then was ready to receive the barge. Shortly after noon the device barge was brought out, placed in position astern, and warped into place over the special cribbing. BELLE GROVE then pumped up, installing shores, chains and cables meanwhile to secure the barge in the well. She was then ready for the movement to Bikini.

30. On arrival at Bikini BELLE GROVE proceeded to the only satisfactory lee the shoal afforded, that of Bikini Island. Once inside the lagoon she commenced flooding down. When she was anchored and ready to discharge the barge, securing cables were cast loose and the barge was started out of the well by LCMs. It was then taken in tow by an ATF and delivered to the shot site where LCMs secured it in moorings prepared earlier.

LST

31. On a typical LST device movement the assigned vessel beached on Parry Island two days before the device was required at Bikini, and commenced loading cargo to be carried in addition to the device. With this loading completed next day about noon the device, loaded in its special trailer, was towed to the LST by tractor. The complete equipage, device, trailer and tractor, was taken aboard the LST, secured for the voyage with specially fabricated cables and chains and screened from observation by canvas awnings. The LST then retracted and sailed that afternoon for Bikini. There the LST beached on Enimman Island and

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an LCU beached alongside. The entire device unit then was taken from the LST, loaded in the LCU, transported to the shot island and there disembarked.

Security During Movement

XI. All device movements between shells were escorted. In each case a Task Unit was formed, commanded by the senior officer in the vessels involved, composed of the ship transporting the devices, one or more escort vessels, and a VP-32 patrol aircraft. The LST or LSD received its surface escort prior to the commencement of loading, and retained it until the devices had been discharged. In the case of LSD movements the escorting vessel remained until the barge had left the LSD, after which the normal security measures in effect at Bikini prevailed. For the LST the escort was terminated when the device was off-loaded at Enimmen. Security guards for the devices within the LSD or LST were provided from CTF132's Marine detachment. It had originally been planned that this be a responsibility of the Task Group 7.2 Military Police detachment, but use of Marine Corps personnel, since they were available, was considered more appropriate. The Marine guard relinquished the watch to Military Police personnel when the device was discharged at Enimmen Aalaal by an LST, but continued guarding barge-loaded devices until the pre-shot evacuation on shot day minus-one. Enroute to Bikini the LSD or LST steamed at maximum speed under conditions of darken ship and radio silence, without resort to weaving or zig-zagging. All ships in the Task Unit had full boiler

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or engine power available for use in emergencies. Movement reports were made by Operational Immediate classified messages. The Task Unit Commander and Commanding Officer of the transporting ship had the usual instructions for jettisoning the device should circumstances require it. Scientific personnel accompanied the device to tend it and act in an advisory capacity. All device movements were completed in a satisfactory manner.

LST BEACHING

23. During the operational period the shortcomings of the LST beach at Enjuman Island, Bikini continued to present a major problem. Every LST that beached there during the operation - four vessels in all - were used at various times - was damaged on this beach. Despite the hazard involved the LSTs beached and retracted at Enjuman 17 times between 24 January and the detonation of KOON on 7 April, moving over 6500 measurement tons of cargo between the two atolls.

24. There was no remedy for the difficulties presented by the condition of this beach. The coral bottom with its unsuitable gradient, the short pier, the strong winds from the port quarter and the undesirable movement of sand and coral fragments on the lagoon bottom by wave action and currents were a combination that could only be endured out of operational necessity, not corrected. The change in the shot schedule that moved KOON ahead to 7 April in effect solved the problem, at least as far as Operation CASTLE was concerned. The shot, fired on the western end of Enjuman near the LST landing, obliterated the pier and eliminated any further need for beaching on the island.

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35. Fortunately, no ship incurred damage on Eniumen sufficient to put it out of commission. The only severe bottom damage incurred by an LST beaching was received by LST 551 at Rongerik early in the operation. LST 762 was placed in upkeep status for 20 days to replace an inoperative main generator and for other repairs, and concluded the operation with a broken main shaft, but these casualties were not directly attributable to her repeated beachings at Eniumen. But all LSTs had their operating efficiency impaired by sprung bows, holed hulls, and bent screws. The most significant beaching accident at Bikini occurred on H-D plus three days, when LST 525, beached and fully laden with cargo being evacuated from Eniumen, was unable to get off the beach. Efforts to assist her to retract were unsuccessful until 36 hours later, at 1000 on D-2, when on a high tide, with all cargo unloaded, the concerted efforts of two ATFs, 15 LCMs and her engines backing full freed her from the beach. The action of the currents had built up a sand bar under her, just forward of the shaft, while she was loading. This same sandbar continued to add to the LSTs' troubles throughout the period.

RADIOLOGICAL SAFETY

36. During the latter half of the CASTLE test series, radiological safety in the task group became a relatively minimum problem. The task group's experiences with radioactive contamination in [redacted] made all subsequent contacts with this phenomenon appear minor, as they actually were in comparison. No ships received any significant

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contamination from fallout on either UNION, YANKEE or DIXIE. Occasional operations in slightly contaminated water were conducted but without ill effect on either ships or personnel. Some VP-29 aircraft received slight contamination in their post-shot flights, as did some of the HSS-2&2 helicopters.

Small Craft

37. The Boat Pool LCMs, and the two barges, YCV 9 and YC 1081, that were customarily moored or anchored in Bikini Lagoon during shots were again contaminated on UNION and YANKEE. The intensities after UNION averaged between 100 and 200 mr/hr, but the contamination was particularly tenacious and was not materially reduced by salt water flushing. Repeated scrub-downs with strong solutions of detergents and lye and wire brushing of "hot" spots brought the levels down sufficiently to permit operation of the craft on UNION plus three days. The intensities after YANKEE were much higher, with average readings of about 3 R/hr and some as high as 7 R/hr. Initial decontamination measures reduced the levels to a 350 mr/hr average, but thereafter intensive efforts reduced them only very slowly. Complete decontamination at this time would have required extensive removal of the surface paint or rust with rotary powered wire brushes. [redacted] not contemplated. By the time they reached Pearl Harbor under tow it was expected that the combined action of radioactive decay and contact

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washing by breaking seas would reduce the radiation levels to a point where little or no shipyard decontamination would be necessary. The LCUs were required only for roll-up of Bikini and Rongerik. They were decontaminated to an average reading of about 30 mr/hr, permitting their crews to operate them for short periods of time without acquiring too great dosages. The crews did not again move back and live aboard. By [redacted] plus ten days the LCUs were reading an average of 10 mr/hr. Decay during the period from their release from [redacted] to their resumption of operations elsewhere was expected to reduce their contamination sufficiently to preclude shipyard decontamination. One was loaded aboard [redacted] for shipment to Pearl Harbor, three were left at Eniwetok to await lift to the Western Pacific.

YAGs

36. The biggest decontamination problem presented to the task group was that of the YAGs. For experimental purposes they were purposely exposed to heavy fallout on three shots, [redacted], [redacted] and [redacted]. YAG 39 was equipped with washdown gear, YAG 40 was not. By keeping the two ships in close company and operating the YAG 39 washdown gear, comparison of contamination levels on the two ships served to show the washdown gear's effectiveness. Decontamination after each shot was necessary to permit manned operation of the craft up to shot time minus a few hours on the subsequent shot, and to get a true picture of new contamination received. Initially both ships were operated as drones maneuvered from an airborne control station

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while in a fallout area. Difficulty was experienced in maneuvering the two ships close enough together to obtain a true comparison. YAG 39's washdown gear was effective enough in holding down her contamination levels to permit her to be manned by a skeleton crew during the latter shots. This was done successfully on both SKINK and YANKEE.

39. Decontamination of the YAGs was a wholesale effort supported by large numbers of personnel from other task group ships. The operations were carried on with the YAGs at moorings in Eniwetok lagoon and were essentially a large scale application of the methods employed in decontaminating the Boat Pool boats. After YANKEE an intensive decontamination was carried out to permit the YAG crews to live aboard on the return voyage to the United States. By 25 May average topside readings on YAG 39 were down to 7 mr/hr with average interior and below deck readings of 2 mr/hr. It was expected that these levels would be down to 4 mr/hr and 1 mr/hr respectively upon arrival in Pearl Harbor, and to 3 mr/hr and 0.5 mr/hr upon arrival in San Francisco. YAG 40's intensities were considerably higher: 40 mr/hr topside and 8 mr/hr inside and below decks on 25 May. Intensities in these locations were expected to be 25 mr/hr and 4 mr/hr respectively at Pearl Harbor, 15 mr/hr and 2 mr/hr at San Francisco. Many YAG personnel had already received dosages in excess of 3.9 Rs CAPT SEVIER granted permission for them to accumulate larger dosages in order that the voyage could be made. YAG 39 personnel were expected

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to receive between 0.5 and 1 R on the trip to Pearl Harbor, YAG 40 personnel between 3 R and 5 R. Their total dosages after the trip, while high compared to the Task Force Maximum Permissible Exposure of 3.9 R, would be well below 15 R and would represent no health hazard. Two men with high dosages were transferred from the YAGs to the MCALA before departure from Eniwetok. Additional transfers were to be made at Pearl Harbor where replacements could be obtained, if actual accumulated dosages warranted such action. Stringent radiological safety precautions were prescribed for the voyage. MCALA and the YAGs departed Eniwetok 26 May.

Radiological Clearances

40. All other task group units left the forward area with radiological contamination no substantial problem. They were all granted operational or final radiological clearances prior to or shortly after their departure. A few had "hot" spots acquiring handling radioactive equipment during the roll-up; these were to be decontaminated enroute. It was not expected that any would require shipyard decontamination. Personnel dosages, while they had continued to increase slightly after BRAVO, generally remained well within the Task Force MPE, except in the case of personnel who had approached or exceeded this limit early in the operation.

BOAT POOL OPERATIONS

41. The Navy Boat Pool operated a total of 29 boats; 5 LCU; 19 LCM; 1 LCM; 2 LCPL; 1 AVR; 1 RBR. 1 LCM was assigned to the Underwater Detection Unit at Eniwetok, and 2 LCMs and the 1 LCPL

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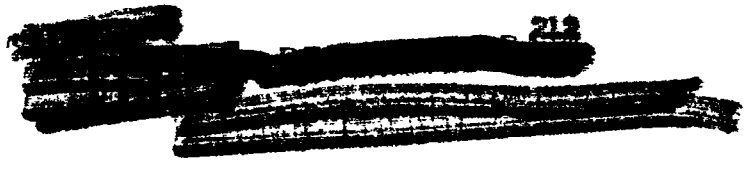

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were stationed there also, supported by the Task Group 7.2 Navy detachment, and operated at various times by the Navy staff ashore on Parry Island, Eniwetok Harbor Control, and SOPA Eniwetok. The remaining boats formed the main body of the Boat Pool, based at Bikini. The Boat Pool was under an Officer-in-Charge, Lt R. E. Watkins, USN, with three officer assistants, and approximately 225 enlisted personnel manning and maintaining the boats.

42. Primary support for the Boat Pool was furnished by BELLE GROVE. To provide additional work and stowage space a covered barge (YFN) had been brought to Bikini, and was fitted out by Boat Pool personnel. During periods when BELLE GROVE had to be absent from Bikini, BAIROKO usually took over her boat pool support duties. Upon occasions CURTISS and LST 752 performed this task.

43. The last Boat Pool boats and personnel arrived in the area in BELLE GROVE, on 20 January 1954. Advance groups of boats and personnel had arrived in November and December 1953. The Boat Pool had overhauled its boats completely before departure from Coronado; all were expected to be one hundred percent operational two days after arrival in the forward area. A few minor mechanical difficulties occurred the first few days, but all booking requirements were met. Boat crews were briefed on Bikini atoll conditions, and sent out on jobs with the civilian contractor's boats, already operating at Bikini for some time, in order to acquaint them with the landings on various islands, and the courses, time and distances and navigational

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dida pertaining to the shell.

44. The contractor's Boat Pool and the Navy Boat Pool provided a coordinated boating service to all task groups at Bikini. Boat assignments were made by a joint scheduling panel which met nightly on Enimanu Island and allotted boats, based on users' requests for service. The Navy boat dispatcher's headquarters was on the YFD. In addition a Navy dispatcher was stationed with the contractor's boat dispatcher on Enimanu to coordinate the use of Navy boats by the civilian task groups. All boats were radio-equipped. In time all major ships were furnished boat pool radios as well to facilitate contact between boats and quarterdeck personnel. After [redacted] the contractor's boat dispatcher moved aboard AINSWORTH, and the scheduling panel met there. This joint operation functioned very smoothly, despite some early misgivings on the part of both participants.

45. Boat operations at Bikini were complicated greatly by the normal choppy state of the lagoon. The location of the base of operations in the southern end of the lagoon, with shot sites generally in the northern end, caused the ship anchorage and principal boating area to be almost an open roadstead. While the reef did break up the ocean swell, the lagoon was so large that the southern anchorage had no shelter whatsoever from the prevailing northeast trade winds. The winds were seldom below 17 knots and were frequently in excess of 20, with the lagoon in a constantly choppy state. Whenever the winds exceeded 20 knots the lagoon waters were rough, with a small chop

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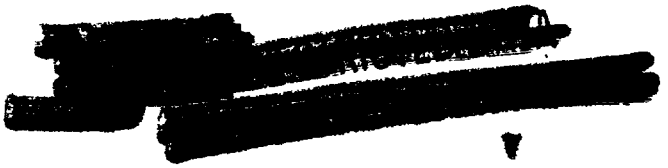
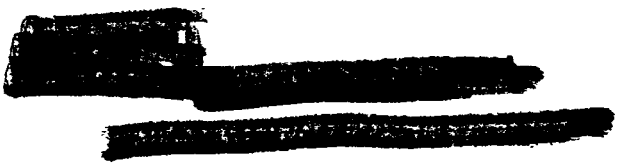


made boating hazardous. Ships at anchor could not stream their boats to booms without danger of lines parting or cleats carrying away, and in any event their boats were too small to carry more than a few passengers safely except on unusually calm days. As a consequence ships depended on the Boat Pool for a great deal of their boating requirements.

46. The LCMs were the "work horses" at Bikini. They made a total of over 14000 trips, carrying 4400 tons of cargo and over 47000 passengers. While many of the trips were short ones, from ship to nearby ship or island landings, these figures represent noteworthy accomplishment by the Boat Pool.

47. The Boat Pool's LCUs, except for LCU 1348, performed a variety of services, of which about 75% involved carrying cargo between Eniwetok and other islands, and to ships. LCUs also laid and picked up buoys, carried recreation parties and launched and picked up DUKWs. LCU 1348 was employed almost exclusively in support of Project 3.2. On several occasions LCUs loaded with equipment were lifted in BELLE GROVE and carried to Eniwetok and back. On 1 February 1954, LCU 1225, towed by an ATF, carried Air Force equipment to Rongerik Atoll to complete the job of establishing a weather station there, begun in January by LST 551. Many LCUs assisted in rolling up this station after BRAVO was fired.

48. The two LCPLs and motor whale boat were used to transport boat crews between ships and the boat moorings, and for a variety



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of odd jobs in the anchorage off Enjumen. The ATR was turned over to [redacted] for SAR duties, and occasionally made special runs in the lagoon, although the waters were usually too rough for her to be considered as a comfortable means of transportation.

49. The Boat Pool was able to maintain its boats in full operational condition only because it had come to the forward area with a complete supply of spares, adequate maintenance personnel and the equipment necessary to effect extensive boat repairs. The boats' employment in rough seas with frequent landings on rough coral beaches resulted in recurring minor hull damage. To keep the boats available for daytime use the maintenance and repair work was normally done at night. Each boat received an inspection before securing for the night, and necessary repairs were accomplished before its first scheduled run next morning. Maintenance and repair personnel logged a total of over 10,000 hours work on the boats during the Operation. At Bikini they performed considerable maintenance and repair on Haines and Mercer boats, a service Haines and Mercer reciprocated by repair of Navy boats at Eniwetok.

[redacted] HELICOPTER OPERATIONS

50. The 12 HUS 2S2 helicopters, 20 pilots and 100 ground personnel assigned to CASTLE from MCAS El Toro, California, with temporary assistance from 3 Air Force helicopters prior to BRAVO, effectively carried out the Navy Task Group's mission to operate a ship to shore and inter-island helicopter lift system at Bikini to support

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pre-shot operations and post-shot flights for damage survey and recovery of scientific data.

52. The helicopter squadron was attached to BAIROKO for the operation. Prior to ZEBRA, 6 aircraft were based ashore on Eniaman Island with pilots and minimum ground crews. Assisted by the Air Force planes they flew two continuous sweep schedules during daylight hours, one clockwise, one counter-clockwise, around the shoal, with stops on islands where work camps were established. Passenger space for personnel of TG 7.1 and TG 7.5 was controlled by a civilian dispatcher employed by Task Group 7.5 who worked in close coordination with the ZEB-362 duty officer at the Eniaman Island helicopter pad. The remaining aircraft were retained aboard BAIROKO and used for ship-to-shore flights and special flights coordinated through CTG 7.1 operations representative on Eniaman. The aircraft were rotated between ship and shore for maintenance which was all performed aboard BAIROKO. In addition to the CVE only one ship, ESTES, had a helicopter platform in place. Since she was seldom at Bikini during this period the ship-board terminal of most ship-shore flights was BAIROKO. YCV-9, a barge provided for use as a helicopter landing platform, was anchored near CURTISS, leading the shot site, to provide helicopter service to personnel based aboard. On later barge shots the YCV served the shot barge in a similar manner.

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53. After ZEBRA the Air Force helicopters were returned to Eniwetok, and all local air transportation at Bikini was provided by

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the Marine aircraft, operating off [redacted]. Operations were directed by the CVE's Air Operations Section in close liaison with CTG 7.1 operations representatives now based aboard [redacted] to coordinate TG 7.1 and TG 7.5 lift requirements.

53. The helicopter airlift was conducted without a serious personnel casualty. One major accident occurred on 28 January when an aircraft crashed on deck upon take off from the [redacted], due to a mechanical failure. Passengers and crew escaped with minor bruises. The landing signal officer was slightly injured when he was struck by a fragment of the rotor blade. One aircraft made a forced landing on a sandspit at Bikini Island on a [redacted] mission one day while evacuation for the shot was in progress. No one was injured; the aircraft was repaired and returned to [redacted] without any significant delay. With most flights conducted over water, and many over extremely radioactive areas, [redacted] exercised close control during all flights, with helicopters making frequent position reports. Escort helicopters often accompanied aircraft on missions over "hot" areas.

AIDS TO NAVIGATION

54. Prior to arrival of the task group in the forward area a navigational buoyage system had been installed at Bikini and channels and turning basins wiredragged and marked. A special limited edition of the HO Chart for Bikini Atoll had been prepared and issued to task group ships. Arrangements had been completed with CTG 7.5 for retention of structures on islands of the atoll for use as navigational

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side. Even before the first shot of the series two buoys were missing, presumably due to the high winds and rough seas that prevailed at Bikini. Thereafter, wind, weather and the blast and water wave effects of the shots severely crippled the buoyage system and eliminated many of the shore structures that ships had been using for landmarks. The blast and water waves following shots had no appreciable effect on unlighted buoys at all distant from the zero point, but damaged many of the lighted buoy mechanisms even at relatively great distances from the detonation. Lighted buoys close to the shots usually had their upper structures blown away, and often sank several days after the damage was received, presumably from slow leaks. The lack of lighted buoys made night movements in the lagoon and through the entrances particularly hazardous. For this reason night movements were held to an absolute minimum. The absence of good landmarks made offshore navigation difficult.

55. There was no arrangement for repair or replacement of buoys by the Coast Guard as the operation progressed, nor was there a supply of replacement buoys available. Limited repairs were undertaken by BAKER, CURTISS and the Boat Pool under the Bikini Harbor Unit, using buoys recovered after they sank or went adrift. When night movements were planned as they were in series for some of the later shots at Bikini, seadrome marker lights were placed on essential but inoperative lighted buoys.

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56. CTO 7.3 has made a detailed report of the condition of the Bikini buoyage system to the Navy Hydrographic Office for reference use in preparing the lagoon for future operations.

MOORING BUOYS

57. Considerable time and expense went into the provision of adequate mooring buoys at both atolls, particularly at Bikini. There a full set of small craft moorings was planned before the operation began, along with three telephone equipped large ship mooring buoys. During the operational period the small craft moorings were put to full use, in fact more of them would not have been amiss. Up until the first shot the large buoys at Bikini were used regularly by HELLE CROFT and BAIRDED, and by ESTES when she was at Bikini. After BRAVO little use was made of the telephone buoys. The telephone equipment was rendered inoperative by the shot, and the frequent surface and unscheduled movements to which the large ships were subject made anchoring more practical than mooring. AM/TEC radio telephone equipment and other voice radio circuits effectively substituted for the loss of the telephone system, except that they lacked the security of the telephone system. The large ship moorings at Eniwetok were little used since after BRAVO the ships were seldom there long enough to warrant mooring. The in-port DDE at Eniwetok was the principal user of the telephone buoys there, regularly mooring to one off Eniwetok Island.

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LOGISTICS

1. In preparation for CASTLE all ships and units had been directed to prepare for a 120 day operational period at a location remote from supply points. All units were to be self supporting to the greatest extent practicable, with the large ships assigned responsibility for the support of smaller ships whose capabilities for self support were limited.

2. CINCPACFLT exercised his responsibility for logistic support of Joint Task Force Seven through his principal logistic agent, COMSERVPAC. Supply of aeronautical material for naval air units was the responsibility of COMAIRPAC. COMSERVFORCE was assigned responsibility for coordinating the logistic support provided by West Coast activities.

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3. All refrigerated provisions were ordered through COMSERVFORCE and shipped by Naval Supply Center, Oakland in regularly scheduled COMSERVPAC refrigerator vessels as cargo consigned to the individual requisitioning ships. "Easter" schedules were adequate, the larger ships with adequate storage space seldom lacked fresh or frozen provisions in good condition. Smaller ships with insufficient storage space to maintain stocks between supply ship schedules had to depend upon the larger ships for assistance they were not always able to give, and as a consequence were not always as well supplied.

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4. Requirements for dry provisions, clothing, small stores, ships store stocks, general supply materials and spare parts were submitted to Naval Supply Center, Oakland and shipped as consigned cargo in regularly scheduled cargo ships. Their schedules too, were adequate, but an abnormal length of time was required to obtain delivery, often from 30 to 60 days after submission of requisitions. Unusually high wage rates on many items led to heavy requisitioning despite the 120 day supplies stocked for the Operation. Unexpected developments such as the full-time presence of large numbers of evacuee personnel aboard ship at Bikini after BRAVO contributed to this high usage. Loss of the recreation area placed a heavy drain on ships store stocks of recreational gear. Decontamination operations consumed huge stocks of supplies. Unable to foresee a definite ending date to the operation, ships were forced to continue ordering to keep adequate supplies on hand.

5. A number of problems arose concerning delivery of supplies and refrigerated cargo. The frequent scheduling and postponements of shots complicated the entry of supply ships into the area and their movements between the two shells and on to their next ports, requiring careful monitoring of their operating schedules. At Bikini the frequent movements of ships on short notice made it difficult to schedule supply ships into that shell with sufficient time to unload. Since Boat Pool assistance was needed in the unloading process, care had to be taken that the unloading did not interfere with essential boat schedules in support of the test operations. Loading consigned

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cargo without knowledge of consignees' operational commitments at the time of unloading inevitably resulted in the necessity of tunneling for stores, overcarriage of cargo and unnecessary handling. Transhipment of cargo between shells was a normal occurrence. There were no adequate and secure facilities ashore at Eniwetok for temporary storage of Navy stores offloaded for transhipment. Losses due to misplacement, pilferage and exposure to the elements resulted. Occasionally supply ships carried two scheduled assignments of provisions for a single ship, beyond the capacity of the consignee to receive. Adequate shore storage would have benefitted the task group greatly.

FUEL REPLENISHMENT

6. Replenishment of fuel presented equal difficulty. The complications arising from shot postponements and frequent ship movements at Bikini affected refueling even more than they did the other supply vessels, since it was usually necessary for the larger ships to get underway and remain at sea for several hours to receive fuel. Wind and the lagoon currents caused ships at anchor to yaw over a wide arc, and a frequent swell made lying alongside undesirable. Fueling schedules were developed to meet the situation prevailing upon the arrival of a tanker, and by judicious topping off of smaller ships by larger ones prior to the tanker's arrival the number of ships refueling directly from SERVPAC tankers was held to a minimum. ALMENTEN, the MSTS transport, presented a particular problem, for she had never fueled at sea, and one refueling was essential before her

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departure. Eventually an opportunity was found to send her to Eniwetok where she was fueled at anchor by YO 122.

7. At Eniwetok the lack of shore storage for Navy special fuel oil presented a problem. Storage afloat was provided by YO 122 with a capacity of only 6000 barrels. Between monthly CINCPAC allocations the DDEs at Eniwetok could soon exhaust the YO's fuel supply. With CURTISS, ESTES and RANDOLPH at Bikini after REHAB the DDEs were left without a source of fuel short of a trip to Bikini to fuel from one of the larger ships. Considerable planning to take advantage of scheduled inter-atoll movements and careful expenditure of the YO's supply were necessary to keep the Eniwetok DDEs fueled.

AVIATION SUPPLY

8. VP-29 encountered an unforeseen supply problem that was solved with the assistance of Naval Station Kwajalein and Naval Air Station, Barber's Point supply activities. The P2V5 was a new aircraft; the usage data from which allowance lists for the Operation were derived was based on estimates, and experience with similar type aircraft. As soon as operations commenced it became obvious that stocks of many items were inadequate. Within the first 60 days the squadron had to submit almost 1500 APA requisitions. Seventy percent of the requisitioned items were furnished on a [redacted] basis by the Kwajalein base supply department, backed up by Barber's Point. The remainder were furnished through regular supply channels. As the Operation progressed the squadron procured material through regular channels on a priority basis and built up its own supply stocks.

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MAINTENANCE AND REPAIR

9. Repairs to ships, boats and aircraft in the forward area were accomplished without the facilities of a repair ship or base ashore. The principle of self-sufficiency applied here as well. When maintenance and repairs in small ships were beyond the capacity of the ship's force, [redacted] furnished assistance. The Boat Pool had its own repair section, supported by [redacted]. They assisted Holmes and Narver in effecting repairs to the contractor's boats at Bikini, and in return received some assistance from Holmes and Narver in the repair of Boat Pool boats at Kwajalein. The airships had their own maintenance organizations. In most cases ships were able to effect repairs successfully without outside assistance. Holmes and Narver aided LST 782 in installing a generator at Navy expense. LST 782, LST 551 and [redacted] were forced to return to Pearl Harbor for major repairs. APACHE obtained repair assistance at Naval Station, Kwajalein. The biggest problem in maintenance and repair was the impossibility of ships observing proper upkeep schedules. All suffered to some extent from this lack, with the many smaller ships, the LSTs, ATFs and DDEs suffering the most.

RECREATION

10. A highly successful and well organized recreational area for the task group was established early in the operation on Bikini Island. Task group personnel built the recreational facility under the direction of Commanding Officer, [redacted]. Funds, equipment

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and athletic gear were borrowed from COMSERVPAC. Bikini afforded a swimming area, baseball and softball diamonds, horseshoe pits and facilities for other games. Buildings left from Operation CROSSROADS were repaired and used as clubs, where beer, liquor and soft drinks were available. Ships held barbecues and picnics; on several of these the hill-billy band from CURTISS provided music.

21. When BRAVO contaminated Bikini use of the area had to be discontinued. After radiation intensities had decayed enough to permit work on the island for short periods the equipment installed there was recovered, and later returned to COMSERVPAC along with the funds borrowed to finance the venture. Profits from liquor, beer and soft drink sales were more than enough to repay the loan, the excess was distributed among task group units' recreation funds.

22. After the loss of the Bikini recreation area no shore-based recreational facilities on such a scale were again available at Bikini. A small island across the lagoon "cool" enough for occupancy was used briefly for beer and swimming parties. It was heavily contaminated on the third shot. Late in the Operation contamination on the desolate tip of Eneu Island was found to be low enough to permit its use by recreation parties. Three tents, and a refrigerator recovered from Bikini Island were installed there. One drowning occurred in the lagoon off this island. Shipboard recreational activity substituted, not too effectively, for the lack of a suitable land area.

23. For the few ships at Eniwetok, CTG 7.2 recreation facilities were made available. Japtan Island at Eniwetok, where the Navy rep-

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reshim area was located during Operation XVI, was used occasionally by ships' recreation parties. Although no attempt was made to install any facilities there it provided a good location for swimming and shell hunting.

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VII

COMMUNICATIONS

1. The communications facilities of the task group headquarters ashore were fully activated by 24 January 1954, when CTG 7.3 and the remainder of his staff arrived on Parry Island. In addition to the all-Navy CW and UHF voice circuits operated by flag personnel, the facilities of the CTF 69WIN teletype message center were made available to CTG 7.3, for use in handling inter-atoll and out of the area traffic.

2. The major communications training aims during the period CTG 7.3 was ashore were to familiarize Navy communication personnel with both the task group and task force organizations; to obtain efficient operation of Navy manned CW and voice circuits, and to accustom naval personnel to the joint communications procedures prescribed for inter task force communications.

3. Good communications between such widely separated but interdependent units of the task group as the security forces, which included VP-29 on Eniwetok (served by joint Navy-Air Force facilities), fighter elements on Eniwetok and Kwajalein (served respectively by Air Force and Army facilities), surface security elements afloat in EDZs, and the 7.3 Underwater Detection Unit at Eniwetok (served by Army facilities), required a practical knowledge of traffic routing and local procedures on the part of supervisory and operating personnel. A growing familiarity with task force call signs, an increased understanding of alternate means of communications, and the establishment

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of standard procedures for the handling of routine task group operations, enabled the headquarters and afloat communications centers to carry the rapidly increasing volume of traffic prior to [redacted].

4. Essential to CTG 7.3 was continuous CW contact with all units afloat, including those with a limited number of communications personnel and equipment. Normal fleet operations did not provide Navy operators with the experience they needed to operate and control successfully, high speed CW circuits like the Task Group CW Comms, with from 15 to 23 stations on the net. Dispersal of task group units between shells, which precluded extensive use of visual and voice communications, and a reluctance to utilize fully joint ship-shore teletype facilities, resulted in an overload on CW circuits which threatened to break down effective communications between CTG 7.3 and units outside of visual and UHF range. Marked improvement in operator proficiency as a result of experience on the circuits, combined with strict circuit discipline exercised by net control, pooling of the best qualified operators on large ships, and indoctrination of communication officers upon arrival of ships in the area, greatly increased the efficiency of Navy CW circuits.

5. Task Group 7.3 personnel, accustomed to Navy teletype and radio telegraph procedures, encountered some difficulty in using the facilities of other task groups, and with the joint teletype procedures prescribed by CINCPAC. Basic differences in service operating practices, such as the use of predetermined routing and transfer of traffic from CW to teletype circuits by the Navy, or the use of cadress

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headings and procedures adapted to strictly "point-to-point" communications employed by Army activities, required both experience and resolution on a command level before maximum Navy use of the extensive teletype facilities of the Task Force was effective. Promulgation by CTF SEVEN and CTG 7.3 of a standard routing for teletype traffic, reduction in the use of codress headings by JTF SEVEN activities, and increased familiarity with joint procedures and the operating practices of the Kwajalein Relay Center, increased the efficiency of Navy use of the joint ship-shore teletype nets.

6. The tape scrambling crypto devices (Sigtot and Sumcon systems) installed for joint use at Parry, Eniwetok, Kwajalein, Bikini, and aboard ESTES and BELMONT, proved to have limited use in TG 7.3 communications. Used successfully by staffs embarked in ESTES for "point to point" communication, they appreciably relieved the crypto load at the shipboard terminal. However, messages originated by shore-based commands, addressed to task group units afloat and encrypted by these devices, placed a recrypt ion responsibility on shipboard relay centers, and thereby increased the workload and overall delivery time. Sigtot equipment was not used by CTG 7.3 after he moved to USS CURTISS on 6 March.

7. A heavy requirement was placed on the Navy crypto facilities ashore and afloat, by the differences in cryptographic allowances of units under CTG 7.3 operational control. In anticipation of a high percentage of encrypted traffic during CASTLE, Navy Class XII

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(machine crypto system) allowances had been obtained for all TG 7.3 ships except the USS [redacted], and YAG's 39 and 40. [redacted] did not arrive in the area until just prior to HARDTACK. Employment of the YAG's prior to HARDTACK was such that mail or guard mail delivery of classified messages was an acceptable alternative to multiple encryptions. After HARDTACK the Project 6.4 headquarters on Ferry Island accepted communication responsibility for the YAGs when they were in port at Kwajalein, and [redacted] acted as guardship for them when they were operating at sea during shots. After HARDTACK, a class III allowance was placed aboard the [redacted]. At no time was CTG 7.3 able to send urgent classified matter simultaneously to all ships in the task group by means of a single machine encrypted message. Unscheduled replacements and additions to the task group continued the necessity of multiple encryption of all messages addressed to "T.G. 7.3". Incorrect use of Class II cryptosystems by task group units resulted in nine reported incidents involving practices dangerous to security.

4. The passage of time, during which communications procedures for working TG activities were standardized, the movement of TG 7.3 afloat, and the concentration of ships within visual and voice communication range at Bikini, all served to increase the efficiency of Navy communications. The proximity of [redacted], [redacted], and [redacted] at Bikini after HARDTACK permitted the establishment of AM/TRC telephone and teletype nets to serve staffs embarked, which materially reduced requirements placed on CF and ship-shore facilities. Use of UHF voice nets, and

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authorization by CTG 7.3 for the transmission of confidential messages in the clear by visual means launched traffic on CW circuits. The centralization of the ship-shore relay function and not control of the task group CW common aboard the flagship further reduced relays, and increased ship-shore flexibility.

COMMUNICATION REHEARSALS

9. A Task Force communications conference was held at CJTF SEVEN Headquarters on 9 February in preparation for the first full scale shot rehearsal. Included in the agenda was a discussion on the handling of high precedence "emer" traffic to be originated during shot time, and destined for addressees outside of the JTF SEVEN operating area. It was concluded that all such traffic would be originated on board NCTCS by staffs embarked, and processed through an officer watch established by CJTF SEVEN. As a result of this conference, a list was made of all persons throughout the task force authorized to release traffic aboard task group ships. CTG 7.3 promulgated this list and established the policy that commanding officers were "not responsible for messages released by passengers or staffs embarked, and sent over circuits officially operated or controlled by such passengers and staffs, or for the classification or contents of messages released by individuals whose names were listed."[1]

10. On 16 February a communications rehearsal involving NCTCS, BAIROKO, CURTISS and ESTERHAZY was conducted by CJTF SEVEN concurrently

1. CTG 7.3 Instruction CR300.2

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with the TG 7.1 air rehearsal in the Bikini area. Air control and ship-shore circuits were activated, in addition to all normal underway circuits. The voice-time announcements originated by the firing party in the Enya Island bunker were received and rebroadcast on the UHF administrative net from minus 3 hours to the simulated shot time. These announcements were rebroadcast over ships' public address systems to insure that all participants and observers were prepared for the detonation. RHEIMAF's and CURTISS' homing devices were tested. The Eniwetok-KWTES HFX circuit was unsatisfactory due to inoperative transmitters at Eniwetok, and the KWTES-Enya ciphony circuit was activated late due to defective crystals. Aircraft communications proved satisfactory. CTG 7.1 desired to conduct further tests of the ciphony and time signals operations, and they were satisfactorily completed on 17-18 February.

11. On 20 February 1954, before the rehearsal of [redacted], CTG 7.3 had shifted his flag from Parry Island to [redacted]. The communications shift was accomplished smoothly, and the task group communications activities on Parry were reduced to one operator manning the task group CW Common, maintained primarily to facilitate contact with CTG 7.3 Liaison Officer at Parry Island.

12. Communications during the [redacted] rehearsal, conducted on 22-23 February, were generally satisfactory. All shipboard circuit terminals were manned continuously for 48 hours while tests were conducted. A heavy load was placed in the task group CW common due to

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the fact that UHF communications were impaired both by unfamiliarity of some units with task force calls and the location of certain ships beyond UHF range at the time. These ships were employed in continued preparations for the actual event, and simulated participation in the rehearsal by transmitting necessary reports. As a result of this rehearsal the shot-time positioning of ships was recommend with a view towards improving communications where possible. Ships that had to be outside of UHF range during actual shot operations were directed to maintain voice communications on the ship-shore HF voice frequency. Daily circuit drills on all voice circuits were conducted for several days.

SHOT TIME COMMUNICATIONS

23. Shot time conditions involved the rapid delivery of high precedence traffic, the reduction of traffic to the absolute minimum required to execute the event, and the provision of maximum flexibility in case of equipment failure or unexpected deployment of task group units. In addition, operations required that the Task Group Commander maintain direct control of individual units and ships rather than exercise control through task unit commanders. Rapid and direct communications with logistics and lifesaving ships within range of fallout was also essential. To meet these requirements, supplementary communications instructions were issued before each shot. The HF/VO instructions directed:

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a. All ships to test all equipment at least 36 hours prior

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to shot time and notify CTG 7.3 of any inability to carry out shot time requirements.

b. All ships to provide continuous guard on the primary tactical and UHF administrative nets, and all ships with two or more operators to guard the TG CW common continuously, commencing at 0800 on shot day minus two.

c. Activation of all aircraft control circuits by ships involved.

d. Activation of a direct ship-shore CW circuit between [redacted] and Radio Pearl.

14. At 1200 on BRAVO minus three a final check of all circuits was made by all ships. All underway and shot time circuits were manned continuously commencing on schedule at 0800 on BRAVO minus two. Final tests of voice time broadcasts were received on BRAVO minus two at 1415, and tests of whistle, siren and signal light shot time warnings were completed. At 0800 on BRAVO minus one traffic on task group circuits was restricted to that which was absolutely essential and related to the evacuation of BRAVO. These restrictions remained in effect until about 1800 on shot day.

15. Communications during BRAVO were very successful, due primarily to the experience gained during the rehearsal, and the circuit drills conducted subsequently. Excellent propagation conditions contributed to the success of UHF communications. Use of previously designated code words, and of an abbreviated plain language system for

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number, position, and fallout reports reduced the length of these frequently recurring messages over voice circuit. On the flagship, the primary tactical and administrative voice circuits terminated in Flag Plot, under the control of the staff watch officer, and were immediately accessible to the Task Group Commander. Considerable use of visual communications was made during the hours when the ships remained in formation, on station outside the lagoon. However, traffic on the task group CW Common became seriously backlogged. No messages of routine precedence or below were passed for approximately 48 hours, and priority traffic was delayed for several hours.

16. Communications for subsequent shots in general followed the pattern established during REPO. There was no necessity for further pre-shot drills and rehearsals of time broadcast and other special signals; the frequent serials provided sufficient drill. Activation of shot time circuits was deferred until 0700 on minus one day. This shortened the period from 72 to approximately 36 hours when most ships were forced to maintain a watch-in-turn among communicators. CURTISS, now the flagship, met all the communication requirements imposed by CTG 7.3, but the number of control lines between Radio Comm and Radio XI (4 radio and 5 CW) was a limiting factor in activating any additional circuits.

17. A considerable decrease in traffic during the later shots was evident. In part this was attributable to the teamwork within the task group prior to these shots, and to previous resolution of problems and promulgation of directives. Originators were directed

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to reduce addressees on shot time messages to an absolute "need to know" basis which reduced relays considerably. Use of a radio controlled firing mechanism aboard [redacted] necessitated a period of radio silence on all circuits below 275 mcs from shot minus 20 minutes until detonation. The only exceptions to this requirement permitted were essential telemetering signals, voice time broadcasts, traffic on aircraft control circuits and emergency traffic.

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16. Encrypted reports of movements of ships and units within the area constituted a large percentage of traffic during [redacted]. To expedite handling of movement reports, CJTF SEVEN proposed that they be made unclassified. [redacted] did not concur. On 30 March, CTG 7.3 promulgated a series of classified code words for use in movement reports which satisfied the requirement for classified reports, and permitted movement report messages to be transmitted unencrypted. Designated code words, classified Confidential, were substituted for "Eniwetok" and "Bikini" in messages reporting movements between these atolls, in which no other classified information was included. Special movements continued to be reported in encrypted reports of higher classification. Incorrect usage of several of the code words, especially by linkage with identifying navigational information, compromised the original series of code words. Temporarily, movement reports were again classified Confidential and encrypted until the promulgation of more detailed instructions and a new series of code words which was used successfully thereafter.

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VII

MAIL

19. Delivery of mail to Task Group 7.3 was a continuing problem throughout the operation. Navy mail for the Eniwetok-Bikini area was normally forwarded from the United States via Navy Post Office 926 at Kwajalein. Mail so routed was often over-flown to Eniwetok by MATS aircraft not stopping at Kwajalein. It then had to be returned to Kwajalein for accounting and sorting purposes and then returned to APO 187 at Eniwetok for local delivery to TG 7.3 units. The delay caused by this procedure, combined with adverse weather conditions during February which repeatedly held up flights departing from the United States to Hawaii, greatly delayed mail deliveries and created a serious morale problem.

20. In conjunction with an investigation of the situation and a directive to LSDs to expedite mail loadings instituted by CJTF SEVEN, CTG 7.3 notified COMSERVPAC of the situation, forwarded a revised list of TG 7.3 units in the area, and requested that mail leaving the U.S. be routed by FPO, San Francisco direct to APO 187 at Eniwetok. COMSERVPAC concurred in this request, although first class, parcel post, and air mail originated in Hawaii continued to be routed via Kwajalein. While more direct, the revised mail routing plan placed a heavy burden on the limited facilities of APO 187. TG 7.3 furnished one Navy mail clerk and two seamen to APO 187 to assist in handling of TG 7.3 mail.

21. Ships at Eniwetok drew their mail directly from APO 187. Mail for Bikini units was moved by air from Eniwetok to Bikini and

[redacted]

[redacted]

thence to [redacted] for distribution to ships. After [redacted] and the temporary closing of the Bikini airstrip, [redacted] continued to act as the receiving and distribution point for units at Bikini, but mail was carried between Eniwetok and Bikini by ship. When the Bikini airstrip reopened, mail was moved by both air and surface lift. Delivery time of air mail from the United States varied from 7 to 14 days, with occasional delays up to a month from the postmark date.

22. On several occasions during April, it was necessary for CTG 7.3 to exercise command in the [redacted] or at Parry Island for a day or two. In each instance, CTG 7.3 administration remained in CURTISS. During these periods, all units were directed to address all messages to both CTG 7.3 and CTG 7.3 Admin. Both [redacted] and CURTISS copied all traffic so addressed, thus insuring that all staff members and the Commander would have complete message files at all times. This procedure resulted in some duplication of messages but was considered necessary in view of the rapidly changing situation prior to the detonation of [redacted].

23. The Parry Island communication facility was reactivated on a full time basis on 6 May concurrent with the shifting of the CTG 7.3 flag ashore from CURTISS. Although ship-to-shore communications were handled aboard CURTISS when [redacted] was fired, the shore station remained fully manned until 161430Z May when the last official message was sent.

DNA

[redacted]

[redacted]

XXII

ROLL-UP

BIKINI

2. It had been anticipated that the Task Force roll-up would require the presence of several task group ships for a considerable period after the final shot. However the delays in getting off the shots, the early abandonment and roll-up of shore based activities at Bikini, and the location of the last shot at Eniwetok Atoll all combined to reduce and in effect practically eliminate this requirement. The base at Enjebaan Island, Bikini, was rolled-up before the third shot. Equipment on the other Bikini islands was removed as the operation progressed and it was no longer needed there, until there was very little roll-up left to accomplish after YANKEE. When the task group headquarters moved to Eniwetok for the last shot, BAIROKO, BELLE GROVE and AINSWORTH remained behind to support the final roll-up, assisted by other task group units. Before the weather permitted NECTAR to be fired the Bikini roll-up was substantially complete, with the Boat Pool standing by to be loaded aboard BELLE GROVE. Some non-Navy material was left at Bikini for recovery in future months after radioactive contamination levels decayed sufficiently to permit extended work on the "hot" islands.

ENIWETOK

3. The Task Force and other task groups required little Navy assistance in support of roll-up activities at Eniwetok, since the base there is a permanent one. In general ships returned to the

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[redacted]

United States with the same non-consumable material they brought to the area. CURTISS carried the AEC test material and device spares for return to the AEC. [redacted] lifted short range Air Force aircraft and TD 7.1 trailers. [redacted] carried a small number of personnel; her passenger capacity was only partially used since most personnel of other groups returned to the United States by air.

[redacted]

3. The roll-up of the Air Force Task Group's outlying weather stations was accomplished by LST 551 and BELLE GROVE. BELLE GROVE rolled-up the Rongerik station. In establishing this station in January LST 551 had received serious damage in beaching, and the LST's experience, plus a naval survey conducted after [redacted] led to the conclusion that beaching there by an LST was impractical. Accomplishment of the task by LCUs escorted by an ATF was contemplated, but, as the shot schedule worked out, BELLE GROVE became available to do the job. Air Force material on the base island at Rongerik included an eleven ton trailer, an inoperative DUKW, radio equipment and other instruments, a fresh water distillation unit, refrigerator, a forklift truck and a number of helium cylinders. There also was a Project 6.6 ionospheric recording station with another eleven ton trailer, a two and a half ton power unit and miscellaneous equipment. Much of the island surface was soft sand, making the moving job difficult. BELLE GROVE took aboard two Navy LCUs, one Hobbes and Barver LCU, trucks and moving and lifting equipment, and with Air Force and Scientific personnel aboard to assist in the task, left for Rongerik on 14 May.

[redacted]

[redacted]

There the equipment was moved to the beach, loaded in the LCUs which were in turn loaded in BELLE GROVE's well, and returned to Eniwetok for decontamination and further shipment. Roll-up of the other three weather stations, at Rajaru, Kwajalein and Ponape, was accomplished by LST 551 enroute to Pearl Harbor. The LST beached at these atolls without difficulty.

TASK GROUP

4. The Task Group 7.3 roll-up was largely a self-contained operation. The only material left in the forward area was the underwater detection installation at Eniwetok. The underwater system and hydrophones were left in place; equipment above water was mothballed and left in caretaker status. Underwater Detection Unit supplies and spare parts were loaded in BELLE GROVE with the Boat Pool equipment. Special equipment that had been installed in ships in the forward area, including much voice radio equipment that had been loaned to the Navy by other task groups or installed in ships for use by scientific or base facility's personnel, was removed and returned to the owners before ships left the area. Special equipment installations that had been made in naval shipyards prior to CASTLE, including the extensive communication installation in ESTES, were scheduled for removal when ships reached their home yards. The only ship to retain her special equipment was CURTISS, since she was already slated for employment in Operation HOWAK. Ships were instructed to remove their [redacted] designed washdown gear, recondition it, survey unusable articles

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[redacted]

[redacted]

and ship it to Naval Radiological Defense Laboratory in San Francisco for return to [redacted] custody

3. The return of ships and aircraft to their bases accomplished almost all of the task group personnel redeployment, since most of the over 6000 naval personnel who participated in CASTLE were members of ships' companies. [redacted] returned with her assigned Marine helicopter squadron and fighter detachment aboard. [redacted] transported Fleet Pool personnel. Flag enlisted personnel who remained aboard ship throughout the Operation returned to the West Coast in [redacted]. Staff personnel who were transferred ashore to Parry Island when the headquarters was reestablished there after [redacted] were redeployed by air, along with [redacted] personnel. VP-29 flight crews returned to the United States with their aircraft; ground personnel and squadron gear were returned by fleet logistics flights and MSTS scheduled surface lift.

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[redacted]

[redacted]

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[redacted] On 28 March, CHUNG, relieved by [redacted]

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REDEPLOYMENT

1. The redeployment of task group units was accomplished very expeditiously. The last shot in the CASTLE series, NECTAR, was fired at Eniwetok on 14 May. On 18 May, NECTAR plus four days, the last ships sailed for home, with the exception of the Atomic Warfare Countermeasures Unit, YAG 39 and 40, and MCLALA. They remained at Eniwetok an additional week, working to reduce the contamination on YAG 40 to levels low enough to permit her to sail for Pearl Harbor with a crew aboard.

EARLY DEPARTURES

2. Three units had left the task group early in the Operation. On 28 February, prior to the first shot, LST 825 completed approximately two weeks duty in CASTLE as a temporary replacement for LST 551 and sailed for the Far East. On 26 March, CHUNG, relieved by USS HENDER because of her urgent need for hull repairs, sailed for Pearl Harbor. LST 1146, temporary relief for LST 762 while the 762 effected repairs at Eniwetok, departed for Pearl Harbor on 4 April.

3. The next ship to be released was LST 762. She reported in the forward area early in the CASTLE buildup period on 13 July 1953 and under the operational control of CTG 7.2, supported the establishment of the Bikini site. On 12 April shortly after completion of the period of upkeep provided by the temporary assignment of LST 1146 she suffered a major casualty, fracture of a main propulsion shaft.

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[redacted]

[redacted]

Repairs could not be effected in the forward area. The resultant loss of speed and maneuverability virtually eliminated her further usefulness to the task group. For a few days prior to UNION she tested the HECTAR site at Eniwetok, supporting the scientific personnel engaged there in preparing for the HECTAR shot. By the time UNION was fired work on HECTAR had progressed to the point where an LCU could take over the shot site support duties. CTG 7.5 provided and LCU for the purpose, and arrangements were completed to release LST 762 from the Operation and assist her to Pearl Harbor. On one engine she could make a maximum speed of only 4.6 knots; at that speed she had difficulty holding her bow into a head sea. Since she would have to head into the seas during the entire voyage, another LST, enroute from the western Pacific, was ordered by COMPHIBPAC to rendezvous with 762 between Eniwetok and Pearl Harbor and serve as escort. The rendezvous was effected, LST 975 joined 762, took her in tow to assist in holding her head into the seas, and the slow voyage to Hawaii continued. On 6 May, approximately 700 miles east of Bikini, both LSTs were slightly contaminated by radioactive fallout from YANKEE, averaging about 2 mr/hr. Both ships effected decontamination before their arrival at Pearl Harbor.

4. Next to leave were the [redacted] and SIOUX. They had been ordered to the task group for the specific purpose of supporting the Bureau of Ordnance's mining project, 3-4. Since they had placed all their experimental mines in position on UNION, their mission was accomplished when they had completed recovery of the mines after the

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[redacted]

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[redacted]

Blank. All strings except the first one, nearest the zero point, were recovered by 3 May, and the two ships were released from the task group. MECLAINER's early departure was desirable because she was due in the Far East to relieve a ship scheduled for rotation. She sailed from Bikini 4 May for Guam. At CINCPAC's request she was diverted from a stop at Guam, but for three days followed the original routing assigned at the request of CTG 7.3 to keep clear of radioactive fallout from YANKEE. SHEA departed Bikini the afternoon of 3 May with her first scheduled stop at Kwajalein for fuel. While there she was assigned briefly to a S/R mission, joining the successful search for another missing British aircraft on 5 May, and then proceeded on to her base at Pearl Harbor. LST 1197, the third ship in this task element, remained behind to assist in the rollup.

5. PC 1546 completed her participation in Operation CASTLE at Rongerik Atoll on 5 May, with YANKEE the last shot in which she took part. Commencing with the third shot, KOON, the PC had been stationed in the atoll area to the east of Bikini at shot time, on varying missions. On both UNION and YANKEE she was at Rongerik with Air Force weather station and scientific project personnel aboard. This atoll, evacuated because of radioactive contamination after [redacted] was still too "hot" for personnel to live ashore. Since weather data from Rongerik was vital, the station was operated by personnel who lived aboard the PC and went ashore periodically to take readings. On YANKEE, personnel of Project 6.6, operating an ionospheric recording

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[redacted]

station ashore, were also aboard. After YANKEE was fired on 5 May, PC 1546 proceeded to Kwajalein where CTG 7.3 relinquished her operational control. She disembarked her Air Force and Project 6.6 passengers there. After participating with SNEA in the search for the missing British aircraft she departed for her base at Pearl Harbor.

AFTER YANKEE

6. With YANKEE fired, test operations at Bikini Atoll were ended, and ships not required for rollup or for REDTOP were released. On 8 May YAMASHIRO, her mission completed, took the now superfluous helicopter landing barge, YCV 9, in tow and departed Bikini for Pearl Harbor, where she was overdue for shipyard overhaul commencing 15 May. She was followed four days later on 12 May, by KENDRICK. On 13 May APACHE left Bikini for Pearl Harbor with YC 1061 in tow.

AFTER REDTOP

7. There were no further departures prior to the detonation of REDTOP at Eniwetok 14 May. Starting on that date, ships left daily until by 19 May the only ships remaining in the forward area were the YAGs and KOLALA. Six ships sailed from Eniwetok the day the last shot was fired. ESTES and CURTISS departed for San Francisco in company. It had been decided by CINCPAC that the security measures taken on CURTISS' outward voyage in January, anti-submarine escort, partial air cover and conditions of radio silence and darkened ship, were not required for her return. With her partial cargo of AEC

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[redacted]

[redacted]

[redacted]

material it was required only that she be accompanied to San Francisco by another surface vessel. [redacted] was assigned. The two ships were formed into a task unit with Commanding Officer, [redacted] the officer in tactical command, and completed the voyage without incident. CURTISS discharged her ASC cargo at the Naval Magazine, Port Chicago and at Naval Supply Center, Oakland, while MSTS continued on to San Diego to prepare for deployment to the Far East. [redacted] arrived at Eniwetok from Bikini on 13 May, embarked 9 cabin and 197 troop class passengers and departed on the 14th. for San Francisco. She was routed via Pearl Harbor where she reverted to normal MSTS employment for the remainder of the voyage. Three DDEs of Escort Destroyer Division [redacted], EPPERSON, NICHOLAS and [redacted] with the Division Commander in EPPERSON, sailed from Eniwetok the 14th. They rendezvoused and anchored off Bikini with the fourth ship of the division, PHILIP, and sailed for Pearl Harbor to prepare for deployment to the Far East.

8. On 15 May LST 1137 completed her tasks at Eniwetok and Bikini and sailed for Kwajalein. Prior to her departure she loaded two boat pool LCMs for return to San Diego, the equipment from the navy recreation island at Bikini for return to [redacted], and building material provided by CTF SEVEN for the construction of living quarters for the natives who had been evacuated from Rongerlap. The natives were to be re-settled temporarily on another atoll since Rongelap

[redacted]

[redacted]

was expected to remain uninhabitable for several months. Upon her arrival at Kwajalein LST 1157 reported to Commander, Naval Station Kwajalein to return the Bikrik natives to their home and transport the Rongelap natives to their new atoll.

9. On 16 May BURROWS completed loading her VC-3 detachment, the Air Force fighter planes, helicopters and L-13s, and with 7 cabin and 46 troop class passengers, considerable Air Force cargo and TD 7.1 trailers aboard, sailed for San Diego. On 17 May LST 951 departed for Pearl Harbor via Kwajalein, Ponape and Majuro, where she rolled up the JTF SEVEN weather stations. From Pearl Harbor she was routed to Oakland. At Oakland she offloaded weather station personnel and gear, then sailed for San Diego, the Panama Canal, Norfolk and her return to the Atlantic Fleet.

10. On 15 May BELLE GROVE took her departure. After YANKEE she had remained at Bikini with the Boat Pool until operations there were very nearly rolled up. On 12 May she turned the Boat Pool over to LST 1157 temporarily, loaded 2 LCUs, and cargo for Eniwetok and Nerver and proceeded to Eniwetok. Arriving there on the 13th. she offloaded her cargo, took aboard an additional LCU plus a caterpillar tractor, crane and truck and left for Rongerik to rollup the weather station and ionospheric observation equipment there. She returned to Eniwetok on the 6th. of May, offloaded the Rongerik equipment, took aboard the Boat Pool boats, gear and personnel at both Bikini and Eniwetok, the Underwater Detection Unit equipment not left in place or in caretaker

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[redacted]

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[redacted]

station and sailed for home on the 12th. Three Boat Pool LCUs were lifted by USS [redacted] (LSD-4) on 15 May for transportation to the Philippines.

11. Also on 10 May two more ATFs left the area, each with a tow. ARIKI picked up the Boat Pool covered barge, YFN 934, at Kwajalein and departed for Pearl Harbor. CCCOPA departed from Eniwetok for Guam, towing the YO 120.

12. VP-29 completed its CASTLE mission 14 May with a final ocean area water survey flight for the AEC. The squadron redeployed to its base at Whidbey Island, Washington, commencing 21 May, with ground personnel and equipment returning by VR-5 special flights and by surface vessel. The two special project aircraft returned to the United States separately, the Project 4.4 P2V5 departing after YANKEE, on 7 May, and the Project 1.4 P4Y2 on 14 May. The PBM streamed at Ponape was turned over to CO, MARSHALLS for disposition, the remaining PBM remained at Eniwetok under the operational control of CTG 7.4 until rollup was completed at the Ponape and Kwajalein weather stations.

13. TU 7.3.6

13. This left CTG 7.3 with operational control of only three vessels, YAG 39, YAG 40 and their tender, MOLALA. Before their departure it was necessary to decontaminate YAG 40 sufficiently to permit her crew to man her for the voyage to Pearl Harbor where decontamination would be completed at the Naval Shipyard. Most YAG personnel had already received radiation dosages in excess of the

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[redacted]

[redacted]

3.9 R [illegible] it was necessary to hold the accumulation of additional dosage to a minimum figure. Decontamination continued until on 26 May, with radiation readings in spaces the [illegible] crews would occupy reduced low enough to permit sailing, the Task Unit departed Eniwetok.

[redacted]

14. CTG 7.3 departed the forward area by air on 16 May. At Pearl Harbor he conferred with CINCPACFLT and staff personnel, then completed the flight to his Washington headquarters in the CNTF [illegible] staff aircraft. To provide continuity of command during the return period, the Chief of Staff and an advance party left Eniwetok by air early on 15 May on a Task Force special flight to Washington, where he reopened the headquarters and established CTG 7.3 administration pending the Task Group Commander's arrival. Remaining staff personnel returned to Washington on various flights, with the Liaison Officer the last to leave. He concluded the final staff business in the forward area and left Eniwetok on 25 May. Upon arrival of the staff in Washington work was begun immediately on the Task Group Final Report for Operation CASTLE.

[redacted]

[redacted]

X

STATISTICS

Personnel Clearance Status

Helicopter Operations

Fighter Aircraft Operations

Patrol Squadron Twenty-Nine Operations

Boat Pool LCM Operations

Radiological Contamination of ships

Radiological Contamination of aircraft

Dosage Tables

Inter-Atoll Surface Lift

Communications Traffic Analysis

Costs

Status of Allotments

[redacted]

[redacted]

X

[redacted] PERSONNEL CLEARANCE STATUS OF SHIPS AND UNITS OF [redacted] AS OF 1 DEC 1958

SHIP OR UNIT	[redacted]	[redacted]	[redacted]	[redacted]	TOTAL
YAG 39	24	2	[redacted]	2	[redacted]
YAG 40	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
USS PHILIP (DDR-498)	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
USS [redacted] (DDR-[redacted])	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
USS [redacted] (DDR-499)	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
USS [redacted] (DDR-[redacted])	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
USS TAWAKONI (ATF-114)	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
USS MOLALA (ATF-106)	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
USS APACHE (ATF-108)	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
USS SIOUX (ATF-76)	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
USS BAIROKO (CVE-115)	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
USS CHEVALA (AF-4)	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
USS [redacted] (AOG-[redacted])	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
USS BELLE GROVE (LSD-2)	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
COMCORTRONDIV TWELVE	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
FLEET SIGNAL TRNG UNIT-NORF	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
COMFLEACT SASEBO TEAM	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
NAB-362	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
USNS [redacted] (TAP-[redacted])	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
MARINE DETACHMENT	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
UNDERSEA DETECTION UNIT	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
NS 7.3 MOAT POOL	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
USS [redacted] (ARS-[redacted])	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
NS 7.3 STAFF	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
USS PC 1586	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
USS [redacted] (SS-[redacted])	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
USS COCOPA (ATF-[redacted])	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
USS LST 1157	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
USS LST 1146	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
USS LST 702	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
USS LST 951	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
TD	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
TOD	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
TOM	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
TOTAL	5629	146	5003	364	6142

* All personnel hold Interim Secret Clearance or Access to Secret pending results of National Agency Checks

DNA

BEST COPY AVAILABLE

[redacted]

273
24

[redacted]

X

[redacted]

	[redacted]	[redacted]	[redacted]	[redacted]
Aircraft assigned	12	11	11	11.3
Average in commission	11.7	10.3	9.4	10.4
Percent aircraft available	97.5	93.6	84.9	92.3
Flights	1125	730	625	[redacted]
Hours flown	915	733.6	833.6	[redacted]
Passengers carried	[redacted]	[redacted]	[redacted]	[redacted]
Cargo (pounds)	[redacted]	[redacted]	[redacted]	[redacted]
Accidents	1	0	0	1
Casualties	1	0	0	1

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[redacted]

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[redacted]

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FIGHTER AIRCRAFT OPERATIONS

	Jan/Feb	March	April/May	Total/Average
Aircraft assigned	6	6	6	6
Aircraft available	4.62	5	4.17	4.5
Percent aircraft available	77 %	83 %	69.5 %	75 %
Flights	150	82	73	305
Hours	139.9	119	110.7	369.6
Accidents	0	1*	0	1
Scrambles	4	0	0	4

* One F-4E made a one wheel landing under MVFR conditions as the result of two fractured hydraulic lines. Class "C" damage resulted with no injuries to the pilot.

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[redacted]

[redacted]

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[illegible] TWENTY-FIVE OPERATIONS

TYPE FLIGHT	NO. OF FLIGHTS	HOURS FLOWN	NIGHT HOURS	DAY HOURS
CARGO & COURIER	22	50.6	4.2	46.4
ASR	53	579.3	326.4	252.9
SURVEY	27	197.5	1.9	195.6
ESCORT	26	266.1	154.9	111.2
RECON	72	712.5	276.0	436.5
BUOY RECOVERY	4	36.6	1.7	34.9
BUOY EVALUATION	2	12.7	0.0	12.7
AEC HEALTH AND SAFETY LABORATORY SPECIAL PROJECT	8	66.3	3.8	62.5
TOTAL	216	1921.6	768.9	1152.7

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[redacted]

COMPOSITE SUMMARY OF TASK GROUP 7.3 BOAT POOL LCM OPERATIONS BIKINI ATOLL

Week	Total Trips	Trips 7.1	Cargo/Tons	Pass	Trips 7.3	Cargo/Tons	Pass	Trips 7.5	Cargo/Tons	Pass
33	1145	107	54.00	191	817	100.40	3910	219	295.0	723
34	840	208	78.00	538	540	115.50	2081	92	82.0	338
35	951	132	100.5	166	692	67.00	1779	127	83.5	135
36	1240	134	31.0	380	986	127.00	2840	120	119.5	198
37	474	296	2.0	308	174	1.00	257	4		14
38	1029	209	38.5	582	680	134.25	2015	141	224.0	265
39	734	113	22.00	302	489	36.50	3582	132	75.5	420
40	560	108	1.50	227	359	61.00	2289	93	140.0	93
41	937	176	80.90	421	640	80.50	3342	121	175.0	221
42	1339	224	75.50	700	870	172.25	3140	245	298.5	383
43	875	146	46.00	461	521	121.00	2225	208	328.5	477
44	1038	7		6	907	117.00	2970	124	68.5	161
45	732	62	33.25	169	614	13.00	1857	76	160.0	221
46	760	336	22.00	932	280	35.00	1867	144	227.5	207
47	863	116	9.70	266	442	48.30	2072	305	273.5	1093
48	602	62	14.00	112	417	43.50	2226	138	151.0	282
TOTALS	14164	2436	609.45	5765	9451	1313.40	37618	2279	2506.00	4842

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RADIOLOGICAL CONTAMINATION OF SHIPS

Contamination of ships at about time of release from Operation CASTLE

SHIP	HIGHEST AMOUNT r/hr	AVERAGE r/hr	DATE OF REPORT	DATE OF RELEASE
MOORE	1.5	1.0	14 May	14 May
CURTISS	1.8		21 May	14 May
BAIROKO	2.5		21 May	17 May
BELLE GROVE	6		16 May	16 May
AINSWORTH	.04	.04	20 May	19 May
JEFFERSON	2	Less than 1	16 May	15 May
PHILIP	1.1	.6	14 May	13 May
NICHOLAS	0	0	14 May	13 May
HENRICO	.4	.05	14 May	13 May
PC 1566	.3		1 May	1 May
MUNDER	1.9	1.0	16 May	15 May
COOPA	20	Less than 1	Est. 16 May	17 May
SIOUX	15	1	16 May	17 May
APACHE	30	.3	14 May	16 May
TAMAROA	.2		18 May	11 May
MILALA	17	1	16 May	16 May
SHEA	1.2	.2	14 May	8 May
BAGLAIEEN		Less than 1	Est. 16 May	9 May
LST 558	0	0	16 May	16 May
LST 703			Contaminated after being released from TG 7.1 enroute Pearl	4 May
LST 1197		Less than 1	Est. 16 May	27 May
LCM 457	200	6	16 May	14 May
LCM 458	110	35	15 May	15 May
LCM 1224	150	35	15 May	15 May
LCM 1225	110	30	15 May	15 May
LCM 1368	35	12	16 May	14 May
YFB 934	0	0	16 May	16 May
YC 1081		30	16 May	16 May
YCT 9	90		18 May	11 May
YC 120	0	0	16 May	15 May
YCM 61	0	0	16 May	16 May
YCM 62	0	0	16 May	16 May

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RADIOLOGICAL CONTAMINATION OF AIRCRAFT

CONTAMINATION OF WB-50 PLANES AS OF 18 MAY 1954

PLANE NUMBER	HIGHEST GAMMA (MR/HR)	HIGHEST BETA + GAMMA (MR/HR)	AVERAGE GAMMA (MR/HR)	AVERAGE BETA + GAMMA (MR/HR)
126544	1.4	4.2	.8	2.5
126534	1.5	3	.7	1.4
126537	.4	1.5	.2	.6
126539	0	1	0	.6
126541	1.5	1.9	.2	.7
126543	.6	1.3	.4	.6
126532	4.7	4.9	2.5	2.5
126535	.3	1	.16	.4
126538	.9	2	.4	.7
126540	.2	1.2	.15	.5
126542	.2	1.5	.15	.4
126522	.35	3	.15	1.5

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TABULATION OF ACCUMULATED RADIOLOGICAL EXPOSURES OF TASK GROUP 7.3 PERSONNEL BY SHIPS AND UNITS AS OF 12 MAY 1958

UNIT	EXPOSURE IN ROENTGENS								
	0.0 to 0.999	1.0 to 1.999	2.0 to 2.999	3.0 to 3.999	4.0 to 4.999	5.0 to 5.999	6.0 to 6.999	7.0 to 7.8	Over 7.8
TG 7.3 Staff	10	17		1					
BAIROKO	412(-44)	238(+19)	67(+22)	50(-1)	07(-1)	8	1		
USS-362		73(-7)	20(+2)	15(-4)	11(+3)	2(+2)			
CURTISS	602(-6)								
VP-29	388(-25)								
ESTES	116(-29)	376	124(+9)	17(+14)	13(+6)	7			
BELLE GROVE	4(-1)	272(-2)	38	20					
TG 7.3 Boat Pool	34	77	50	51	23	6	1	1	4
LST 762	74	26	10	2					
LST 951	203(+2)								
LST 1157	124 (-19)								
EPPERSON	198 (-35)	80(+73)	7(+7)						
NICHOLAS	267 (+1)		1						
RENSHAW	221 (-1)	30	6						
PHILIP		36	103	67	32	2	1		
SHEA	299 (+27)								
PC 1546	33 (-9)	23(-11)	1						
GYPSY	1	32	29	1					
MENDER	63 (-2)	9							
RECLAIMER	97								
MOLALA	28 (-96)	35(+33)	14(+14)	1(+1)	3(+3)	3(+3)		1(+1)	
APACHE	65	12							
SIOUX	60 (-2)	5							
YAMASKEE	76 (-2)	1							
COCOPA	13 (-24)	47(+7)	25(+6)	8(+6)					
AINSWORTH	157 (-39)	28(-20)							
YAG 39	12 (-26)	5(-4)	6	5(+2)	4(14)	3(+1)	2(+2)	2(+2)	2(+2)
YAG 40	7 (-5)	4(+11)	9(-10)	7(+5)	14(+13)	6(+6)	1(+1)	2(+2)	1(+1)
TG 7.3 UDU	22								
Proj 6.4 aircraft	0								
Proj 1.4 aircraft	0								
VQ-3	44 (+24)	(-21)							
TOTAL	3582	1196	495	224	135	33	5	5	13
% Total	59.34	24.77	8.20	4.04	2.37	0.58	0.25	0.15	0.22

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SHIP	DATE	FROM	TO	PASSENGERS	M/T CARGO LIFTED
LST 762	2 Jan	Bikini	Eniwetok	-	[illegible]
LST 762	5 Jan	Eniwetok	Bikini	-	440
LST 762	7 Jan	Bikini	Eniwetok	-	476
LST 762	20 Jan	Eniwetok	Bikini	-	535
LST 762	23 Jan	Bikini	Eniwetok	-	420
LST 762	26 Jan	Eniwetok	Bikini	-	504
LST 762	31 Jan	Bikini	Eniwetok	-	201
LST 762	26 Jan	Eniwetok	Bikini	-	405
LST 762	4 Feb	Bikini	Eniwetok	-	430
LST 762	7 Feb	Eniwetok	Bikini	-	166
LST 762	9 Feb	Bikini	Eniwetok	-	668
LST 762	18 Feb	Eniwetok	Bikini	-	60
BELLE GROVE	20 Feb	Bikini	Eniwetok	-	385
LST 825	20 Feb	Eniwetok	Bikini	-	192
LST 762	21 Feb	Bikini	Eniwetok	-	948
BELLE GROVE	21 Feb	Eniwetok	Bikini	-	675
LST 762	23 Feb	Eniwetok	Bikini	-	54
LST 825	23 Feb	Bikini	Eniwetok	-	780
LST 762	25 Feb	Bikini	Eniwetok	-	354
LST 762	2 Mar	Eniwetok	Bikini	-	104
LST 551	3 Mar	Eniwetok	Bikini	31	37
AIRDROME	4 Mar	Eniwetok	Bikini	167	5

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INTER-ATOLL SURFACE LIFT (continued)

SHIP	DATE	FROM	TO	PASSENGERS	MT CARGO LIFTED	
LST 762	5 Mar	Bikini	Eniwetok	- 9	112	
[redacted]	5 Mar	Bikini	Eniwetok	20	-	
[redacted]	5 Mar	Eniwetok	Bikini	99	30	
BELLE GROVE	6 Mar	Bikini	Eniwetok	17	-	
BELLE GROVE	7 Mar	Eniwetok	Bikini	13	-	
[redacted]	8 Mar	Eniwetok	Bikini	46	-	
[redacted]	8 Mar	Bikini	Eniwetok	22	-	
PHILIP	8 Mar	Eniwetok	Bikini	32	-	
PHILIP	9 Mar	Bikini	Eniwetok	16	-	
[redacted]	10 Mar	Bikini	Eniwetok	17	-	
PHILIP	10 Mar	Eniwetok	Bikini	20	-	
LST 551	11 Mar	Eniwetok	Bikini	21	10	
LST 762	11 Mar	Eniwetok	Bikini	25	9	
[redacted]	11 Mar	Eniwetok	Bikini	27	-	
PHILIP	11 Mar	Bikini	Eniwetok	22	-	
LST 762	13 Mar	Bikini	Eniwetok	6	98	
LST 551	13 Mar	Bikini	Eniwetok	3	78	
[redacted]	13 Mar	Eniwetok	Bikini	48	3	
LST 551	14 Mar	Eniwetok	Bikini	-	68	
LST 1146	14 Mar	Bikini	Eniwetok	-	127	DNA
LST 762	15 Mar	Eniwetok	Bikini	6	-	
LST 762	16 Mar	Bikini	Eniwetok	-	215	
LST 551	17 Mar	Bikini	Eniwetok	9	103	

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INTER-ATOLL SHIP-TO-SHIP LIFT (continued)

SHIP	DATE	FROM	TO	PASSENGERS	M/T CARGO LIFTED
LST 1146	18 Mar	Bikini	Eniwetok	1	-
LST 1146	19 Mar	Eniwetok	Bikini	2	5
LST 552	19 Mar	Eniwetok	Bikini	2	141
LST 1146	20 Mar	Bikini	Eniwetok	-	120
HERCULES	23 Mar	Eniwetok	Bikini	-	2
LST 552	25 Mar	Bikini	Eniwetok	5	298
LST 1146	26 Mar	Eniwetok	Bikini	-	25
CURTISS	27 Mar	Bikini	Eniwetok	61	-
LST 1146	28 Mar	Bikini	Eniwetok	-	207
LST 1146	29 Mar	Eniwetok	Bikini	-	110
BELLE GROVE	29 Mar	Bikini	Eniwetok	12	500
LST 552	30 Mar	Eniwetok	Bikini	3	1
HERCULES	31 Mar	Eniwetok	Bikini	17	-
KINGMAN	31 Mar	Bikini	Eniwetok	10	-
BELLE GROVE	31 Mar	Eniwetok	Bikini	16	60
LST 552	2 Apr	Bikini	Eniwetok	-	135
LST 1146	2 Apr	Bikini	Eniwetok	7	153
TAWAKENI	3 Apr	Bikini	Eniwetok	4	-
LST 762	7 Apr	Eniwetok	Bikini	32	72
BELLE GROVE	8 Apr	Bikini	Eniwetok	7	375
CURTISS	8 Apr	Bikini	Eniwetok	90	-
[redacted]	9 Apr	Bikini	Eniwetok	4	1
CURTISS	9 Apr	Eniwetok	Bikini	20	31

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INTER-ATOLL SURFACE LIFT (continued)

SHIP	DATE	FROM	TO	PASSENGERS	M/T CARGO LIFTED
[illegible]	11 Apr	Bikini	Eniwetok	162	2
[illegible]	12 Apr	Eniwetok	Bikini	-	7
LST 982	12 Apr	Bikini	Eniwetok	1	99
YAG 39	14 Apr	Eniwetok	Bikini	13	-
YAG 40	14 Apr	Eniwetok	Bikini	5	-
[illegible]	14 Apr	Eniwetok	Bikini	-	1
[illegible]LALA	14 Apr	Eniwetok	Bikini	5	-
[illegible]	14 Apr	Eniwetok	Bikini	4	-
LST 551	15 Apr	Eniwetok	Bikini	18	9
LST 551	20 Apr	Bikini	Eniwetok	-	375
[illegible]	23 Apr	Bikini	Eniwetok	-	1
LST 551	26 Apr	Eniwetok	Bikini	26	22
PHILIP	28 Apr	Bikini	Eniwetok	43	2
[illegible]	28 Apr	Eniwetok	Bikini	24	-
BELLE GROVE	30 Apr	Bikini	Eniwetok	24	103
LST 551	30 Apr	Bikini	Eniwetok	-	5
BELLE GROVE	1 May	Eniwetok	Bikini	-	89
CURTISS	7 May	Bikini	Eniwetok	3	61
[illegible]	8 May	Bikini	Eniwetok	2	4
BELLE GROVE	11 May	Bikini	Eniwetok	9	-
TOTALS				1,259	12,550

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[redacted] TRAFFIC ANALYSIS

Incoming	[redacted]
Outgoing	[redacted]
Total	[redacted]
Daily Average Incoming	66
Daily Average Outgoing	66
Classified Messages	44 %
Emergency	00 %
Operational Immediate	18.4 %
Priority	41.9 %
Routine and Night Messages	40.3 %

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COST OF TASK GROUP 7.3 - PERIOD 7 APRIL 1954 THRU 15 MAY 1954

Travel and Per Diem	$23,915.00
Telephone and Utilities	none
Military Pay	2,583,714.00
Office Supplies	5,639.00
Alterations of Ships	30,000.00
Radiological Defense	400.00
Land Improvement	none
Navy Project (Coast Guard)	none
Documentary Photography	none
Transportation of Baggage	325.00
General Stores Items for Ships	260,211.00
Fuel and Arms	166,297.00
Provisions (Food), General Messes	312,289.00
Rehabilitation of YF-29 living quarters	17,000.00
	3,361,890.00

[redacted] TOTAL COST TASK GROUP 7.3 - THRU 15 MAY 1954

Travel and Per Diem	99,359.00
Telephone and Utilities	3,500.00
Military Pay	4,903,955.00
Office Supplies	8,254.00
Alteration of Ships	115,000.00
Radiological Defense	12,000.00
Land Improvement	4,500.00
Navy Project (Coast Guard)	12,000.00
Documentary Photography	2,700.00
Transportation of Baggage	700.00
General Stores for Ships	459,111.00
Fuel and Arms for Ships	823,555.00
Provisions (General Mess)	838,174.00
Rehabilitation of YF-29 living quarters	17,000.00
GRAND TOTAL	7,229,976.00

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STATUS OF ALLOTMENTS RECEIVED FROM JOINT TASK FORCE SEVEN AS OF

15 MAY 1954

NAVY APPROPRIATION BUDGET NOA 1954

DESCRIPTION	RECEIVED	OBLIGATED	EXPENDED	UNOBLIGATED
Travel	82,000.	77,289.87	21,049.63	1,710.13
Transportation of Things	1,000	700.		300.00
Communications	2,000			2,000.
Task Group Overhead	400	300.		100.
Modification of Ships	115,200	85,200.	30,200.	30,000.
Land Improvement	4,500	4,500		
Documentary Photography	3,000	2,700	185.25	300.
Radiological Defense	13,300	13,000	11,600.	300.
Navy Project (Coast Guard)	12,000	12,000	12,000.	
TOTAL	232,400	177,689.87	125,034.88	34,710.13

Note 1 $4,710.13 of the unobligated balance returned to CJTF SEVEN on 31 May 1954 as excess to Task Group 7.3 requirements.

STATUS OF NEGLIX R-40 ALLOTMENT NUMBER 4229/54 HELD BY THE SUPPLY OFFICER, USS BAIROKO (DTE-115) AS OF 15 MAY 54

Received	4,800.
Obligated	200.
Expended	4,200.
Unobligated Balance	400.

STATUS OF THE NAVAL OF NEGLIX BOAT POOL ALLOTMENT HELD BY SUPPLY OFFICER, U.S. NAVAL AMPHIBIOUS BASE, CORONADO, SAN DIEGO, CALIFORNIA, AS OF 15 MAY 1954 (NSA ALLOTMENT NUMBER 4402)

Received	165,000.00
Obligated	1,825.00
Expended	162,449.55
Unobligated Balance	725.45

Note 2 This allotment will be reported to CJTF SEVEN by BuShips and is not reflected in CTG 7.3 Cost Report

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XI

PERSONNEL ROSTER

Commander and Staff of Task Group 7.3

RADM H. G. Bruton, USN	Commander
CAPT R. Rutherford, USN	Chief of Staff
LCDR R. F. Madden, USNR	Flag Lieutenant & Aide

X-1

LCDR A. C. Driggs, USN	Flag Secretary
YN1 C. E. Howard, USNR	Personnel Officer

X-2

CDR R. A. Klare, USNR	Intelligence-Security

X-3

CDR H. S. Schmidling, USN	Plans & Operations
CDR V. A. Clark, USN	Asst. P & O (Air)
LCDR D. A. Pickler, USN	Asst. P & O (Atomic Defense)
LCDR L. I. Estep, USNR	Asst. P & O (Asst Atomic Defense)
LCDR C. P. Carlson, MC, USN	Medical Officer
Mr. Seymour Gorlon	Civilian Consultant on Radiological Defense

X-4

CDR D. Masteson, USN	Logistics Officer
CDR F. B. Muir, Jr., SC, USN	Supply Officer

X-5

LCDR J. B. Johnson, Jr., USN	Communications Officer
LTJG B. C. Yelverton, Jr., USNR	Asst Comm Officer
LTJG A. E. Soare, USNR	Asst Comm Officer
LTJG J. D. Engels, USN	Asst Comm Officer

Flag Allowance, Task Group 7.3

X-1

GUSTSON, James D., YN2	HAFNER, Alan C., YN2
FILARDI, George J., SN	JONES, Thurman D., SN
HULL, Jack A., YN3C	THOMPSON, James M., YN3C
PRENDAK, Joseph E., YN2	WILLIAMS, Charles W., YN1

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E-2

THOMPSON, Gene, YN2

E-3

BRADWELL, John D., Jr., EM1
MITCALF, Edwin W., YN2
ROCK, James E., ET3
THOMPSON, Edward J., YN2
TRACHER, Noah D., Jr., ET1
WALKER, Martin L., QM3

E-4

TAYLOR, Carroll A., YN1
TIMMIS, Robert L., SK3

E-5

BAYHOFF, Paul R., EM1
GREENWOOD, Manford A., EM3

Admiral's Barge Crew

JONES, Francis E., EM1
SAR[illegible], Orus K., ET3
TORRES, Manuel (n), FN
VAN HOOKER, Bruce H., FN

Staff Gig Crew

FOX, Stanley V., ET3
HURVEY, Fyren D., EM2
WRIGHT, David L., SN

Stewards

BROOKS, James D., SN
BROWN, Druc P., SN2
CEPEDA, Jose C., SN
FLORES, Johnny C., SN3
FRANI, Gamato T., SN
MACAULE, Raymaldo E., SN2
PARKER, Robert (n), SN
VERGARA, Aurelianno (n), SD3

Communications Personnel

BALDWIN, Joseph (n), YN3
BARRIENOS, George E., RM2
CHESNEY, George E., EM3
DALLMAN, Keith W., YN3N
FOLWELL, John E., Jr., RM2
HARDY, Howard J., YN2
HOUGHTON, Ashmore S., YN2
NUCKOLS, Bobby J., EM3
RALSTON, Billy J., YN3
RUSSELL, Jack F., ET3
TERRY, Kenneth K., EM3N
VAN HORN, James R., YN3
VAN STONE, Charles C., EM3N
YORCK, Donald G., RM2
YOSNELL, George C., Jr., QM2
WEIMER, Robert E., EM2

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XI

Quartermasters

MINEHAN, Walter J., QM1 — PAULSON, Hugo L., QM1
NO LEAN, Laurence E., QM3

Task Group 7.3 Boat Pool Officers

Lt R. R. Watkins, USN	Officer in Charge
LTJG G. A. Milanis, USNR	Asst Officer in Charge
ENSIGN F. J. Cook, Jr., USN	Asst Officer in Charge
ENSIGN K. E. Ross, USN	Asst Officer in Charge

Task Group 7.3 Underwater Detection Unit

Lt R. Nannette, USNR	Officer in Charge

Task Group 7.3 Project 1.4 Aviation Unit

LCDR W. R. Hahn, USN	Patrol Plane Commander
LTJG C. T. Cook, USN	Co-Pilot
LTJG H. L. Carlson, USN	Navigator

Task Group 7.3 Project 6.4 Aviation Unit

Lt Roy Bergstrom, Jr., USNR	Patrol Plane Commander
LTJG J. A. Ross, USN	Navigator
LTJG John P. Schulfield, USNR	Co-Pilot

Ships and Units

CAPT J. W. Waterhouse, USN	CO, USS MISTIC (AGC-12)
CAPT R. C'Beirne, USN	CO, USS MAUMEE (AVR-115)
CAPT R. L. C. Jones, USN	CO, USS CURTISS (AV-4)
CAPT G. G. Mulumphy, USN	Commander Task Unit 7.3.6
CAPT J. L. Smith, USN	ComCortDesDiv 12
Captain C. W. Matheson, U.S. Merchant Marine	Master, USNS FRED C. AINSWORTH (T-AP-181)
CDR H. B. Davis, Jr., USN	CO, USS JEFFERSON (DDR-719)
CDR C. W. Allen, Jr., USN	CO, USS PHILIP (DDR-498)
CDR L. H. Alford, USN	CO, USS RENSHAW (DDR-499)
CDR C. C. Lowe, USN	CO, USS BELLE GROVE (LSD-2)
CDR J. W. Reed, USN	CO, USS REHA (AM-30)
CDR V. Arnold, USN	CO, Patron Squadron 29
LCDR K. K. Smith, USN	CO, USS REGULUS (AKS-42)
LCDR E. W. Ansell, Jr., USN	OinC, YAG-39
LCDR J. S. Walgster, USN	OinC, YAG-40
LCDR L. Jones, USN	CO, USS MERCER (APSR-2)
LCDR R. S. Scott, Jr., USNR	CO, USS LST 1157

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LT W. C. Wilson, USN	CO, USS COCOPA (ATF-108)
LT R. F. Reed, USN	CO, USS MOLALLA (ATF-106)
LT K. V. Loughlin, USN	CO, USS LST 825
LT T. A. Carey, USN	CO, USS APACHE (ATF-67)
LT W. R. Brooks, USNR	CinC, MOMI-One
LT T. B. Hartt, USN	CO, USS SIOUX (ATF-75)
LT R. C. Wilson, USN	CO, USS GYPSY (ARSD-1)
LT J. C. Rachert, USN	CO, USS LST 762
LT R. A. Mourer, USN	CO, USS TAMAROA (ATF-114)
LT R. G. Kanzenbach, USN	CO, USS LST 991
LT B. B. Darlinghouse, USN	CO, USS PC 1546

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