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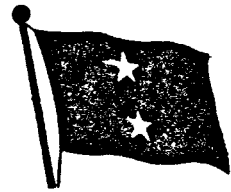
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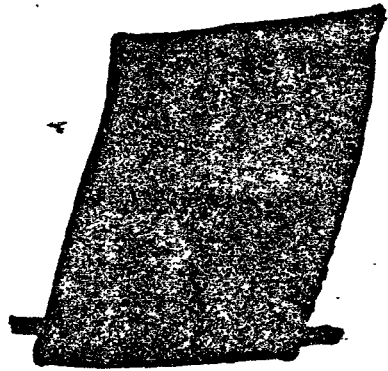
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JOINT TASK FORCE 7 COMMANDER TASK GROUP 7.3

Classification (Cancelled) ~~TOP SECRET~~ UNCL
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By Reynolds ch ISCS Date 10 Feb 52 1669

OPERATION PLAN NO. 1-53



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Joint Task Force SEVEN
Task Group 7.3
Washington 25, D. C.
7 December 1953, 1200R

Operation Plan
CTG 7.3 No. 1-53

Chart Reference: Grids of ENIWETOK and BIKINI, HO 6032; HO 6033; HO 2009 FC;
HO 2010 FC; and HO 2011 FC

Task Organization:

a. TU 7.3.0	Special Devices Unit	CAPT R.E.C. JONES
(1) TE 7.3.0.0	Special Devices Element USS CURTISS (AV-4)	CAPT R.E.C. JONES
(2) TE 7.3.0.1	Escort Element	As assigned
b. TU 7.3.1	Surface Security Unit Cort DesDiv 12 USS EPPERSON (DDE-719)(F) USS PHILIP (DDE-498) USS NICHOLAS (DDE-449) USS MENSLOW (DDE-499) USS PC 1546 <i>ENIWETOK Surface Security Element</i>	CAPT J. E. SMITH CDR N. B. DAVIS CDR G. W. ALBIN CDR J. C. ELIOT CDR L. H. ALFORD LT B.B. GARLINGHOUSE <i>As Assigned.</i>
(1) TE 7.3.1.0		
c. TU 7.3.2	Carrier Unit	CAPT E. O'BEIRNE
(1) TE 7.3.2.0	Carrier Element USS BAIROKO (CVE-115) 10 HHS & Air Force helicopters as assigned	CAPT E. O'BEIRNE
(2) TE 7.3.2.1	BIKINI Fighter Element 3 F4U-5N	Senior Naval Aviator assigned
(3) TE 7.3.2.2	ENIWETOK Fighter Element 3 F4U-5N	Senior Naval Aviator assigned
d. TU 7.3.3	Patrol Plane Unit VP - 29 12 P2V-6 1 P2V-5 1 P4Y-2 2 PBM-5A	CDR W. ARNOLD
e. TU 7.3.4	Joint Task Force Flagship Unit USS ESTES (AGC-12)	CAPT J. W. WATERHOUSE

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f. TU 7.3.5	Utility Unit USS BENDER (ARSD 2) USS CCCOPA (ATF 101) USS MOLALA (ATF 136) USS ATACHE (ATF 67) USS SIOUX (ATF 75) USS TAWAKONI (ATF 114)	LCDR L. JONES LCDR L. JONES LT W. O. WILSON LT R. F. REED LT T. A. CASEY LT T. B. HURTT LT R. A. MOWRER
g. TU 7.3.6	AW Ship Countermeasures Test Unit	CAFT G. G. MOLUMPHY
(1) TE 7.3.6.0	Drone Ship Element YAG 39 YAG 40	CAFT G. G. MOLUMPHY LCDR H. W. ANCELL, Jr. LCDR J. S. MALAYTER
(2) TE 7.3.6.1	Towing and Decontamination Element ATFs as assigned	As assigned
h. TU 7.3.7	BIKINI Harbor Unit	CAPT E. O'BEIRNE
(1) TE 7.3.7.0	Landing Ship Dock Element USS BELLE GROVE (LSD 2)	CDR C. O. LOWE
(2) TE 7.3.7.1	Boat Pool Element 5 LCU 15 LCM 2 LCPH 1 26' MNB 1 AVR 1 YCV 1 YFN 1 YC	LT B. P. WATKINS
i. TE 7.3.7.2	Mine Project Element USS SHEA (DR 30)	CDR J. W. REED
(1) TE 7.3.7.3	Mine Laying and Recovery Element USS RECLAIMER (ARS 42) EODU ONE (Team 1)	LCDR H. K. SMITH LCDR H. K. SMITH LT W. R. BROOKS
(2) TE 7.3.7.4	Mine Ready and Analysis Element USS LST 1157 Mine Project SIX	LCDR R. S. SCOTT, Jr. LCDR R. S. SCOTT, Jr.

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j. TU 7.3.8

ENIWETOK Harbor Unit
3 LCI
YCG
YCGN
1 AVR
1 LCPR
1 YO, when at ENIWETOK
Ships in upkeep ENIWETOK

k. TU 7.3.9

Transport Unit

CDR C. O. LOWE

(1) TE 7.3.9.0

Special Devices Transport Element CDR C. C. LOWE
USS BELLE GROVE (LSD 2) CDR C. O. LOWE

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(2) TE 7.3.9.1	Special Devices Transport Element USS LST 762	LT J.O. BACHERT
(3) TE 7.3.9.2	Escort Element	As assigned
(4) TE 7.3.9.3	Escort Element	As assigned
(5) TE 7.3.9.4	Material Transport Element USS LST 551	LT R.G. KANZEBACH
(6) TE 7.3.9.5	Material Transport Unit	As assigned
(7) TE 7.3.9.6	Personnel Transport Element USNS Fred C. HINSWORTH (T-AP-181)	C. W. HUTCHESON, MASTER LCDR H.B. KRUEZFELDT CO, Military Dept.

1. General. This plan is based on CJTF SEVEN Operation Plan No. 3-53 of 10 November 1953, copies of which are being distributed to all ships and units of TG 7.3 with this plan.

a. By direction of the Joint Chiefs of Staff, Joint Task Force 132 (JTF 132) was activated on 9 July 1951 for the purpose of conducting Operation IVY at ENIWETOK Atoll during 1952. Operation IVY was completed on 21 November 1952. On 21 May 1952, the JCS designated the Chief of Staff, U.S. Army to continue as Executive Agent for a subsequent overseas Atomic Test (Operation CASTLE) and broadened the mission of CJTF 132 to include the execution of CASTLE. On 1 February 1953, Joint Task Force 132 was redesignated Joint Task Force SEVEN (JTF SEVEN). By direction of the JCS, CJTF SEVEN will conduct tests of experimental devices at the Atomic Proving Grounds at ENIWETOK and BIKINI in the winter and spring of 1954. Seven (7) shots are presently planned. Further details in Annex A.

b. Joint Task Force SEVEN is commanded by Major General P. W. CLARKSON, U.S. Army, with the Chief of Staff, U.S. Army as Executive Agent for the Joint Chiefs of Staff. CJTF SEVEN reports to CINCPAC for movement control, logistics support and for purposes of general security with respect to Joint Task Force SEVEN and the ENIWETOK/BIKINI Danger Area.

c. Joint Task Force SEVEN is organized into five task groups:

Task Group 7.1 (Scientific)	Dr. William E. OGLE, LASL
Task Group 7.2 (Army)	COL Edward H. LAHTI, USA
Task Group 7.3 (Navy)	RAIM H. C. BRUTON, USN

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Task Group 7.4 (Air Force) BRIG GEN H. M. ESTES, USAF
Task Group 7.5 (AEC Base Facilities) Mr. James E. REEVES, AEC

d. ENIWETOK/BIKINI Danger Area is that area encompassing ENIWETOK and BIKINI atolls and bounded by the meridians $160^{\circ} 35' E$ and $166^{\circ} 16' E$ and by the parallels $10^{\circ} 15' N$ and $12^{\circ} 45' N$, an area of 150 by 340 miles. For other area definition, see paragraph 1 CJTF SEVEN OpPlan 3-53.

e. Intelligence, Security and Public Information - Annex D.

2. Mission. The mission of Task Group 7.3, broadly stated, is to provide the necessary afloat support, including an evacuation capability, for the Joint Task Force Commander and other task groups of Joint Task Force SEVEN, and to provide for the security of the ENIWETOK/BIKINI Danger Area.

3. Tasks Assigned Task Group 7.3:

a. Provide for the security of the ENIWETOK/BIKINI Danger Area by:

(1) Maintaining the status of the "Closed Area".

(2) Detecting, warning and escorting unauthorized vessels and aircraft out of the Danger Area.

b. Provide suitable water transportation, air and surface escort and shipboard assembly facilities for the weapons and devices to meet the requirements of the Commander, TG 7.1.

c. Provide shipboard command and control facilities for CJTF SEVEN, with command and administrative space for CTG 7.1, CTG 7.4, and CTG 7.5 afloat.

d. Assume operational control of inter-island helicopter airlift system at BIKINI and provide ship to shore and inter-island surface and helicopter transportation, primarily at BIKINI, to include flights for damage survey and recovery of scientific data.

e. Provide shipboard facilities to house designated elements of the joint task force while afloat, including pre-shot evacuations as directed by CJTF SEVEN.

f. Support TG 7.1 directly with ships, aircraft and small craft required in experiments and projects and as otherwise directed by CJTF SEVEN.

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g. Provide personnel, as required, for participation in the defense of ENIWETOK and BIKINI Atolls. All military personnel based on ENIWETOK Island will, to the extent practicable, be trained in and available for ground defense.

h. Exercise maximum economy in the conduct of all operations. Attention is directed to letter, subject: "Conservation of Funds, Time and Resources", published by CJTF SEVEN on 8 May 1953.

4. Tasks of subordinate units:

a. Commander Special Devices Unit shall perform the following tasks:

- (1) Receive, transport and safeguard special devices as directed.
- (2) Provide shipboard facilities for assembly of devices and space for CTG 7.1 administration and laboratories.
- (3) Act as flagship of CTG 7.3 enroute to the forward area.
- (4) Provide transportation to the forward area for approximately 100 officer and 50 troop class personnel of JTF SEVEN.
- (5) Assist Joint Task Force Weather Control by taking Rawind data.

b. Commander Surface Security Unit shall perform the following tasks:

- (1) Provide surface escorts and plane guards as directed.
- (2) Conduct anti-submarine, air and surface search of designated areas, as directed. (See Annex H).
- (3) Detect, warn and escort out of the Danger Area any unauthorized craft.
- (4) Take such action as may be directed or authorized in the event a ship (including submarines), craft or aircraft takes offensive action, as later defined, against ENIWETOK or BIKINI Atolls or against a unit of the Joint Task Force. (See Annexes H and J).
- (5) Station ^{At least} DDE ^{AS TE 7.3.1.0 AT} at ENIWETOK Atoll (See Annexes H and I) to provide surface patrol, ASW, air search and fighter director services.
- (6) Provide air search, fighter director and communications services for CTG 7.3.2.2, as required.

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- (7) Perform rescue missions as directed. (See Annex E).
- (8) Provide a capability for rapid surface movement of ground defense forces between ENIWETOK and BIKINI Atolls in the event of emergency.
- (9) Provide control landing ship for TG 7.4 aircraft at shot times if required.

c. Commander Carrier Unit shall perform the following tasks:

- (1) Transport from the west coast to the forward area the following:

Material:

15 F84G Sampler Aircraft (TG 7.4)
3 to 6 L-20 Aircraft (TG 7.4)
10 HRS Aircraft (TG 7.3)
6 F4U-5N Aircraft (TG 7.3)
2 LCPL type Barge and Gig with dollies (CTG 7.3)
3 Trailers 27' long 11' high 8' wide, weight 18,000 lbs (TG 7.1)
600 cubic feet, 10 tons water spray equipment (TG 7.3)
2 675 cubic feet reefers
2 8GPH distilling units
Assorted recreation equipment
Radiac Instruments (TG 7.1)

Personnel:

22 Officers, 70 enlisted men (TG 7.4)
3 Officers or officer class, 2 enlisted men (TG 7.3)
32 Officers and 142 enlisted (Naval Air Units)

- (2) Operate a ship-to-shore and inter-island helicopter lift system at BIKINI Atoll to support pre-shot operations, post-shot surveys and scientific data recovery. (See Annex N).

- (3) Assist TG 7.4 with inter-island airlift operations at ENIWETOK as directed by CTG 7.3 by assigning helicopters to CTG 7.4 operational control.

- (4) Provide decontamination facilities aboard CVE for own aircraft and assigned Air Force helicopters.

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- (5) Control and provide manpower for rough decontamination of aircraft ashore at BIKINI Atoll.
- (6) Assist CTG 7.4 in search and rescue operations. (See Annex E).
- (7) Provide space and command facilities for CTG 7.3 in the forward area.
- (8) Base 3 F4U-5N each at ENIWETOK and BIKINI Atolls, respectively. Operate 3 BIKINI F4U-5N from CVE during BIKINI shot evacuation periods, as directed.
- (9) Control and operate F4U-5N aircraft, as directed.
- (10) Take such action as may be directed or authorized, in the event a ship (including submarines), craft or aircraft, takes offensive action, as later defined, against ENIWETOK or BIKINI Atolls or against a unit of the Joint Task Force. (See Annex J).
- (11) Maintain all F4U-5N aircraft and assigned USMC helicopters.
- (12) Maintain a plot of all ships and aircraft transiting the ENIWETOK/BIKINI Danger Area.
- (13) Provide space and power for radio-chemical laboratory and operations office for radiological safety unit, TU 7 of TG 7.1, and for three (3) trailers, each 28' x 8' x 11'.
- (14) Assist Joint Task Force Weather Central by taking Rawind data.

d. Commander Patrol Plane Unit shall perform the following tasks:

- (1) Provide for the security of the ENIWETOK/BIKINI Danger Area by air patrol of that area as directed. (See Annex I).
- (2) Provide air escort for Special Devices Unit or Special Devices Transport Unit as directed.
- (3) When directed before each shot, patrol out to 800 miles to detect and warn any surface shipping from the significant sector.
- (4) Take such action as may be directed or authorized in the event a ship (including submarines), craft or aircraft takes offensive action, as later defined, against ENIWETOK or BIKINI Atolls or against a unit of the Joint Task Force. (See Annex J).

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(5) Provide logistic support for the Navy aircraft participating in scientific programs.

(6) Assist in post-shot location of collector buoys for fall-out measurements.

(7) When directed make two specially configured EB-5A available to CTG 7.4 for inter-atoll airlift.

e. Commander Joint Task Force Flagship Unit shall perform the following tasks:

(1) Provide shipboard command, control and communications facilities for CJTF SEVEN and staff.

(2) Provide facilities and personnel for the Joint Task Force Weather Central.

(3) Provide command, control and communications facilities for CTG 7.4.

(4) Provide assistance to TG 7.1 with certain scientific projects, including the major portion of personnel required for decontamination of drone ships,

f. Commander Utility Unit shall perform the following tasks:

(1) Provide general tug services as directed.

(2) Assist TG 7.5 in mooring shot barges and in preventing loss of barge-loaded devices in heavy weather or other emergency.

(3) Assist TG 7.1 in carrying out scientific projects, including the positioning and recovery of test equipment and free floating buoys.

(4) Assist Commander TU 7.3.6 with remote control, towing, ship evacuation and decontamination facilities.

(5) Plant mooring buoys for TG 7.3 boat pool craft.

(6) Assign ATF's to other task units as directed.

g. Commander AW Ship Countermeasures Test Unit shall perform the following tasks:

(1) Prepare and train drone ships and control units for tests,

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(2) Direct the movement of drone vessels and assigned ATF's and aircraft.

(3) Direct, and provide for the radiological safety of, working parties from other units of TG 7.3 assigned for decontamination duties aboard drones.

h. Commander BIKINI Harbor Unit shall perform the following tasks:

(1) Control Harbor Operations at BIKINI.

(2) Assist in cargo handling operations at BIKINI, as requested.

(3) Operate and maintain TG 7.3 Boat Pool at BIKINI taking cognizance of the Task Force Commander's concept of coordinated Boat Pool Operations. (See Annex O).

(4) Provide SAR surface craft facilities at BIKINI.

(5) Provide POL replenishment services for Task Force Units at BIKINI.

(6) When Belle Grove is present at BIKINI, delegate foregoing tasks to CTE 7.3.7.0 as desired.

i. Commander ENIWETOK Harbor Unit shall perform the following tasks:

(1) Control Harbor Operations at ENIWETOK.

(2) Assist in cargo handling operations at ENIWETOK, as requested.

(3) At ENIWETOK, operate and maintain assigned units of TG 7.3 Boat Pool, taking cognizance of the Task Force Commander's concept of coordinated Boat Pool Operations. (See Annex O).

(4) Provide SAR surface craft facilities at ENIWETOK.

(5) Provide POL replenishment services for task force units at ENIWETOK.

(6) Detect surreptitious entrance of unauthorized ships or boats into ENIWETOK Lagoon by maintaining continuous hydrophone surveillance of harbor entrances.

(7) Coordinate information from visual and radar searches of units present to permit early identification of hydrophone contacts and inform appropriate units.

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j. Commander Transport Unit shall perform the following tasks:

(1) Transport the special devices and the necessary barges and associated personnel between and within ENIWETOK and BIKINI Atolls, as directed.

(2) Provide shipboard facilities for pre-shot evacuation of Task Force personnel for BIKINI Atoll.

(3) Provide afloat barracks accommodations and administrative space in Personnel Transport Element for TG 7.5 during BIKINI operations. (See Appendix II to Annex C).

(4) Provide surface transportation for personnel and materials between BIKINI and ENIWETOK Atolls, and other designated points.

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x. (1) This operation plan is effective for planning purposes on receipt and is effective for all units upon reporting to CTG 7.3 for operational control. Commanding Officers of all ships and units are required to be thoroughly familiar with CJTF SEVEN OpPlan 3-53 to insure intelligent performance of assigned tasks. A separate CTG 7.3 Operation order will be promulgated for each shot.

(2) All units, except VP-29, shall be prepared to provide working parties to assist Commander AW Ship Countermeasures Test Unit.

(3) Commander Carrier Unit and Commander Joint Task Force Flagship Unit will provide and maintain recreation facilities for TG 7.3 personnel at their respective bases.

(4) All units having organized landing forces be prepared to land such to assist in ground defense of ENIWETOK and BIKINI Atolls, if so directed.

(5) All units shall provide for the radiological safety of all embarked Task Force personnel.

(6) All units shall be prepared to provide emergency post-shot evacuation of all personnel from both atolls for a period of less than 48 hours. A detailed plan to cover this contingency will be promulgated before the shot period.

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- D Intelligence, Security and Public Information
- E Search and Rescue Plan
- F Communications
 - Appendix I Radio Circuit Plan
 - TAB A Radio Circuit Description
 - TAB B Radio Frequency Plan
 - TAB C Aircraft Radio Frequency Plan
 - Appendix II Radio Circuit Diagrams
 - TAB A Principle Task Force HF Circuits
 - TAB B Joint Task Force SEVEN Teletype Network
 - TAB C Security Patrol Communications
- G Radiological Safety
 - Appendix I Radiological Safety Regulations
 - Appendix II Hazards Resulting from Atomic Bomb Explosions
 - Appendix III Decontamination Procedures
- H Surface Security Unit Employment Plan *since bomb of page 10 changed*
 - Appendix I BIKINI Patrol Sectors
 - Appendix II ENIWETOK Patrol Sectors
- I Aerial Search and Fighter Defense Plan
 - Appendix I Basic ASW Patrol Plans
 - Appendix II Patrol Plane in Flight Report
 - TAB A Patrol Planes Weather Reporting Code
 - TAB B Visibility Table
- J Contact Identification and Development Procedure
 - Appendix I ~~Tasks of UDU Installation, ENIWETOK Atoll~~
~~Hydrophone Contact Development Procedure~~
- K Typhoon and Tidal Wave Plan
- L Hostile Alert Plan
- M Shot Phase Evacuation and Reentry Plan
- N Airlift Plan
- O Boat Plan
- P Weather Plan
- Q Photography Plan
- X Summary of Reports

Joint Task Force SEVEN
Task Group 7.3
Washington 25, D. C.
7 December 1953, 1200R

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Annex G

Radiological Safety

1. General

a. This annex supplements Annex N of CJTF SEVEN OpPlan 3-53, the provisions of which are applicable to all units of this command.

b. Radiological safety of all task force military and civilian personnel is a command responsibility and radiological safety activities will be performed through normal command channels.

c. (1) Radiological Defense (RadDefense) operations, or Radiological Safety (RadSafe) operations, short term RadOps, are general terms. They are used to denote the means by which a unit can control and confine the damage and radiological effects of an atomic explosion, or of radioactive material spread by other means, thereby preventing and avoiding health hazards to personnel. They are interpreted to include such measures as training, organization, distribution of radiological personnel, development of techniques and procedures for use of detecting equipment, protection or removal of exposed personnel, and decontamination of personnel, structures and equipment.

(2) Following each detonation there will be areas of surface radiological contamination and areas of air radiological contamination. These areas are designated as Radiological Exclusion Areas (Radex). Prior to shot times, the forecast air and surface Radex will be disseminated by CJTF SEVEN in the target area. These Radexes will represent a forecast from HOW Hour (H-Hour) until dissemination of a later surface and air Radex at about H plus 4 hours. The later Radexes will be based upon the master radiological "situation map" maintained in the RadSafe Office of CJTF SEVEN. Since the air Radex after shot time will be based on monitored air tracking by aircraft over significant large ocean areas, information promulgated from the forecast air Radex may have to be extended beyond the originally anticipated 4-hour period. The surface Radex will be determined by actual survey with Radiation Detection, Indication and Computation (Radiac) equipment after shot time. The most rapid method of accomplishing surface survey in the early stages will be by helicopter flight in and around the surface of contaminated areas. From the radiation intensities measured at a known altitude, it is possible to obtain an estimate of the radiation dosage rate which would be encountered on the surface of the ground or water. Actual water samples from the lagoon will also be utilized. Ground survey will follow these guides to determine definitely the contaminated regions and objects.

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2. Mission. The purpose of Radiological Safety (RadSafe) is to provide:

- a. Protection of personnel.
- b. Effective training of personnel.
- c. Evaluation of effectiveness of training and equipment.

3. Phases. To carry out its radiological mission, the Radiological Operations (RadOps) of Task Group 7.3 during Operation CASTLE are divided into three phases.

- a. Pre-shot Phase.
- b. Shot Phase.
- c. Roll-up Phase.

4. Pre-Shot Phase General Requirements

a. The Pre-shot Phase shall be utilized by all subordinate commands in:

(1) Developing operational efficiency to carry out all phases of RadOps through training.

(2) Filling of operational equipment allowances.

(3) Maintenance and calibration of Radiac equipment.

b. Developing Operational Efficiency. Commanding Officers of surface and air elements shall arrange for the training of key enlisted personnel who will be concerned with RadOps in Operation CASTLE at the Radiological Defense Schools, Fleet Training Centers, San Diego, California and Pearl Harbor, T.H., and for the training of designated officers at the Damage Control Training Center, Treasure Island, San Francisco, California. In the forward area, lectures will be conducted by certain qualified personnel of Task Group 7.3 staff for key ship, boat pool, and air personnel of Task Group 7.3. "On the job training" cannot be over stressed; commanding officers of task units shall hold frequent drills to develop operational efficiency. Commander Task Group 7.3 will conduct non-competitive inspections of all elements in the forward area to insure readiness for safe participation in the operation.

c. Filling of operational equipment allowances.

(1) Radiac equipment: BuShips, on request of type commanders, is taking steps to bring all units up to 100% of allowance, and members of the staff of CTG 7.3 are monitoring the progress of this work.

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(2) Water spray equipment: Packaged weather deck spray units together with installation plans have been developed by BuShips. These units will be issued by the Supply Officer of the USS BAIROKO (CVE-115) to ships of the task group in the forward area. The purpose of these units is to reduce the hazard of contamination from fall-out.

(3) Film badge dosimeters will be furnished by CTG 7.1 in the forward area.

(4) Decontamination clothing. Decontamination suits equivalent to those described in detail in paragraph 3b (2) (a) of Appendix III of this Annex shall be obtained for personnel of repair parties. Waterproof suits when worn in tropical climates cause heat prostration too quickly to be considered practical for this operation.

d. Maintenance and Calibration of Radiac Equipment. Units of Task Group 7.3 are responsible for the maintenance of their own radiac equipment. For repairs beyond the capacity of ship's force, a radiac instrument repair center and reserve instrument pool will be maintained by CTG 7.3 staff personnel aboard the USS BAIROKO. Radiac instruments needing calibration will ordinarily be brought to the USS BAIROKO for calibration. Training exercises and calibration drills, supervised by staff members of CTG 7.3, will be conducted for all ship's monitoring and decontamination parties aboard the USS BAIROKO.

5. Pre-Shot Phase Specific Requirements

a. BAIROKO (CVE-115)

- (1) Assist TG 7.1 to establish the following:
 - (a) Photo dosimetry laboratory.
 - (b) Radiological center.
 - (c) Provide space and power for trailer laboratories on hangar deck.
 - (d) Provide space for radiac instrument repair shop.
- (2) Provide space for TG 7.3 radiac instrument repair center.
- (3) Provide facilities for and develop proficiency in decontamination of aircraft on board ship.

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(4) Establish liaison with TG 7.4 for, and develop proficiency in, decontamination of aircraft ashore on ENIWETOK Island.

(5) Establish liaison with TG 7.1 for, and develop proficiency in, decontamination of aircraft ashore at BIKINI ATOLL.

b. Patrol Squadron (VP-29)

(1) Train a qualified monitor for each aircraft crew.

(2) Establish liaison with TG 7.4 for, and develop proficiency in, decontamination of aircraft ashore on ENIWETOK Island.

c. Other units as directed.

6. Shot Phase General Requirements.

a. Prior to shot time, ships of TG 7.3 shall note the background activity on low range survey meters at several points on topside. Radiation intensities at these points shall be read at frequent intervals for about a week after shot time. If indication of significant fall-out is noted, the ship's water spray system shall be started and continued in operation until instruments indicate that fall-out is complete, or the vessel is clear of the fall-out area. Significant fall-out is considered to be 5 mr/hr on shot day and 2 mr/hr on post shot days. CTG 7.3 shall be notified immediately of each instance when significant fall-out is detected, and further when the reporting unit is clear of significant fall-out. A simple code and instructions will be published at a later date.

b. If ships of the Task Group are contaminated by fall-out or by contaminated personnel or material coming aboard, every effort shall be made to localize the contamination. Standard decontamination procedures as outlined in USF 82, USF 85, and Appendix III of this Annex shall be used to remove contamination.

c. Decontamination of personnel and disposal of contaminated material shall be as provided in Pacific Fleet Instructions, USF 82, USF 85, and Appendix III to this Annex.

d. In order to detect contamination of vessels of the Task Group from radioactive material in the water of the lagoons, one or more water monitoring devices may be installed aboard certain ships of the Task Group. When these ships are inside a lagoon where a shot has been fired previously, these devices shall be read hourly. Should these devices indicate contamination in the lagoon, it may be necessary for CTG 7.3 to order temporary evacuation of the lagoon. Reporting instructions will be issued at a later date.

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During the BIKINI phase of the operation, aircraft operating between ENIWETOK and BIKINI shall report approximate air radiation intensities encountered from H hour to H plus 24 hours. It is not contemplated that aircraft will be scheduled for this specific requirement alone. Reports shall be routed to the RadSafe Office of CJTF SEVEN at the Task Force Command Post by the most expeditious means, and shall indicate the approximate position, altitude, and order of magnitude of radiation encountered. Simple codes and other instructions for these reports will be furnished separately.

7. Roll-up Phase General Requirements

a. All subordinate commands in TG 7.3 shall make the following reports by letter to CTG 7.3, within five (5) days after the final shot and prior to leaving the forward area.

(1) Instances of contamination of either personnel or equipment covering the following: Time after shot when first noticed, intensity, type of radioactivity encountered, estimated initial time of contamination, duration of contamination, dosage received by personnel, methods of decontamination, effectiveness thereof, and final disposition of contaminated items.

(2) Radiac equipment performance, adequacy of spares, etc. Such reports should include operational difficulties in use of equipment and an estimate of the adequacy of personnel training methods.

(3) That all radiac instruments borrowed from CTG 7.3 radiac instrument repair center have been returned, or exception, if any.

b. Unless directed otherwise by CTG 7.3, water spray equipment will be packaged and returned to the Supply Officer of the USS BAIHOKO prior to departure from the forward area. Shortages in this equipment will be charged to ship's quarterly allotment.

H. C. BRITTON
Rear Admiral
Commander

Appendix

- I. Radiological Safety Regulations
- II. Hazards Resulting from Atomic Bomb Explosions
- III. Decontamination Procedures
- IV. Radioactive Fallout Reports.
- V. Additional Package Measures

Directed for this Time
AUTHENTICATED:

65 A. C. D. [Signature]
L. O. DR. GGS

LCDE

Flag Secretary

Joint Task Force SEVEN
Task Group 7.3
Washington 25, D. C.
7 December 1953, 1200R

Operation Plan
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Appendix I to Annex G

Radiological Safety Regulations

1. The Maximum Permissible Exposures (MPEs) and Maximum Permissible Limits (MPLs) as stated herein are applicable to a field experimental test of nuclear devices in peacetime wherein numbers of personnel engaged in these tests have been previously exposed or will be continuously exposed to potential radiation hazards. It may become necessary from a study of personnel records to reduce the MPE for certain individuals who have recently been over-exposed to radiation. Further, the MPEs and MPLs are subject to revision by waiver from the Task Force Commander in individually designated cases when circumstances indicate the need and justification therefor.

2. Due to the special nature of field tests it is considered that a policy of strict adherence to the radiological standards prescribed for routine work is not realistic. The regulations set forth herein have been designed as a reasonable and safe compromise considering conservation of personnel exposures, the international import of the test and the cost aspects of operational delays chargeable to excessive radiological precautions. In all cases other than emergencies or tactical situations, the ultimate criteria will be limited by the MPEs for personnel. Special instances may arise such as in the case of an air-sea rescue within the Radex, or in the case of a tactical situation, in which operations will be carried out without regard to the MPEs and MPLs prescribed herein. For such emergency or tactical operations the criteria prescribed below for tactical situations will be used as a guide. Wherever possible, however, film badges will be carried and RadSafe monitors will accompany such operations to determine the extent of the actual radiation hazard experienced in order that appropriate medical action may be initiated.

3. a. The MPE for personnel involved in this operation is 3.9 roentgens (gamma only). This exposure may be acquired at any time during a thirteen (13) week period. Provided no previous over-exposure remains for compensation, 3.9 roentgens may be acquired without regard to the individuals past radiation history. This MPE will be considered further augmented (without separate action) by 0.3 roentgens/week for each week in excess of thirteen (13) weeks of the operational period.

b. All exposure to external gamma radiation will be regarded as total body irradiation.

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4. These individuals exposed to ionizing radiation in excess of the value computed in paragraph 3a above will be informed that appropriate remarks will be included in their medical records. Military personnel in this category will be advised that they should not be exposed to further radiation until sufficient time has elapsed in order to bring their average radiation dose down to 0.3 roentgens/week. Civilian personnel in this category will be informed that limitations on further radiation exposure will be as determined by the laboratory or agency having administrative jurisdiction over such personnel.
5. All atoll land and lagoon areas in or near which a detonation takes place will be considered contaminated until cleared for operations by the Task Force Commander. Entry to and exit from contaminated areas will be via RadSafe check points only.
6. Contaminated land and water areas will be delineated as such. Personnel entering these areas will be subject to clearances by the RadSafe Officer, TG 7.1, and will normally be accompanied by a RadSafe monitor. RadSafe clothing and equipment will be issued to these personnel.
7. Contaminated land areas of intensities less than 10 mr/hr (gamma only) shall be considered unrestricted from a RadSafe viewpoint. Areas coming within this limitation will be designated specifically by CJTF SEVEN prior to unrestricted entry.
8. RadSafe monitors assigned to individuals or groups working in contaminated areas or with contaminated equipment during recovery operations shall act in an advisory capacity to keep the recovery party leader informed of radiation intensities at all times. The recovery party leader shall accept this advice and act accordingly. It is the responsibility of both the leader and the members of the recovery party to adhere to the limits established in these regulations. The RadSafe monitor shall limit his activities to monitoring and will not engage in actual recovery operations.
9. a. Film badges, dosimeters and protective clothing (coveralls, booties, caps, gloves, dust respirators, etc.) as deemed necessary shall be issued to personnel entering contaminated areas by appropriate task group RadSafe supply sections. All personnel dosage film badges shall be procured from and returned to the laboratory of TU 7, TG 7.1 where all processing and recording will be accomplished.
b. Film badges shall be worn by all personnel whose tasks bring them in contact with radiological hazards, and by such other personnel as may be designated by CTG 7.3.

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c. For the purpose of obtaining film badge dosimeters, names of all individuals who are expected to enter radioactive areas shall be submitted to CTG 7.1, via CTG 7.3, two (2) weeks prior to the first test. Subsequent changes to the original list shall be submitted as they occur.

d. For purposes of estimating the dose received by any ship subjected to fall-out, ten (10) percent of the crew of each ship will receive film badges at the start of the operation. These badges will be retained either until the end of the operation or until called for by CTG 7.3.

10. All personnel within viewing distance of an atomic detonation who are not supplied with protective goggles shall turn away from the detonation point and close their eyes during the time of burst. At least 10 seconds must be allowed before looking directly at the burst.

11. All air and surface vehicles or craft used in contaminated areas shall be checked through the appropriate task group decontamination section upon return from such areas.

12. The Maximum Permissible Limits (MPLs) listed herein are to be regarded as advisory limits for control under average conditions. All readings of surface contamination are to be made with Geiger counters, with shield open unless otherwise specified. The surface of the probe should be held one (1) inch to two (2) inches from the surface that is under observation unless otherwise specified. For operational purposes the contamination MPLs presented below will not be considered applicable to spotty contamination provided such areas can be effectively isolated from personnel.

a. Personnel and clothing MPLs are as follows:

(1) Skin readings should not be more than 1.0 mr/hr. Complete decontamination by bathing will be utilized for readings in excess of this level. If the body is generally contaminated and especially if contamination is on the eyes or gonads, special efforts should be made to reduce the contamination level. In general, however, it is not considered profitable to abrade the skin or epilate the scalp in an attempt to reduce stubborn contamination below 1 mr/hr. (about 1000 cpm). Beta radiation exposure to the hands should not exceed 30.0 rps for the overseas operational period.

(2) Underclothing and body equipment such as the internal surfaces of respirators should be reduced to 2 mr/hr.

(3) Outer clothing should be reduced to 7 mr/hr.

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b. Vehicle MPLs: The interior surfaces of occupied sections of vehicles should be reduced to 7 mr/hr. The outside surfaces of vehicles should be reduced to less than 7 mr/hr (gamma only) at five (5) or six (6) inches from the surface.

c. Ship and Boat PMLs:

(1) It is desired to point out that the employment of the ships and units in TG 7.3, insofar as radiological safety is concerned, is not considered routine usage within the purview of NavMed P-1325, "Radiological Safety Regulations". Current revision of NavMed P-1325 indicates that its provisions do not apply for special operations such as field tests and that for such operations naval personnel will operate under regulations set forth by the Task Force Commander as approved by the Chief of Naval Operations.

(2) In general, ships and boats operating in waters near shot sites after shot times may become contaminated. Monitors shall be aboard all such craft operating after shot time, either as passengers or members of the crew, until such time as radiological restrictions are lifted.

(3) Task Unit Commanders shall take necessary action to ensure that personnel of ships and boats are not over-exposed to radiation and that ships and boats are not contaminated excessively. The criterion in both cases is that no personnel shall be over-exposed as defined by paragraph 3a above, except in emergencies or tactical operations, and that after the operational period no personnel shall receive more than 6.3 roentgen per week.

(4) For ships and boats operating in contaminated waters, reasonable allowances shall be made to differentiate between the relative contribution to the total flux from fixed contamination and that due to "Shine" from contaminated waters. Fixed alpha contamination should not exceed 2500 dpm (disintegrations per minute) per 150 cm² of area for enclosed areas (cabins, etc.) and 5000 dpm per 150 cm² area for open surfaces where ventilation is good.

(5) At the conclusion of the operation, final clearances will be granted by the Task Group Commander, or by Commanding Officers if so ordered, to those ships and boats showing no point of contamination greater than 15 mr/day (beta and gamma) and no detectable alpha. Other ships and boats will be granted operational clearances by the Task Group Commander, or by Commanding Officers if so ordered. An operational clearance implies that contamination exists and that special procedures as necessary are instituted aboard ship.

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(6) Individuals on board ships of the task force will be protected collectively from hazards of blast, heat and radioactivity by movement and positioning of the ships;

(7) No ships with personnel shall be permitted inside the 1.0 psi line unless specifically directed otherwise. Bearings of danger from immediate radioactive fall-out for ship operations will be established by CJTF SEVEN on the basis of forecast wind directions at the intended time of detonation. This danger section will be designated as surface Radex. All ships of the task force shall be required to remain outside Radex - danger bearing, radial limitation and time restriction unless specifically directed otherwise. However, if ships are directed tactically into the surface Radex, movement of ships shall be governed by tactical exposure guides.

d. Aircraft MPLs:

(1) The interior surfaces of occupied sections of aircraft should be reduced to 7 mr/hr.

(2) No aircraft in the air at H Hour shall be at slant ranges from ground zero less than as determined by the following effects unless specifically directed otherwise. (Based on maximum predicted yield and 20 mile visibility.):

Blast (at predicted shock arrival): 0.5 psi
Thermal (H Hour): Fabric control surfaces: 1.0 cal/cm²
Metal control surfaces: 6.0 cal/cm²

(3) After detonation, no aircraft shall operate inside the air Radex or closer than 10 nautical miles from the rising or visible cloud unless specifically directed otherwise. Non-expected aircraft involved in routine operations encountering unexpected regions of aerial contamination shall, immediately upon detecting such contamination, execute a turn-out. Cloud tracking aircraft shall execute turn-out from contaminated areas at a level of not more than 3.0 r/hr. If a tactical or emergency situation arises where aircraft must enter the air Radex or visible cloud, tactical exposure allowances shall apply.

(4) All multi-engine task force aircraft in the air at H Hour within 100 miles of the detonation point shall carry a person designated as radiological safety monitor equipped with suitable Radiac equipment and a Radex plot. This monitor shall be capable of calculating allowable exposures under both tactical and operational conditions.

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(5) All persons in aircraft at shot time, or at subsequent times when engaged in operations in or near the cloud or Radex track, shall wear film badges.

(6) Crew members of aircraft in the air at H hour will take special precautions to avoid (for at least 10 seconds) the direct and reflected light resulting from the burst. At the discretion of the airplane commander this may be done with protective high density goggles, by turning away from the burst with eyes closed, or by covering the eyes with the forearm.

(7) In the event that it becomes necessary to launch fighter aircraft, the aircraft controller shall make every effort to keep these planes clear of the air Radex to the maximum extent allowed by the tactical situation.

e. In air and water the following continuous levels of radioactivity are considered safe from the viewpoint of personnel drinking and breathing (uc = microcurie):

Water

Beta-Gamma Emitter
 5×10^{-3} uc/cc (calculated to H + 3 days)

Air (24-hour average)

Particles less than 5 micron diameter 10^{-6} uc/cc

Particles greater than 5 micron diameter 10^{-4} uc/cc

13. In tactical situations the OTC must make the decision regarding allowable exposures. As military personnel are normally subject to only random exposure, health hazards are at a minimum. Current Department of Defense information on exposure to gamma radiation in tactical situations is indicated below:

a. Uniform acute (immediate) exposure of 50 roentgens to a group of Armed Forces personnel will not appreciably affect their efficiency as a fighting unit.

b. Uniform acute exposure of 100 roentgens will produce in occasional individuals nausea and vomiting, but not to an extent that will render Armed Forces personnel ineffective as fighting units. Personnel receiving an acute radiation exposure of 100 or more roentgens should be given a period of rest and individual evaluation as soon as possible.

c. Uniform acute exposure of approximately 150 roentgens or greater can be expected to render Armed Forces personnel ineffective as troops within a few hours through a substantial incidence of nausea, vomiting.

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weakness and prostration. Mortality produced by an acute exposure of 150 roentgens will be very low and eventual recovery of physical fitness may be expected.

d. Field commanders should, therefore, assume that if substantial numbers of their men receive acute radiation exposures substantially above 100 roentgens there is a grave risk that their commands will rapidly become ineffective as fighting units.

e. Internal radiation hazards caused by entry of radioactive substances through the mouth, through the lungs or through cuts or wounds do not exist after an air burst. Internal hazards following a contaminating surface explosion may be avoided if ordinary precautions are taken. Only under unusual circumstances will there be internal hazard from residual contamination. This eliminates the necessity for masking and consequent reduction of tactical efficiency.

14. The Radiological Safety Officer, Task Group 7.1 will maintain standard type film badge records of radiation exposures for all Task Force personnel. Records will indicate full name, rank or rate, serial or service number, if applicable, organization, home station or laboratory, date of exposure, and remarks such as limitations on assignment because of exposure. Upon completion of the operation, disposition of these records will be as follows:

a. A consolidated list of exposures listing military personnel, and civilian personnel under military control, by full name, rank or rate, serial or service number (if applicable), organization, home station or laboratory and exposure in milliroentgens together with exposed film badges and control film badges will be forwarded to the Chief, AFSWP.

b. A consolidated list of personnel and exposures will be forwarded to the Director, Division of Biology and Medicine, AEC.

c. Individual records of Navy military and civilian personnel will be forwarded to their unit of assignment for inclusion in the individual's health record (Medical History Sheets and NavMed H-8). For those military personnel exposed to ionizing radiation in excess of that defined by paragraph 3a above, a statement will be included to the effect that the individual is not to be subjected to ionizing radiation before a specific date, the date to be computed by the Radiological Safety Officer, Task Group 7.1 to allow sufficient time to elapse in order to bring the average radiation dose down to 0.3 roentgens per week.

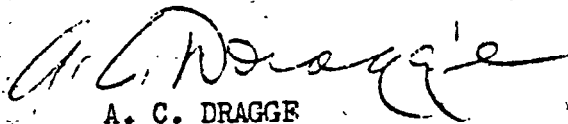
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d. Upon completion of above, letter reports will be submitted through channels to the Chief, Bureau of Medicine and Surgery, and the Director, Division of Biology and Medicine, AEG, indicating, in general, the action taken to dispose of individual dose records, comments on over-exposures if applicable, and any pertinent remarks considered of interest to the above offices.

15. This appendix has been designed for reduced security classification in order to facilitate wide dissemination and may be downgraded to UNCLASSIFIED provided all references to Joint Task Force SEVEN and its subordinate units are deleted.

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Commander

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Flag Secretary

Joint Task Force SEVEN
Task Group 7.3
Washington 25, D. C.
7 December 1953, 1200R

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CTG 7.3 No. 1-53

Appendix II to Annex G

Hazards Resulting from Atomic Bomb Explosions

1. Nature of Hazards

a. When an atomic bomb explosion occurs, tremendous quantities of energy in a variety of forms are released. This energy is propagated outward in all directions.

b. The immediate reaction is intense emission of ultraviolet, visible and infrared (heat) radiation, gamma rays and neutrons. This is accompanied by the formation of a large ball of fire. A large part of the energy from the explosion is emitted as a shock wave. The ball of fire produces a mushroom-shaped mass of hot gases, the top of which rises rapidly. In the trail below the mushroom cap, a thin column is left. The cloud and column are then carried downwind, the direction and speed being determined by the direction and speed of the wind at the various levels of air from the surface to base of mushroom cap. Part of the energy from the explosion results in an ocean surface wave which is considered of minor nature directly to the Task Force.

c. All personnel of the Task Force will be well outside of the range of all hazards at the time of detonation, except for the light from the fire ball. The light of explosion is so intense that permanent injury to the eye may result from viewing the ball of fire at close range with the naked eye or through binoculars. Ordinary dark glasses will not suffice and all personnel who do not have the special protective glasses, which will be issued in limited numbers by CTG 7.1, must be facing 180 degrees from the detonation with the eyes closed.

d. The emission of dangerous nuclear radiation can be separated into two time periods. The primary radiation which occurs at the time of the flash is composed of gamma rays and neutrons. Casualties may result from this primary radiation if the exposure occurs within a certain range of ground zero. Secondary radiation is due to activation of the soil around ground zero and to fall-out.

e. Following the detonation, personnel entering shot areas will be exposed to beta particles and gamma rays coming from induced neutron activity in the soil and/or water, and any fission products which might have been deposited on the ground or in the water. There may also be a potential alpha particle hazard from the unfissioned fissionable materials which may be deposited on the ground or in the water.

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2. Protection

a. Against the primary radiological effects, distance will provide protection.

b. Against the secondary radioactivity hazards from radioactive fission products, induced radioactivity and unfissioned residue, detection and avoidance provide the best protection. Suitable instruments indicate both the presence and intensity of radioactivity at a given place. Area reconnaissance, the maintenance of contamination situation maps, the posting of areas of hazard, and minimizing the spread of contaminated material into uncontaminated areas constitute the active measures for reducing the radiological hazard.

c. Personnel within an operational radius of ground zero who are to be facing in the direction of the flash will be required to wear special goggles to protect their eyes against excessive light. Personnel within the above operational radius who are not provided goggles will face, with eyes closed, in the opposite direction from the flash. After ten (10) seconds, such personnel may turn about and observe the phenomena.

3. Anticipated Hazard Areas

a. Immediately under the bomb burst there will be an area of intense radioactivity extending downward and to some extent crosswind and upwind with gradually decreasing intensity.

b. Extending downwind, (and to some extent crosswind and upwind) an airborne radioactive hazard will exist. Its characteristics will depend on the meteorological influences such as wind speed and direction at various altitudes up to the maximum height reached by the cloud,

c. Contaminated water in the lagoon adjacent to the shot site may be of consequence, and will be analyzed by the radiological safety unit of TG 7.1 immediately after shot time and at other intervals.

d. Unless care is exercised, individuals or objects entering contaminated areas may transfer radioactivity to clean areas.

e. By means of instruments, such as Geiger-Mueller counters, ion chambers or photoelectric cells it is possible to detect the area of contamination and to measure the intensity of the radioactivity. Radiation intensity will normally be measured and reported in roentgens per hour. Besides those

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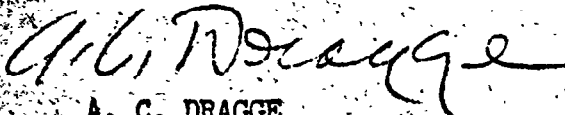
instruments, dosimeters and film badges will be used as indicators of the accumulated exposure to radioactivity. Only personnel involved in work near, or in, radioactive areas will wear film badges to provide a permanent record of exposure, except for a few film badges issued to units of TG 7.3 for an indication of exposures of personnel in the event that unit is caught in "fall-out".

f. The intensity of the radioactive hazard tends to decrease with time due to decay of radioactive materials, and dispersion and dilution, depending upon climatic conditions. As an approximation, the intensity of the radiation from the fission products decreases by radioactive decay inversely with the time after the detonation.

4. This appendix has been designed for reduced security classification in order to permit wide dissemination to all personnel of the command, and may be downgraded to UNCLASSIFIED provided all references to Joint Task Force SEVEN and its subordinate units are deleted.

H. C. BRUTON
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Task Group 7.3
Washington 25, D. C.
7 December 1953, 1200R

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Appendix III to Annex G

Decontamination Procedures

1. General. Radioactive contamination will very probably at some time during Operation CASTLE render an essential area or piece of equipment temporarily unusable. In such a situation, the reduction of such radioactive contamination may be mandatory to successful accomplishment of the operation. Decontamination of units and personnel shall be accomplished on the site to reduce the hazard to operational levels.

a. Definitions (Ref. NavMed P-1325)

(1) Operational Clearance implies that radioactive contamination exists and that special operating procedures are required. Commander, Task Group 7.3 is responsible for authorizing operational clearances.

(2) Final Clearance. Following the completion of decontamination, or if a ship has not been contaminated, Commander Task Group 7.3 may authorize final clearance for a particular ship or unit. This shall apply, also, to final clearance on the decontamination of all forms of equipment, instruments, furniture, and personal items. Final clearance shall imply that the area or object concerned has been monitored and found to have no point exceeding 0.015R/24 hr beta plus gamma and no detectable alpha emitting isotopes. In the event that a unit of the task group has some area or material, at the conclusion of Operation CASTLE, which has not yielded to decontamination, this unit may be released to its type commander under operational clearance.

(3) It should be remembered that radioactive fission products decay as time passes, the most rapid decay taking place within the first few hours after detonation. To compute dosages, see "Radiological Defense", Vol II pp 223-229.

2. Reagents. In most of the decontamination operations which might be required of Task Group 7.3, fresh and/or salt water sprayed under pressure shall be used for gross decontamination. Ordinarily, salt water should not be used on aircraft. Other reagents which are used where water is inappropriate or inadequate are: Standard Cleaner, USN C-152, or 147, 5-10% sodium citrate solution or USAF cleaning compound Spec. 20016 (gunk), kerosene and soap powders. Cleaners with an oil carrier are especially suitable for aircraft decontamination.

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3. General Aircraft Decontamination Procedures.

a. The flight of an aircraft through an atomic cloud or its "fall-cut" poses a problem which contains many unpredictable factors, i.e., type of aircraft, pressurizing, if any, type of ducting for cockpit and engine oil cooler location, jet, turbo-jet, or propeller driven, etc.

b. After it has been determined through monitoring that decontamination is necessary, aircraft will be decontaminated at a shore facility at ENIWETOK or BIKINI or on board the CVE, as circumstances indicate.

(1) Decontamination Operations on Board a Carrier (General Criteria).
In decontaminating aircraft on board a carrier, the following factors should be stressed:

(a) Area should be well isolated from personnel living spaces, ventilator intakes, etc.

(b) A clear watershed to the sea to prevent contamination of the vessel.

(c) Air circulation.

(2) Decontamination Operations Aboard a Carrier (Specific).

(a) Decontamination personnel shall be in decontamination suits. Decontamination suits shall ordinarily include the following:

<u>Nomenclature</u>	<u>Stock No.</u>
Coveralls	G37-C-2570 (Or equivalent)
Gloves, electricians	G37-G-2295
Goggles	U37-G-3050
Mask, half, filter pad	G37-M-315
Overshoes, rubber N-1	U37-O-6915
Cap, Marine Utility	73-C-59100 through 59104

This decontamination suit provides protection from contamination, and for avoiding heat prostration is much more satisfactory than a waterproof suit.

(b) Decontamination personnel shall be restricted to the immediate area surrounding the contaminated aircraft. Support personnel are in the "clean" background area to manipulate equipment to the decontamination team.

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(c) The decontamination area should be clearly marked and roped off in some manner.

(d) Every effort shall be made to prevent the contamination of the ship in the decontamination area. A disposable waterproof canvas deck cover with chutes to clear water over the side might be used for this purpose.

(e) Provision should be made for disposal of contaminated items in the decontamination area.

(f) All material leaving the decontamination area shall be monitored.

(g) Decontamination operations shall be interrupted intermittently for monitoring of aircraft to determine effectiveness. Work periods should be calculated after intensity levels are measured.

(h) Decontamination operations should continue until the level of intensity drops to what is considered the point of diminishing returns. In the case of helicopters, every effort shall be made to maintain maximum decontamination since these aircraft probably will be required to make repeated flights into contaminated areas. Due consideration should be given to maintaining helicopter operations and further maintaining maximum number of "clean" helicopters, bearing in mind that personnel are allowed only 3.9R for the operation.

(i) Approximately 40% of original contamination should be removed by the first application of cleaning solution and flushing and approximately 10% by the second application; further applications are of a dubious value.

(j) Where metal parts are contaminated and there is danger of damaging adjacent items of porous material, such as fabric, scrubbing with cleaning solution is effective.

(k) If initial contamination is driven into paint, apply a solution containing 5 pounds lye, 5 pounds boiler compound, 1 pound starch and 10 gallons of water and scrub with wire brush or scrape to remove all paint. Apply cleaning solution and flush thoroughly with water. REMONITOR.

4. General Ship Decontamination Procedures.

a. Spraying of the topside prior to and during unavoidable exposure of ship to radioactive particles in the fall-out area will probably eliminate

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the necessity for decontamination. The interior of the ship is preserved in its "clean" status by setting of the appropriate damage control condition of readiness to seal the ship's envelope.

b. Should the above method fail to prevent contamination, decontamination suits shall be worn to protect the damage control parties who must work on the contaminated sections of the ship. In the use of water after the ship has been exposed to contamination, special techniques are required to control the contaminating spray resulting from hosing operations. If possible, the hosing of an object should be carried on from the upwind side so that the spray will not drift back on the operators. The most satisfactory operating position is from 15 to 20 feet from the surface. On vertical surfaces, the water should be directed to strike the surface at an angle of 30 to 45 degrees. The complication of a brisk wind can be partially offset by using a wind-break. For hosing down large contaminated areas, a rate of approximately 4 square feet per minute should be used. Special attention must be given to the drainage from these operations to allow direct flow to disposal points over the side.

c. Hosing is not the complete answer to decontamination; scrubbing techniques may have to be used.

d. Wooden surfaces, if contaminated, can be decontaminated as outlined below under General Boat Decontamination Procedures.

5. General Boat Decontamination Procedures.

a. If boat exterior, i.e., painted surface, is contaminated from passage through contaminated water, hosing down and scrubbing if necessary should be sufficient to reduce any contamination to well below prescribed tolerances. If boat is water-borne, drainage from hosing down should present no problem. Dispersal of radioactive products in the lagoons is anticipated to be sufficient to prevent recontamination of other boats. If interior of boat is contaminated, hosing down and pumping out over the side should suffice. However, repeated use of this method can concentrate some contamination in the bilge pump system which is not desirable, and this pump should be especially monitored.

b. Contamination can be introduced into boats by contaminated passengers radioactive "fall-out" from atomic burst, or seepage of contaminated water into bilges. It is considered most likely that any major contamination in the boats will come from contamination on passengers and from sand unintentionally brought on board from contaminated beaches. Unpainted wood will not be as readily decontaminable as described above. Any contamination should be

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relatively light. If relatively light and too resistant to normal hosing down, scrubbing and scraping, followed by a coating of shellac, varnish or paint will usually effectively shield out alpha and beta radiation and seal it in until radioactive decay completes the process of removal of any health hazard. It is planned that all boat decontamination will be done in an open sea area (ocean or lagoon) where water disposal from low order of contamination and drainage is no problem.

6. General Personnel Decontamination Procedures.

a. At the completion of decontamination operations on shipboard, personnel concerned should be monitored on the spot - then shed outer (protective) clothing, gloves, booties, etc., discarding of same into covered containers. Personnel then are monitored and if necessary sent to a personnel decontamination center. (See Appendix I of this Annex, para. 12a)

(1) Ships damage control directives usually state that a "decontamination head" shall have an entrance from the weather deck, and a clean exit inside the ship. To prevent contamination from getting inside the ship, it is recommended that a temporary "change house" be installed on the weather deck. This could consist of a simple shower arrangement which drains over the side. A stage over the side could accomplish this, with some provision for storing contaminated clothing.

b. Personnel upon completion of their duties in a contaminated area will be required to utilize the facilities within a "change house" (equivalent to a personnel decontamination head). It should be organized and operate in such a way that it ensures:

(1) Monitoring of suspected contaminated personnel at "change house" ENTRANCE.

(2) Advising each person as to degree of contamination and spots more highly contaminated than others, paying special attention to soles of shoes, hands and hair.

(3) Instruction of incoming personnel where contaminated clothing should be disposed of. This clothing may require laundering or, as a result of decay of radioactive contamination, it may be possible to re-use it after a period of time without laundering.

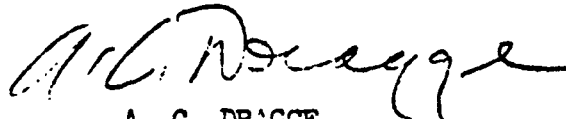
(4) Monitoring of personnel with and without clothing.

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- (5) Collection of dosimeters worn by persons entering decontamination centers.
- (6) Shower facilities where personnel will scrub thoroughly with particular attention to hair and hands when contaminated.
- (7) Second monitoring after shower at exit to change house and release of personnel if skin count is less than 1 mr/hour. Washing should continue as necessary to assure the above degree of decontamination, or until it is obvious that further washing is useless.
- (8) This appendix has been designed for reduced security classification in order to permit wide dissemination to all personnel of the command, and may be downgraded to UNCLASSIFIED provided all references to Joint Task Force SEVEN, its subordinate units, Operation CASTLE, and geographical locations are deleted.

H. C. BRUTON
Rear Admiral
Commander

AUTHENTICATED:



A. C. DRAGGE
LCDR
Flag Secretary

G-III-6

Operation Plan
CTG 7.3 No. 1-53

Joint Task Force SEVEN
Task Group 7.3
Eniwetok Atoll, M.I.
8 April 1954, 1800M

Appendix IV to Annex G

Radioactive Fallout Reports

1. For one week following each shot each ship shall report radioactive fallout encountered as follows:

a. A report shall be made of fallout readings (gamma only) of 1 mr per hour or higher.

b. Only the value of gamma radiation shall be reported.

c. Reports will be coded as follows: "Rabbit" followed by a number to indicate average topside activity, the number indicating mr per hour (gamma only); "Cat" followed by a number to indicate maximum activity found on the ship, the number indicating mr per hour (gamma only). Thus a message "Rabbit 2 Cat 7" indicates the average topside activity is 2 mr per hour (gamma only), and the maximum activity found on the ship is 7 mr per hour (gamma only). Fractional numbers will be reported as the nearest whole number. Thus if the average topside activity is 3.8 mr per hour (gamma only) and the maximum activity found on the ship is 8.4 mr per hour (gamma only) the message to be sent is "Rabbit 4, Cat 8".

d. New reports shall be made when the average topside activity increases to more than twice that last previously reported or decreases to less than half that last previously reported.

e. Reports shall be sent by radio or light to CTG 7.3, to the USS BAIROKO, and to the USS ESTES. These reports shall be delivered to the RadSafe Center on the BAIROKO and to the RadSafe Office on the ESTES.

f. Reports shall be sent on TG 7.3 UHF Admin or CW Common or on TG 7.1 Pogo or Admin Nets, as appropriate.

g. One week after each shot every ship shall send to CTG 7.3 a complete letter report on radioactive contamination experienced since the shot occurred. As applicable, each letter shall include a table with estimated average intensity topside in milliroentgens per hour and approximate position of ship in latitude and longitude at following times: Hourly on the hour from How hour to 2000M Dog day; every four hours from 2000M Dog day to 0400M Dog plus two day; daily at 0800M Dog plus two

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day to Dog plus seven day inclusive. Letters shall be in quintuplet and leave ships not later than Dog plus ten day.

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Commander

Authenticated:

A. C. Dragge

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Flag Secretary

Operation Plan.
CTG 7.3 No. 1-53

Joint Task Force SEVEN
Task Group 7.3
Washington 25, D. C.
7 December 1953, 1200R

Appendix V to Annex G

Additional RadSafe Measures Directed for Shot Times

1. If decks and structures are kept wet prior to fallout there is less likelihood of radioactive fallout being absorbed into porous materials and cracks.
2. In addition to RadSafe Instructions listed elsewhere, it is directed that all ships within eighty miles of the shot site from D Day to D+2 day observe the following procedures:
 - a. From H+10 minutes to H+4 hours:
 - (1) Clear topsides of all non-essential personnel.
 - (2) Close all doors, hatches, and ports from topside to the interior of the ship.
 - (3) Continue to operate the ventilation systems at the discretion of the Commanding Officer, but monitor air coming from topside.
 - (4) Keep the washdown equipment ready for immediate use.
 - (5) Maintain the topside in a wet condition by continuous or intermittent use of the washdown system. In order to avoid grounding numerous antennas, ESTES shall not use the washdown system until and unless fallout is detected.
 - (6) Maintain a constant watch for radioactive fallout on topsides except when washdown system is turned on.
 - b. From H+4 hours to H+48 hours
 - (1) Keep the washdown system ready for immediate use, except when this interferes with essential ship activities.
3. All TG 7.3 ships in the ENIWETOK/BIKINI Danger Area shall:
 - a. From H+4 hours to H+36 hours, check the topsides for radioactive fallout every twenty minutes.
 - b. From H+36 hours to H+72 hours, check the topsides for radioactive fallout every hour.
 - c. From H+72 hours to D plus 7 days, check the topsides for radioactive fallout every four hours.
 - d. Maneuver to avoid rainfall and low clouds, as practicable.

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e. When radioactive fallout is detected, take appropriate measures in accordance with existing instructions, and report in accordance with Appendix IV of this annex.

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CHANGE #4