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17869

HEADQUARTERS

TASK GROUP 7.4

OPERATION ORDER NO. 5-54

HOWELL M. ESTES, JR.
BRIGADIER GENERAL, USAF
COMMANDER

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HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
APO 187, c/o Postmaster
San Francisco, California
7 April 1954, 1800M

OPERATION ORDER NO. 5-54

CHART REFERENCES:

a. World Aeronautical Charts (748, 749, 848, 849, 850) 1:1,000,000.

b. USAF Aeronautical Planning Chart (AP-14) 1:5,000,000.

TASK ORGANIZATION:

a.	Headquarters, Task Group 7.4, Provisional	Brigadier General Howell M. Estes, Jr.
b.	Test Aircraft Unit	Lt Colonel James A. Watkins
c.	Test Services Unit	Lt Colonel Mahlon B. Hammond
d.	Test Support Unit	Colonel James F. Starkey

1. GENERAL SITUATION:

a. In order to add flexibility to the detonation schedule, Task Group 7.4 Operation Order No. 5-54 has been prepared for execution in the event adverse wind conditions prevent detonation in the BIKINI area, this Operation Order will apply. Execution day for this Operation Order will be specified by Joint Task Force SEVEN. At that time and upon notification by this headquarters, this order is a specific directive to all elements of the Air Task Group to execute the assigned missions in support of the ENIWETOK event. This order supplements Task Group 7.4 Operation Order No. 1-53 which is still in effect.

(1) See Annex A, Intelligence, Task Group 7.4 Operation Order No. 1-53.

(2) See Annex B, Organization and Command Relationships, Task Group 7.4 Operation Order No. 1-53.

(a) Task Group 7.3 will provide to Task Group 7.4 aircraft control facilities aboard the Command Ship and the Control Destroyer for the ENIWETOK event. (See Annex A, Check List, this Operation Order, and Annex T, Command Ship CIC Procedures; Annex U, Control Destroyer Procedures).

2. MISSION:

a. To participate in the ENIWETOK operations as directed by Joint Task Force SEVEN.

3. TASKS FOR SUBORDINATE UNITS:

a. Test Aircraft Unit:

(1) Execute assigned mission to include that specified in Annex A.

(2) Provide twelve (12) F-84 aircraft for necessary sampling mission for the ENIWETOK event. (See Annex H)

(3) Provide four (4) B-36 aircraft for control and sampling mission for the ENIWETOK event. (See Annexes G and I, this Order)

(4) Assure adequate sample removal procedures for the ENIWETOK event. (See Annex N)

(5) Augment the field maintenance facilities of the Test Support Unit as required.

(6) Provide for complete care, storage, and issue of personal equipment to all aircrews of the Test Aircraft Unit.

(7) Prepare the marshaling plan for all aircraft which will depart from ENIWETOK to participate in the ENIWETOK event, and special missions.

(8) Prepare a post-mission parking plan for all aircraft that will land at ENIWETOK after the completion of their mission.

(9) Prepare a mission execution chart and assure that take-offs and landings are accomplished as specified in Annex C.

(10) Provide for aircraft decontamination.

b. Test Services Unit:

(1) Execute assigned missions, including that specified in Annex A.

(2) Provide three (3) C-54 photographic aircraft and crews for the ENIWETOK event. (See Annex L)

(3) Provide adequate SA-16 and other required SAR support to the AOC and CIC for operational control throughout the ENIWETOK event. (See Annex F)

(4) Provide adequate WB-29 weather reconnaissance, cloud tracking and sampling services throughout the ENIWETOK event. (See Annex M)

(5) Assure adequate pre-mission weather forecasting as required for the ENIWETOK event.

(6) Provide necessary weather briefings and weather reports to the GIC and AOC throughout the ENIWETOK event.

(7) Assure adequate communications facilities throughout the ENIWETOK event.

(8) Augment the field maintenance facilities of the Test Support Unit as required.

(9) Coordinate with Test Aircraft Unit to assure that Test Services Unit aircraft are marshaled as required by that unit.

(10) Provide for complete care, storage, and issue of personal equipment to all aircrews of the Test Services Unit.

[redacted]

c. Test Support Unit:

(1) Assure that transient traffic and airlift operations do not interfere with or endanger test aircraft operations during the ENIWETOK event. (See Annex A)

(2) Establish required measures to prevent movement of vehicles from interferring with or endangering air operations throughout the ENIWETOK event.

(3) Provide adequate crash removal and fire fighting protection for all air operations on ENIWETOK event.

(4) Place one (1) H-19 helicopter under the operational control of the SAR Element Commander and one (1) crash boat under the operational control of the AOC from 27 February 1954 and continuing throughout the project. (See Annex F)

(5) Assure adequate refueling and field maintenance support for all aircraft during the ENIWETOK event.

(6) Provide photographic coverage during the ENIWETOK operations for historical purposes.

(7) In coordination with other Test Units, assure adequate transportation schedules from the flight line to the dining halls and billeting areas throughout the ENIWETOK event operations.

(8) Provide for aircraft decontamination.

x. All Units:

(1) Provide liaison officers to assist Headquarters, Task Group 7.4 aircraft controllers in the AOC, on the Command Ship and Control Destroyer as required. (See Annexes S, T and U)

(2) Coordinate with Test Support Unit to arrange required early dining schedules, in-flight lunches, transportation, etc., for the ENIWETOK event.

(3) Adhere to security procedure as outlined in Annex G, Security and Public Information, Task Group 7.4 Operation Order No. 1-53, and other directives.

(4) Emphasize the Flight Safety Program outlined in Annex L, Flighty Safety, Task Group 7.4 Operations Order 1-53, and other directives.

(5) Be prepared to augment existing SAR facilities in emergencies during the ENIWETOK operation.

(6) Be prepared to postpone execution of the mission for such periods as are made necessary by adverse weather or other unforeseeable event. (See Annex V)

(7) Assure proper reporting of radiation encountered by multi-engine aircraft. (See Annex W)

(8) Conduct briefings as required. (See Annex X)

[redacted]

[redacted]

(9) All communications with FRED Tower from H minus 4 hours to H-Hour will be on VHF Channel "H" (HOW), 134.1 mc. No Task Group 7.4 aircraft will transmit on VHF Channel "B" (BAKER), 126.18 mc during this period of time.

4. LOGISTICAL MATTERS:

a. See Annex C, Administration, Task Group 7.4 Operation Order No. 1-53.

5. COMMAND AND SIGNAL MATTERS:

a. Communications: (See Annex E)

b. Time: Zone "M" (Local) Time.

c. Command Posts:

(1)	Task Group 7.4	AEC Control Room (PARRY)
	(a) CIC	USS ESTES (AGC-12)
	(b) AOC	Building #90 ENIWETOK ISLAND
(2)	Test Aircraft Unit	Building #135 ENIWETOK ISLAND
(3)	Test Services Unit	Building #135 ENIWETOK ISLAND
(4)	Test Support Unit	Building #135 ENIWETOK ISLAND

HOWELL M. ESTES, JR.
Brigadier General, U. S. A. F.
Commander

ANNEXES:

(See Page 5)

DISTRIBUTION:

(See pages 6 & 7)

[redacted]

ANNEXES

A. Schedule of Events

B. Aircraft Parking Plan

C. Aircraft Mission Execution Chart

D. Aircraft H-hour Positions and Flight Patterns

E. Communications

F. SAR Plan

G. Control RB-36 Flight Procedures

H. F-84 Sampler Flight Procedures

I. B-36 Effects Flight Procedures

J. B-47 Effects Flight Procedures

K. B-36 Hi-Altitude Sampler Flight Procedures

L. C-54 Photo Flight Procedures

M. WB-29 Weather and Rad Safe Flight Procedures

N. Decontamination Procedures

O. B-50 IBDA Flight Procedures

P. (N/A This Oprs Order)

Q. Observer Aircraft Flight Procedures

R. Sample Recovery Procedures

S. AOC Procedures

T. CIC Procedures

U. Control Destroyer Procedures

V. Aircraft Abort Criteria

W. Multi-Engine Aircraft Rad Safe Reporting Code

X. Briefings

Y. Navy Aircraft Flight Procedures

Z. Pre-Shot Blast Precautions

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1	23	Comdr, AWS, Andrews AFB, Washington 25, D. C.
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1	25	Comdr, 8th Air Force, Carswell AFB, Texas
1	26	Comdr, PACDIVMATS, APO 953, c/o PM, San Francisco, Calif
1	27	Comdr, 4925th Test Group (ATOMIC), Kirtland AFB, NM
1	28	Comdr, 76th Air Rescue Sq, APO 953, c/o PM, San Francisco, Calif
1	29	Comdr, Air Defense Command, Ent AFB, Colorado
1	30	Comdr, Air Proving Ground Command, Eglin AFB, Fla
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5	38 - 42	Comdr, TG 7.1, APO 187, c/o PM, San Francisco, Calif
2	43 - 44	Comdr, TG 7.2, APO 187, c/o PM, San Francisco, Calif
2	45 - 46	Comdr, TG 7.3, APO 187, c/o PM, San Francisco, Calif
4	47 - 50	Comdr, TG 7.5, APO 187, c/o PM, San Francisco, Calif
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1	52	CG, AFSWP, Sandia Base, New Mexico
		ARMY AGENCIES
1	53	C/S, U.S. Army, Washington 25, D.C.
1	54	CG, USARPAC, APO 958, c/o PM, San Francisco, Calif
		NAVY AGENCIES
1	55	CNO, Washington 25, D.C.
1	56	CINCPACFLT, Navy #128, c/o FPO, San Francisco, Calif
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10	69 - 78	Comdr, Test Services Unit
6	79 - 83	Comdr, Test Support Unit

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1	85	Commander, TG 7.4
1	86	Deputy Commander
1	87	Chief of Staff
5	88 - 92	Director of Operations
2	93 - 94	Director of Personnel
2	95 - 96	Director of Materiel
1	97	Comptroller
1	98	Personnel Security Officer
1	99	Historian
1	100 - 114	Adjutant, Hq, Task Group 7.4 (REAR), Kirtland AFB, NM

ANNEX A

TO

OPERATIONS ORDER NO. 5-54

SCHEDULE OF EVENTS

(Information normally contained in this Annex is of a transitory nature and will be issued separately with an specific Operations Order referencing this Operations Order.)

ANNEX B

TO

OPERATIONS ORDER NO. 5-54

AIRCRAFT PARKING PLAN

(Information normally contained in this Annex is of a transitory nature and will be issued separately with an specific Operations Order referencing this Operations Order.)

ANNEX C

TO

OPERATIONS ORDER NO. 5-54

AIRCRAFT MISSION EXECUTION CHART

(Information normally contained in this Annex is of a transitory nature and will be issued separately with an specific Operations Order referencing this Operations Order.)

ANNEX D

TO

OPERATIONS ORDER NO. 5-54

AIRCRAFT H-HOUR POSITIONS AND FLIGHT PATTERNS

(Information normally contained in this Annex is of a transitory nature and will be issued separately with an specific Operations Order referencing this Operations Order.)

ANNEX "E"

In 6 pages W/5 Appendices

consisting of 20 pages

ANNEX "E"

TO

OPERATIONS ORDER NO. 5-54

COMMUNICATIONS

ANNEX "E"
TO
OPERATIONS ORDER NO. 3-54
COMMUNICATIONS

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
APO 187, c/o Postmaster
San Francisco, California
8 April 1954, 1800 M

1. GENERAL CONCEPT OF COMMUNICATIONS OPERATIONS:

a. One permanent relay - crypto center at ENIWETOK will be installed, operated and maintained by Task Group 7.2. Tributary stations serviced by this relay center will include Headquarters Task Group 7.4, which will be responsible for distribution of messages to its subordinate units. For handling of teletype traffic, up to and including SECRET, between major forward and rear echelon task force elements, the following radio teletype circuits will be operated "ON-LINE", using SIGTOT with SAMSON (synchronous mixer):

(1) ENIWETOK-OAHU (UHF): One full duplex radio teletype channel (Provided by TG 7.2).

(2) ENIWETOK-KWAJALEIN: One full duplex multiplex channel (Provided by TG 7.4).

(3) ENIWETOK-BIKINI: One full duplex radio teletype channel (Provided by TG 7.2).

(4) ENIWETOK-LOS ALAMOS: One full duplex radio teletype channel (Provided by TG 7.2).

(5) ENIWETOK-AGC (USS ESTES): One full duplex multiplex channel (Provided by TG 7.4).

b. Traffic not capable of being handled by means of on-line facilities will be enciphered off-line prior to transmission. All TOP SECRET and RESTRICTED DATA traffic will be enciphered off-line. This is necessary to meet AEC requirements and, in addition, terminal communications personnel are not in all instances TOP SECRET or "QUEBEC" cleared.

c. On ENIWETOK and BIKINI ATOLLS, wire telephone facilities cleared for conversations up to and including SECRET will be made available to the Task Group by the Joint Task Force.

d. Voice radio facilities will be available on a closely controlled basis between the following points:

(1) ENIWETOK-BIKINI (HF)

(2) ENIWETOK-KWAJALEIN-BIKINI (HF) (TG 7.4 controlled)

(3) Between ships (UHF, VHF, AN/TRC and HF)

(4) Ship - shore (VHF, AN/TRC and HF)

(5) AOC ENIWETOK-CIC Command Ship-CVE-Control DDE-ENIWETOK Fighter Control DDE (TG 7.4 controlled)

[redacted]

e. Internal Task Group communications and navigational aids will be furnished from existing AACS facilities augmented as necessary to fulfil operational requirements. Control of task force aircraft will be centered aboard the Command Ship (AGC) utilizing radar and radio facilities to be furnished by TG 7.3. An Air Operations Center (AOC) on ENIWETOK ISIAND will be responsible for air traffic control and for the maintenance of a plotted picture of the air situation. Airborne communications and electronic aids for aircraft control will consist of the usual installed electronics equipment, together with Mark 10 IFF transponders and interrogators and low frequency radio homing beacons as necessary.

2. MISSION, HEADQUARTERS TASK GROUP 7.4:

a. Prepare communications annexes to operations order as required and supervise the installation, operation, maintenance and utilization of Task Group 7.4 communications and electronic facilities.

b. Establish and supervise a transmission security training program for all intended users of voice radio facilities and a message drafter improvement program to insure most efficient use of limited operational communications facilities. (See Appendix 3)

3. COMMUNICATIONS TASKS FOR SUBORDINATE UNITS:

a. Test Support Unit:

(1) Provide and operate organizational and field maintenance for communications and electronics equipment installed in assigned aircraft.

(2) Provide and operate a task group radio-radar field maintenance shop for electronic equipment. This shop will be augmented by qualified personnel from the Test Aircraft Unit and the Test Services Unit.

(3) Provide and maintain necessary inter-communications and public address systems.

(4) Install, maintain and operate the AN/TTQ-1 Operations Center equipment in the AOC on ENIWETOK ISLAND.

(5) Provide, install and maintain mobile line, crash, security and maintenance control radio equipment.

(6) Prepare task group telephone directory stencils, in format to be designated by the consolidating and issuing agency. (See JTF SEVEN COI 40-1)

(7) Install, maintain and operate a modified Mark 10 interrogator with associated scopes in the AOC, ENIWETOK ISLAND.

(8) Install and maintain necessary radio and associated equipment for the control of liaison aircraft and helicopter operations on ENIWETOK ATOLL.

(9) Maintain a crystal bank for all task group operational frequencies.

(10) A Communications Officer assigned to the Test Support Unit will be responsible to the Senior Aircraft Controller for the supervision of all communications and electronic facilities in the AOC, ENIWETOK ISLAND.

[redacted]

(11) Install, maintain and operate VHF relay equipment in two C-47 aircraft.

b. Test Aircraft Unit:

(1) Install, maintain and operate communications and electronics facilities in assigned aircraft to provide:

(a) Air-to-ground mission progress and position reporting.

(b) Air-to-air cloud sampling control.

(c) Air-to-air homing.

(d) Radar for navigation and positioning.

(e) Identification for control and positioning.

(2) To assure these capabilities, communications-electronics equipment will be installed as follows:

(a) F-84G Sampling Aircraft: AN/ARC-3 VHF transmitter-receiver, AN/ARN-6 radio compass, AN/APX-6 IFF transponder, AN/ARA-8 VHF/DF Homing Adapter.

(b) B-36 Sampling Aircraft: Normal C-E equipment to include AN/APX-6 IFF transponder.

(c) B-36 Control Aircraft: In addition to the normal C-E equipment to include the AN/APX-6 transponder, the following will be installed: One AN/ARC-3 VHF transmitter-receiver, one LF radio beacon, modified AN/APX-6 interrogators to operate in conjunction with installed radars and suitable scopes for presentation of IFF returns.

(d) B-36 Effects Aircraft: Normal C-E equipment to include AN/APX-6 transponder.

(e) B-47 Effects Aircraft: Normal C-E equipment to include AN/APX-6 transponder.

(3) Perform organizational maintenance on communications and electronic equipment installed in assigned aircraft and provide augmentation for field maintenance to the Test Support Unit.

c. Test Services Unit:

(1) Provide airways and air communications service in support of JTF operations. The following communications facilities will be installed, operated and maintained:

(a) Communications Center (less code room) on ENIWETOK ISLAND.

(b) ENIWETOK-KWAJALEIN multiplex radio teletype circuit, one (1) channel to be remoted to the Joint Communications Center ENIWETOK for use by TG 7.2.

(c) Pacific weather radio teletype intercept on ENIWETOK ISLAND.

(d) Tokyo weather facsimile intercept on ENIWETOK ISLAND.

(e) ENIWETOK-BIKINI-KWAJALEIN high frequency radio voice net for aircraft movement control and weather.

(f) ENIWETOK-KWAJALEIN-RONGERIK-PONAPE-KUSAIE-MAJURO high frequency radio CW net for collection of weather data and weather island administration.

(g) KWAJALEIN-WAKE crossband circuit.

(h) ENIWETOK-weather reconnaissance aircraft high frequency radio CW and voice net.

(i) ENIWETOK terminal of a multiplex radioteletype circuit between ENIWETOK and the COMMAND SHIP. One channel to be remoted to the Joint Communications Center ENIWETOK for use by TG 7.2. One channel to be remoted to the Weather Central ENIWETOK. Operate the Command Ship Weather Channel terminal of this circuit.

(2) Install, maintain and operate the following circuits for use in the AOC on ENIWETOK ISLAND.

(a) Seven (7) VHF radio voice air-ground channels.

(b) One (1) UHF radio voice air-ground channel.

(c) Two (2) high frequency radio voice air-ground channels.

(d) Two (2) high frequency radio voice channels to the CIC aboard the Command Ship.

(3) Install, maintain and operate the applicable facilities as listed in the Radio Facility Charts, Pacific.

(4) In addition to the facilities referred to in subparagraph (3) above, the following aids to aerial navigation will be installed, maintained and operated:

(a) Two (2) channels of UHF in the ENIWETOK control tower.

(b) Control tower with three (3) channels of VHF and one (1) channel of HF on BIKINI.

(c) Radio homing beacon on RONGERIK.

(d) Radio homing beacon on BIKINI.

(e) AN/CPS-6 radar beacons (Racons) on ENIWETOK and BIKINI ATOLLS.

(5) Install, maintain and operate following landline teletype facilities.

[redacted]

(a) One (1) duplex terminal in AACS message center to JTF Joint Relay Center.

(b) One (1) simplex terminal in the weather central ENIWETOK to the Task Force Weather Officer, PARRY ISLAND.

(6) Install, maintain and operate necessary AN/TRC back-up for keying and modulation wire lines on ENIWETOK ISLAND.

(7) Complete maintenance of all ground equipment operated by the Test Services Unit will be performed by that unit.

(8) Perform organizational maintenance of airborne equipment and augment the Test Support Unit for field maintenance of airborne equipment.

(9) Furnish necessary air traffic control personnel for an approach control facility in the ENIWETOK AOC.

(10) Assigned aircraft will have normal communications-electronics equipment installed. All aircraft will be equipped with the AN/APX-6 transponder. In addition, the SA-16's will have a modified AN/APX-6 interrogator operating in conjuction with the installed radar.

4. GENERAL:

a. Signal Officer, TG 7.2, will operate a crystal grinding facility to provide emergency production of crystals for all elements of the Task Force. However, every effort will be made to procure required crystals through established supply channels prior to commencement of the operational phase.

b. Communications operating instructions (COI's) published by Headquarters, Joint Task Force SEVEN, will include a list of approved radio and wire circuits, call signs and frequencies, and uniform task force communications operating procedure.

c. Task Unit Commanders are responsible for the suppression of electrical interference being generated by equipment of their task units, and will take necessary action to reduce such noises to a point of non-interference with authorized communications facilities.

d. See Appendix 1 for complete listing of communications circuits and navigational aids available to all elements of Task Group 7.4, together with frequencies assigned, hours of operation and other pertinent information.

e. A list of frequencies authorized for use by all elements of Joint Task Force SEVEN may be found in Communications Operation Instructions (COI) Number 20-1.

f. See Appendix 2 for call signs, code words and identifiers authorized for use by all elements of Task Group 7.4.

g. See Appendix 4 for HF and VHF Aircraft Channelization.

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[redacted]

h. See Appendix 5 for Voice Time Script.

HOWELL M. ESTES, JR.
Brigadier General, U.S.A.F.
Commander

5 Appendices
1. Communications Circuits
2. Call Signs and Code Words
3. Communications Security
4. Air-Ground Communications
5. Voice Time Script

OFFICIAL:

Paul H. Fackler

PAUL H. FACKLER
Lt Colonel, USAF
Director of Operations

APPENDIX 1
TO
ANNEX E
OPERATIONS ORDER NO. 5-54

COMMUNICATIONS CIRCUITS

Circuit Number	Circuit and Frequencies
J-205	Eniwetok Armed Forces Radio Station WXLE 1385 kcs Hours of Operation: Mon, Wed, Thurs, Fri: 0600 - 2400M Tue : 0600 - 0800M; 1100 - 2400M Sat : 0600 - 0100M Sun : 0800 - 2400M
J-213	Eniwetok Comm Center-USS Estes, AN/TRC Back-up Eniwetok Transmit: 72.2 mcs USS Estes Transmit: 93.0 mcs
J-306	Search and Rescue (TG 7.3 Operates) (*Also Eniwetok AOC Operates) 500 kcs 3310 kcs 4475 kcs 7945 kcs *8364 kcs (Replaces 8280 kcs) *121.5 mcs 243.0 mcs (Eniwetok Control Tower & GCA)
J-311	Helicopter Net, USS Estes-USS Bairoko, Voice 126.18 mcs Bikini Control 136.44 mcs Eniwetok and Bikini Control 132.48 mcs Special Missions
J-319	Control Destroyer Homing Beacon (YER) 232 kcs Operates continuously when DDE is on Station
J-322	LORAN Station, Eniwetok (U.S. Coast Guard operated) 1950 kcs (For [redacted] Event, LORAN Station will be off the air from E-4 minutes to E+4 minute
J-400	Eniwetok-Kwajalein, Multiplex RATT (SAMSON) Eniwetok Transmit / Kwajalein Transmit Chan A: 3247.5 kcs / 3340 kcs Chan B: 5145 kcs / 6780 kcs Chan C: [illegible]5 kcs / 9270 kcs

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Declassified DOD DIR 5200.10

Circuit Number	Circuit and Frequencies
J-401	Eniwetok-USS Estes, Multiplex RATT (SAMSON)

	Eniwetok Transmit	USS Estes Transmit
Chan A:	2815 kcs	2478 kcs
Chan B:	4752.5 kcs	4630 kcs
Chan C:	6920 kcs	6507.5 kcs

J-402 Eniwetok-USS Estes, Duplex RATT, Weather (Stand-by Status, Back-up for J-401)

	Eniwetok Transmit	USS Estes Transmit
Chan A:	2815 kcs	2478 kcs
Chan B:	4752.5 kcs	4630 kcs
Chan C:	6920 kcs	6507.5 kcs

J-403 Guam Weather Broadcast (Intercept only)

Chan A: 5452.5 kcs
Chan B: 8105 kcs
Chan C: 11085 kcs
Chan D: 14515 kcs
Chan E: 21810 kcs

J-404 Tokyo Facsimile Broadcast (Intercept only)
(Transmitting Antennas are beamed on Eniwetok)

Chan A: 7938 kcs
Chan B: 15798 kcs
Chan C: 20885 kcs

J-405 Eniwetok-Kwajalein, Simplex Voice

Chan A: 3190 kcs
Chan B: 6200 kcs
Chan C: 9545 kcs
Chan D: 11550 kcs

J-406 Eniwetok-Ponape-Kusaie-Majuro-Rongerik-Kwajalein Weather Net, Simplex CW

Chan A: 3427.5 kcs
Chan B: 6350 kcs
Chan C: 9180 kcs
Chan D: 12070 kcs

J-407 Eniwetok AOC-USS Estes CIC-USS Bairoko-Control DDE, Fighter Control DDE, Simplex Voice

Chan A: 2212.5 kcs
Chan B: 6010 kcs
Chan C: 9377.5 kcs

J-408 Eniwetok AOC-USS Estes CIC, Simplex Voice

Chan A: 3060 kcs
Chan B: 4917.5 kcs
Chan C: 9310 kcs

Declassified DOD DIR 5200.10

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Declassified DOD DIR 5200.10

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Circuit Number	Circuit and Frequencies
J-409	Eniwetok AOC-USS Estes CIC-Operational Aircraft, Simplex Voice (Frequencies on Stand-by status, back-up for J-410) 2100 kcs 6745.5 kcs 7835 kcs 13162.5kcs
J-410	Eniwetok AOC-USS Estes CIC-Control Destroyer-Operational Aircraft, Simplex Voice Chan A: 3295 kcs Chan B: 5460 kcs Chan C: 7580 kcs Chan D: 10122.5 kcs
J-411	Eniwetok AOC-Weather Recon Aircraft, Simplex Voice/CW Chan A: 4415 kcs Chan B: 7685 kcs Chan C: 14450 kcs
J-412	Maintenance Control & Expediter Net, Simplex Voice 34.7 mcs
J-413	TG 7.4 Comm Center-Transmitters, AN/TRC Back-up Comm Center Transmit — Transmitters 98.0 mcs — 75.4 mcs 99.6 mcs — 78.0 mcs
J-414	Eniwetok-Liaison Aircraft & Helicopters, Voice 136.44 mcs
J-415	Voice Time Broadcast 126.18 mcs
J-416	Eniwetok AOC-USS Estes CIC-Operational Aircraft, Simplex Voice (*Control Destroyer also operates) (**Fighter Control DDE also operates) 119.34 mcs — C-47 Relay (CIC only) *121.50 mcs** — "D" Channel 126.18 mcs** — "B" Channel 128.70 mcs — "E" Channel 134.10 mcs — "H" Channel 137.88 mcs — "C" Channel *139.86 mcs — "F" Channel

[redacted]

[redacted]

Circuit Number	Circuit and Frequencies	
J-416	143.10 mcs	"A" Channel
	146.16 mcs	"G" Channel
	147.6 mcs	C-47 Relay (AOC only)
J-417	Eniwetok Control Tower - Operates Continuously (*AOC also operates)	
	*4765 kcs	(Transmit only)
	*6500 kcs	(Receive only)
	8364 kcs	(Replaces 8280 kcs)
	121.5 mcs	
	126.18 mcs	
	134.1 mcs	
	135.9 mcs	
	236.6 mcs	
	243.0 mcs	
J-418	Eniwetok GCA	
	Hours of Operation:	
	a. Mon thru Sat: 0800 - 1700M	
	b. During all periods TG 7.4 Test Acft are conducting flights.	
	c. On 30 - 40 minute stand-by at all other times.	
	121.5 mcs	
	134.1 mcs	
	136.8 mcs	
	142.02 mcs	
	146.16 mcs	
	243.0 mcs	
	289.4 mcs	
	335.8 mcs	
	2800 mcs	Search
	9080 mcs	Final Approach
J-420	Eniwetok Homing Beacon (GY)	
	345 kcs	
	Operates Continuously	
J-421	Bikini Homing Beacon (BI)	
	272 kcs	
	Operates Only from H ∠ Shock Arrival to end of Sampling Operations	
	NOTE: After H ∠ 15 minutes, the USS CURTISS will operate a radio homing beacon on 400 kcs with identifier AV.	

[redacted]

[redacted]

Circuit Number	Circuit and Frequencies
J-422	Rongerik Homing Beacon (RAM)
	1675 kcs
	Hours of Operation:
	a. During periods of Task Group 7.4 rehearsals.
	b. On shot days.
	c. Any time F-84 acft are flying other than in local Eniwetok area.
J-423	Control Aircraft Homing Beacon (AXZ)
	450 kcs
J-424	Aircraft Altimeter
	440 mcs
J-425	Mark X IFF
	960-1150 mcs
J-426	Radiosonde
	1660-1700 mcs
J-427	Radar Beacon and Aircraft Radar
	9310 mcs
	Identification:
	Eniwetok: 1-2
	Bikini: 2-2
	Racons on Eniwetok and Enyu Islands will operate continuously.
	LOCATION:
	Eniwetok: 11° 20' 47.61" N 162° 19' 49.93" E
	Bikini: 11° 30' 36.785" N 165° 33' 37.084" E

[redacted]

[redacted]

APPENDIX 2
TO
ANNEX E
OPERATIONS ORDER NO. 5-54
CALL SIGNS AND CODE WORDS
CALL SIGNS

USER	VOICE CALL	CW CALL
AACS Communications Centers:		
Eniwetok	EMOTION	ACD 2Ø
Bikini	EMOTION ONE	4WF
Kwajalein	EMOTION TWO	AGC 2
Aircraft Calls:		
Bikini Helicopter	PEANUT / No	
Eniwetok Helicopter	DAGO / No	
Navy Helicopter	No / THUMBTACK	
L-13's	MOSQUITO / No	
C-47's	REFLECTOR / No	
CJTF SEVEN C-54	LORD CALVERT	5AS
Control RB-36	CASSIDY	8KO
Effects B-36, B-47	ELAINE / No	6NS
Photo C-54's	PEWTER / No	CYØ
SAC B-50's	HARDTIME / No	BE8
Sampler B-36's	FLOYD / No	RD4
Sampler F-84's	TIGER	
SAR SA-16's	STABLE / No	7DU
VIP Aircraft	VIKING / No	V16
Weather Recon WB-29's	WILSON / No	2GA
PBM's Navy	No / LENA	5OH
SA-16 (Airlift Support)	LENA 3 & 4	
Aircraft Carrier - USS BAIROKO	THUMBTACK	NKBR
AOC Eniwetok	DIRTY FACE	
CIC USS ESTES	BOUNDARY TARE	NWDE
Control DDE	DOLL HOUSE	
Cloud (Tracking Purposes)	GILDA	
Crash Boats:		
Eniwetok	GUNSHOT ONE	
Bikini	GUNSHOT TWO	
Commander, Task Group 7.4	PULLMAN	
Eniwetok Fighter Control DDE	NUT CRACKER	
Homers, Radio		
Bikini	BI	
Eniwetok	GY	
Rongerik	RAM	
Control RB-36	AXZ	
Control DDE	YER	
USS Curtiss	AV	
Inter Island CW Weather Net		
Eniwetok		1DR
Kusaie		1DR1
Majuro		1DR2
Ponape		1DR3
Rongerik		1DR4
Kwajalein		1DR5
Liaison Aircraft Dispatchers:		
CVE (Navy)	THUMB TACK	
Bikini	BIGAMY / No	
Eniwetok	PINHEAD / No	

[redacted]

[redacted]

USER	VOICE CALL	CW CALL
Maintenance Control Net-Eniwetok	MIDWATCH	
Radio & Radar Shop	NETWORK	
Rendezvous Controller	CASSIDY ONE	
Scientific Sampling Controller	CASSIDY TWO	
Task Group 7.4	LAWYER	
Voice Time Broadcast	BARRYMORE	
Weather Central Eniwetok	GOOD HUMOR	
Weather Central USS Estes	BOUNDARY TARE	NWDE
For Assignment by Task Group 7.4:	CITATION	
	EAGER BEAVER	
	FRASER	

CODE WORDS

IDENTIFICATION	VOICE
Bikini Atoll	AUGUSTUS
Eniwetok Atoll	CAVALIER
Eniwetok Island	FRED
Parry Island	ELMER
Guam	DEFIANT
Kusaie	FLAT BROKE
Kwajalein	HAYWORTH
Ponape	WEASEL
Majuro	TWILIGHT
Roi	IDIOT
Rongelap Atoll	FISHHOOK
Rongerik Atoll	EUGENE
Ujae Atoll	UPROAR
Wake	ESCORT
Wotho	FENWAY

IFF CODE

CODE	MEANING

[redacted]

APPENDIX 3
TO
ANNEX E
OPERATIONS ORDER NO. 5-54
COMMUNICATIONS

COMMUNICATIONS SECURITY

1. GENERAL:

The purpose of the appendix is to set forth the mission, functions, responsibilities, and organization of the communications security program.

2. GUIDING PRINCIPLES:

a. All low, medium and high frequency radio circuits are subject to constant intercept from fixed land positions or possibly from ships, aircraft or submarines. In the same manner and under favorable atmospheric conditions, VHF transmissions are susceptible to possible monitoring.

b. No radio circuit or telephone circuit having a radio link is approved for transmission of classified information in the clear.

c. All TOP SECRET and RESTRICTED DATA traffic will be enciphered offline prior to transmission.

d. Code names will not be assigned to individuals. The use of personal names on voice radio circuits is authorized.

e. All messages for transmission to addressees outside the BIKINI-ENIWETOK Operational Area will be routed through the Joint Relay Center, ENIWETOK, except:

(1) Traffic between Commander, TG 7.4 and the Weather Island Detachments.

(2) Unclassified traffic (i.e., weather, aircraft movement) between AACS, KWAJALEIN and AACS Detachment, ENIWETOK.

(3) Intra-Task Group operational traffic.

(4) Emergency traffic which cannot be delivered to the Joint Relay Center because of circuit failure.

(5) Other traffic as directed by Commander, JTF SEVEN.

f. Radioteletype facilities will be used in lieu of voice radio whenever practicable for communications security reasons.

g. COI's (Communications Operating Instructions) are published and issued by JTF SEVEN for the technical control and coordination of communication agencies throughout the Task Force. COI's are directive in nature.

h. No cover or deception plan is to be employed except for deception offered by the rehearsals and for such traffic security as is provided by the use of SIGTOT-SAMPSON equipment on RATT circuits.

i. No requirements for radio silence are imposed on Task Group

7.4 radio circuits. Commander, Task Group 7.4 may impose radio silence as required for accomplishment of his mission.

j. Since the new phonetic alphabet (ALPHA, BRAVO, COCOA, etc) is not being used by all services, the old phonetic alphabet (ABLE, BAKER, CHARLIE, etc.) will be used.

3. MONITORING:

a. Communications channels of Task Group 7.4 in the forward area will be monitored by communications security personnel of Joint Task Force SEVEN. They will analyze messages to detect violations of security, to determine the amount of information of an intelligence value being made available to unauthorized agencies, and to make recommendations as to necessary corrective action.

4. RESPONSIBILITY:

a. Commanders are responsible that communications security is observed at all times.

b. A high degree of communications security will minimize the danger of compromise of classified information. The following functions are necessary to establish an acceptable degree of communications security:

(1) Adherence to provisions of ACP 122 (B), "Communications Instructions, Security".

(2) Indoctrination of all personnel in the need for Communications Security.

(3) Operation of all communications facilities in accordance with procedures as prescribed by Joint Task Force SEVEN Communications Operation Instructions (COI's).

c. Commanders of the Task Units of Task Group 7.4 will be responsible for the supervision and coordination of communications security matters within their respective Task Units.

d. It is mandatory that classified matters not be discussed over any voice radio circuits including VHF and UHF radios. Users of voice circuits will be held responsible for security violations.

5. MESSAGE TRAFFIC:

a. Each message written for electrical transmission will be classified according to its contents.

b. The tributary circuit (wire) between Headquarters, Task Group 7.4 and the Joint Communications Center on ENIWETOK is approved for transmission of messages up to and including SECRET.

c. When Task Group 7.4 is based at ENIWETOK, TOP SECRET and RESTRICTED DATA messages will be handcarried between Headquarters, Task Group and the Joint Communications Center.

d. A message drafters improvment program will be placed in effect by all units of Task Group 7.4, with special emphasis on the following:

(1) Proper classification.

(2) Proper precedence.

(3) Proper abbreviations

e. Task Unit Commanders will bring to the attention of all message drafters the contents of COI No. 10-7 "Preparation of Messages".

f. ACP 124 (A) "Communication Instructions - Radio Telegraph Procedure" will be complied with.

6. TELEPHONE USAGE:

a. In the Zone of Interior, no classified information will be discussed over the telephone.

b. In the forward area wire telephone facilities cleared for conversations up to and including SECRET will be available at:

(1) ENIWETOK ISLAND (400 line dial exchange with connecting service to other islands of ENIWETOK ATOLL).

(2) BIKINI ATOLL (connecting service between necessary islands).

(3) PARRY ISLAND (270 line manual with connecting service to other islands of ENIWETOK ATOLL).

(4) Telephone cables to buoys (providing wire telephone service to designated ships).

c. VHF (FM) radio relay equipment will be provided at key points as a back-up for wire and cable telephone facilities, but communications will be limited to unclassified conversations and message traffic when such facilities are in use. TELEPHONE OPERATORS WILL INFORM TELEPHONE USERS IN ALL CASES WHEN CALLS ARE ROUTED OVER VHF RADIO RELAY FACILITIES AND USERS WILL BE INFORMED THAT CONVERSATIONS MUST BE CONFINED TO UNCLASSIFIED MATTERS.

d. ACP 134(A) "Joint Communications Instructions Appendix IV- Telephone Switchboard Operating Procedure" will be complied with.

e. TOP SECRET and AEC RESTRICTED DATA material will not be transmitted in plain language over telephone circuits, either wire or radio relay.

7. RADIO TELEPHONE PROCEDURES: The following information on Communications Security, based in general on material contained in ACP 125 (A) "Communications Instruction Radio Telephone Procedure," is published here for the guidance of all personnel and for compliance by those personnel using HF, VHF, or UHF radiotelephone circuits.

a. Communications Security:

(1) In the interest of security, transmission by radiotelephone will be as short and concise as possible consistent with clearness. Since personnel other than trained operators frequently operate radiotelephone equipment, all personnel must be cautioned that transmissions by radiotelephone are subject to enemy interception and therefore have no security.

(2) Adherence to prescribed procedure is mandatory. Unauthorized departures from or variations in prescribed procedure invariably create confusion, reduce reliability and speed, tend to nullify security precautions, and are prohibited. If the procedure prescribed herein does not cover a specific operating requirement, resorting to initiative and common sense should suffice.

(3) The following basic rules are essential to transmission security and shall be strictly enforced on all radiotelephone circuits.

(a) No transmission shall be made which has not been authorized by proper authority.

(b) The following practices are specifically forbidden.

1. Violation of radio silence.

2. Unofficial conversation between operators.

3. Excessive tuning and testing.

4. Transmitting the operator's personal sign or name.

5. Unauthorized use of plain language in place of applicable prowords or operating signals.

6. Use of other than authorized prowords.

7. Unauthorized use of plain language.

8. Linkage or compromise of classified call signs and address groups by plain language disclosures or association with unclassified call signs.

9. Profane, indecent or obscene language.

(c) The following practices are to be avoided:

1. Use of excessive transmitting power.

2. Excessive time consumed in tuning, changing frequency, or adjusting equipment.

3. Transmitting at speeds beyond the capabilities of receiving operators.

b. Phonetic Alphabet:

(1) When necessary to identify any letter of the alphabet, the phonetic alphabet listed below shall be used:

Letter	Spoken as	Letter	Spoken as
A	ABLE	N	NAN
B	BAKER	O	OBOE
C	CHARLIE	P	PETER
D	DOG	Q	QUEEN
E	EASY	R	ROGER

Letter	Spoken as	Letter	Spoken as
F	FOX	S	SUGAR
G	GEORGE	T	TARE
H	HOW	U	UNCLE
I	ITEM	V	VICTOR
J	JIG	W	WILLIAM
K	KING	X	XRAY
L	LOVE	Y	YOKE
M	MIKE	Z	ZEBRA

(2) Difficult words or groups within the text of plain text messages may be spelled using the phonetic alphabet and preceded by the proword " I SPELL " If the operator can pronounce the word to be spelled, he will do so before and after the spelling to identify the word.

(3) Where a text is composed of pronounceable words, they will be spoken as such. Where a text is encrypted, the groups, even though occasionally pronounceable, are to be transmitted by the phonetic equivalents of the individual letters and without using the proword "I SPELL."

c. Pronunciation of numerals:

(1) To distinguish numerals from words similarly pronounced, the proword "FIGURES" may be used preceding such numbers.

(2) When numerals are transmitted by radiotelephone, the following rules for their pronunciation will be observed.

Numeral	Spoken as	Numeral	Spoken as
0	ZERO	5	FI-YIV
1	WUN	6	SIX
2	TOO	7	SEVEN
3	THUH-REE	8	ATE
4	FO-WER	9	NINER

d. Prowords:

Prowords are pronounceable words or phrases which have been assigned meanings for the purpose of expediting message handling on circuits where radiotelephone procedure is employed. In no case shall a proword or a combination of prowords be substituted by the operator for the textual component of a message. The following prowords are authorized for general use.

PROWORD	EXPLANATION
ALL AFTER	The portion of the message to which I have reference is all that which follows_____.
ALL BEFORE	The portion of the message to which I have reference is all that which precedes_____.
CORRECTION	An error has been made in this transmission. Transmission will continue with last word correctly transmitted.
	An error has been made in this transmission (or Message indicated). The correct version is_____. That which follows is a corrected version in answer to your request for verification.

DISREGARD THIS TRANSMISSION - This transmission is in error. Disregard it. This proword shall not be used to cancel any message that has been completely transmitted and for which receipt or acknowledgement has been received.

FIGURES - Numerals or numbers follow.

I READ BACK - The following is my response to your instructions to read back.

I SAY AGAIN - I am repeating transmission or portion indicated.

I SPELL - I shall spell the next word phonetically.

I VERIFY - That which follows has been verified at your request and is repeated. To be used only as a reply to VERIFY.

OUT - This is the end of my transmission to you and no answer is required or expected.

OVER - This is the end of my transmission to you and a response is necessary. Go ahead; transmit.

READ BACK - Repeat this entire transmission back to me exactly as received.

RELAY (TO) - Transmit this message to all addressees or to the address designations immediately following.

ROGER - I have received your last transmission satisfactorily.

SAY AGAIN - Repeat all of your last transmission. Followed by identification data means "Repeat_____(portion indicated.)"

SILENCE - Cease transmission immediately. Silence will be maintained until instructed to resume.

SILENCE LIFTED - Silence can be lifted only by the station imposing it or higher authority.

SPEAK SLOWER - Your transmission is at too fast a speed. Reduce speed of transmission.

THAT IS CORRECT - You are correct, or what you have transmitted is correct.

VERIFY - Verify entire message (or portion indicated) with the originator and send correct version. To be used only at the discretion of or by the addressee to which the questioned message was directed.

WAIT - I must pause for a few seconds.

WAIT OUT - I must pause longer than a few seconds.

WILCO - I have received your message, understand it, and will comply. To be used only by the addressee. Since the meaning of ROGER is included in that of WILCO, the two prowords are never used together.

WORD AFTER - The word of the message to which I have reference is that which follows_____.

WORD BEFORE - - -The word of the message to which I have reference is that which precedes.

WORDS TWICE - - -Communications is difficult. Transmit (ting) each phrase (or each code group) twice. This proword may be used as an order, request or as information.

WRONG- - - - - - Your last transmission was incorrect. The correct version is_____.

e. General:

(1) To utilize circuit time more efficiently all messages or their substance should be written down prior to transmission. Those messages which must be delivered by the receiving operator to another person or which are preceded by the proword "MESSAGE FOLLOWS" shall be written down.

(2) Transmissions by radiotelephone shall be as short and concise as practicable consistent with clarity. The use of standard phraseology enhances brevity.

(3) Transmission over radiotelephone should be clear with natural emphasis on each word except the prescribed pronunciation of numerals, and should be spoken in natural phrases, not word by word.

(4) To avoid interfering with other traffic, an operator shall listen in to make certain that a circuit is clear before making any transmissions thereon.

f. Establishing Communications:

Before conducting regular traffic over radiotelephone circuits, it may be necessary to make contact with the other station (s) involved to ascertain that communications is possible.

g. Signal Strength and Readability:

(1) A station is understood to have good signal strength and readability unless otherwise notified. Strength of signals and readability will not be exchanged unless one station cannot clearly hear another station.

(2) A station that wishes to inform another of his signal strength and readability will do so by means of a short and concise report of actual reception, such as "Weak", but readable," "Strong, but distorted," "Loud and clear" etc. Reports such as "Five by five," "Four by four" etc., will not be used to indicate strength and quality of reception. A station desiring to know how his transmission is being received will transmit "How do you hear me?", "What is my readability?", "Report my signals," etc.

8. AUTHENTICATION:

Authentication for voice or telegraphic transmissions, if required, will be in compliance with COI 30-3. The Communications Officer, Test Support Unit, will issue authentication tables as necessary.

APPENDIX 4
TO
ANNEX E
OPERATIONS ORDER NO. 5-54
AIR/GROUND COMMUNICATIONS FOR ENIWETOK EVENTS

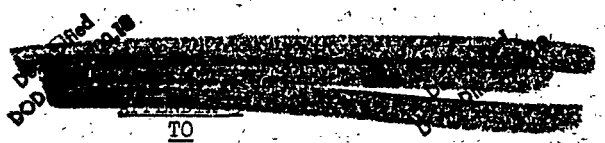
AIRCRAFT	CHANNEL											
	A	B	C	D	E	F	G	H	J-410	J-411	J-306	
ELAINE 1		x	#		o			*	# o		AOC - CIC Guards	
ELAINE 2		x	#		o			*				
WILSON 1		x	#			o		*	# o			
WILSON 2	o	*	#						# o	#		
WILSON 3	o	*	#						# o	#		
PEWTER 1	o	x	#					*	# o			
PEWTER 2	o	x	#					*	# o			
PEWTER 3		x	#				o	*	# o			
HARDTIME 1		x	#				o	*	# o			
HARDTIME 2		x	#				o	*	# o			
HARDTIME 3		x	#				o	*	# o			
VIKING 1		x	# o					*	# o			
VIKING 2		x	# o					*	# o			
VIKING 3		x	# o					*	# o			
VIKING 4		x	# o					*	# o			
STABLE 1		*	#			o			# o			
STABLE 2		*	#			o			# o			
FLOYD 1		*	#		o	o			# o			
FLOYD 2		*	#		o	o			# o			
CASSIDY		x	#		o	o		*	# o			
14 BABYFOOD	o	x	#					*	# o			change #1
TIGER (R, W, B)		*	#		o	o						
TIGER SNIFFERS		x	#		o	o		*				

LEDGEND

* Tower
x Time Hack
\# AOC
o CIC
DOLL HOUSE Guards - E, F, and J-410

E4-1

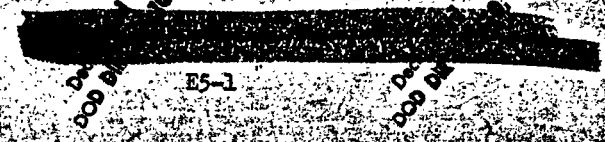
TASK GROUP 7.4
OPRS ORDER NO. 5-54
ANNEX E, APNDX 4



TO
ANNEX "E"
OPERATIONS ORDER NO. 5-54
COMMUNICATIONS
VOICE TIME SCRIPT

The following Voice Time broadcast script will be used in making voice time announcements on 126.18 MC. From FIFTEEN MINUTES through ZERO the script is transmitted from a tape recording and a distinctive TONE replaces the word HACK.

TIME	ANNOUNCEMENT
_____	This is BARRYMORE - Standby for time HACK - Standby for time HACK.
_____	In one minute the time will be - H MINUS THREE HOURS - H MINUS THREE HOURS.
-30	Thirty seconds.
-50	Ten seconds.
-55	Five seconds.
_____	HACK - H MINUS THREE HOURS.
	Next time HACK AT H MINUS TWO HOURS - Next time HACK AT H MINUS TWO HOURS.
_____	This is BARRYMORE - Standby for time HACK - Standby for time HACK.
_____	In one minute the time will be - H MINUS TWO HOURS - H MINUS TWO HOURS.
-30	Thirty seconds.
-50	Ten seconds.
-55	Five seconds.
_____	HACK - H MINUS TWO HOURS.
	Next time HACK at H MINUS ONE AND ONE HALF HOURS - Next time HACK AT H MINUS ONE AND ONE HALF HOURS.
_____	This is BARRYMORE - Standby for time HACK.
_____	In one minute the time will be - H MINUS ONE AND ONE HALF HOURS - H MINUS ONE AND ONE HALF HOURS.
-30	Thirty seconds.
-50	Ten seconds.
-55	Five seconds.
_____	HACK - H MINUS ONE AND ONE HALF HOURS.



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Next time HACK at H MINUS ONE HOUR - Next time HACK at H MINUS ONE HOUR.

_____ This is BARRYMORE - **Standby** for time HACK.

_____ In one minute the time will be - H MINUS ONE HOUR - H MINUS ONE HOUR.

-30 Thirty seconds.

-50 Ten seconds.

-55 Five seconds.

_____ HACK - H MINUS ONE HOUR.

Next time HACK at H MINUS FORTY-FIVE MINUTES - H MINUS FORTY-FIVE MINUTES.

_____ In one minute the time will be H MINUS FORTY-FIVE MINUTES - H MINUS FORTY FIVE MINUTES.

-30 Thirty seconds.

-50 Ten seconds.

-55 Five seconds.

_____ HACK - H MINUS FORTY-FIVE MINUTES.

_____ Next time HACK at H MINUS THIRTY MINUTES - Next time HACK at H MINUS THIRTY MINUTES.

_____ In one minute the time will be H MINUS THIRTY MINUTES - H MINUS THIRTY MINUTES.

-30 Thirty seconds.

-50 Ten seconds.

-55 Five seconds.

_____ HACK - H MINUS THIRTY MINUTES.

At H MINUS ONE MINUTE observers having special density goggles or lenses put them on - those not having special goggles or lenses, face away from ZERO POINT - Do not face ZERO POINT or remove goggles until FIRE BALL DISSIPATES.

To avoid eye injury binoculars or telescopes must not be used to view burst.

In the event of no detonation - Do not remove goggles and hold position until advised. In the event of no detonation - Do not remove goggles and hold position until advised.

Next time TONE at H MINUS FIFTEEN MINUTES.

_____ In one minute the time will be H MINUS FIFTEEN MINUTES - H MINUS FIFTEEN MINUTES.

[redacted]

-30 Thirty seconds until H MINUS FIFTEEN MINUTES.

-50 Ten seconds.

-55 to 60 Five, four, three, two, one.

TONE - H MINUS FIFTEEN MINUTES.

-30 Thirty seconds until H MINUS FOURTEEN MINUTES.

-50 Ten seconds.

-55 to 60 Five, four, three, two, one.

TONE - H MINUS FOURTEEN MINUTES.

-30 Thirty seconds until H MINUS THIRTEEN MINUTES.

-50 Ten seconds.

-55 to 60 Five, four, three, two, one.

TONE - H MINUS THIRTEEN MINUTES.

-30 Thirty seconds until H MINUS TWELVE MINUTES.

-50 Ten seconds.

-55 to 60 Five, four, three, two, one.

TONE - H MINUS TWELVE MINUTES.

-30 Thirty seconds until H MINUS ELEVEN MINUTES.

-50 Ten seconds.

-55 to 60 Five, four, three, two, one.

TONE - H MINUS ELEVEN MINUTES.

-30 Thirty seconds until H MINUS TEN MINUTES.

-50 Ten seconds.

-55 to 60 Five, four, three, two, one.

TONE - H MINUS TEN MINUTES.

-30 Thirty seconds until H MINUS NINE MINUTES.

-50 Ten seconds.

-55 to 60 Five, four, three, two, one.

TONE - H MINUS NINE MINUTES.

-30 Thirty seconds until H MINUS EIGHT MINUTES.

-50 Ten seconds.

-55 to 60 Five, four, three, two, one.

TONE - H MINUS EIGHT MINUTES.

-30	Thirty seconds until H MINUS SEVEN MINUTES.
-50	Ten seconds.
-55 to 60	Five, four, three, two, one.
	TONE - H MINUS SEVEN MINUTES.
-30	Thirty seconds until H MINUS SIX MINUTES.
-50	Ten seconds.
-55 to 60	Five, four, three, two, one.
	TONE - H MINUS SIX MINUTES.
-30	Thirty seconds until H MINUS FIVE MINUTES.
-50	Ten seconds.
-55 to 60	Five, four, three, two, one.
	TONE - H MINUS FIVE MINUTES.
-30	Thirty seconds until H MINUS FOUR MINUTES.
-50	Ten seconds.
-55 to 60	Five, four, three, two, one.
	TONE - H MINUS FOUR MINUTES.
-30	Thirty seconds until H MINUS THREE MINUTES.
-50	Ten seconds.
-55 to 60	Five, four, three, two, one.
	TONE - H MINUS THREE MINUTES.
-30	Thirty seconds until H MINUS TWO MINUTES.
-50	Ten seconds.
-55 to 60	Five, four, three, two, one.
	TONE - H MINUS TWO MINUTES.
-30	Thirty seconds until H MINUS ONE MINUTE.
-50	Ten seconds.
-55 to 60	Five, four, three, two, one.
	TONE - H MINUS ONE MINUTE.
	Put on goggles or turn away. - Do not remove goggles or face burst until FIRE BALL DISSIPATES.
-30	Thirty seconds to ZERO TIME.

-35	Twenty-five seconds to ZERO TIME.
-40	Twenty seconds to ZERO TIME.
-45	Fifteen seconds to ZERO TIME.
-50 to 60	Ten, nine, eight, seven, six, five, four, three, two, one, TONE.
+ 10 sec	The shock wave will arrive in a few minutes - keep firm footing until wave passes.

An automatic time tape broadcast will be used from H-15 minutes through H-Hour. This broadcast will be synchronized with the device-firing timer, to insure time broadcast accuracy in relation to actual blast time. This broadcast will be continual, with counts down and hack tones given at each minute increment of the 15 minutes. BOUNDARY TARE will instruct participating aircraft when to switch to VHF Channel "B" for time hacks. Immediately upon determination by the aircraft commander that he has received an adequate time hack, he will return to his assigned control channel. All aircraft will remain on Channel "B" from H-3 minutes through H-Hour. (C-54 Photo Aircraft only are authorized to deviate from these instructions, during the period H-5 minutes through H-Hour, if such deviations are previously agreed upon by the pilots and their controllers.) All aircraft will switch back to assigned control channels immediately following H-Hour. In the event of malfunction of automatic tape broadcast, critical aircraft will be directed by BOUNDARY TARE to return to base or to immediately depart the shot area. Manual voice broadcasts will be made by BARRYMORE if the automatic tape broadcast fails. This procedure will enable non-critical aircraft to complete their mission.

Annex F

In 5 pages w/1 Appendix

consisting of 2 pages

ANNEX F

TO

OPERATIONS ORDER NO. 5-54

SEARCH AND RESCUE

ANNEX "F"
TO
OPERATIONS ORDER NO. 5-54
SEARCH AND RESCUE

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
APO 187, c/o Postmaster
San Francisco, California
7 April 1954, 1800M

References: (a) Search and Rescue Joint Standard Operating Procedures; prepared jointly by Commanders-in-chief, Caribbean (CINCARIB), Far East (CINCFE), Pacific (CINCPAC) and Alaska (CINCAL).

1. RESPONSIBILITIES:

a. Responsibilities of commanders for Search and Rescue (SAR) operations within their respective commands are set forth in reference (a). Specifically, as relates to the area of primary concern to Commander, JTF SEVEN, responsibility for Search and Rescue is assigned to CINCPAC.

b. These references further provide that:

"For tactical aircraft, operating on unit combat or training missions, the primary responsibility for SAR rests with the commander exercising operational control of the aircraft regardless of the area of operation. This responsibility may be delegated to subordinate commanders. Commanders holding SAR responsibility as defined above shall insure that their operating forces are familiar with the rescue facilities and procedures of the SAR area in which they are operating and shall request assistance as necessary from the appropriate area SAR Commander. Once the area SAR Commander has been requested to provide assistance he assumes SAR control".

The paragraph quoted is applicable to Operation CASTLE, and places certain responsibilities on Commander, JTF SEVEN.

c. Overall responsibility for search and rescue within JTF SEVEN is delegated to TG 7.4. TG 7.4 is therefore responsible for the overall control of all JTF SEVEN SAR operations. This overall responsibility, however, in no way relieves the individual Task Group Commander of his inherent SAR responsibilities as pertain to his own forces.

d. The overall control of Joint Task Force SAR forces during shot and rehearsal periods is delegated to the Senior Air Controller on the Command Ship by the Commander, Task Group 7.4. During all other periods, this control will be delegated to the Senior Controller in the AOC, and will be exercised by the SAR section of the AOC.

e. The Commander, Test Services Unit, will be responsible for providing two (2) SA-16 aircraft for shot and rehearsal periods, one (1) SA-16 for backup and for twenty-four (24) hour airstrip alet during the entire project, and a competent SAR control section in the AOC.

f. All pilots, and all AOC, CIC and SAR personnel will be responsible for a detailed knowledge of all information outlined in this Annex.

g. The Commander, Test Services Unit, will be responsible for providing SAR briefings to all participating 7.4 aircrews.

[redacted]

h. The Commander, Test Support Unit, will place [redacted] (1) helicopter (H-19) under the operational control the the SAR Element Commander and one (1) Crash Boat under the operational control of the AOC and continuing throughout the project.

2. GENERAL SAR PLAN:

a. SAR aircraft will be identified by the voice Call Sign STABLE 1, 2, 3 and 5 and by CW Call Sign 7DU1, 2, 3, and 5, as appropriate. Call Signs of all project aircraft and stations are specified in Appendix 2 to Annex "E", this order. STABLE 1, 2 and 3 are SA-16 type aircraft. STABLE 5 is a Helicopter.

b. STABLE 1 and 2 will carry aero-medical technicians, who will also function as radiological monitors. If STABLE 1 or 2 should abort prior to or immediately after take-off, the aero-medical technicians will transfer to STABLE 3, if time permits. Reference: Paragraph 11c (3), page H1-3, Appendix 1, Annex "H", Operations Order No. 1-53.

c. During operational periods, control and coordination of SAR aircraft will be exercised by the Air Operations Center (AOC) until such time as positive control is accepted by BOUNDARY TARE (CIC aboard the Command Ship), in accordance with the provisions of Appendix 1 to this Annex.

d. One (1) SA-16 will be maintained on continual airstrip alert (ground) during the entire project.

e. One (1) H-19 or H-13 helicopter will be maintained on continual airstrip alert (ground) during the entire project.

f. One (1) Naval AVR Crash Boat, Voice Call Sign GUNSHOT 1 will be maintained on continual SAR alert in the ENIWETOK LAGOON during the entire project.

g. Inspections and periodic maintenance of SAR SA-16 aircraft will be performed at KWAJALEIN by the 78th Air Rescue Squadron.

h. The SAR Element will bring a thirty (30) day flyaway kit of aircraft spares, with resupply from AF 714 SO, Hickam AFB, through the MATS Service Stock at KWAJALEIN.

i. Resupply of the SAR Element will be the responsibility of the Commander, Test Services Unit, through AF 714 SO, Hickam AFB, and the MATS Service Stock at KWAJALEIN

j. Applicable personnel supply and administrative procedures are those outlined in Annex "C" and pertinent appendicies of Operations Order No. 1-53.

3. STRIP ALERT AIRCRAFT OPERATIONAL PROCEDURES:

a. Intercept and Escort:

(1) The SA-16 on strip alert at ENIWETOK will provide rescue facilities for all aircraft in distress within the vicinity during non-operational periods. Its call sign will be STABLE 3.

(2) Upon notification of distress from any aircraft or surface vessel, the ENIWETOK AOC will notify all proper agencies, including the SAR alert crew and SAR Controller.

(3) When notified of the distress by the ENIWETOK AOC, the

SAR aircraft will become airborne as quickly as possible. The SAR aircraft will contact DIRTY FACE on Channel "C" for vector to the craft in distress.

(4) The SAR aircraft will contact the distressed craft on the latter's operating frequency. When within VHF range of aircraft in distress, the SAR aircraft will contact the aircraft in distress on Channel "D" (121.5 megacycles).

(5) The SAR aircraft will be cleared by ENIWETOK AOC to the altitude requested and the intercept will be accomplished using scope control directions from the AOC, DR, Loran, ARC-13 with O-17 Low Frequency Oscillator, AN/ARA-8, VHF Homing Adapter, APS-31, Mark 10 transponder, flares, Aldis Lamp and landing lights as necessary.

(6) Escort will be given to the closest landing area, depending upon the urgency of the situation.

(7) Every effort will be made to maintain SAR communications with the distressed aircraft on its operating HF frequency. All other radio traffic will be directed to discontinue using the frequency and to maintain radio silence until further notice.

b. Ditching:

(1) If ditching is imminent, the SAR aircrew will give all directions and assistance to the distressed aircraft including:

(a) Sea Conditions.

(b) Wind Conditions.

(c) Best Ditching Heading.

(d) Best location for ditching if near Atoll.

(e) Parachute Flare for night ditching.

(f) Drop PP-1 flotation equipment to personnel, which consists of two (2) 20 man life rafts, three (3) emergency sustenance kits, URC-4 radio, etc.

(2) If pick-up of personnel is not possible, due to sea conditions, for example, the SAR aircraft will circle the area and assist in directing helicopter and/or surface craft support to the distress target. The SAR aircraft will transmit requests for additional rescue facilities to the AOC on 6500 Kilocycles, HF, VHF Channel "C", or on the operating frequency of the distress aircraft.

(3) If a water pick-up is accomplished, survivors will be evacuated and given necessary medical attention by the aero-medical technician crew member. STABLE aircraft will advise the ENIWETOK AOC if medical facilities will be required upon landing at the base.

c. SAR Coordination Procedures:

(1) The scene of action ("on-scene) command of SAR operations will be exercised by the SA-16 aircraft. Frequency for

[redacted]

"on-scene" coordination and control will be VHF Channel "D" and HF Circuit J-417. Overall control will be retained at the AOC, and control of individual SAR unit at the scene of action will be exercised through the "on-scene" commander. SAR units will come under the "on-scene" command when they are in the scene of action area, and communications are established with the "on-scene" commander.

(2) Outlined below are procedures which will be employed by the SA-16, helicopter, and crash boat to coordinate rescue operations within the AOC control area.

(a) SA-16 aircraft: Initial contact with the AOC will be on VHF Channel "C". If the AOC has VHF contact with the distressed aircraft, the rescue aircraft will contact the distressed aircraft on the same frequency. After contact has been established between the rescue and distressed aircraft, or if the AOC does not have VHF contact with the distressed aircraft, VHF Channel "D" will be used to establish communications between the rescue and the distressed aircraft.

(b) SAR Helicopter: Initial contact with the AOC will be on VHF Channel "C". Frequency control will be exercised by the AOC to coordinate, and to effect direct contact with the associated SA-16, on VHF Channel "I".

(c) Crash Boat: The crash boat will guard ENIWETOK tower frequency, VHF Channel "B", and circuit J-417 at all times. The crash boat will be dispatched and controlled by the AOC through ENIWETOK tower. Frequency control will be exercised by the AOC to effect direct contact with the associated SA-16, on VHF Channel "D".

4. REHEARSAL AND SHOT PROCEDURES:

a. The SAR Element, Provisional, will provide three (3) SA-16 aircraft for rescue activities during rehearsal and actual shot periods. Primary SAR missions will be performed by two of the SA-16's; the third aircraft will provide back-up support.

b. The two (2) primary SAR aircraft will be required to fly eight (8) hour missions during these periods and will be known as STABLE 1 & 2.

c. The third aircraft will remain at ENIWETOK on a twenty-four (24) hour strip alert status and will be utilized, if necessary, as a back-up aircraft for STABLE 1 and 2. This aircraft is designated as STABLE 3.

d. During operational periods, STABLE aircraft will turn APX-6 IFF to Position Two on take-off and remain on that position until further advised.

e. Detailed operating instructions for STABLE aircraft are contained in Appendix 1, this Annex.

5. EMERGENCY PROCEDURES FOR STABLE AIRCRAFT:

a. Upon notification of an emergency on Channel "F", from either BOUNDARY TARE or CASSIDY, STABLE aircraft will:

[redacted]

[redacted]

(1) Turn to vector given by control or obtained on APS-31 scope from emergency IFF blips transmitted by the distressed aircraft.

(2) Proceed to area using METO power.

(3) Standby on Channel "F" and HF circuit J-410 for further information.

(4) Make rescue plan to fit the situation and advise proper control.

(5) If F-84 type aircraft is in distress, AN/ARA-8 Homing may be obtained on VHF Channel "F".

(6) Be prepared to coordinate with helicopters or surface vessels for search/rescue missions.

b. Additional intercept/escort/ditching procedures will be used as outlined in previous paragraphs.

6. STABLE AIRCRAFT SPECIFIC OPERATING INSTRUCTIONS:

a. STABLE aircraft will carry Appendix 4 to Annex "E", this order, "Air Ground Communications for CASTLE", to facilitate rapid contact in case of emergency.

b. STABLE aircraft will carry maps approved by Task Group 7.4; also maps of ENIWETOK and BIKINI Atolls, scale 1:100,000, showing depth of water, in fathoms, should water landings be necessary for emergency pick-ups.

c. STABLE aircraft will not fly in or near GILDA (Atomic Cloud) after H-Hour. Area downwind of GILDA should be avoided to prevent fall-out contamination, and no flight should be conducted closer than ten (10) nautical miles from the visible or rising cloud unless specifically directed otherwise.

d. Pilots and Co-pilots in the air at shot time shall use modified, all purpose 4.025 density filter goggles. Co-pilots should, as an extra precaution, cover their eyes with forearm at zero hour.

e. 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.

7. MISSION REPORTING:

a. All incidents pertaining to SAR operations will be reported to Headquarters, Air Rescue Service through the 78th Air Rescue Squadron, KWAJALEIN, M.I., as directed by ARD Regulation 55-16 and CTG 7.4.

b. Rescue operations conducted in the ENIWETOK-BIKINI area will include SARCC at Pearl Harbor and SAR Center at USNA KWAJALEIN - flash information will be sent out on teletype circuit and actual intercept rescue and closing of mission when accomplished will be similarly transmitted.

HOWELL M. ESTES, JR.
Brigadier General, U. S. A. F.
Commander

1 Appendix:
Specific Instructions for Shot and Rehearsal Missions

OFFICIAL:

PAUL H. TACKLER
Lt Colonel, USAF
Director of Operations

[redacted]

APPENDIX 1
TO
ANNEX F
OPERATIONS ORDER NO. 5-54
SPECIFIC INSTRUCTIONS FOR SHOT AND REHEARSAL MISSIONS

1. MISSION:

a. To provide Search and Rescue service to all Joint Task Force air and surface craft in distress.

2. RESPONSIBILITIES:

a. The Commander, Test Aircraft Unit will insure that aircraft meet take-off schedules as outlined in Annex "C".

b. The AOC Senior Air Controller will be responsible for the operational control of SAR aircraft while operating in the ENIWETOK area.

c. The SAR Controller in the AOC will be responsible for scrambling SAR aircraft as directed by the Senior Air Controller, and for advising the Senior Air Controller on SAR operations.

d. The CIC Senior Air Controller will be responsible for the operational control of the SA-16 Search and Rescue aircraft while operating in the Command Ship area on rehearsals or actual shots.

3. PROCEDURES:

a. On rehearsal and actual shot missions, a Search and Rescue SA-16, call sign STABLE, will take-off as scheduled in Annex "C" (Aircraft Mission Execution Chart). He will call the AOC, call sign DIRTY FACE, on VHF Channel "C". DIRTY FACE will check all modes of IFF, and HF air-ground Channel J-410, while STABLE aircraft is proceeding to his assigned H-Hour position as outlined in Annex "D" (Aircraft H-Hour Positions and Flight Patterns). DIRTY FACE will maintain control until STABLE aircraft is approximately 50 miles from ENIWETOK at assigned control point in Annex "D". He will then instruct STABLE to contact the CIC, call sign BOUNDARY TARE on VHF Channel "F", with IFF squawking Mode 2.

b. The BOUNDARY TARE Controller will establish positive control of STABLE and vector him to his H-Hour position.

c. After H-Hour, STABLE will remain under control of BOUNDARY TARE on Channel "F" (139.86) until informed by BOUNDARY TARE to change to Channel "D" (121.5) or other frequency, as directed, for the purposes of a SAR emergency. BOUNDARY TARE will position STABLE approximately at the midpoint between sampling operations and BOUNDARY TARE.

d. For return to base (ENIWETOK), BOUNDARY TARE will provide STABLE a range and bearing to his assigned control point, approximately 50 miles from ENIWETOK, inbound to base, BOUNDARY TARE will instruct STABLE to call DIRTY FACE on Channel "C". DIRTY FACE will establish positive control and provide STABLE with range and bearing to base.

e. On rehearsal and actual shot missions, two (2) Search and Rescue SA-16's, call sign STABLE will occupy a position on the ground at ENIWETOK adjacent to runway (See Annex "B", "Aircraft Parking Plan"; and Annex "C", "Aircraft Mission Execution Chart"). STABLES will be scrambled by the SAR Controller in the AOC by direct communication to Rescue Alert Position. Immediately upon becoming airborne, STABLE will contact DIRTY FACE on Channel "C" for instructions.

[redacted]

f. On rehearsals, actual shot missions, and during jet practice periods, the Search and Rescue helicopter, call sign STABLE 5, will be maimtained in a ground alert status and will assume a position adjacent to runway (See Annex B, "Aircraft Parking Plan"; and Annex C, "Aircraft Mission Execution Chart"). STABLE 5 will be scrambled by the SAR Controller in the AOC by direct communication to the Rescue Alert Position. Immediately upon becoming airborne, STABLE 5 will contact DIRTY FACE on Channel "C" for instructions.

g. The Crash Boat, call sign GUNSHOT 1, will standby in ENIWETOK LAGOON. GUNSHOT 1 will continually monitor VHF Channel "H" and will be under the operational control of the AOC.

[redacted]

Annex G

In 2 pages

ANNEX G

TO

OPERATIONS ORDER NO. 5-54

CONTROL RB-36 FLIGHT PROCEDURES

[redacted]

ANNEX G
TO
OPERATIONS ORDER NO. 5-54
CONTROL RB-36 FLIGHT PROCEDURES

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
APO 187, c/o Postmaster
San Francisco, California
7 April 1954, 1800M

1. MISSION:

a. To control all aircraft in the sampling area; to direct F-84 and FB-36 sampling missions as required; to accomplish certain photographic missions; and to provide required radiological data to the Command Ship.

2. RESPONSIBILITIES:

a. The Commander, Test Aircraft Unit, and the Senior Task Group 7.4 Controller, will assure that the provisions of this Annex are carried out.

3. PROCEDURES:

a. On an ENIWETOK event, the Control RB-36, call sign CASSIDY, will take-off as scheduled in Annex "C" (Aircraft Mission Execution Chart). CASSIDY will climb to H-Hour orbit altitude along corridor designated in Annex "D". The pilot will call the AOC, call sign DIRTY FACE, on VHF Channel "C". DIRTY FACE will check all modes of IFF and HF air-ground Channel J-410. At control point on designated corridor DIRTY FACE will instruct CASSIDY to contact the CIC, call sign BOUNDARY TARE on VHF Channel "F" for control. IFF will be squawking mode 2.

b. The BOUNDARY TARE Controller will establish radio and IFF contact with CASSIDY and provide the aircraft with range and bearing to its assigned H-Hour position, to perform cloud measurement photography. Details of this mission will be supplied by Task Group 7.1. CASSIDY will hold at this position with BOUNDARY TARE providing range and bearing information, as required, from ground zero. At H-Hour, cloud measurement photographs will be accomplished. CASSIDY will then proceed on its primary mission. BOUNDARY TARE will provide each element of F-84 samplers, call sign TIGER RED, WHITE or BLUE, with bearing to CASSIDY on VHF Channel "F". When TIGER aircraft are within radar range of CASSIDY, the BOUNDARY TARE Controller will notify the CASSIDY Rendezvous Controller, call sign CASSIDY ONE, the TIGER element's relative position. Continuous positions will be given to both CASSIDY ONE and TIGER aircraft until CASSIDY ONE makes positive radio and IFF contact with TIGER aircraft. CASSIDY ONE will then assume control. CASSIDY ONE will turn control of the TIGER element over to sampler controller, call sign CASSIDY TWO, on VHF Channel "E". CASSIDY TWO will direct the TIGER aircraft sampling mission. Upon completion thereof, CASSIDY TWO will instruct the TIGER element to return to "F" Channel and call CASSIDY ONE. CASSIDY ONE will rendezvous the TIGER element and give the lead aircraft a bearing and range to FRED, maintaining control until BOUNDARY TARE establishes radio and IFF contact with TIGER aircraft and accepts positive control.

c. In the event of an F-84 emergency, BOUNDARY TARE will direct STABLE ONE to the aircraft in distress, on Channel "F". If the SAR aircraft is not in the immediate area or cannot be contacted, CASSIDY ONE

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may direct another aircraft in the area to orbit over the distressed aircraft until the SAR aircraft arrives and assumes control of the rescue operation.

d. BOUNDARY TARE will continually monitor the sampling operation on VHF Channel "E" and "F", and standby on "D" for emergency. All aircraft positions will be monitored by BOUNDARY TARE throughout the sampling operation to assist CASSIDY in positioning any aircraft, on request, or to direct the control of SAR operations if required. BOUNDARY TARE will provide CASSIDY with any weather or rad/safe information requested on Channel "E" or "F". If the sampling area drifts from BOUNDARY TARE's radio coverage, communications between BOUNDARY TARE and CASSIDY will be established on the HF air-ground Channel J-410 or through use of a VHF relay aircraft.

e. CASSIDY TWO will provide BOUNDARY TARE with radiological reports each 30 minutes, [redacted] HF air-ground Channel J-410 or VHF Channel "E" will be used for this reporting.

f. CASSIDY will be instructed by BOUNDARY TARE to switch to Channel "B" for the following time hacks:

(1) H-2 hours 2 minutes for H-2 hour time hack.

(2) H-1 hour 2 minutes for H-1 hour time hack.

(3) H-32 minutes for H-30 minutes time hack.

(4) H-3 minutes and remain on B until after H-Hour.

g. When CASSIDY has completed its mission, to include directing the FB-36 or F-84 samplers, if required. BOUNDARY TARE will vector CASSIDY to Eniwetok and maintain positive control until DIRTY FACE establishes radio and IFF contact with CASSIDY. At this time, DIRTY FACE will assume positive control of CASSIDY and vector the aircraft to base for landing. CASSIDY will normally be turned over to DIRTY FACE control at control point 1 or 2.

HOWELL M. ESTES, JR
Brigadier General, U. S. A. F.
Commander

OFFICIAL:

PAUL H. FACKLER
Lt Colonel, USAF
Director of Operation

Declassified DOD DIR 5200.10

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Annex H

In 2 pages w/1 Appendix

ANNEX H

TO

OPERATIONS ORDER NO. 5-54

F-84 SAMPLER FLIGHT PROCEDURES

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ANNEX H
TO
OPERATIONS ORDER NO. 5-54
F-84 SAMPLER FLIGHT PROCEDURES

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
APO 187, c/o Postmaster
San Francisco, California
7 April 1954, 1800M

1. MISSION: To obtain cloud samples as directed by the scientific observer in the Control RB-36.

2. RESPONSIBILITIES: The Commander, Test Aircraft Unit, will insure that all F-84 pilots are familiar with this Annex and that its provisions are carried out.

3. PROCEDURES:

a. F-84 Sniffers and Samplers, call sign TIGER, will take off in two (2) ship elements as scheduled in Annex C (Aircraft Mission Execution Chart). These take offs may be rescheduled during the operation by direction of BOUNDARY TARE. Such directions will be issued to DIRTY FACE for relay to F-84 operations. When airborne, each element will call the AOC, call sign DIRTY FACE on VHF Channel "C". DIRTY FACE will take over direct control of the F-84's at this point and vector them to their assigned control point in Annex D (Aircraft H-Hour Positions and Flight Patterns), checking all IFF modes enroute. DIRTY FACE will then instruct the TIGER lead aircraft to return to mode 2. In the event that radio or IFF is inoperative on either aircraft, the two (2) ship element will be instructed by DIRTY FACE to abort mission. With radio and IFF functioning properly, the TIGER element will continue on course to assigned control point approximately fifty (50) miles from Eniwetok, DIRTY FACE will instruct them to contact the CIC, BOUNDARY TARE, for control on Channel "F".

b. The BOUNDARY TARE, TIGER Controller, will establish radio and IFF contact with TIGER elements as soon as possible and accept positive control. If radio or IFF is inoperative in either aircraft of a TIGER element, BOUNDARY TARE will direct the TIGER element to abort. With radio and IFF functioning properly, BOUNDARY TARE will vector the TIGER element to the CASSIDY rendezvous controller, call sign CASSIDY ONE, who is also on VHF Channel "F". When CASSIDY ONE establishes radio and IFF contact, he will accept positive control notifying the TIGER element and BOUNDARY TARE simultaneously. CASSIDY will vector the F-84's to its position, then instruct the F-84's to switch to VHF Channel "E" for sampler control. This control will be exercised by the SAMPLER Controller aboard the Control RB-36 whose call sign is CASSIDY TWO. Sampling will be conducted at altitudes and areas as directed by CASSIDY TWO. When this mission is completed, or in the event an F-84 becomes lost, CASSIDY TWO will instruct the aircraft to switch back to VHF Channel "F" and CASSIDY ONE will vector the F-84's back to CASSIDY or to BOUNDARY TARE, as appropriate.

c. When BOUNDARY TARE establishes radio and IFF contact with the F-84's, inbound to base from the sampling area, he will notify CASSIDY ONE and the F-84's simultaneously on VHF Channel "F", and assume positive control of the F-84's at this point. BOUNDARY TARE will give the F-84's a vector to their assigned control point, maintaining positive control until

[redacted]

approximately fifty (50) miles from base. At this point the F-84's will be instructed to switch to VHF Channel "C" and DIRTY FACE will assume positive control when radio contact is established.

d. F-84 call signs will be as follows:

(1) Sniffers:

(a) TIGER Sniffer 1 and 2.

(2) Samplers:

(a) 1st Flight - TIGER RED 1 and 2.

(b) 2d Flight - TIGER RED 3 and 4.

(c) 3rd Flight - TIGER WHITE 1 and 2.

(d) 4th Flight - TIGER WHITE 3 and 4.

(e) 5th Flight - TIGER BLUE 1 and 2.

(f) 6th Flight - TIGER BLUE 3 and 4.

e. Emergency procedures: See SAR Annex "F".

f. The TIGER crews will be thoroughly briefed on the sniffing, sampling and radiation reporting procedures by the Scientific Task Group Sampling Project Officer prior to each mission.

HOWELL M. ESTES, JR.
Brigadier General, U. S. A. F.
Commander

OFFICIAL:

PAUL H. FACKLER
Lt Colonel, USAF
Director of Operations

1 Appendix:
Sampler Acft Landing at KWAJALEIN

[redacted]

[redacted]

APPENDIX 1
TO
ANNEX "H"
OPERATIONS ORDER NO. 5-54
F-84 SAMPLER AIRCRAFT LANDING AT KWAJALEIN

1. PURPOSE:

a. The purpose of this Appendix is to provide for expeditious removal, preparation, packaging and dispatch to the ZI, of radiological samples contained in F-84 sampler aircraft which are compelled to land at KWAJALEIN after conducting a sampling mission.

2. BACKGROUND:

a. F-84 sampler aircraft normally will return to ENIWETOK upon the completion of a sampling or sampling rehearsal mission. However, two conditions unforeseeably may arise, either of which could necessitate a landing at KWAJALEIN.

(1) A planned landing of one or two of the F-84 sampling elements to increase sampling time when cloud drift is unusually fast.

(2) An emergency landing of an F-84 element, when KWAJALEIN is closer to these aircraft than ENIWETOK.

b. Provisions for the support required at KWAJALEIN have been agreed upon by the Commander, Naval Air Station, KWAJALEIN, and the Commander, Task Group 7.4. These agreements are outlined in paragraph 5.

3. PROCEDURES:

a. CASSIDY TWO will recommend to BOUNDARY TARE whether or not a sampling mission should continue wherein return of the sampler aircraft to ENIWETOK is questionable. If BOUNDARY TARE instructs CASSIDY TWO to continue with the sampling mission and to land F-84 sampler aircraft at KWAJALEIN, procedures as outlined herein apply.

b. Change the Code Name of TIGER aircraft.

NOTE: F-84 SAMPLER AIRCRAFT CODE NAME "TIGER"
WILL BECOME "CHILIPEPPER".

c. BOUNDARY TARE will submit in the clear either of the following messages, as applicable, to the ENIWETOK AOC on Circuit J-407 or J-408.

"CHILIPEPPER MESSAGES"

(1) Text of Message:

(a) For emergency landing of F-84 element at KWAJALEIN:

"EMERGENCY CHILIPEPPER ARRIVING AT _____ TIME."

(b) For planned landing of one or more F-84 elements at

[redacted]

KWAJALEIN to increase sampling time:

"EXECUTE CHILIPEPPER PLAN. CHILIPEPPER AIRCRAFT ARRIVING _____ TIME."

(2) Transmission Procedures: Upon receipt of either of the above messages from BOUNDARY TARE, the ENIWETOK AOC will:

(a) Have an officer hand carry the message to the ENIWETOK Communications Center, declare it "Operational Immediate" and insure that it is transmitted in the clear to KWAJALEIN. He will standby in the Communications Center until the message is receipted for. The AOC will then notify the CIC of the time the message was received at KWAJALEIN.

d. CASSIDY TWO will pass on to BOUNDARY TARE the information of the LASL Scientific Director aboard CASSIDY reference his recommended disposition of the samples as follows:

(1) That FLYAWAY TWO depart ENIWETOK on shot day to ferry personnel and equipment to KWAJALEIN. These personnel will remove and package samples for immediate loading into FLYAWAY TWO for airlift to the ZI.

(2) That C-47 aircraft depart ENIWETOK on shot day to ferry personnel and equipment to KWAJALEIN. These personnel will remove and package samples for loading into FLYAWAY THREE on D/1 for airlift to the ZI.

e. BOUNDARY TARE, after considering the recommendation of the LASL Scientific Director, will inform the ENIWETOK AOC as to which of the two above courses of action will be initiated.

f. BOUNDARY TARE will notify all Task Force Aircraft Control agencies that F-84 sampler aircraft will land at KWAJALEIN, giving approximate ETA.

g. F-84 sampler aircraft concerned will contact CASSIDY for range and steer to KWAJALEIN upon completion of the sampling mission. As soon as contact is established with KWAJALEIN tower, the "CHILEPEPPER" Element Leader will request that upon landing, the aircraft be directed to the predesignated CHILIPEPPER parking area.

4. RESPONSIBILITIES:

a. The Director of Operations, Task Group 7.4:

(1) The Air Operation Center will:

(a) Notify the Test Aircraft Unit that F-84 sampler aircraft will land at KWAJALEIN.

(b) Notify the Test Aircraft Unit of the departure time of the aircraft that will depart ENIWETOK to airlift filter recovery party, removal and storage equipment, maintenance personnel and equipment to KWAJALEIN.

(c) Notify the Test Support Unit to alert the aircraft crew for FLYAWAY TWO or the aircraft crew for the C-47, as appropriate, for departure to KWAJALEIN at the time designated by BOUNDARY TARE.

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[redacted]

(d) Notify BOUNDARY TARE of the actual time of departure of FLYAWAY TWO or C-47 from ENIWETOK for KWAJALEIN.

(2) Technical Projects Division will:

(a) Notify Task Group 7.1 that F-84 sampler aircraft will land at KWAJALEIN.

1. Complete coordination with LASL couriers and military couriers to insure that they are available for the FLYAWAY TWO or C-47 airlift to KWAJALEIN.

b. Test Aircraft Unit:

(1) Sample Recovery Party:

(a) Provide a sample recovery party to remove the samples from the F-84 aircraft. One (1) officer and one (1) airman is considered the minimum personnel requirement, consistent with safety, to remove the samples from two (2) F-84 aircraft. If more than two (2) F-84 aircraft land at KWAJALEIN, the Test Aircraft Unit will augment the Sample Recovery Party to the extent considered necessary.

1. Equipment to accompany the Sample Recovery Party will include:

a. T-1B ion chambers and/or GM counters as are considered necessary.

b. IVY type, lead-lined sampler box.

c. Extended diagonal cutters.

d. Filter removal pole.

e. Extended crucible tongs.

f. Rad/Safety disposable clothing and gloves.

g. Rad/Safe signs.

h. Detergent for decontamination.

i. Other equipment as is considered necessary.

(2) Maintenance Personnel:

(a) Provide one (1) F-84 Crew Chief per sampler aircraft that lands at KWAJALEIN.

1. Equipment to accompany the crew chiefs will include:

a. Seat ejection pins.

b. Landing gear external locks.

c. Flight surface control locks.

d. Tool box.

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e. Other equipment as is considered necessary.

(3) Estimated Time of Departure for KWAJAIE IN:

(a) Advise the Air Operation Center, ENIWETOK, and the Test Support Unit (Base Operations) as to the estimated time personnel and equipment will be assembled at the MATS terminal for airlift to KWAJAIE IN.

(4) Clothing:

(a) Deliver to the sampler pilots at KWAJALEIN a complete change of clothing.

(5) Filter Removal:

(a) Sample panels will be removed from the aircraft and placed in the IVY type sample box by the Sample Recovery Party. No rolling of the papers will be required. When all papers have been removed, the lead-lined box will be secured and placed aboard the FLYAWAY aircraft, utilizing a fork lift. The Rad/Safe monitoring will be done by the Sample Recovery Party.

(6) Securing F-84 Aircraft:

(a) Crew Chiefs will install seat ejection pins, external landing gear locks and flight surface control locks; insure that aircraft canopies are closed and that the wheels are chocked.

(7) Decontamination: It is assumed that the aircraft will stand for a minimum of 48 hours prior to decontamination and flyaway. Decontamination will not be required if the cockpit reading does not exceed 50 mr/hr, 48 hours post-shot. In any event, unless directed otherwise by Commander, Task Group 7.4, minimum detergent-water decontamination will be effected.

(a) Decontamination will be accomplished by the Sample Recovery Party, assisted by Navy personnel at KWAJALEIN.

(8) Return of F-84 samplers to ENIWETOK: The original pilots will remain at KWAJALEIN to return their F-84's to ENIWETOK when the aircraft have reached a suitable radiation level.

(a) The officer in charge of the Sample Recovery Party will notify the Commander, Task Group 7.4, as to the extent of F-84 contamination. He will include in this notification the estimated date that sampler aircraft can be returned to ENIWETOK and will request airlift for the Sample Recovery Party, Maintenance personnel and equipment.

(b) F-84 pilots will dispatch a message to Commander, Task Group 7.4 at least two hours prior to intended departure from KWAJAIE IN.

5. SUPPORT FROM OTHER AGENCIES:

a. The Commander, Naval Air Station, KWAJALEIN, has agreed to

support this operation to the extent indicated below and therefore will:

(1) Park CHILIPEPPER aircraft immediately.

(2) Meet aircraft with fork lift and pallet to remove the pilot.

(3) Transport the pilot to a shower immediately to insure decontamination.

(4) Provide guards with film badges to guard aircraft.

(5) Provide fork lift and low boy to move and load the lead-lined sample boxes.

(6) Provide housing for the sample recovery operation and parking space for the FLYAWAY aircraft.

(7) Provide fresh water for aircraft decontamination (cockpit level to be reduced to 50 mr/hr).

(8) Provide ground equipment for F-84 aircraft on a "share basis".

[redacted]

Annex I

In 1 page

ANNEX I

TO

OPERATIONS ORDER NO. 5-54

B-36 EFFECTS FLIGHT PROCEDURES

[redacted]

[redacted]

ANNEX "I"
TO
OPERATIONS ORDER NO. 5-54
B-36 EFFECTS FLIGHT PROCEDURES

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
APO 187, c/o Postmaster
San Francisco, California
7 April 1954, 1800M

1. MISSION: To measure and record certain blast and thermal effects in the immediate target area during Operation CASTLE in order to obtain required effects data.

2. RESPONSIBILITIES:

a. The Commander, Test Aircraft Unit, is responsible for the readiness of the aircraft to meet take-off schedules for rehearsals and actual shots.

b. The Senior Air Controller on the Command Ship will be responsible for the operational control of the B-36 effects aircraft while operating in the test area.

c. Task Group 7.1 will be responsible for the calibration, maintenance and operation of the special instrumentation installed in the B-36 Effects aircraft.

3. PROCEDURES:

a. The Effects B-36, call sign ELAINE ONE, will take-off as scheduled in Annex C (Aircraft Mission Execution Chart). The pilot will call the ACC, call sign DIRTY FACE, on VHF Channel "C". DIRTY FACE will check all modes of IFF and HF air-ground Channel J-410, while ELAINE ONE is proceeding to H-hour position as designated in Annex D (Aircraft H-Hour Position and Flight Patterns). DIRTY FACE will maintain control until ELAINE ONE is approximately 50 miles from Eniwetok, then instruct ELAINE ONE to contact the CIC, call sign BOUNDARY TARE, on VHF Channel "E" with IFF squawking mode 2.

b. The BOUNDARY TARE Controller will establish radio and IFF contact with ELAINE ONE and provide the aircraft with range and bearing to pre-H-hour orbit position. Upon reaching orbit position, the aircraft will establish wind run patterns to culminate in H-hour position as specified in Annex D. H-hour position tolerances are plus or minus three (3) seconds. Positioning will be the responsibility of the aircraft commander. BOUNDARY TARE will monitor the flight path and issue any required emergency instructions. BOUNDARY TARE will provide weather and high altitude wind information, as required, and instruct ELAINE ONE to switch to Channel "B" for all time hacks. ELAINE ONE will maintain radio silence on Channel "B" at all times. Immediately following H-hour, ELAINE ONE will be provided range and bearing to base by BOUNDARY TARE. ELAINE ONE will remain on Channel "E" until instructed to switch to Channel "C" for DIRTY FACE control when approximately 50 miles from base. If at any time ELAINE ONE cannot contact DIRTY FACE on Channel "C", or BOUNDARY TARE on "E", HF air-ground circuit J-410 will be used as an alternate.

OFFICIAL:

HOWELL M. ESTES, JR.
Brigadier General, U. S. A. F.
Commander

PAUL H. FACKLER
Lt Colonel, USAF
Director of Operations

[redacted]

Annex J

In 1 page

ANNEX J

TO

OPERATIONS ORDER NO. 5-54

B-47 EFFECTS FLIGHT PROCEDURES

[redacted]

ANNEX J
TO
OPERATIONS ORDER NO. 5-54
B-47 EFFECTS FLIGHT PROCEDURES

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
APO 187, c/o Postmaster
San Francisco, California
7 April 1954, 1800M

1. MISSION: To measure and record certain blast and thermal effects in the immediate target area during Operation CASTLE in order to obtain required effects data.

2. RESPONSIBILITIES:

a. The Commander, Test Aircraft Unit is responsible for the readiness of the aircraft to meet take-off schedules for rehearsals, and actual shots.

b. The senior air controller on the Command Ship will be responsible for the operational control of the B-47 effects aircraft while operating in the test area.

c. Task Group 7.1 will be responsible for the calibration, maintenance, and operation of the special instrumentation installed in the B-47 effects aircraft.

3. PROCEDURES:

a. The Effects B-47, call sign ELAINE TWO, will take off as scheduled in Annex C (Aircraft Mission Execution Chart). The pilot will call the AOC, call sign DIRTY FACE, on VHF Channel "C". DIRTY FACE will check all modes of IFF while ELAINE TWO is proceeding to H-Hour Position designated in Annex D (Aircraft H-Hour Position and Flight Patterns). DIRTY FACE will maintain control until ELAINE TWO is approximately 50 miles from Eniwetok at assigned control point, then instruct ELAINE TWO to contact the CIC, call sign BOUNDARY TARE, on VHF Channel "E", with IFF squawking mode 2.

b. The BOUNDARY TARE Controller will establish radio and IFF contact with ELAINE TWO and provide the aircraft with range and bearing to pre-H-Hour orbit position. Upon reaching orbit position, the aircraft will establish wind run patterns to culminate in H-Hour position designated in Annex D. H-Hour position tolerances are plus or minus three (3) seconds. Positioning will be the responsibility of the aircraft commander. BOUNDARY TARE will monitor the flight path and issue required instructions. BOUNDARY TARE will provide weather and high altitude wind information, as required, and instruct ELAINE TWO to switch to Channel "B" for all time hacks. ELAINE TWO will maintain radio silence on Channel "B" at all times. Immediately following H-Hour, ELAINE TWO will be provided range and bearing to his inbound control point by BOUNDARY TARE. ELAINE TWO will remain on Channel "E" until instructed to switch to Channel "C" for DIRTY FACE control.

OFFICIAL:

HOWELL M. ESTES, JR.
Brigadier General, U. S. A. F.
Commander

Paul H. Fackler

PAUL H. FACKLER
Lt Colonel, USAF
Director of Operations

[redacted]

Annex "K"

In 1 page

ANNEX "K"
TO
TO

OPERATIONS ORDER NO. 5 -54

FB-36 SAMPLER FLIGHT PROCEDURES

[redacted]

ANNEX "K"
TO
OPERATIONS ORDER NO. 5-54
FB-36 SAMPLER FLIGHT PROCEDURES

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
APO 187, c/o Postmaster
San Francisco, California
7 April 1954, 1800M

1. MISSION: To obrain cloud samples at extreme altitudes as directed by the Scientific Observer on the Control RB-36.

2. RESPONSIBILITIES: The Commander, Test Aircraft Unit, will insure that both RB-36 pilots are familiar with this Annex and that its provisions are carried out.

3. PROCEDURES:

a. Two (2) FB-36 samplers, call sign FLOYD ONE and TWO, will take off as scheduled in Annex "C" (Aircraft Mission Execution Chart). When airborne, each aircraft will call the AOC, call sign DIRTY FACE, on VHF Channel "C". DIRTY FACE will take over direct control of the FB-36's at this point and vector them along a designated corridor, checking all IFF modes enroute. DIRTY FACE will then instruct aircraft commanders to return to mode 2. They will continue on course until turned over to BOUNDARY TARE on VHF Channel "F" at a point approximately fifty (50) miles out from FRED.

b. BOUNDARY TARE will vector FLOYD aircraft to the vicinity of CASSIDY. When BOUNDARY TARE determines that CASSIDY is capable of accepting control of FLOYD aircraft, control of these aircraft will be turned over to CASSIDY on Channel "E" or "F". Actual sampling operations will be controlled by CASSIDY. Upon completion of sampling operation control of FLOYD aircraft will be turned over to BOUNDARY TARE, Channel "F".

c. BOUNDARY TARE will vector FLOYD aircraft to a designated control point fifty (50) miles from base and turn control of FLOYD aircraft over to DIRTY FACE. DIRTY FACE will vector FLOYD aircraft to base using VHF, Channel "C".

4. Personnel and Decontamination procedures for aircraft and crew are outlined in Annex "[redacted]".

HOWELL M. ESTES, JR.
Brigadier General, U. S. A. F.
Commander

OFFICIAL:

PAUL H. FACKLER
Lt Colonel, USAF
Director of Operations

[redacted]

Annex "L"

In 2 pages

ANNEX "L"

TO

OPERATIONS ORDER NO. 5-54

C-54 PHOTO FLIGHT PROCEDURES

[redacted]

ANNEX "L"
TO
OPERATIONS ORDER NO. 5-54
C-54 PHOTO FLIGHT PROCEDURES

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
APO 187, c/o Postmaster
San Francisco, California
7 April 1954, 1800M

1. MISSION: To conduct aerial photographic coverage of all CASTLE shots to obtain required documentary still and motion picture photography.

2. RESPONSIBILITIES:

a. The Commander, Test Services Unit, will be responsible for the air crews and for the readiness of photographic aircraft to meet take-off schedules for rehearsals and actual shots.

b. The Senior Controller on the Command Ship will be responsible for the operational control of photographic aircraft while in the test area.

c. Task Group 7.1 will be responsible for the readiness of photographic equipment for rehearsals and actual shots, for the operation and maintenance of photographic equipment, and for the processing and dissemination of all film.

3. PROCEDURES:

a. The photographic C-54's, call sign PEWTER ONE, TWO and THREE, will take-off as scheduled in Annex "C" (Aircraft Mission Execution Chart). They will call the AOC, call sign DIRTY FACE, on VHF Channel "C". DIRTY FACE will check all modes of IFF, and HF air-ground channel J-410, while PEWTER aircraft are climbing on corridor designated in Annex "D". DIRTY FACE will maintain control until PEWTER aircraft reach the designated control point, then instruct PEWTER aircraft to contact the CIC, call sign BOUNDARY TARE. PEWTER ONE will call BOUNDARY TARE on VHF Channel "A"; PEWTER TWO on "A"; PEWTER THREE on "G". All PEWTER aircraft will squawk IFF mode 2.

Change # 1

b. The BOUNDARY TARE Controllers will establish radio and IFF contact with PEWTER aircraft and provide them with range and bearing to orbit position designated in Annex "D". PEWTER will remain on assigned VHF Channels until completion of their missions, except when directed to switch to Channel "B" for time hacks. PEWTER aircraft will maintain radio silence on Channel "B" returning to assigned mission channel immediately after receiving the time hacks. Each PEWTER aircraft will begin wind runs to achieve its H-Hour position as designated in Annex "D". Each PEWTER aircraft will be provided range from ground zero each time the aircraft passes through its assigned true bearing from ground zero. This procedure will be followed so that in the event of VHF radio failure, just prior to H-Hour, tolerances are plus or minus 15 seconds. After H-Hour, PEWTER aircraft will conduct required photographic missions. When missions are complete, aircraft will call BOUNDARY TARE for vector to control point. The BOUNDARY TARE Controller will instruct PEWTER aircraft to switch to Channel "C" for DIRTY FACE control when reaching control point, approximately fifty (50) miles out from base.

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c. PEWTER aircraft will be instructed by BOUNDARY TARE to switch to Channel "B" for the following time hacks:

(1) H - 2 hours 2 minutes for H-2 hour time hack.

(2) H - 1 hour 2 minutes for H-1 hour time hack.

(3) H - 32 minutes for H-30 minute time hack.

(4) H - 3 minutes and remain on "B" until after H-Hour.

HOWELL M. ESTES, JR.
Brigadier General, U. S. A. F.
Commander

OFFICIAL:

PAUL H. FACKLER
Lt Colonel, USAF
Director of Operations

[redacted]

ANNEX "M"

In 5 pages W/3 Appendices

consisting of 3 pages

ANNEX "M"

TO

OPERATIONS ORDER NO. 5-54

WB-29 OPERATIONS

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ANNEX "M"
TO
OPERATIONS ORDER NO. 5-54
WB-29 OPERATIONS

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
APO 187, c/o Postmaster
San Francisco, California
7 April 1954, 1800Z

1. MISSION

To conduct weather reconnaissance, typhoon reconnaissance, cloud tracking and such other operations as required during Operation CASTLE.

2. RESPONSIBILITIES:

The Commander, Test Services Unit, will be responsible for planning and for maintaining a capability to execute the WB-29 mission as outlined in this Annex.

3. PROCEDURES:

a. Sortie Requirements: The Test Services Unit will be capable of performing:

(1) Two (2) daily weather reconnaissance sorties, of approximately twelve (12) hours duration, beginning on first shot minus twenty (20) days and extending through first shot minus five (5) days and, as directed, on any other than those days on which sorties are required by the following paragraphs.

(2) Three (3) daily weather reconnaissance sorties, of approximately twelve (12) hours duration, beginning each shot minus four (4) days and extending through each shot minus one (1) day.

(3) One (1) sortie, of approximately twelve (12) hours duration, on each shot day, to perform the following tasks.

(a) Provide preshot reports on weather in the ENIWETOK AREA affecting aircraft operations.

(b) Provide preshot "Up Wind Special" weather information (if required).

(c) Perform postshot heavy particulate sampling.

(4) Two daily combination cloud tracking-weather reconnaissance flights, of approximately twelve (12) hours duration, beginning at H-Hour on each shot day and extending through H+48 hours. The primary mission of these flights will be cloud tracking. (See Appendices 1 and 2)

(5) Any special typhoon reconnaissance sorties required to discharge typhoon reconnaissance responsibility in the area bounded by the equator, latitude 25° North, the Meridian of 180° and longitude of 157°31' East. The Joint Task Force Weather Central will coordinate this effort.

b. Flight Procedures:

(1) Weather Reconnaissance and Cloud Tracking Sorties:

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(a) The Commander, Test Services Unit will insure that a thorough briefing of all personnel concerned is held in the Weather Central prior to each weather reconnaissance and cloud tracking flight. This briefing will include tracks to be flown and communications, control reporting and emergency procedures. The following personnel will attend the briefing:

1. The Weather Reconnaissance Aircraft Crew.
2. The Weather Officer, who will be on duty in the Weather Central during the mission.
3. The AOC and SAR Controllers who will be on duty during the mission.
5. The 57th Strat Reconnaissance Squadron Radiological Safety Officer.

(b) Weather reconnaissance and cloud tracking aircraft will call the AOC on VHF Channel "C", immediately after take-off, and remain under the direct control of the ENIWETOK AOC on this channel while within VHF range of ENIWETOK. Those aircraft will establish CW HF radio contact with the AOC on HF Circuit J-411 immediately after takeoff and remain under the AOC control throughout the mission on this circuit. Crews will submit position, weather and/or rad/safe reports to the AOC at 100 nautical miles intervals. The Rad/Safe code is included as Appendix 3 to this Annex. The weather code will be in accordance with Air Weather Service Manual 105-34, 1 August 1953; Recco Code. The Senior AOC Controller will insure that these reports are forwarded immediately to the ENIWETOK Weather Central. The ENIWETOK Weather Central will forward required reports to the USS ESTES Weather Central. The USS ESTES Weather Central will forward all rad/safe reports received to the JTF SEVEN rad/safe officer in the JOC. The ENIWETOK AOC will continually plot the position of weather reconnaissance and/or cloud tracking aircraft. Upon completion of weather reconnaissance and cloud tracking missions, WB-29's will call the ENIWETOK AOC on VHF Channel "C" when 100 miles out from ENIWETOK and will remain under AOC control until base is in sight and instructions are received from the AOC to switch to Approach Control or Tower Frequency. Aircraft on specific weather reconnaissance flights will include reports of radiation, along with their primary mission weather reports, during the period H-Hour until H/48 hours.

(c) Any weather reconnaissance or cloud tracking aircraft experiencing an emergency within VHF radio range of ENIWETOK will notify the ENIWETOK AOC on VHF Channel "C". The ENIWETOK AOC will initiate SAR intercept and implement the SAR Plan. If the emergency is experienced out of VHF range of ENIWETOK, the following action will be taken:

1. The WB-29 radio operator will immediately notify the ENIWETOK AOC of the emergency on Circuit J-411 and announce the pilot's intentions.
2. The AOC will initiate required emergency action maintaining contact with the aircraft in distress on J-411 until VHF contact is possible.

[redacted]

(d) The USS ESTES will be located in the Eniwetok Area during shot period. The CIC will continually monitor VHF Channel "D" and HF, Circuit J-410. WB-29's may contact this station for emergency assistance, including GCI radar vectors, VHF/DF steers and S/R intercept, at the discretion of the aircraft commander.

(e) Although crews will be thoroughly briefed on all aspects of each mission as specified in paragraph 3b(1) above, the following cloud tracking information is provided for planning purposes:

1. Flight #1 (WILSON #2 - H + 1:05 to H + 15:00 hours): This flight is to determine the characteristics of the radiological hazard likely to drift and fall out on Ujelang Atoll and the hazard upwind from the shot atoll. WILSON #2 will take off at H + 1:05 hours, climb to 10,000 feet while proceeding to Point "A". (See Appendix 1). WILSON #2 will then begin a 10,000 foot racetrack holding pattern, the eastern edge will be 50 nautical miles west of Ground Zero. This pattern will extend 50 nautical miles from Northwest to Southeast and 15 miles from East to West (See Appendix 1). Upon encountering radiation, the entire pattern is to be shifted westward to follow the leading edge of the radiation field. Upon completion of this phase of the mission, a search upwind from the shot atoll will be made in a 30 degree sector with apex on ground zero and centered on the average prevailing easterlies. Specific instructions for this mission will be forwarded by CJTF SEVEN to CTG 7.4, ATTN: Commander, Test Services Unit, not later than H minus eight (8) hours. Flight #2 (WILSON #3 - H+00:55 to H+12:00 hours): This flight is the same as flight #1 except that altitude will be 3,000 to 5,000 feet or as is directed by BOUNDARY TARE.

2. Flight #3 (WILSON #4 - H plus 12 hours to H plus 24 hours): This flight is to determine the characteristics of the radiological hazard existing upwind from the native populated atolls in the southeast quadrant and the hazards existing on, or near, air routes of interest to commands external to the Task Force Area of responsibility (Appendix 2). "E" type flight patterns at 10,000 feet will be employed. Search of air routes will be at 10,000 feet and along the routes, or through the area forecast to be upwind from such routes, for representative distances as determined by the estimated limits of accuracy of the air RADEX. The attempt here will be to determine the contamination status of the air on the routes, or of the potential hazards likely to drift across the routes. The air routes of interest are those through Wake and the Marshall Islands. Specific instructions will be forwarded by CJTF SEVEN to CTG 7.4, ATTN: Commander, Test Services Unit, not later than H plus four (4) hours.

3. Flight #4 (H+24 to H+36 hours): This flight will attempt to determine the extent of drift of other major segments of the atomic cloud as practicable and as required by existing meteorological influences. Areas and altitude of search are to

[redacted]

[redacted]

be specified later and will be contingent upon the above influences and the results of flight #1 and #2. Specific instructions for this mission will be forwarded by CJTF SEVEN to CTG 7.4, ATTN: Commander, Test Services Unit, not later than eight (8) hours prior to scheduled aircraft take-off.

4. Flight #5 (H/36 to H/ 48 hours): The necessity for scheduling this flight will be determined by CJTF SEVEN on the basis of the result of Flight #1, #2, #3 and other sources.

5. Mission instructions from CJTF SEVEN will be routed through normal command and communications channels. However, to insure that advance details get to TG 7.4 sufficiently in advance of the missions, informal mission instructions will be transmitted through USS ESTES Weather Central - Eniwetok Weather Station RATT channels by mission take-off time minus eight (8) hours for each flight.

6. The basic requirement for cloud tracking flights is to provide data of sufficient accuracy to support conclusions and decisions relating to health hazards, and to confirm or modify forecast cloud segment drift. In general, the missions are to be flown on the tracks specified with maximum emphasis on complete coverage of the designated areas. It is not anticipated that in flight analysis of the overall situation will be necessary, except that tracking aircraft crews should recognize cloud boundaries and leading edges. Deviations from the prescribed track and reporting positions should be made only in the event of entry into highly contaminated areas. For cloud tracking mission, turn-out will be executed when intensities of 3.0 r/hr are approached. Following such turn-out, appropriate in-flight adjustment of track should be made by the aircraft commander in the interest of maximum coverage of the designated area. The rad/safe monitor will exercise discretion on turn-out from contaminated areas, carefully considering crew personnel dosages and the anticipated length of flight through the radiation field. Since precise measurements are not required, suitable RADIAC equipment and reporting codes have accordingly been specified below.

7. Each flight will have on board sufficient instruments of the following types to insure reasonable expectation of proper functioning of at least one (1) of each type:

   a. AN/PDR-T1B.

   b. Mx-5 or any equivalent military instrument such as the AN/PDR-27, capable of direct reading in milliroentgens per hour.

8. An additional survey instrument of the scintillation counter type will be made available and will be forwarded by JTF SEVEN Rad/Safe Officer to WB-29 operational personnel for additional RADIAC backup.

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9. In-flight reports on radiation will be made in conjunction with the standard weather reporting messages used for weather reconnaissance flights. Special reports are to be transmitted for any positions where radiation intensity reaches a maximum along a segment of the flight track, regardless of whether or not such positions coincide with points of regular 100-mile weather reports. Additional special reports should be made at critical positions in the flight track, such as positions which define a cloud boundary, a turn out point, or any other unusual situation.

(2) Heavy Particulate Sampling Sorties:

(a) One (1) WB-29, call sign WILSON ONE, will take off at approximately H-5 hours. Exact take-off time will be specified in Annex "C", "Mission Execution Schedule". This aircraft will contact the Eniwetok AOC on VHF Channel "C" and on HF Circuit J-410 immediately after take-off. The AOC will vector WILSON ONE out his designated corridor in Annex "D", "Aircraft H-Hour Flight Plan." WILSON ONE will be instructed to contact the CIC on VHF Channel "F". The aircraft will perform weather reconnaissance within a 30 mile radius of the Eniwetok Area and report any significant weather to the AOC or CIC as directed. He will perform an "Upwind" weather run culminating in an H-hour position as required in Annex "D", "H-Hour Positions and Flight Patterns". At approximately H + 1:00 hours, WILSON ONE will be directed by CASSIDY to conduct the Heavy Particulate Sampling Operation. The time of this operation will be decided by the Scientific Director in the Control B-36. WILSON ONE will also be provided all significant rad/safe forecasts, prior to the sampling operation, by the CIC Controller. Safeguarding of the aircraft and crew, however, will be the responsibility of the Rad/Safe monitor aboard WILSON ONE. After the sampling operation is completed, WILSON ONE will be vectored back to his assigned corridor by the CIC Controller. When 50 miles out from Eniwetok, WILSON ONE will be instructed to call the Eniwetok AOC on VHF Channel "C" for control and further instructions. The Eniwetok AOC will vector WILSON ONE to Eniwetok for landing.

(b) Briefing:

1. The WILSON ONE crew will be thoroughly briefed on the radiation reporting procedures by the Scientific Task Group Sampling Project Officer prior to each mission. The weather phase of the briefing will be conducted by Commander, Test Services Unit.

OFFICIAL:

Paul H. Fackler

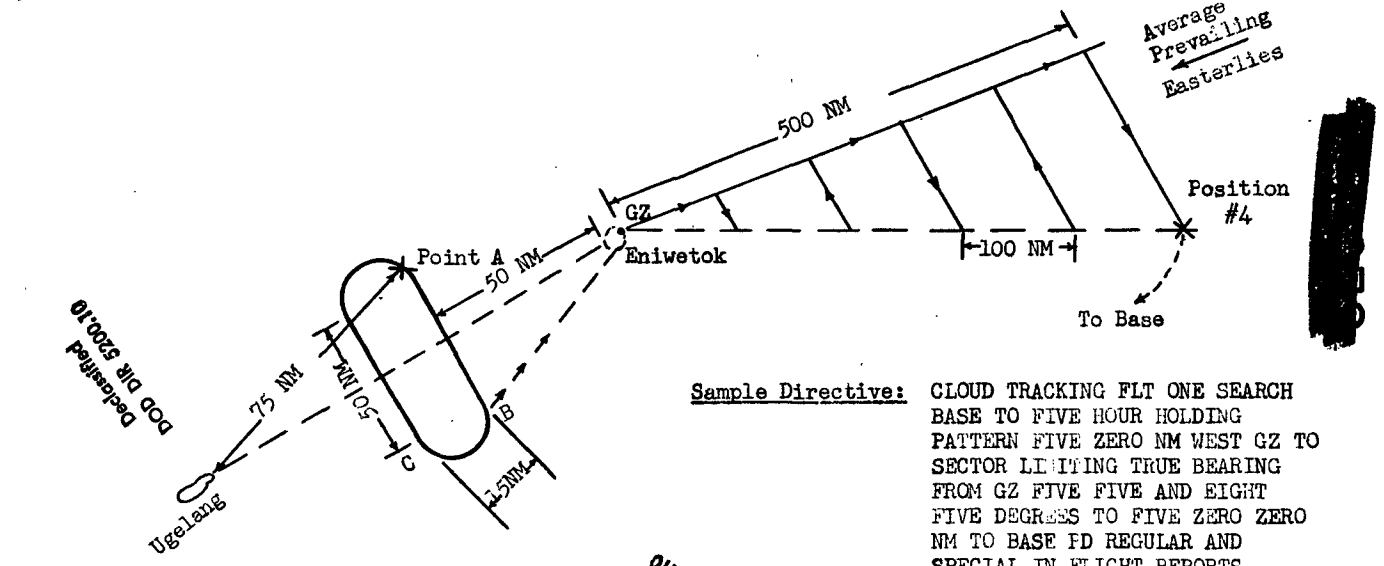
PAUL H. FACKLER
Lt Colonel, USAF
Director of Operations

HOWELL M. ESTES, JR.
Brigadier General, U. S. A. F.
Commander

3 Appendices:
1. Cloud Tracking Chart, Flt #1
2. Cloud Tracking Chart, Flt #2
3. Rad/Safe Code

[redacted]

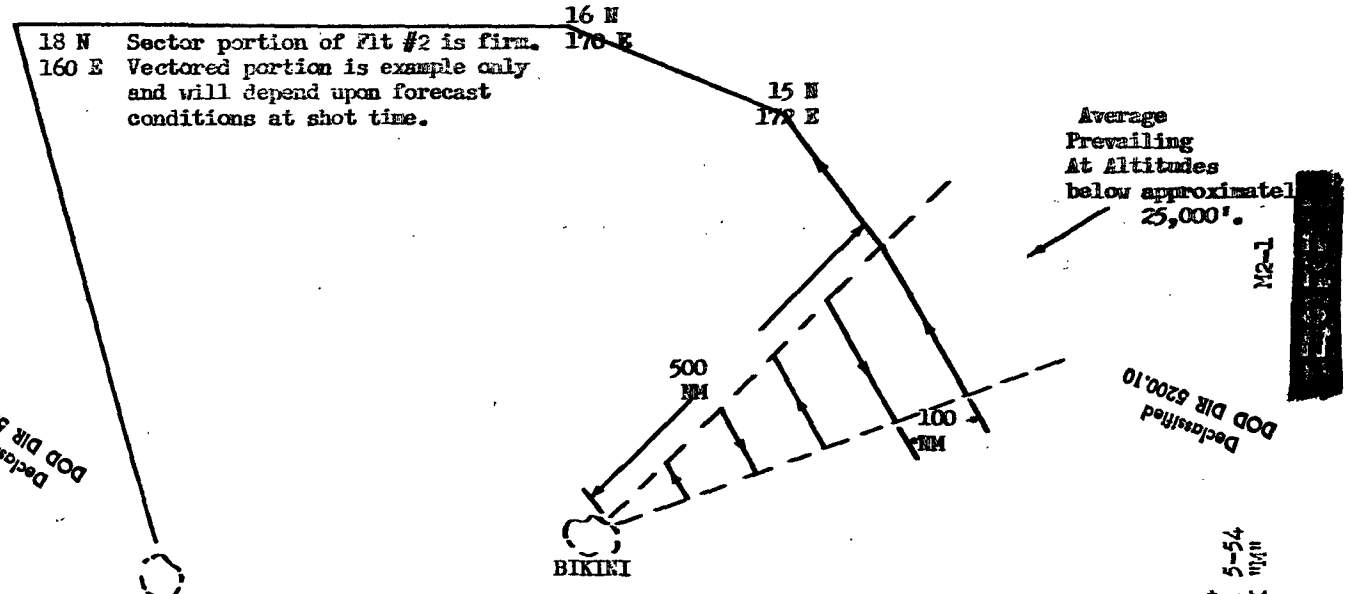
FLIGHT #1, WB-29 SECTOR SEARCH FOR CLOUD TRACKING



Sample Directive: CLOUD TRACKING FLT ONE SEARCH BASE TO FIVE HOUR HOLDING PATTERN FIVE ZERO NM WEST GZ TO SECTOR LIMITING TRUE BEARING FROM GZ FIVE FIVE AND EIGHT FIVE DEGREES TO FIVE ZERO ZERO NM TO BASE FD REGULAR AND SPECIAL IN FLIGHT REPORTS REQUIRED

TASK GROUP 7.4
OPRS ORDER NO. 5-54
APNDX 1, ANNEX "M"

FLIGHT #2, WB-29 SECTOR AND VECTOR SEARCH AND CLOUD TRACKING



Sample Directive: CLOUD TRACKING FLT TWO SEARCH SECTOR LIMITING TRUE BEARING FROM BIKINI FIVE FIVE AND EIGHT FIVE DEGREES TO FIVE ZERO ZERO NM PD REGULAR AND SPECIAL IN FLIGHT REPORTS REQUIRED

TASK GROUP 7.4
OPRS ORDER NO. 5-54
APNDX 2, ANNEX "A"

[redacted]

APPENDIX 3
TO
ANNEX "M"
OPERATIONS ORDER NO. 5-54

PART 1 - WB-29 RAD/SAFE CODE FOR CLOUD TRACKING OPERATIONS

The code for in-flight reporting of radiation will be used in conjunction with the five digit groups normally devoted to AFOAT-1 reporting. Position, time and altitude will be as normally reported on weather reconnaissance flights. The first group of the five digits group will be used for encode the radiation observations. Readings and general observations are to be coded in sequence and if conformance with the code below. Should the first five digit group not adequately describe the report, successive five-digit groups should be used. To indicate such amplification, the first digit of the first five digit group should be coded accordingly. The numbers indicated for coding the desired information below are examples only. Formal random code numbers will be assigned by CJTF SEVEN prior to the first shot for successive three-hour periods starting at H-hour and terminating at H plus 48 hours. Copies of formal code numbers will be furnished to the Weather Central and the operating agency.

EXAMPLE

*CODE NUMBERS FOR PERIODS IN HOURS AFTER H HOUR				RADIATION MESSAGE
6 to 9	9 to 12	12 to 15	15 to 18	
				First Digit (Report Identification)
4	6	1	7	No detectable radiation above background
9	2	6	8	Radiation (gamma only) report follows
7	0	4	2	Radiation (gamma only) report follows with one amplifying five-digit group
8	4	7	1	Radiation (gamma only) report follows with two amplifying five-digit groups
3	9	8	6	Radiation (gamma only) report follows with three amplifying five-digit groups
1	5	3	0	Dummy
5	1	9	3	Dummy
6	8	0	5	Dummy
2	3	5	9	DDummy
0	7	2	4	Dummy
				Second Digit (Intensity reading above estimated aircraft background)
2	6	5	3	Less than 10 10 mr/hr, but above background

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7	2	8	6	10 to 50 mr/hr.
5	7	2	0	50 to 100 mr/hr.
3	4	0	8	100 to 500 mr/hr.
9	1	3	2	500 to 1000 mr/hr.
6	5	9	1	1 to 5 r/hr.
8	9	1	5	5 to 10 r/hr.
1	8	6	4	More than 10 r/hr.
4	0	7	9	Dummy
0	3	4	7	Dummy
				Third Digit (Pertinent additional information on reading reported)
8	9	2	6	No comment on reported readings, or this is an amplifying five-digit group.
5	7	0	3	Instruments (RADIAC) malfunctioning.
2	5	1	9	Readings fluctuating.
6	2	2	5	Spotty radiation levels encountered.
0	3	5	2	Radiation levels in the area are higher, but flying on fringe and taking observations at lower levels of radiation.
3	4	7	0	Having passed through rain shower, background is definitely higher.
1	6	4	8	Readings fluctuating because of intermittent showers.
4	0	6	1	Radiation intensity approximately constant since last report.
7	8	9	4	Radiation intensity steadily increasing since last report.
9	1	8	7	Radiation intensity steadily decreasing since last report.
				Fourth Digit (General trends of mission and other pertinent information)
5	7	2	4	Rad/Safe mission progressing satisfactorily.
1	4	5	2	Changed track (for rad/safe reasons) to that indicated in the clear at end of this message. (Indicate track change in approximate full degrees of latitude and longitude from present position.

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2	1	3	0	Having mechanical difficulties which effect Rad/Safe mission or designated track. (Amplify at end of message, in the clear, if desired).
3	0	4	9	Cloud is visible.
6	2	0	3	Cloud is not visible.
0	5	6	7	No comment.
4	9	8	5	Dummy.
7	3	9	8	Dummy.
9	8	1	6	Dummy.
8	6	7	1	Dummy.
				Fifth Digit (For amplification of previous information)
2	5	7	1	No Comment.
4	2	0	3	Executed turn-out at intensity indicated in second digit of this report.
1	9	4	2	Operating position relative to cloud is unknown.
7	1	9	0	Working leading edge of cloud.
9	6	5	4	Working cloud boundary.
0	8	6	5	Dummy.
3	4	8	6	Dummy.
5	7	2	9	Dummy.
6	0	3	8	Dummy.
8	3	1	7	Dummy.

EXAMPLE: (H plus 14 hour message).

". . . . . .40549 34125 64321 83679. . . . . ."

for

"Radiation report follows with one amplifying five-digit group, 100-500 mr/hr, radiation levels in the area are higher but flying on fringe and taking observations at lower levels of radiation, cloud is visible, working leading edge of cloud, dummy, reading fluctuating, Rad/Safe mission progressing satisfactorily, plus two dummy five-digit group"

"Actual code numbers for each shot will be assigned and distributed by JTF SEVEN five (5) days prior to shot time."

[redacted]

Annex "N"

In 3 pages

ANNEX "N"

TO

OPERATIONS ORDER NO. 5-54

DECONTAMINATION

[redacted]

ANNEX "N"
TO
OPERATIONS ORDER NO. 5-54
DECONTAMINATION

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
APO 187, c/o Postmaster
San Francisco, California
7 April 1954, 1800 M

1. MISSION: To provide, operate and maintain facilities for personnel and aircraft decontamination and for personnel dosimetry.

PART 1
AIRCRAFT DECONTAMINATION

2. RESPONSIBILITIES:

a. Test Support Unit:

(1) Provide primary aircraft decontamination facilities on ENIWETOK ISLAND.

(2) Furnish necessary supplies and equipment to decontaminate all affected Air Force aircraft.

(3) Be prepared to assist TG 7.3 in the decontamination of Navy aircraft.

b. Test Aircraft Unit:

(1) Furnish representatives from communications to advise the decontamination officer concerning any communications equipment involved in the washdown of affected aircraft.

(2) Furnish ground crew members to assist in washing down organizational aircraft.

c. Test Services Unit:

(1) In the event of an accidential contamination, furnish representatives of communications and ground crews of the affected aircraft to assist in decontamination operations.

3. PROCEDURES: Procedures to be followed are listed below in in chronological sequence of execution. These procedures will be thoroughly rehearsed.

a. On D-Day, sampler F-84's, WB-29 and FB-36 will be parked in designated "hot" decay areas.

b. All other aircraft will be checked upon landing for evidence of radiological contamination. If an aircraft is contaminated, above 25 mr/hr, it will be isolated and posted.

c. The Sampler FB-36's will be parked, one on the decontamination pad and one on the turn around pad, and checked for radiation intensities by the same monitor used in a. and b. above.

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d. Unless urgency necessitates, no aircraft decontamination will be attempted until D plus 1 day, at which time the B-36's will be decontaminated first.

e. As soon as the radiation intensities are reduced to tolerable levels, to be determined by the Aircraft Decontamination Officer, Test Support Unit, the B-36's will be returned to there normal parking space.

f. Second priority for decontamination will be the F-84 sampler aircraft.

g. Third priority for decontamination will be WB-29 aircraft.

h. Fourth priority for decontamination will be those aircraft accidentally contaminated.

i. Before aircraft are cleared for flying, the intensity of radiation at crew positions must be less than 10 mr/hr.

j. As aircraft are decontaminated, they will be released to maintenance.

PART 11
PERSONNEL DECONTAMINATION

4. RESPONSIBILITIES:

a. Test Support Unit:

(1) Provide primary personnel decontamination facilities for all personnel on ENIWETOK ISLAND.

(2) Provide protective clothing for use by sampler aircraft crews, aircraft decontamination crews, maintenance crews, etc.

(3) Provide all film badges and dosimeters for use by sampler aircraft crews and for all other individuals who will enter a radiation field of more than 10 mr/hr.

(4) Maintain individual records of dosage received so that personnel may be withdrawn from exposure to radiation before exceeding their maximum permissible exposure of 3.9 roentgens for the operation.

b. Test Aircraft Unit:

(1) Brief personnel concerning all procedures to be followed in personnel decontamination.

c. Test Services Unit:

(1) Brief personnel concerned on procedures to be followed in personnel decontamination.

5. PROCEDURES: The Personnel Decontamination Section of the Test Support Unit will:

a. On D minus 10 days, furnish to J-7 Division, TG 7.1, estimate of number of film badges needed on shot and subsequent days.

b. On D minus 1 day, obtain dosimeters and calibrated radiac instruments from the Instrumentation Section of the Test Aircraft Unit.

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c. On D minus 1 day, install film badges and other special radiation detection controls in designated aircraft.

d. On D Day, issue protective clothing, film badges and dosimeters to all air-crew members of sampling aircraft and to air-crew members of aircraft which will be flying within 100 miles of the shot site at H-Hour.

e. On D Day, issue protective clothing, film badges and dosimeters to all individuals who will be utilized as rad-safe monitors by Air Force Task Units.

f. On D Day, operate the personnel decontamination center for all individuals who have been issued film badges. Level of tolerance acceptable on any skin surface is 1 mr/hr; on clothing it is 7 mr/hr; and on underclothing it is 2 mr/hr.

g. On D Day, assist in removing aircrew members from sampler aircraft and provide transportation to the personnel decontamination center.

h. On D plus 1 day, launder contaminated clothing until levels of intensity are reduced substantially to that of background. When clothing has been decontaminated sufficiently, it will be returned to the issue section and reused. Shoes will be isolated and allowed to undergo natural decay processes until the level of radiation intensity is sufficiently lowered.

i. Each day, deliver to J-7 Division, TG 7.1, all exposed film badges. Record the results of each day's operations on individual cumulative radiation exposure cards. If any individual has reached 3.0 roentgens cumulative dosage during the preceeding twenty-four hour period, his name will be reported immediately to his commander and to the Rad-Safe Officer, TG 7.4.

HOWELL M. ESTES, JR.
Brigadier General, U. S. A. F.
Commander

OFFICIAL:

PAUL H. FACKLER
Lt Colonel, USAF
Director of Operations

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Annex O

In 3 pages

ANNEX O

TO

OPERATIONS ORDER NO. 5-54

B-50 IBDA FLIGHT PROCEDURES

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ANNEX O
TO
OPERATIONS ORDER NO. 5-54
B-50 IBDA FLIGHT PROCEDURES

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
APO 187, c/o Postmaster
San Francisco, California
7 April 1954, 1800M

1. MISSION:

a. To provide Strategic Air Command and other interested agencies with IBDA data.

b. To familiarize Strategic Air Command crews with the phenomena associated with thermonuclear detonations.

2. RESPONSIBILITIES:

a. The SAC Detachment Commander will be responsible for proper crew selection and for the procedures outlined in paragraph 3 below until arrival of the aircraft at Eniwetok, and for that portion subsequent to crew debriefing.

b. The Test Aircraft Unit Commander will be responsible for that portion of the procedures outlined in paragraph 3 below subsequent to arrival of the aircraft at Eniwetok and until completion of debriefing of all assigned missions.

3. PROCEDURES:

a. Three (3) Guam based B-50 aircraft and crews, to include a qualified Rad-Safe monitor, will be selected and dispatched sufficiently in advance of each shot so as to arrive at Eniwetok not later than 1500 hours on D minus three (3) days. One (1) of the three (3) B-50's will be modified to give a capability for crater photography, in addition to participating in the shot-day missions. The modifications will be done through coordination of TU-13, TG 7.1 personnel and the Test Aircraft Unit, for completion by 1600 hours on D minus one (1) day.

(1) No more than four (4) maintenance personnel will accompany each aircraft to Eniwetok. These personnel will be qualified to perform any maintenance necessary to assure proper preparation of the aircraft for its mission.

(a) A small enroute maintenance kit will accompany each aircraft to Eniwetok (No B-50 parts will be available).

(b) One R-4360 built-up engine, complete with power pack, will be prepositioned at Eniwetok and this level will be maintained throughout the operation.

(2) All crews and maintenance personnel concerned will be briefed on Pacific Proving Grounds restriction on

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contraband items such as firearms, cameras, narcotics, etc, as prescribed in Task Group 7.4 Operations Order 1-53.

(3) All of the above personnel will possess a minimum security clearance of SECRET.

(4) All crews will be capable of assuming any position in flight to provide for a replacement in the event the leader or number two (2) aircraft is forced to abort.

b. Immediately upon landing, the crews will be checked through security and billeting. The Flight Commander will then report to the Test Aircraft Unit Commander to receive instructions on:

(1) Crystallization of aircraft with proper test frequencies.

(2) Briefings to attend.

(3) Spotting of aircraft in take-off order.

(4) Procurement of Film Badges and Dosimeters.

c. The B-50's, call sign HARDTIME 1, 2 and 3, will take off on D day as scheduled in Annex C (Aircraft Mission Execution Chart). HARDTIME ONE (1) will call the AOC, call sign DIRTY FACE, on VHF Channel "C". HARDTIME TWO (2) and THREE (3) will standby on Channel "C". DIRTY FACE will check all modes of IFF and the HF air-ground Channel J-410 on all aircraft. Aircraft will proceed along designated corridor in a night cell formation assigned by Annex D (Aircraft H-hour Positions and Flight Patterns). DIRTY FACE will maintain control until the flight is approximately 50 miles from Eniwetok, then will instruct HARDTIME ONE (1) to contact the CIC, call sign BOUNDARY TARE, on VHF Channel "G", with IFF squawking mode 2. HARDTIME TWO (2) and THREE (3) will switch to Channel "G" at this time but will not squawk IFF unless instructed to do so by BOUNDARY TARE. In the event HARDTIME ONE (1) is forced to abort, HARDTIME TWO (2) will assume the lead together with HARDTIME ONE's H-hour position, with HARDTIME THREE (3) assuming HARDTIME TWO's H-hour position. If two (2) HARDTIME aircraft abort, the remaining HARDTIME aircraft will fill HARDTIME ONE's H-hour position.

d. BOUNDARY TARE Controller will establish radio and IFF contact with HARDTIME ONE (1) and provide him with range and bearing to his H-hour position. Upon reaching his prescribed orbit pattern he will establish wind run pattern to culminate in his H-hour position as prescribed in Annex D. H-hour position tolerances are plus or minus five (5) seconds. Positioning will be the responsibility of the aircraft commander. BOUNDARY TARE will provide range from Ground Zero, and will issue any required emergency instructions. HARDTIME TWO (2) and THREE (3) will position themselves on HARDTIME ONE (1), as prescribed by Annex D. with BOUNDARY TARE Controller periodically checking their relative positions. BOUNDARY TARE will provide weather and upper wind information as required and will instruct HARDTIME ONE (1) to switch to Channel "B" for all time hacks. HARDTIME TWO (2) and THREE (3) will automatically switch to Channel "B" when HARDTIME ONE (1) is instructed to do so for time hacks. All HARDTIME aircraft will maintain radio silence on Channel "B" at all times. Immediately upon completion of IBDA photography (approximately H plus 15 minutes), the three (3) aircraft will rejoin in formation over the Command Ship or at a point in space as directed by the Controller, and advise BOUNDARY TARE that mission is complete. At

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no time will these aircraft enter or maneuver to a position closer than 10 nautical miles from the atomic cloud. BOUNDARY TARE will provide range and bearing to base and will retain control until the flight is approximately 50 miles from Eniwetok. At this time HARDTIME ONE (1) will be instructed to switch to Channel "C" and call DIRTY FACE. HARDTIME TWO (2) and THREE (3) will also switch to Channel "C" at this time. If at any time HARDTIME aircraft cannot contact DIRTY FACE on Channel "C" or BOUNDARY TARE on Channel "G", HF air-ground circuit J-410 will be used as an alternate.

e. Crews will be debriefed immediately upon landing. The two (2) B-50's departing for Guam on shot-day, will turn in the VHF mission crystals, film badges and dosimeters; these two (2) aircraft will be refueled; maintenance personnel will be picked up; and the aircraft will depart for Guam without delay. Normal OATC procedures will be used.

f. Participation will be in shots UNION, YANKEE, NECTAR and ECHO.

g. The post-crater mission will be accomplished by the modified B-50 as soon as possible after detonation, depending upon the Rad/Safety situation. At the completion of this mission, photographs taken, film badges and dosimeters and VHF mission crystals will be turned in; aircraft refueled, maintenance personnel picked up, and aircraft will depart for Guam without delay. Normal OATC procedures will be used.

HOWELL M. ESTES, JR.
Brigadier General, U. S. A. F.
Commander

OFFICIAL:

Paul H. Fackler

PAUL H. FACKLER
Lt Colonel, USAF
Director of Operations

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Annex Q

In 2 pages

ANNEX Q

TO

OPERATIONS ORDER NO. 5-54

OBSERVER AIRCRAFT FLIGHT PROCEDURES

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ANNEX "Q"
TO
OPERATIONS ORDER NO. 5-54
OBSERVER AIRCRAFT FLIGHT PROCEDURES

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
APO 187, c/o Postmaster
San Francisco, California
7 April 1954, 1800M

1. MISSION:

a. To monitor the arrival of official observers and project participants who will visit Eniwetok during the CASTLE operation.

b. To integrate and properly position the observer aircraft, call sign VIKING, into CASTLE Operations, providing also for the departure of these aircraft from the operational area to the point of next intended landing outside Pacific Proving Ground area.

2. RESPONSIBILITIES:

a. Official observers and project participants will be assisted in accordance with the provisions of Task Group 7.4 Headquarters Office Instructions, Number 900-1, dated 20 February 1954.

b. Briefings for official observers and participants are outlined in Annex X (Briefings).

c. Test Aircraft Unit will:

(1) Brief the observer aircraft commander to file DD Form 175 at least twelve hours prior to scheduled take-off for the observer mission.

(2) Integrate the observer aircraft into Annex "C" (Aircraft Mission Execution Chart).

d. VIKING Aircraft Commander will:

(1) Attend VIP briefings.

(2) Establish and maintain route, altitude, and orbit patterns and comply with instructions received from the ACC and CIC.

3. PROCEDURES:

a. The official observer aircraft, call sign VIKING 1, 2, 3, etc., will take off as scheduled in Annex "C" (Aircraft Mission Execution Chart), and climb to the altitude prescribed in Appendix 2, Annex D (H-Hour Aircraft Flight Plans), on a course of 180°. VIKING pilots will call DIRTY FACE on VHF Channel "C". DIRTY FACE will check all modes of IFF, and HF air-ground Circuit J-410 while VIKING aircraft are proceeding to their H-hours positions as designated in Appendix 1, Annex D (Aircraft H-Hour Positioning Chart). Aircraft will fly the 180° course for fifty (50) NM, then establish a direct course for a position sixty (60) NM from Ground Zero, along an outbound true bearing of 225° from Ground Zero to enter and maintain prescribed orbit patterns at this point. DIRTY FACE will instruct VIKING aircraft to contact the CIC (BOUNDARY TARE) for positioning control on VHF Channel "C" and HF Circuit J-410. VIKING aircraft will squawk IFF Mode 2.

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b. BOUNDARY TARE controller will establish radio and IFF contact with VIKING aircraft and provide them with range and bearing to their H-hour positions. VIKING aircraft will remain under the direct control of BOUNDARY TARE on VHF Channel "C" until completion of their missions, except when directed to switch to VHF Channel "B" for time hacks. VIKING aircraft will maintain radio silence on Channel "B", returning to assigned mission Channel (VHF "C") immediately after receiving the time hacks. Aircraft will maintain a side attitude to Ground Zero until after shock wave arrival to allow the Official Observers to watch the cloud growth. BOUNDARY TARE will continue to monitor the VIKING aircraft flight path after H-Hour to insure that they maintain 60 NM from Ground Zero.

c. VIKING aircraft will be instructed by BOUNDARY TARE to switch to VHF Channel "B" for the following time hacks:

(1) H - 2 hours 2 minutes for H - 2 time hack.

(2) H - 1 hour 2 minutes for H - 1 time hack.

(3) H- 32 minutes for H - 30 minutes time hack.

(4) H - 3 minutes and remain on B until after H-hour.

d. VIKING aircraft will maintain assigned altitude at all times and execute normal orbit pattern so that observers can watch cloud development.

e. Commanders of VIKING aircraft will depart from the operational area not later than H + 1 hour. However, the departure plan must be coordinated first with the CIC (BOUNDARY TARE) on VHF Channel "C". BOUNDARY TARE will then release the VIKING aircraft concerned from the area, with instructions to proceed to its point of first intended landing as specified by the pilot in his previously filed DD Form 175. BOUNDARY TARE also will notify DIRTY FACE of the VIKING departure.

f. Personnel aboard each VIKING aircraft will turn in their density goggles and film badges, together with any other related special equipment, to the TG 7.1 Radiological Safety monitor accompanying each aircraft. In turn, the Rad Safety monitor will insure that all such items of equipment are returned to the proper agency of Joint Task Force SEVEN.

g. Aircraft commanders will maintain orbit pattern as outlined in their briefing and b above. All VIKING aircraft will follow this pattern without exception. Should any person aboard the VIKING aircraft insist that the flight pattern be changed, the aircraft commander will contact his controller on BOUNDARY TARE using normal communications procedures. BOUNDARY TARE will relay this information to the Commander, Task Group 7.4 for his decision.

OFFICIAL:

Paul H. Fackier

PAUL H. FACKIER
Lt Colonel, USAF
Director of Operations

HOWELL M. ESTES, JR.
Brigadier General, U. S. A. F.
Commander

[redacted]

Annex R

In 2 pages

ANNEX R

TO

OPERATIONS ORDER NO. 5-54

SAMPLE RECOVERY PROCEDURES

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ANNEX R
TO
OPERATIONS ORDER NO. 5-54
SAMPLE RECOVERY PROCEDURES

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
APO 187, c/o Postmaster
San Francisco, California
7 April 1954 1800M

1. MISSION: The purpose of this Annex is to outline tasks to be accomplished by this headquarters and by subordinate Task Units in sample recovery operations.

2. RESPONSIBILITIES:

a. Sample recovery operations encompasses three (3) separate operations: Sample removal, Sample packaging, and Sample return. The Air Task Group Rad-Safe responsibilities will be executed in the following manner: Test Aircraft Unit will be responsible for sample removal: Test Support Unit will be responsible for providing assistance and normal support for Sample return. Sample packaging is the responsibility of Task Group 7.1.

b. The extent to which the Air Task Group is responsible in each of these three (3) operations is as follows:

(1) The Test Aircraft Unit will:

(a) Park and secure aircraft.

(b) Assist pilot from aircraft, and remove film badges.

(c) Provide one trained Rad-Safe monitor to stand-by during Sample removal to insure that exposure to radiological hazard is reduced to a minimum.

(d) Provide personnel for removal of radiochemical samples from aircraft.

(e) Provide personnel to support Task Group 7.1 in their packaging responsibilities.

(2) The Test Support Unit will:

(a) Isolate parking area, using ropes, radiation signs and military or air police guards to enforce the quarentine as required.

(b) Refuel sample return aircraft as required.

(c) Provide meals and inflight lunches.

(d) Provide billeting for the crews of sample return aircraft.

(e) Assure timely loading to accomplish take-off schedule as listed in g below.

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(f) Insure that samples will not present a radiological hazard on the return flight as a result of improper packaging.

(g) Assure the departure of four (4) R6D sample return aircraft from ENIWETOK ISLAND on the following schedule:

1. Two (2) aircraft as early as H/5:00, to be determined by progress of sampling.

2. One (1) aircraft departs ENIWETOK approximately H/36:00.

3. One (1) aircraft departs ENIWETOK approximately H/72:00.

(3) The MATS will arrange for the arrival of sample return aircraft at ENIWETOK on the following schedule:

(a) Priority I trips will arrive at 0600M on D-2 days and will be operated with heavy type transport equipment.

(b) Priority II trip will be in position and ready for departure at ENIWETOK ISIAND with a back-up aircraft at KWAJALEIN ISIAND at 1800M on D-Day and will be operated with medium type transport equipment.

(c) Priority III trip will be in position and ready for departure at ENIWETOK ISLAND at 0600 on D/3 days and will be operated with medium type transport equipment.

3. PROCEDURES: Specific detailed operating procedures for the accomplishment of the above will be prepared by the Test Unit responsible.

HOWELL M. ESTES, JR.
Brigadier General, U. S. A. F.
Commander

OFFICIAL:

PAUL H. FACKLER
Lt Colonel, USAF
Director of Operations

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Annex 8

In 2 pages

ANNEX S

TO

OPERATIONS ORDER NO. 5-54

AOC PROCEDURES

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ANNEX "S"
TO
OPERATIONS ORDER 5-54
AOC PROCEDURES

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
APO 187, c/o Postmaster
San Francisco, California
7 April 1954, 1800M

1. PURPOSE: To outline all control procedures and functions of AOC personnel for Operation CASTLE.

2. SCOPE: This Annex describes in detail all procedures to be used in the AOC to conform with the policies and responsibilities as outlined in Annex "K", Operations Order No. 1-53.

3. PROCEDURES:

a. The AOC (DIRTY FACE) will supervise and coordinate operations of ENIWETOK Approach control, Area control and SAR control. A senior controller will be assigned to the AOC for the purpose of supervising the operation of the AOC during all periods of operation. During all shot and rehearsal periods he will be under the supervisory control of the Senior Air Controller of the CIC (BOUNDARY TARE) and will work with and assist the CIC in accomplishing the aircraft missions as outlined in Annexes "F" through "M", "O" through "Q" and "U". The Area Controllers, Status Controllers, Approach Controllers, SAR controllers, Plotters and radio operators of the AOC will be personnel assigned to the operational control of headquarters, Task Group 7.4 by Test Units for the purpose of operating the AOC on a twenty-four (24) basis and to man the AOC to maximum strength during all shot and rehearsal periods. Personnel will report to duty as scheduled and will check the facilities and equipment assigned to perform their mission to insure it is functioning properly. The status and plotting boards will be checked for proper display of information.

b. All aircraft will take off as scheduled in Annex "C" contacting DIRTY FACE on 137.88MC (Channel C). DIRTY FACE will check all modes of IFF equipment and HF air-ground communications on all aircraft in route to assigned control point in Annex "D" (H-Hour positions and Flight Patterns). If any F-84 aircraft fails to respond to the proper IFF or communications check they will be aborted and returned to base. The above checks will be conducted while on course to assigned mission. DIRTY FACE will maintain positive IFF and VHF control until BOUNDARY TARE establishes positive radar and radio control.

c. VHF Channels, IFF modes and mission instructions for aircraft are specified in aircraft mission briefings and individual controller instructions.

d. The Status Controller will be responsible, through information received and told to his plotters and radio operators for the maintaining of the appropriate status boards. On the mission status board, position one (1) and six (6) will be obtained from the control tower, posted and told forward to BOUNDARY TARE. Positions two (2) through five (5) will be received from BOUNDARY TARE. Position five (5) will be confirmed by the Area Controller. Positions are:

(1) Position one (1) - Actual take off time of aircraft.

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(2) Position two (2) - Actual time CIC establishes contact and accepts control from AOC (approximately 50 miles from ENIWETOK at designated control point outbound).

(3) Position three (3) - Actual time aircraft arrives at assigned mission station.

(4) Position four (4) - Actual time aircraft departs mission station.

(5) Position five (5) - Actual time AOC establishes contact and accepts control from CIC. (Approximately 50 miles at designated control point inbound).

(6) Position six (6) - Actual time aircraft lands.

e. Plotting will be the responsibility of the Status Controller through his assigned plotters and tellers. Aircraft will be plotted from position one (1) to position two (2) and from Position five (5) to position six (6) at three minute intervals from positions received from the AREA Controllers scope. After aircraft depart position two (2) they will be plotted by one arrow with time and call sign as told forward from the CIC.

f. SAR missions in the ENIWETOK area will be conducted as set forth in Annex "F" and will be controller from the AOC as directed in "Emergency Rescue Operating Procedure (AOC)".

HOWELL M. ESTES, JR.
Brigadier General, U. S. A. F.
Commander

OFFICIAL:

Paul H Fackler

PAUL H. FACKLER
Lt Colonel, USAF
Director of Operations

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Annex "T"

In 3 pages w/2 Appendices

consisting of 9 pages

ANNEX "T"

TO

OPERATIONS ORDER NO. 5-54

CIC PROCEDURES

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ANNEX T
TO
OPERATION ORDER NO. 5-54
CIC PROCEDURES

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
APO 187, c/o Postmaster
San Francisco, California
7 April 1954, 1800M

1. PURPOSE: To outline all control procedures and functions of CIC personnel for Operation CASTLE.

2. SCOPE: This annex covers all detail procedures for use in the CIC. The overall aircraft control policies and responsibilities are outlined in Annex K, Operations Order 1-53.

3. PROCEDURES:

a. Supervisory control of the air operation will be exercised from the CIC on the USS ESTES, call sign "BOUNDARY TARE". BOUNDARY TARE as a supervisory control agency, will work with and assist the AOC (DIRTY FACE) and the RB-36 Control Aircraft (CASSIDY) in accomplishing the aircraft missions as outlined in Annexes F through M, O through Q and U. To provide maximum coordination and assistance, the senior air controller, Task Group 7.4 will delegate to six (6) assistant controllers (from USS ESTES CIC complement) direct control of specified aircraft. The plotters, tellers, monitor-tellers and status personnel to coordinate CIC operations with the AOC and JOC will be the enlisted personnel of the CIC complement. A member of the CIC complement will supervise the status display and plotting procedures under the overall supervision of the Senior Controller of Task Group 7.4. Personnel will report for duty as specified in specific briefing for each assigned position. Upon reporting for duty they will thoroughly check the electronic equipment assigned to perform their mission to insure it is functioning properly. The aircraft status boards and plotting boards will be checked for proper information pertaining to their assigned aircraft.

b. All aircraft will take-off as scheduled in Annex C contacting the AOC on VHF Channel C. DIRTY FACE will check all modes of Mark 10 IFF on all aircraft immediately after take-off and HF airground communications on all aircraft except jets. The aircraft will take-off and proceed on course through assigned corridor in Annex D to mission station making the above electronic checks enroute. DIRTY FACE will maintain positive IFF and VHF control until BOUNDARY TARE establishes positive radar and radio contact at assigned control point in Annex D7-1. Aircraft equipped with HF air ground equipment will establish radio contact on assigned HF air ground frequency with BOUNDARY TARE.

c. VHF Channels, IFF modes and mission instructions for aircraft are specified in specific aircraft mission briefings and individual controller instructions.

d. The controller will be responsible, through his teller, to maintain and display on the appropriate status boards positions two (2) through five (5) on each aircraft assigned for his control. Positions

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One (1) and six (6) will be received from the AOC and be the responsibility of the status Controller for proper display.

(1) Position one (1) - Actual take-off time of aircraft.

(2) Position two (2) - Actual time CIC establishes and accepts control from AOC. (Approximately 50 miles outbound at assigned control point.

(3) Position three (3) - Actual time aircraft arrives at assigned mission station.

(4) Position four (4) - Actual time aircraft departs mission station.

(5) Position five (5) - Actual time AOC establishes and accepts control from CIC. (Approximately 50 miles out, inbound at assigned control point.)

(6) Position six (6) - Actual time aircraft lands.

e. Plotting will be the responsibility of the controller through his assigned teller. Aircraft will be plotted from positions two (2), to three (3) and positions four (4) to five (5) with three arrows with the lead arrow designating the last position of the aircraft. The time will be plotted in minutes below each arrow with the letter designating the aircraft call sign ($\xrightarrow[08]{}$ $\xrightarrow[11]{}$ $\xrightarrow[14]{E-2}$). While aircraft are at position three (3) (on mission station) one (1) arrow will be used to reduce congested plotting on the operation board. Plots will be displayed on each aircraft at a miximum interval of three minutes.

f. Aircraft in emergency and the assisting aircraft or ships will be plotted with three arrows at an interval not to exceed one (1) minute to maintain an accurate position, direction and time. Emergencies will take priority over other aircraft plots to maintain an up to the minute display.

g. Controllers will be thoroughly familiar with aircraft flight procedures, as outlined for each specific event.

h. Scope Controller Assignments:

(1) Controller #1: Scope #1, SAC B-50's IBDA Aircraft, call sign; HARDTIME 1, 2 and 3. SA-16 Search and Rescue Aircraft, call sign: STABLE.

(2) Controller #2: Scope #2, C-54 Photo Aircraft, call sign: PEWTER 2, B-36 FEATHERWEIGHT SAMPLERS, call sign; FLOYD 1 and 2.

(3) Controller #3: Scope #3, C-54 Photo Aircraft, call sign: PEWTER 3 and Official Observers, call sign; VIKING. (EAGER BEAVER.)

(4) Controller #4: Scope #4, B-36 Effects Aircraft, call sign: ELAINE 1. F-84 SAMPLERS, call sign TIGER RED 1 and 2, TIGER WHITE 3 and 4.

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(5) Controller #5: Scope #5, RB-36 Control, call sign: CASSIDY 1. WB-29 Weather Aircraft, call sign: WILSON 1 SA-16 Search and Rescue, call sign: STABLE. F-84 Sampler Aircraft, call sign: TIGER RED, 3 and 4 and TIGER BLUE, 1 and 2.

(6) Controller #6: Scope #6, B-47 Effects Aircraft, call sign: ELAINE 2. F-84 Sampler Aircraft call sign: TIGER SNIFFER 1 and 2, TIGER WHITE 1 and 2, and TIGER BLUE 3 and 4.

(7) Controller #7: Scope #7, C-54 Photo Aircraft, call sign: PEWTER 1. WB-29 cloud trackers, call sign: WILSON 2 and 3.

HOWELL M. ESTES, JR.
Brigadier General, U. S. A. F.
Commander

2 Appendices:
1. CIC Plotter-Teller Instructions
2. CIC Operators Instructions

OFFICIAL:

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Director of Operations

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APPENDIX 1
TO
ANNEX T
OPERATIONS ORDER NO. 5-54
CIC PLOTTER TELLER INSTRUCTIONS

Scope Controller #1: Will control three (3) B-50 type aircraft, call sign, HARDTIME 1, 2 and 3; and two (2) SA-16 Search and Rescue aircraft, call sign, STABLE. He will report for duty fifteen (15) minutes prior to the scheduled arrival at position 2 of HARDTIME 1, 2 and 3 in Annex C (Aircraft Mission Execution Chart). He will check Scope #1 and VHF Channel G to assure they are functioning properly and have his teller check his communications with the Effects Status Clerk and his plotter. HARDTIME 1 will be lead aircraft for formation and be the only aircraft showing IFF (mode 2). The controller will monitor VHF Channel G to receive a call from HARDTIME 1 when approximately fifty (50) miles from Eniwetok at designated control point in Annex D (Aircraft H-Hour Position and Flight Patterns). When positive control is established with HARDTIME aircraft the teller will give the status clerk the time control is accepted and start three minute position reporting to the plotter. The controller will give HARDTIME 1 range and bearing to his assigned mission station in Annex D. When HARDTIME aircraft reach respective mission stations, position three will be reported to the status clerk. HARDTIME 2 and 3 will position themselves on HARDTIME 1. The controller will closely monitor the flight patterns of HARDTIME 1, 2 and 3, and be prepared to issue necessary instructions or provide range and bearing in relation to Ground Zero to aid them in meeting H-Hour positions. After H-Hour, mission complete, HARDTIME 1 will assume lead aircraft position and be given range and bearing to FRED and instructed to squawk 1. When HARDTIME aircraft depart cloud area for base, the teller will give position four to the status clerk. The controller will have HARDTIME switch to VHF Channel C and call DIRTY FACE when approximately fifty (50) miles from FRED and report position five. The controller will notify HARDTIME to switch to VHF Channel B for all time hacks and return to Channel G immediately following receipt of same.

After HARDTIME aircraft have reached position five the controller will accept control of STABLE on VHF Channel H and the HF air ground circuit J-410. STABLE will be on a vector to BOUNDARY TARE from his H-Hour position showing IFF mode 3. STABLE will hold over BOUNDARY TARE upon arrival and maintain this position until the sampling proceeds sixty (60) miles from BOUNDARY TARE. STABLE will then be vectored to a position twenty (20) miles from BOUNDARY TARE and between BOUNDARY TARE and CASSIDY 1 in the flight path of TIGER aircraft. As the sampling range extends STABLE will be moved approximately one-third the distance from BOUNDARY TARE to CASSIDY 1.

The controller must at all times be aware of cloud fall out and be prepared to move STABLE to a safe orbit position. The controller will

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provide STABLE aircraft with sea conditions for the local area and be prepared to take over search and rescue during emergencies. After the last TIGER aircraft has completed sampling and returning to base the controller will vector STABLE to his assigned corridor in Annex D and switch control to DIRTY FACE.

Scope Controller #2: Will control one C-54 photo aircraft, call sign, PEWTER 2 and two B-36 sampler aircraft, call sign, FLOYD 1 and 2. He will report for duty fifteen (15) minutes prior to the scheduled arrival at position 2 for PEWTER 2 in Annex C (Aircraft Mission Execution Chart). He will check scope #2 and VHF Channel H to insure they are functioning properly and have his teller check his communications with the Effects Status Clerk and his plotter. He will monitor VHF Channel A to receive a call from PEWTER 2 when approximately fifty (50) miles from Eniwetok at designated control point in Annex D (Aircraft H-Hour Positions and Flight Pattern). When positive control is established with PEWTER 2, the teller will give the status clerk the time control is accepted and start three minute position reporting to the plotter. The controller will give PEWTER 2 range and bearing to his assigned mission station with IFF on mode 2. When PEWTER 2 reaches mission station, position three will be reported to the status clerk. The controller will place PEWTER 2 in a starboard race track pattern with approximately three (3) minute legs broadside to Ground Zero. The controller will provide PEWTER 2 with range from Ground Zero each time he passes through his assigned true bearing from Ground Zero. The controller will provide position reports and necessary vectors to insure PEWTER 2 meeting his H-Hour position within accepted tolerance of plus or minus fifteen (15) seconds. Immediately after H-Hour, PEWTER 2 will be instructed to squawk mode 1 and fly at his own discretion to photograph cloud. The controller will continue to track PEWTER 2 and give him range and bearing to his designated control point upon completion of mission. When PEWTER 2 departs cloud area for base, the teller will give position four to the status clerk. The controller will maintain control until PEWTER 2 reaches the control point, inbound, and control is accepted by DIRTY FACE, at which time, position five will be told to the status clerk. Scope Controller #2 will have PEWTER 2 switch to Channel B for Time Hacks: designated by blinking light only (disregard solid light). Immediately after DIRTY FACE accepts control of PEWTER 2, Controller #2 will switch to Channel F and standby to accept control of FLOYD 1 and 2 upon arrival at their designated control point. FLOYD 1 and 2 will be vectored to CASSIDY 1 squawking mode 1. This will be position three for FLOYD 1 and 2. CASSIDY 1 or 2 will direct sampling mission for FLOYD 1 and 2. The controller will continue to track and have plotted three minute positions. When FLOYD completes sampling mission position four will be reported and the controller will vector FLOYD aircraft to the designated control point fifty (50) miles from base and turn control of FLOYD aircraft over to DIRTY FACE on VHF Channel C. This will be position five for FLOYD 1 and 2.

Scope Controller #3: Will control one C-54 photo aircraft, call sign, PEWTER 3 and Official Observer aircraft call sign: VIKING and EAGER BEAVER. He will report for duty fifteen (15) minutes prior to the scheduled arrival at position 2 for PEWTER 3 in Annex C (Aircraft Mission Execution Chart). He will check Scope #3 and VHF Channel G to insure they are functioning properly and have his teller check his communications with the Effects Status Clerk and his plotter. He will monitor VHF Channel G to receive a call from PEWTER 3 when approximately fifty (50) miles from Eniwetok at designated control point in Annex D (Aircraft H-Hour Position and Flight Patterns). When positive control is established with

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PEWTER 3, the teller will give the status clerk the time control is accepted and start three minute position reporting to the plotter. The controller will give PEWTER 3 range and bearing to assigned mission station with IFF on mode 2. He will switch PEWTER 3 to Channel C prior to arrival of VIKING at position 2. When PEWTER 3 reaches mission station, position three will be reported to the status clerk. The controller will place PEWTER 3 in a starboard race track pattern with approximately three (3) minute legs broadside to Ground Zero. The controller will provide PEWTER 3 with range from Ground Zero each time he passes through his assigned true bearing from Ground Zero. The controller will provide position reports and necessary vectors to assure PEWTER 3 meeting his H-Hour position within accepted tolerance of plus or minus fifteen (15) seconds. Immediately after H-Hour, PEWTER 3 will be instructed to squawk mode 1 and fly at his own discretion to photograph cloud. The controller will continue to track PEWTER 3 and give him range and bearing to designated control point upon completion of mission. When PEWTER 3 departs cloud area for control point, the teller will give position four to the status clerk. The controller will maintain control until PEWTER 3 reaches the control point, inbound, and control is accepted by DIRTY FACE at which time position five will be told to the status clerk. Scope Controller #3 will have PEWTER 3 switch to Channel B for Time Hacks: designated by blinking lights only. (Disregard solid light).

The above general control procedures will apply to VIKING aircraft with the following specific instructions. The controller will place VIKING's in a starboard race track pattern with approximately five (5) minute legs broadside to Ground Zero. He will provide VIKING's with range from Ground Zero each time they pass through their assigned true bearing from Ground Zero. He will provide position reports and necessary vectors to assure VIKING's do not come nearer to Ground Zero than sixty (60) NM. VIKING aircraft will observe the H-Hour blast from side aspect and remain side aspect to view the blast and cloud.

Scope Controller #3 after releasing PEWTER 3 and VIKING aircraft will standby to accept control of EAGER BEAVER. The EAGER BEAVER aircraft will be on VHF Channel B and have no IFF. The URD-2 will be used to obtain bearings for steers to bring EAGER BEAVER aircraft within radar range. Specific control points will be received prior to penetration of area to assist in control procedures. The EAGER BEAVER aircraft will be vectored to CASSIDY. Every effort will be made to track by radar and when not possible DR through time and distance will be applied. Departure point and estimated time and place of penetration into area will be provided prior to mission.

Scope Controller #4: Will control a B-36 Effects aircraft, call sign, ELAINE 1 and F-84 Sampler aircraft, call sign, TIGER RED 1 and 2, and TIGER WHITE 3 and 4. He will report for duty fifteen (15) minutes prior to the scheduled arrival at position 2 for ELAINE 1 in Annex C (Aircraft Mission Execution Chart). He will check Scope #6 and VHF Channels E and F to insure they are functioning properly and have his teller check his communications with the Effects Status Clerk and his plotter. He will monitor VHF Channel E to receive a call from ELAINE 1 when approximately fifty (50) miles from Eniwetok at the designated control point on course to assigned mission station in Annex D (Aircraft H-Hour Position and Flight Patterns). When positive control is established with ELAINE 1, the teller will give the status clerk position two and the time control is accepted from DIRTY FACE and start giving three minute positions to the plotter. The controller will give ELAINE 1 range and bearing to assigned mission station, squawking mode 3. When ELAINE 1 reaches mission station, position three, it will be reported to the status clerk. The controller will continually monitor ELAINE 1 in his flight pattern in

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Annex D. ELAINE 1 will primarily position himself and will normally require no assistance if his equipment functions properly; although the controller will be responsible to closely monitor his position and see that the track is plotted to assure the Senior Controller that ELAINE 1 will be in position at H-Hour. Scope Controller #4 will instruct ELAINE 1 to switch to Channel B for all time hacks. Immediately after H-Hour, ELAINE 1 will proceed to base receiving range and bearing to base from the controller and squawk mode 1. Upon departing position three, mission station, the teller will give position four to the status clerk. The controller will switch ELAINE 1 to F Channel after shock wave passes and continue to track and have ELAINE 1 plotted until approximately fifty (50) miles from Eniwetok at which time he will instruct ELAINE 1 to switch to Channel C and contact DIRTY FACE. Scope Controller #6 after switching to Channel F will standby to receive TIGER RED 1 and 2, and TIGER WHITE 3 and 4 respectively upon arrival at position 2. The controller will vector TIGER elements to CASSIDY 1. CASSIDY will assume control of TIGER aircraft when radio and IFF contact is made or when TIGER aircraft have CASSIDY in sight and have established radio contact. This will be position three for TIGER aircraft and the time reported to the Sampler Status Clerk. CASSIDY upon accepting control of TIGER aircraft will complete rendezvous and turn samplers over to CASSIDY Sampler Controller on VHF Channel E. Scope Controller #4 will also switch to Channel E and track TIGER aircraft and be prepared to assist CASSIDY. The CASSIDY Sampler Controller upon completion of mission will return TIGER aircraft to Channel F, CASSIDY control will accomplish a rendezvous with the assistance of BOUNDARY TARE, if required, or vector them individually to BOUNDARY TARE. BOUNDARY TARE upon establishing radio and IFF contact will accept control from CASSIDY and report position four to the status clerk. The controller will give the TIGER element a steer to their designated control point and obtain a fuel status report and altitude. When the TIGER elements reach the control point, inbound, they will be instructed to switch to C Channel and call DIRTY FACE. This will be position five.

Scope Controller #5: Will report for duty fifteen (15) minutes prior to the first aircraft arrival at position 2 in Annex C (Aircraft Mission Execution Chart). He will control WILSON 1, CASSIDY 1, STABLE 1, TIGER RED 3 and 4, and TIGER BLUE 1 and 2. He will check scope #5 and VHF Channel F to insure they are functioning properly and have his teller check his communication with the Status Clerk and his plotter. He will monitor VHF Channel F to receive a call from WILSON 1. When approximately fifty (50) miles from Eniwetok at the designated control point in Annex D (Aircraft H-Hour positions and Flight Patterns). When positive control is established with WILSON 1 the teller will give the status clerk position two and start giving three minute positions to the plotter. The controller will give WILSON 1 range and bearing to his mission station and standby to receive weather reports from WILSON 1. When WILSON 1 reaches weather reconnaissance area over Ground Zero, position three will be told to the status clerk. WILSON 1 will start his H-Hour positioning run to arrive 60 to 65 miles from Ground Zero at H-Hour, tail aspect, on mode 3. After H-Hour WILSON 1 will be vectored to CASSIDY to sample in the cloud area. CASSIDY will be controlled in the same manner as WILSON through position three on mode 3. After H-Hour CASSIDY will direct sampling operations in cloud area with WILSON 1, FLOYD and TIGER aircraft. STABLE will be positioned as outlined in Annex D showing mode 3 IFF and released after H-Hour to controller on Scope #1 on circuit J-410 and H Channel. CASSIDY will assume control of TIGER aircraft when radio and IFF contact is made or when aircraft have established radio and visual contact with CASSIDY. This will be position three for TIGER aircraft

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and the time reported to the Sampler Status Clerk. CASSIDY upon accepting control TIGER aircraft will complete rendezvous and turn samplers over to CASSIDY Sampler Controller, on VHF Channel E. The controller will also switch to Channel E and track TIGER aircraft, and be prepared to assist CASSIDY in case of emergencies. The CASSIDY Sampler Controller upon completion of mission will return TIGER aircraft to Channel F. CASSIDY control will accomplish a rendezvous with the assistance of BOUNDARY TARE, if required, or vector them individually to BOUNDARY TARE. BOUNDARY TARE upon establishing radio and IFF contact will accept control from CASSIDY and report position four to the status clerk. The controller will then give TIGER element steers to the designated control point and upon arrival instruct them to call DIRTY FACE on Channel C. The B-36 Samplers, call sign, FLOYD will be a back up for CASSIDY in case CASSIDY aborts. Controller #5 will be prepared to position FLOYD in replacement position for CASSIDY.

Scope Controller #6: Will control a B-47 Effects aircraft, call sign, ELAINE 2 and F-84 Sampler aircraft, call sign, TIGER SNIFFER 1 and 2, TIGER WHITE 1 and 2, and TIGER BLUE 3 and 4. He will report for duty fifteen (15) minutes prior to the scheduled arrival at position 2 for ELAINE 2 in Annex C (Aircraft Mission Execution Chart). He will check scope #6 and VHF Channels E and F to insure they are functioning properly and have his teller check his communications with the Effects Status Clerk and his plotter. He will monitor VHF Channel E to receive a call from ELAINE 2 when approximately fifty (50) miles from Eniwetok at the designated control point in Annex D (Aircraft H-Hour Positions and Flight Patterns). When positive control is established with ELAINE 2, the teller will give the status clerk position two and the time control is accepted from DIRTY FACE and start giving three minute positions to the plotter. The controller will give ELAINE 2 range and bearing to assigned mission station, squawking mode 3. When ELAINE 2 reaches mission station position three, it will be reported to the status clerk. The controller will continually monitor ELAINE 2 in his flight pattern in Annex D. ELAINE 2 will primarily position himself and will normally require no assistance if his equipment functions properly; although the controller will be responsible to closely monitor his position and see that the track is plotted to assure the Senior Controller that ELAINE 2 will be in position at H-Hour. Scope Controller #6 will instruct ELAINE 2 to switch to Channel B for all time hacks. Immediately after H-Hour, ELAINE 2 will proceed to base receiving range and bearing to base from the controller and squawk mode 1. Upon departing position three, mission station, the teller will give position four to the status clerk. The controller will switch ELAINE 2 to F Channel after shock wave passes and continue to track and have ELAINE 2 plotted until approximately fifty (50) miles from Eniwetok at which time he will instruct ELAINE 2 to switch to Channel C and contact DIRTY FACE. Scope Controller #6 after switching to Channel F will standby to receive TIGER SNIFFER 1 and 2, TIGER WHITE 1 and 2, and TIGER BLUE 3 and 4, respectively, upon arrival at position 2. The controller will vector TIGER elements to CASSIDY-1. CASSIDY will assume control of TIGER aircraft when radio and IFF contact is made or when TIGER aircraft have CASSIDY in sight and have established radio contact. This will be position three for TIGER aircraft and the time reported to the Sampler Status Clerk. CASSIDY upon accepting control of TIGER aircraft will complete rendezvous and turn samplers over to CASSIDY Sampler Controller on VHF Channel E. Scope Controller #6 will also switch to Channel E and track TIGER aircraft and be prepared to assist CASSIDY. The CASSIDY Sampler Controller upon completion of mission will return TIGER aircraft to Channel F, CASSIDY control will accomplish a rendezvous with the assistance of BOUNDARY TARE, if required, or vector them individually to BOUNDARY TARE, BOUNDARY TARE upon establishing radio and IFF contact will accept control from CASSIDY and report position four to the status clerk. The controller will give the TIGER element a steer

to their designated control point amd obtain a fuel status report and altitude. When the TIGER elements reach the control point, inbound, they will be instructed to switch to C Channel and call DIRTY FACE. This will be position Five.

Scope Controller #7: Will control one C-54 photo aircraft, call sign, PEWTER 1 and monitor two (2) WB-29 cloud trackers, call sign WILSON 2 and 3. He will report for duty fifteen (15) minutes prior to the scheduled arrival at position 2 for PEWTER 1 in Annex C (Aircraft Mission Chart). He will check scope #7 and VHF Channel A to insure they are functioning properly and have his teller check his communications with the Effects Status Clerk and his plotter. He will monitor VHF Channel A to receive a call from PEWTER 1 when approximately fifty (50) miles from ENIWETOK at the designated control point in Annex C (Aircraft H-Hour Position and Flight Patterns). When positive control is established with PEWTER 1, the teller will give the status clerk the time control is accepted and start three minute position reporting to the plotter. The controller will give PEWTER 1 range and bearing to assigned mission station. When PEWTER 1 reaches mission station, position three will be reported to the status clerk. The Controller will place PEWTER 1 in a starboard race track pattern with approximately three (3) minute legs broadside to Ground Zero. The controller will provide PEWTER 1 with range from Ground Zero each time he passes through his assigned true bearing from Ground Zero. The Controller will provide position reports and necessary vectors to insure PEWTER 1 meeting his H-Hour position within accepted tolerance of plus or minus fifteen (15) seconds. Immediately after H-Hour, PEWTER 1 will fly at his own discretion to photograph cloud. The Controller will continue to track PEWTER 1 and give him range and bearing to his assigned control point upon completion of mission. When PEWTER 1 departs cloud area for control point, the teller will give position four to the status clerk. The controller will maintain control until PEWTER 1 reaches the control point, inbound to ENIWETOK and control is accepted by DIRTY FACE at which time position Five will be told to the status clerk. Scope Controller #7 will have PEWTER 1 switch to Channel B for time hacks designated by blinking lights only. (Disregard solid light). Scope Controller #7 after releasing PEWTER 1 at position 5 will standby to monitor WILSON 2 and 3 on VHF Channel "A". Position reporting procedures for WILSON 2 and 3 will be the same as for PEWTER 1. They will report rad-safe information on VHF Channel "A" to BOUNDARY TARE and to DIRTY FACE on Circuit J-411. The Controller will be prepared to copy rad-safe information in code and pass to officer maintaining check list for disposition.

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APPENDIX 2
TO
ANNEX T
OPERATIONS ORDER NO. 5-54
CIC OPERATORS INSTRUCTIONS

STATUS CONTROLLER: The Status Controller is the Senior Controller's assistant and will supervise operational control of the two HF point-to-point operators on Circuits J-407, J-408, HF air-to-ground operator on Circuit J-410, and VHF Relay operator. Every effort will be made to keep all circuits open for operations with the clearest circuit being used to interchange information between DIRTY FACE and BOUNDARY TARE. All messages received from DIRTY FACE or to be sent to DIRTY FACE will go through the Status Controller for disposition. Messages requiring immediate action, will so state, and take priority over aircraft position reporting. Communications difficulties on the above circuits will be reported to the Status Controller, who will contact the Electronics Officer or the CIC Officer for corrective action. All circuits will be continually monitored during entire operational periods. He will assure that positions one (1) through six (6) are properly displayed on the aircraft status boards. He will receive positions one (1) and six (6) from DIRTY FACE over one of the HF point-to-point circuits or over the VHF Relay circuit and will give positions two (2) through five (5) to DIRTY FACE. Exchange of control will be confirmed between BOUNDARY TARE and DIRTY FACE for positions two (2) and five (5). Positions one (1) through six (6) will be displayed by entering the times in red that each position was reached by each aircraft - positions two (2) and five (5) will be confirmed by circling the time entries in respective positions. A status log will be kept up to date by the status controller to assure positions one (1) and six (6) are received from the AOC and properly displayed on the CIC status boards and that positions two (2) through five (5) are told to the AOC. Positions will be told between the AOC and CIC by given call sign, position and time (PEWTER 2, position three, one zero two zero). Aircraft in emergency and assisting aircraft or ships will take priority over other aircraft plots to assure accurate positions. The Status Controller will be directly responsible to the Senior Controller.

TELLERS: The Tellers will provide their plotter with a position on each aircraft at least each three minutes. In case an aircraft is in an emergency, the frequency of plots will be increased to depict a constant heading and position. The Teller will give the plotter call sign, bearing and range. (WILSON 1 zero two five at forty). The Teller and Plotter will use head and chest sets for reporting on a direct circuit. The Teller for scopes four, five and six will give positions two through five to the Sampler Status Clerk and three minutes positions on CASSIDY 1, WILSON1, ELAINE 2, VIKING and all TIGER aircraft to his plotter. STABLE will also be his responsibility until H-Hour only. The Teller for scopes one, two, three and seven will give positions two through five to the Effects Status Clerk, and three minute positions on PEWTER 1, 2, and 3; HARDTIME 1, 2, and 3; FLOYD 1 and 2; WILSON 2 and 3; and EAGER BEAVER Aircraft to his Plotter. At H-Hour he will also assume telling responsibilities on STABLE. The Tellers will be responsible to see that the plotted positions are maintained on the operation board each three minutes on all aircraft. He may read positions direct from the controllers scope or obtain call sign, range and bearing from the scope controllers.

HF AND VHF RELAY OPERATIONS: The HF point-to-point monitor-tellers will make every effort, through the Status Controller, to keep circuits J-407, J-408, and VHF Relay operational to the AOC. The primary purpose of these circuits will be to pass aircraft positions and maintain coordination on

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operational matters between the CIC and the AOC. The VHF relay will be a back up for the HF point-to-point circuits and provide an additional means of communications between the AOC and CIC. The HF air-ground monitor-teller will continually monitor this circuit to receive any messages from aircraft out of VHF range and pass necessary messages to the aircraft. After H-Hour, STABLE 1 and 2 will be controlled on Circuit J-410. The HF air-to-ground circuit may also be used by the Senior Controller for coordination or by the Controller on scope five if the sampler element (CASSIDY exceeds VHF range). Positions one and six will be received from the AOC and positions two through five will be given to the AOC. Positions will be given using the aircraft call sign, position and time (PEWTER 1 position two at zero six one five). The operator receiving the positions from the AOC will write the position information on a slip of paper and give it to the Status Controller (PEWTER 1 position two at zero six one five). The Status Controller will provide the monitor teller with the same information for positions to be told to the AOC.

PLOTTERS: The Plotter for Scopes #1, 2, 3, and 4 will receive positions on PEWTER 1, 2 and 3; HARDTIME 1, 2 and 3; FLOYD 1 and 2; WILSON 2 and 3; and STABLE from his teller. The Teller will give aircraft call sign, bearing and range. (PEWTER 1, zero nine zero at forty). Arrows will be used to plot the position of aircraft with the point of the arrow designating the position of aircraft. Aircraft arriving and departing mission positions will have three arrows showing flight path. Upon plotting fourth arrow, number 1 will be removed. ($\frac{P-1}{40} \rightarrow 41 \rightarrow 44 \rightarrow \frac{P-1}{47}$)

Aircraft upon reaching assigned mission station will be plotted with only one arrow, the last plotted position. The time will be placed by each arrow in minutes. The teller will normally give a position on each aircraft each three minutes, although in case an aircraft is in an emergency, a position and time will be plotted each minute. Aircraft in emergency will take priority over other aircraft plots to insure constant plotting with three arrows to depict aircraft heading and position. The plotter for Scopes #4, 5 and 6 will receive positions on ELAINE 2, CASSIDY, STABLE, WILSON 1, all TIGER, and VIKING aircraft from Teller on scopes four (4), five (5) and six (6). The Teller will give aircraft call sign, bearing and range (ELAINE 2, 180 at 10), arrows will be used to plot the position of aircraft. Aircraft arriving and departing mission position will have three arrows showing flight path and upon plotting the fourth, arrow number one (1) will be removed. ($\frac{C-1}{40} \rightarrow 41 \rightarrow 44 \rightarrow \frac{C-1}{47}$).

Aircraft upon reaching mission station will be plotted leaving only one (1) arrow, the last plotted position. The time will be placed by each arrow in minutes. The Teller will normally give a position on each aircraft each three minutes. In case of an aircraft emergency, a position and time will be plotted each minute. Aircraft in emergency will take priority over other aircraft plots to insure constant plotting with three arrows to depict aircraft heading position and time.

EFFECTS STATUS CLERK: The Effects Status Clerk will enter the time each aircraft reaches positions one through six in the appropriate space as received from the Status Controller and his teller over his direct circuit. The Teller will state aircraft call sign, position and the time (PEWTER 2 position one 0705). The only entry made by the Status Clerk will be the time in the appropriate position opposite aircraft call sign. Positions one and six will be told to the Effects Status Clerk by the Status Controller, and positions two through five by his Teller. Positions two and five will be confirmed by the Status Controller and the Status Clerk will circle the time to so designate. The Effects Status Clerk will have the following aircraft on his Status Board, PEWTER 1, 2, and 3; HARDTIME 1, 2, and 3; ELAINE 2; WILSON 1; and VIKING aircraft.

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SAMPLER STATUS CLERK: The Sampler Status Clerk will enter the time each aircraft reaches positions one through six in the appropriate space as received from the Status Supervisor and Teller over his direct circuit. The Teller will state aircraft call sign, position and time (CASSIDY position 2, 0710). The only entry made by the status clerk will be the time in the appropriate position opposite the aircraft call sign. Positions one and six will be told to the Sampler Status Clerk by the Status Controller. Positions two through five will be received from his Teller. Positions two and five will be confirmed by the Status Supervisor and the Staus Clerk will circle the time to so designate. The Sampler Status Clerk will have the following aircraft on his status board: CASSIDY 1, STABLE, WILSON 2 and 3, FLOYD 1 and 2, TIGER SNIFFER 1 and 2, TIGER RED 1 and 2, TIGER RED 3 and 4, TIGER WHITE 1 and 2, TIGER WHITE 3 and 4, TIGER BLUE 1 and 2, TIGER BLUE 3 and 4, and EAGER BEAVER aircraft.

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Annex U

In 2 pages

ANNEX U

TO

OPERATIONS ORDER NO. 5-54

CONTROL DESTROYER PROCEDURES

[redacted]

ANNEX U
TO
OPERATIONS ORDER NO. 5-54
CONTROL DESTROYER PROCEDURES

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
APO 187, c/o Postmaster
San Francisco, California
7 April 1954, 1800M

1. MISSION:

a. To control aircraft as directed by the USS ESTES.

b. To assist in SAR operation in coordination with the USS ESTES.

c. To provide navigational aids to aircraft during rehearsal and shot periods.

d. To provide backup control facilities for the USS ESTES and the AOC, ENIWETOK.

2. RESPONSIBILITIES:

A. The Senior Air Controller, Control Destroyer, is responsible for executing the provisions of this Operations Order.

b. Task Group 7.4 will provide a Senior Air Controller for the Destroyer to:

(1) Assist in planning CIC operations.

(2) Supervise CIC operations during operational periods.

3. PROCEDURES:

a. The Control Destroyer, Call Sign DOLL HOUSE, will be positioned as jointly agreed by Task Group 7.3 and Task Group 7.4 at shot time. After H-Hour, DOLL HOUSE will be positioned by Task Group 7.3 in coordination with Task Group 7.4.

b. Detailed Control Destroyer CIC SOP's will be prepared by the Senior Air Force Controller on the Control Destroyer in coordination with the Senior Controller, Task Group 7.4.

4. COMMUNICATIONS REQUIREMENTS:

a. Two (2) VHF radio channels.

b. One (1) AN/SPS-6 Radar and Mark 10 IFF.

c. One (1) LF Beacon.

d. One (1) HF radio channel to CIC, Command Ship.

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5. SPECIFIC DESTROYER CIC FUNCTIONS: (During Rehearsal and Shot Periods)

a. Maintain a plotting board showing the planned positions of all aircraft and times aircraft are in positions "1" through "6". (See Annex "T")

b. Exercise control of JTF SEVEN SAR forces as directed by USS Estes.

c. Take initial SAR action and keep CIC USS Estes informed of all emergencies within Control Destroyer radar coverage.

d. Maintain positive control of such JTF SEVEN aircraft as may be delegated by USS Estes.

e. Detect, identify and positively track by radar such aircraft as delegated by USS Estes.

f. Assist in passing jet aircraft to USS Estes and AOC ENIWETOK when requested.

g. Relay, upon request, information to and from aircraft operating in the test area.

HOWELL M. ESTES, JR.
Brigadier General, U. S. A. F.
Commander

OFFICIAL:

PAUL H. FACKLER
Lt Colonel, USAF
Director of Operation

[redacted]

Annex V

in 2 pages

ANNEX V

TO

OPERATIONS ORDER NO. 5-54

MISSION ABORT CRITERIA

[redacted]

ANNEX V
TO
OPERATIONS ORDER NO. 5-54
MISSION ABORT CRITERIA

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
APO 187, c/o Postmaster
San Francisco, California
7 April 1954, 1800M

1. PURPOSE:

a. To establish minimum criteria for aborting CASTLE (UNCLASSIFIED) missions.

2. SCOPE:

a. These criteria apply to all Task Group 7.4 aircraft participating in Operation CASTLE (UNCLASSIFIED). These criteria are those considered minimum and will be waived only by the Task Group Commander or his Deputy. The establishment of these minimum abort criteria do not restrict aircraft commanders from aborting missions for any additional, valid reasons.

3. RESPONSIBILITY:

a. Test Unit Commanders are responsible for insuring that all aircraft commanders are thoroughly familiar with the provisions of this Annex.

4. ABORT CRITERIA:

a. Prior to Take-Off:

(1) Incomplete crew (members considered critical by aircraft or unit commander concerned).

(2) Failure of engine to check out according to Technical Order or other major preflight discrepancy which might affect the safe completion of the mission.

(3) Inoperative Rad/Safe equipment, essential to the mission.

(4) Inoperative HF Homer or IFF responder or interrogator equipment in Control RB-36.

(5) Inoperative IFF in F-84 Samplers.

(6) Inoperative VHF radio in F-84 Samplers.

(7) Inoperative HF radio in WB-29's.

(8) Inoperative sampling equipment in F-84 or RB-36 sampling aircraft.

b. After Take-Off:

(1) Inability to establish or maintain radio contact with control agencies.

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(2) Failure of an engine or any primary aircraft system such as hydraulic, oxygen, electric, controls, flight instruments, etc.

(3) Failure of Rad/Safe or any other specialized equipment essential to the completion of the mission.

(4) Serious injury to or incapacitating illness of a crew member.

(5) Failure of APX-6 IFF equipment in F-84's or SAR aircraft.

(6) Failure of VHF radio equipment in F-84's.

(7) Inability of Control RB-36 to establish or maintain radio contact with F-84's.

(8) Failure of IFF interrogator and/or HF Homer in Control RB-36 (Discretion of Senior Controller).

5. GENERAL:

a. F-84's: In the event one (1) F-84 from a two (2) ship element is forced to abort the other aircraft of that element will accompany it to base.

b. Control RB-36: In the event the Control RB-36 is forced to abort prior to take-off, the scientific and control team will board the back-up Control B-36 and take off with as little delay as possible. In the event the Control RB-36 is forced to begin an abort prior to H plus two (2) hours, upon landing the scientific and control team will board the back-up B-36 Control Aircraft which will be standing by with engines running. The CIC will take over control of all airborne F-84's and SAR aircraft for the duration of any period in which the B-36 Control Aircraft is not available and will coordinate all readjustments necessary in F-84 flight plans. In the event of abort by the Control RB-36 after H plus two (2) hours, the sampling operation will be cancelled, unless otherwise directed by CTG 7.4 Instructions pertinent to this situation will be relayed to all concerned agencies by the CIC, USS ESTES.

OFFICIAL:

PAUL H. FACKLER
Lt Colonel, USAF
Director of Operations

HOWELL M. ESTES, JR.
Brigadier General, U. S. A. F.
Commander

[redacted]

Annex W

In 2 pages

ANNEX W

TO

OPERATIONS ORDER NO. 5-54

MULTI-ENGINE AIRCRAFT RADIOLOGICAL REPORTING CODE

ANNEX W
TO
OPERATIONS ORDER NO. 5-54
MULTI-ENGINE AIRCRAFT RADIOLOGICAL REPORTING CODE

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
APO 187, c/o Postmaster
San Francisco, California
7 April 1954, 1800M

1. PURPOSE:

To provide a code system for reporting radiation encountered by multi-engine aircraft in flight. It will be used by all multi-engine aircraft, except those specifically assigned separate radiological reporting codes. This code has been developed primarily for voice air-to-ground transmission, to either the AOC or the CIC, on HF Circuit J-410.

2. APPLICATION:

Multi-engine aircraft to which this code applies will, upon encountering radiation, transmit the information enumerated below in accordance with the following sequence.

a. Aircraft call sign.

b. The report will be identified as a "Sweet-Sour Report".

c. Approximate local time, position and altitude of aircraft will be given in the clear.

d. Actual code numbers for each shot will be assigned and distributed by JTF SEVEN prior to first shot.

e. Code for radiation intensity reading (above estimated aircraft background). (Code numbers will be re-designated by CJTF SEVEN for each shot. The numbers appearing below are for example only).

55 No detectable radiation above background.

77 Less than 10 mr/hr, but above background.

33 10 to 50 mr/hr.

66 50 to 100 mr/hr.

11 100 to 500 mr/hr.

99 500 to 1000 mr/hr.

22 1 to 5 r/hr.

00 5 to 10 r/hr.

88 More than 10 r/hr.

44 Dummy.

f. Code name for the cloud is "GILDA".

g. The size of the contaminated area will be given in approximate nautical miles in the north-south direction, followed by the approximate nautical miles in the east-west direction e.g., "50 slash 20".

h. The approximate center of the contaminated area should be given in nautical miles, in relation to a known fix.

i. If determinable, the leading edge of the contaminated area should be identified by the code name "GILDA ABLE", and its approximate distance from a known fix should be given in nautical miles.

3. EXAMPLE:

"This is SAND BLASTER TWO/Sweet-Sour-Report/one six three zero/ four zero west of (fix)/ten thousand/one one/GILDA six zero/ four zero/five zero northwest of (fix)/ GILDA ABLE six zero west of (fix)."

"SAND BLASTER TWO radiation report for 1630 local, 40 NM west of (fix), 10,000', 100 to 500 mr/hr, area of cloud 60 NM north-south by 40 NM east-west, entered at 50 NM northwest of (fix), leading edge is at 60 NM west of (fix)."

HOWELL M. ESTES, JR.
Brigadier General, U. S. A. F.
Commander

OFFICIAL:

PAUL H. FACKLER
Lt Colonel, USAF
Director of Operations

Annex "I"

In 2 pages

ANNEX 'I"

TO

OPERATIONS ORDER NO. 5-54

BRIEFINGS

UNCLASSIFIED

ANNEX "K"
TO
OPERATIONS ORDER NO. 5-54

BRIEFINGS

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
APO 187, c/o Postmaster
San Francisco, California
7 April 1954, 1800M

1. PURPOSE: To outline and standardize Briefing Procedures within Task Group 7.4 Units.

2. RESPONSIBILITY:

a. The Director of Operations, Task Group 7.4, will have monitorial responsibility for the conduct and procedure of those briefings defined herein, except the VIP Briefings.

b. Task Unit Commanders will be directly responsible for those briefings designated herein.

3. DEFINITIONS:

a. VIP Briefing: The official Task Group 7.4 presentation covering the overall Task Group mission and designed as an orientation for VIP level observers or such other persons as designated at the discretion of the Commander, Deputy Commander or the Chief of Staff. This briefings will ordinarily be presented as the occasion demands by the Commander, or at his discretion, by a designated alternate.

b. General Operational Briefing: This briefing covers the broad aspects of any specific operational mission. This presentation represents the Commander's concept of the mission and is for all participants and designated observers. The Director of Operations, Task Group 7.4 will make the presentation, assisted by such other personnel as he may designate.

c. Specialized Aircrews Briefing: This briefing covers essentially the same material as the General Briefing but in minute detail. It will contain information applicable to all participating aircrews.

d. Specialized Mission Briefing: This briefing covers the specific details relative to specialized mission of the particular units, e.g.; Cloud Sampling, Effects, and IBDA.

e. Unit Operational Briefing: This briefing, commonly called "Crew Briefing" covers the fine points of the aircraft mission by units plus any additional items deemed necessary. This briefing will usually be given by the Unit Operations Officer, or in the case of certain aircraft, the aircraft commander.

f. VIP Crew Briefing: VIP crew briefing is a special briefing for VIP aircraft crews and passengers. This presentation will be made by the Task Group 7.4 Briefing Officer.

4. SCHEDULE:

a. VIP Briefing: To be given at the discretion of the Commander, Deputy Commander, or Chief of Staff, Task Group 7.4.

UNCLASSIFIED

b. General Briefing: 0800, E-1 Day.

c. Special Aircrew Briefing: Announced at the General Briefing.

d. Special Mission Briefing: Announced at the General Briefing.

e. Crew Briefing: One hour before first station time on M-Day.

f. VIP Crew Briefing: Will be announced at the General Briefing.

g. Special Aircrew, Special Mission, and Unit Crew briefings may be varied from the above schedule at the discretion of the Unit Commander; however, the schedule should be firm and a definite schedule announced at the 0800 General Briefing on [illegible] event minus 1.

5. GENERAL:

a. Wherever possible, a Unit or Detachment Briefing Officer should be designated in those instances where the Unit Commander chooses an alternate to himself for presentations.

b. Presentations should be brief but comprehensive; chronological, and with each major point supported by suitable visual aids. All briefings will be formal and for the General Briefing, no smoking will be allowed. Smoking during other briefings will be at the discretion of the Unit Commander or Briefing Officer. Commanders should insure that all participants are present and seated a minimum of five minutes before scheduled briefing time.

c. Two briefing rooms will be available; Building 79 is equipped with a P.A. system (stationary and mobile microphone), black light presentation capability, a baloptican, a 16mm movie projector and screen, chart stand and pointer, lighted stage and speakers stand, and seating capacity for 200. Building 135 contains a Briefing Room which is available through the Test Aircraft Unit for groups of 100 to 150 people. Facilities therein are limited to a stage, some sliding panels, and a blackboard. Other necessary equipment will have to be provided by the using agency.

HOWELL M. ESTES, JR.
Brigadier General, U.S.A.F.
Commander

OFFICIAL:

Paul H. Fackler

PAUL H. FACKLER
Lt Colonel, USAF
Director of Operations

ANNEX Y

TO

OPERATIONS ORDER NO. 5-54

NAVY AIRCRAFT FLIGHT PROCEDURES

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ANNEX "Y"
TO
OPERATIONS ORDER NO. 5-54
NAVY AIRCRAFT FLIGHT PROCEDURES

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
APO 187, c/o Postmaster
San Francisco, California
7 April 1954, 1800 M

1. MISSION: To conduct missions as directed by Task Group 7.3 in support of scientific projects.

2. RESPONSIBILITIES:

a. Task Group 7.3 is responsible for:

(1) Providing one (1) P4Y aircraft to JTF SEVEN for support of scientific missions. (This aircraft, call sign 14 BABYFOOD, will be based at ENIWETOK Air Field).

(2) Briefing the aircrew on the assigned mission.

b. Task Group 7.4 is responsible for:

(1) Insuring that this aircraft is integrated into the prepositioning, take-off, mission execution and landing schedules of other aircraft operating from ENIWETOK Air Field.

(2) Direct control of this aircraft while operating in the shot area.

3. PROCEDURES:

a. 14 BABYFOOD aircraft will be prepositioned on Shot minus One Day as directed by Task Group 7.4. It will take off at the time specified in Annex "C" under control of FRED Tower on VHF Channel "H". Immediately after take off, the P4Y will be instructed to switch to VHF Channel "C" for DIRTY FACE control. DIRTY FACE will check 14 BABYFOOD's IFF and instruct it to proceed on mission squawking Mode 3. DIRTY FACE will vector this aircraft out on its designated corridor as specified in Annex "D". When 50 miles out from FRED, DIRTY FACE will instruct 14 BABYFOOD to switch to Channel "A" (~~121.5 mc~~ 143.1 mcs) and to call BOUNDARY TARE for control and further instructions.

Change #1

b. BOUNDARY TARE will control 14 BABYFOOD at the altitude assigned in Annex "D" while in the shot area.

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BOUNDARY TARE will provide sufficient vectors and range and bearings from Ground Zero to insure that 14 BABY FOOD is no closer to Ground Zero at H-Hour than as specified in Annex "D". At completion of the assigned mission, BOUNDARY TARE will vector this aircraft direct to his assigned corridor and as specified in Annex "D" and when 50 miles out from FRED, BOUNDARY TARE will instruct 14 BABY FOOD to switch to VHF Channel "C" and call DIRTY FACE for control.

c. DIRTY FACE will vector this aircraft to FRED and turn him over to FRED Tower for landing instructions.

HOWELL M. ESTES, JR.
Brigadier General, U. S. A. F.
Commander

OFFICIAL:

for PAUL H. FACKLER
Lt Colonel, USAF
Director of Operations

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Annex "Z"

In 3 pages W/1 Appendix

consisting of 3 pages

ANNEX Z

TO

OPERATIONS ORDER NO. 5-54

PRE-SHOT SAFETY PRECAUTIONS

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ANNEX Z
TO
OPERATIONS ORDER NO. 5-54
PRE-SHOT SAFETY PRECAUTIONS

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
APO 187, c/o Postmaster
7 April 1954, 1800M

1. REFERENCES:

a. Annex A, JTF SEVEN Operations Order No. 3-53.

b. Special Bulletin, JTF SEVEN, Subject: "Safety Instructions", dated 19 February 1954.

c. ENIWETOK Building Layout, 1" = 400'.

2. GENERAL SITUATION:

a. This plan is applicable to all personnel of Task Group 7.4 located on ENIWETOK ISLAND.

b. This plan governs preparation for the safety of personnel and equipment at H-Hour and until the actual detonation plus fifteen (15) minutes.

c. No evacuation of Task Group 7.4 personnel from ENIWETOK will be conducted in preparation for a local detonation. Evacuation which may become necessary because of post-mission radioactivity is covered in Task Group 7.4 Operation Plan No. 1-54. Actions to be taken in the event of high wind or natural disaster are covered in Task Group 7.4 Operations Plan No. 2-54.

d. Security of aircraft, equipment, vehicles, materiel and organizational areas is a responsibility of owning and/or using or controlling agencies.

e. A nuclear detonation will take place in the ENIWETOK ATOLL at a specified time and location to be announced. It is possible that the shot may be delayed or rescheduled for another day. However, the safety instructions contained herein will apply regardless of the exact firing.

f. Possible hazards which must be considered in conjunction with detonations in the local area include: Intense light, heat, blast, high winds, flying debris and minor water wave effects. Of these phenomena which will occur at time of burst, only intense light will constitute a hazard to personnel. However, the intense light is a serious hazard only to personnel who look in the direction of the burst during and immediately following H-Hour. Only sites RUBY and FLORA will be used for tests in the ENIWETOK area.

3. MISSION:

a. Insure that necessary precautions are taken to safeguard personnel and equipment, including aircraft from the effects of nuclear detonations which are conducted in the ENIWETOK area.

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4. TASKS FOR SUBORDINATE UNITS:

a. Commander, Test Support Unit:

(1) Take necessary action to safeguard personnel and equipment for which he is responsible in accordance with Appendix 1 hereto.

(2) Secure L-13, H-19 and H-13 aircraft in the hanger prior to H-Hour.

(3) Secure all other Air Force aircraft under operational control of the Test Support Unit which are not airborne at H-Hour.

(4) Insure that the emergency telephone system is operating properly.

(5) Insure that emergency facilities are in place in an operational status and that operating personnel are afforded adequate protection nearby. Personnel should not occupy vehicles at H-Hour.

(6) Reestablish the flight line dispensary as soon after H-Hour as is possible.

(7) Retain the Control Tower equipment in operational status. Tower will be unmanned from H minus 2 minutes and until passage of the shock wave.

b. Commander, Test Aircraft Unit:

(1) Take necessary action to safeguard personnel and equipment for which he is responsible in accordance with Appendix 1 hereto.

(2) Secure all aircraft of the Test Aircraft Unit which are not airborne at H-Hour.

c. Commander, Test Services Unit:

(1) Take necessary action to safeguard personnel and equipment for which he is responsible in accordance with Appendix 1 hereto.

(2) Secure all aircraft of the Test Services Unit which are not airborne at H-Hour.

(3) Maintain all communications facilities operational throughout H-Hour.

d. Other Supporting Activities of Task Group 7.4:

(1) Provide for the security of personnel and equipment as provided in Appendix 1 hereto.

(2) Take special precautions as necessary.

x. All Units:

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(1) Conduct musters on H minus 1 Day and on H minus 1 Hour to insure positive control of all personnel throughout the period of danger. The muster at H minus 1 Hour will be conducted in the vicinity of the ramp/work area.

(2) Conduct necessary briefings and insure that all personnel understand fully the actions which they must take for personal safety during and following H-Hour.

(3) All personnel will evacuate the living area prior to H-1 hour. They will be assembled in unit work areas in the vicinity of the ramp to remain at this location throughout H-Hour and until H-Hour plus 15 minutes, unless otherwise notified.

(4) Carefully examine living and work areas and areas adjacent thereto to insure that all debris and all light or loose objects which may be dislodged by blast and/or high winds, are removed or otherwise secured. Such object become dangerous missiles when dislodged into the atmosphere by blast or wind effects.

(5) Be prepared to furnish damage control, emergency and work parties as required.

(6) Designate inspection officers for proper security of personnel, aircraft, buildings and areas.

1 Appendix:
1 - Safety Inctructions

HOWELL M. ESTES, JR.
Brigadier General, U. S. A. F.
Commander

OFFICIAL:

PAUL H. FACKLER
Lt Colonel, USAF
Director of Operations

[redacted]

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APPENDIX 1
TO
ANNEX Z
OPERATIONS ORDER NO. 5-54
SAFETY INSTRUCTIONS

1. SAFETY OF PERSONNEL:

a. Unit Commanders will conduct a muster and will report thereon to the Director of Personnel, this Headquarters by 1545 hours on H minus 1 Day. A final muster will be conducted at H minus 1 Hour in unit work areas in the vicinity of the ramp.

b. Personnel will be briefed on safety precautions to be observed before, during and after the shot.

c. All buildings will be evacuated, except for the AOC.

(1) Long sleeve shirts and long pants are not necessary for protection against thermal radiation. Gusts of wind and some overpressures are expected; exercise precautions to secure light objects nearby.

(2) All personnel will be faced away from ground zero at H-Hour. Personnel will not turn to view the fireball until at least 10 seconds after burst, and will do so then with caution.

(3) The shock wave will travel at a rate of approximately 5½ seconds per nautical mile. Personnel will remain at their stations to await the passage of the shock wave. There is a possibility that more than one shock wave will be felt. It is not anticipated that any water wave of sufficient magnitude to damage property will be generated. Personnel will be cautioned, nevertheless, to be prepared in the event a wave does follow the blast. Approximately 3 minutes will elapse before a wave reaches ENIWETOK.

change #2 (4) After H-Hour personnel will not swim or fish in the ENIWETOK ATOLL area until further notice.

2. SAFETY OF MATERIEL AND UNIT AREAS:

a. Aircraft:

(1) All aircraft must be parked nose toward Ground Zero, magnetic heading 345°, with the area in front of aircraft carefully cleared of possible missiles. Wheels should be chocked, with brakes set. Parking should be planned so that slight shifts in position will not cause collisions between aircraft.

(2) Gust locks should be placed on all control surfaces.

(3) Doors, windows, hatches, bomb bay doors, etc., should be opened and secured in the open position, so that there are no sealed enclosures such as cockpits, cabins, or bomb bays.

(4) L-13's and helicopters should be stored in the hangar with their wings folded and rotors stowed. Further

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protection may be afforded by tying them down to sand bags or piling sand bags around their landing gear.

b. Vehicles:

(1) Secure all vehicles. Tugs and power units will be secured down blast and at a safe distance from the parked aircraft. All windows will remain open.

c. Other Organizational Materiel:

(1) Every effort will be made to secure all items of organizational materiel in such a manner that they do not constitute a hazard. Maintenance stands should be secured in a manner similar to that specified for vehicles.

d. Unit Areas:

(1) A careful examination of work and living areas and areas adjacent thereto should be conducted to insure the removal of all debris and light or loose objects which might be dislodged. Thorough policing by all personnel will reduce the possibility of loose or movable objects becoming missiles by the action of blast or high wind.

(2) Special attention should be given to securing objects with sharp, cutting or jagged edges, e.g., large sheets of metal, glass, wooden planking, etc.

e. Building and Tents:

(1) All windows, doors and tent flaps will be secured in the open position to allow for rapid equalization of pressure. Hangar doors will be open and precautions should be taken to prevent slippage.

(2) All movables should be removed from the tops of desks and furniture.

(3) Main power switches which control electricity used in tents will be placed in the "OFF" position and will remain off until all danger has passed.

(4) All buildings will be evacuated of personnel during detonation, except for the AOC.

3. SIREN SIGNALS:

a. Before the Shot:

(1) Shot Time Minus 5 Minutes:

(a) Five (5) siren blasts. In the event of siren failure, the fire engine whistle will be used.

(2) Shot Time Minus 1 Minute:

(a) Three (3) siren blasts.

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(3) Shot Time Delayed:

(a) One (1) continuous blast indicates the shot has been delayed. If there is a delay, warning blast will be repeated at Shot minus five (5) minutes and Shot minus one (1) minute before the new shot.

b. After the Shot:

(1) If five (5) consecutive blasts are heard anytime after the shot, take cover in the nearest building and close all doors and windows, because of radiation.

(2) If three (3) consecutive blasts are heard anytime after the shot, Unit Commanders will prepare personnel to go aboard ship for a temporary evacuation in accordance with Task Group 7.4 Operations Plan No. 1-54.

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