76393

HEADQUARTERS

TASK GROUP 7.4

OPERATION ORDER NO. 6-54

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

[redacted]

Declassified DOD DIR 5200.10

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

OPERATIONS ORDER NO. 6-54

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:

Joint Task Force SEVEN and it Task Groups have successfully completed KOON Mission. The mission covered by this Operations Order is assigned the code name UNION. Its execution day is U-Day. Aircraft positioning in space at H-Hour and flight patterns are issued as annexes here to. This order is a specific directive to all elements of the Air Force Task Group to execute their assigned missions in support of UNION. This order supplements Task Group 7.4 Operations Order 1-53 and 2-54 which are still in effect.

a. See Annex A, Intelligence, TG 7.4 Operations Order 1-53.

b. See Annex B, Organization and Command Relationship, TG 7.4 Operations Order 1-53.

(1) Task Group 7.3 will provide, to Task Group 7.4, aircraft control facilities aboard the Command Ship and the Control Destroyer for the U-Day event. (See Annex A, Check List, this Operations Order and Annex T, Command Ship CIC Procedures; Annex J, Control Destroyer Procedures, Operations Order 2-54).

(2) B-50 aircraft of the 97th Bomb Wing (Medium) will participate on U-Day. (See Annex O, B-50 IBDA Flight Procedures, TG 7.4 Operations Order 2-54 and Annex A, Check List, this Operations Order).

2. MISSION:

To participate in the UNION Event 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 six (6) F-84 aircraft for necessary sampling missions for U-Day. (See Annex H, Operations Order 2-54).

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(3) Provide three (3) B-36 aircraft for control, effects and sampling missions for U-Day. (See Annexes G, I, and K, TG 7.4 Operations Order 2-54)

(4) Provide one (1) B-47 aircraft for an effects missions on U-Day. (See Annex J, TG 7.4 Operations Order 2-54).

(5) Integrate the operations of three (3) B-50 aircraft into U-Day. (See Annex O, TG 7.4 Operations Order 2-54).

(6) Assure adequate sample removal procedures for U-Day. (See Annex R, Task Group 7.4 Operations Order 2-54).

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

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

(9) Prepare the marshaling plan for all aircraft which will depart from ENIWETOK to participate in U-Day, and special missions.

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

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

(12) Provide for aircraft decontamination.

b. Test Services Unit:

(1) Provide three (3) C-54 photographic aircraft and crews for U-Day. (See Annex L, TG 7.4 Operations Order 2-54).

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

(3) Provide adequate SA-16 and other required SAR support to the AOC and CIC for operational control throughout the U-Day event. (See Annex F, TG 7.4 Operations Order 2-54). Additional SA-16 aircraft for back up purposes may be obtained from Test Support Unit.

(4) Provide adequate WB-29 Weather Reconnaissance, cloud tracking and sampling services throughout the U-Day event. (See Annex M, TG 7.4 Operations Order 2-54).

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

(6) Provide necessary weather briefings and weather reports to the CIC and AOC throughout the U-Day event.

(7) Assure adequate communications facilities throughout the U-Day 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.

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c. Test Support Unit:

(1) Assure that transient traffic and airlift operations do not interfere with or endanger test aircraft operations during the U-Day event. (See Annex A, TG 7.4 Operations Order 2-54).

(2) Provide two (2) C-47 aircraft for VHF relay for the U-Day mission. (See Annex F, TG 7.4 Operations Order 2-54).

(3) Establish required measures to prevent movement of vehicles from interferring with or endangering air operations throughout U-Day.

(4) Provide adequate crash removal and fire fighting protection for all air operations on U-Day.

(5) 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, TG 7.4 Operations Order 2-54).

(6) Assure adequate refueling and field maintenance support for all aircraft during the U-Day event.

(7) Provide photographic coverage during U-Day operations for historical purposes.

(8) In coordination with other Test Units, assure adequate transportation schedule from the flight line to the dining halls and billeting areas throughout the U-Day event.

(9) Coordinate with Test Aircraft Unit to assure that C-47 REFLECTOR aircraft are marshaled as required by that unit.

(10) Make available one airlift SA-16 to the Test Services Unit for additional rescue capability, if required.

x. All Units:

(1) Provide liaison officers to assist Headquarters TG 7.4 aircraft controllers in the AOC, on the Command Ship and Control Destroyer as required. (See Annex K, TG 7.4 Operations Order 2-54).

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

(3) Adhere to security procedures as outlined in Annex G, Security and Public Information, TG 7.4 Operations Order 1-53.

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

(5) Be prepared to augment existing SAR facilities in emergencies during the U-Day event.

(6) Be prepared to postpone execution of the mission for such periods as are made necessary by adverse weather or other unforeseeable events. (See Annex V, TG 7.4 Operations Order 2-54).

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(7) Assure proper reporting of radiation encountered by multi-engine aircraft. (See Annex W, TG 7.4 Operations Order 2-54).

(8) Conduct briefings as required. (See Annex X, TG 7.4 Operations Order 2-54).

(9) Maintenance personnel will be standing by to meet their aircraft upon return from the mission so that the aircraft can be prepared for subsequent operations in the shortest time possible.

4. LOGISTICAL MATTERS:

See Annex C, Administration, TG 7.4 Operations Order No. 1-53.

5. COMMAND AND SIGNAL MATTERS:

a. Communications: (See Annex E, TG 7.4 Operations Order 2-54)

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

c. Command Posts:

(1) Task Group 7.4	USS ESTES (AGC-12)
(a) Eniwetok Operations	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)

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ANNEXES

A. Check List

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. C-47 Relay Flight Procedures

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

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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
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1	28	Comdr, 11th Air Rescue Group, 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
1	31	Comdr, 78th Air Rescue Sq, Box 26, FPO 824, c/o PM, San Francisco, Calif
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2	44 - 45	Comdr, TG 7.3, APO 187, c/o PM, San Francisco, Calif
4	46 - 49	Comdr, TG 7.5, APO 187, c/o PM, San Francisco, Calif
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TASK GROUP 7.4 -
OPRS ORDER NO. 6-54 [redacted]

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1	84	Commander, TG 7.4
1	85	Deputy Commander,
1	86	Chief of Staff
5	87 - 91	Director of Operations
2	92 - 93	Director of Personnel
2	94 - 95	Director of Materiel
1	96	Comptroller
1	97	Personnel Security Officer
1	98	Historian
15	99 - 113	Adjutant, Hq Task Group 7.4 (REAR), Kirtland AFB, NM

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ANNEX A

TO

OPERATIONS ORDER NO. 6-54

TASK GROUP 7.4 CHECK LIST

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TASK GROUP 7.4 CHECK LIST

ITEM	DAY	HOUR	EVENT
1	D-4	0700	Three (3) WB-50 Weather Reconnaissance missions per day begin.
2	D-4	0900	Positioning meeting at Hq, Task Group 7.4 to firm positions of all aircraft for UNION event.
3	D-4	1600	~~Publish Task Group 7.4 Operations Order 6-54.~~
4	D-4	1900	CTG 7.4 reports state of readiness of TG 7.4 to CJTF SEVEN.
5	D-3	0800	~~Project participants arrive arrive ENIWETOK.~~ SHOULD HAVE SOME COMMENT LIKE THIS
6	D-3	1600	Task Group 7.4 personnel board USS ESTES. → LATER – 1400 ON D-1)
7	D-3	1700	JTF SEVEN notifies CINCPAC that ENIWETOK and BIKINI airstrips are closed to air traffic, only scheduled MATS and official observer flights will land at ENIWETOK. (NOTAM)
8	D-3	1800	~~DOLL HOUSE begins constant listening watch on J-407. CIC scope controller assignment charts prepared.~~
9	D-2	0700	~~JTF SEVEN official observers arrive at ENIWETOK.~~
10	D-2	0800	~~CIC briefing by Senior Air Controller.~~ (LATER – NOON ON – 1)
11	D-2	0900	~~AOC confirms requirements for post mission, inter-atoll airlift operations. Notify CIC of all confirmed missions.~~
12	D-2	1000	Mission flimsies issued to all aircrews by Test Aircraft Unit.
13	D-2	1200	~~Two forecasters from Weather Central board USS ESTES.~~
14	D-2	1300	~~CIC designated and briefs officer to stand by on Dr. Ogle's phone.~~
15	D-2		Required radiological instruments issued by Test Aircraft Unit ~~to B-36 and B-29 Radiological Directors.~~ aircraft monitors
16	D-2	1300	~~CIC checks Time-Hack communications.~~ CIC/AOC (ON MINUS 1)
17	D-2	1300	Test Aircraft Unit designates mission tower officer.
18	D-2	1600	~~Three (3) sample return aircraft (FLY AWAY 1, 2 and 3) arrive at ENIWETOK.~~
19	D-2		~~Three (3) P-50 IRDA aircraft arrive at ENIWETOK from GUAM. Radio and IFF checked in these acft.~~

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ITEM	DAY	HOUR	EVENT
✓20	U-1	0700	AOC insures that tower ~~personnel are~~ OFFICER IS rebriefed on J-Day mission.
✓21			Test ~~Support~~ BASE Unit insures that crash removal crews are briefed and prepared for J-Day assignments.
✓22			Test ~~Support~~ BASE Unit insures that final arrangements are made for messing and transportation during the mission.
✓23	U-1	0700	CIC completes arrangements with JOC to use direct line to ~~Dr. Ogle~~ → ADM. HANLON (NO GO CIRCUIT).
~~24~~	~~U-1~~	~~0730~~	~~Aircraft Status Report submitted to CIC by AOC.~~
~~25~~			~~AOC submits full "Midnight Report" by 0800.~~
✓26	U-1	1330 a 1430 ~~0800~~	General and specialized briefings begin.
✓27			~~CIC~~ CIC/AOC* reports state of readiness of Task Group 7.4 to JTF SEVEN.
~~28~~	~~U-1~~	~~0900~~	~~Amphibious aircraft departs on rawindsonde and homer mission to RONGERIK.~~ (MIGHT NEED THIS ONE LATER IF RONGERIK GETS KLOBBERED)
~~29~~	~~U-1~~		~~JTF SEVEN personnel board USS ESTES.~~
✓30	U-1	1000	CIC secures ETD of Commander, Task Group 7.4 from AOC.
✓31	U-1	1100	CJTF SEVEN commander's conference. (MAY BE?)
	D-1		CIC/AOC Briefing by Senior Air Controller.
~~32~~	~~U-1~~	~~1230~~	~~"Execute" order from CIC to AOC.~~
✓33	U-1	1230	Commander, Task Group 7.4 departs ENIWETOK for USS ESTES.
19-	D-1	1300 1400-1600	CIC/AOC* checks Time Hack Communications.
✓~~34~~ 20	U-1	~~1245~~	Last aircraft departs BIKINI and inter-atoll airlift operations are discontinued.
✓35	U-1	1600 ~~1300~~	Marshaling of mission aircraft begins. ~~Final position of DOLL HOUSE determined by Task Group 7.3 and Task Group 7.4.~~

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ITEM	DAY	HOUR	EVENT
✓36	D-1	1300	Test Support Unit checks crash phone operation. BASE
		1400	ALL UNITS CIC ADVISED OF FIRM H-HOUR.
~~37~~	~~D-1~~	~~1400~~	~~VIP aircrew specialized briefing.~~
✓38	D-1	1500	Commander, Task Group 7.4 boards USS ESTES. *
✓39	D-1	1600	Test Aircraft Unit forwards any changes in operational plan to the AOC for dissemination to the CIC and other control agencies.
✓40			Production Control officer & FSO ~~Director of Material~~ inspects fire fighting and crash removal equipment. CINCWAVG BARRIER & BARRICADE OPERATION. D/M ASSURES THAT MA-1 BARRIERS AT JANET TARE & NAN ARE ERECTED.
✓41			Senior CIC Controller makes final changes in CTG 7.4's ~~General Estes~~'s check list, if applicable.
✓42			One B-50 ~~HARDTIME~~ aircraft modified to include capability of crater photography. (SHUTTERSHOT ONLY)
✓43			USS ESTES leaves lagoon for H-Hour position. *
~~44~~	~~D-1~~	~~1630~~	~~CIC Controllers dry run for Commander, Task Group 7.4.~~
✓45	D-1	1700	Test Aircraft Unit submits D-Day aircraft clearances to Base Operations.
~~46~~			~~PLANK-SLATER Report to Commander, Task Group 7.4 through AOC to CIC.~~
✓47	D-1	1720	Aircraft marshaling completed. CH MORAS, IT, INSTALLED IN C-54'S
✓48	D-1	1800	AOC communications and equipment checked.
✓49			Final muster report submitted to JOC. (IF NEC.)
✓50	D-1	1830	Deputy Commander, Task Group 7.4 in place at ~~AOC~~ and all commanders immediately available.
✓51	D-1	1845	CIC/AOC * ~~CIC~~ routine maintenance completed. Status reports received from Electronics Officer on: a. SPS-6 b. Mark 10 IFF c. UHF radio d. HF radio

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ITEM	DAY	HOUR	EVENT
✓52	U-1	1845	~~CIC~~ CIC/AOC** personnel briefed
✓53		1700	CIC and/or AOC duty schedules firmed to include: a. Reporting time b. ~~CIC~~ crew reliefs set up c. Meal schedules arranged
✓54	U-1	2240	JTF SEVEN passes directive to Task Group 7.4 concerning flight #1 (~~WILSON-2~~) WB-~~50~~ 90 cloud tracker. → LATER
~~55~~	~~U-1~~	~~2300 H-7:15~~	~~Deputy Commander and Staff, including weather forecaster meet to finalize "Midnight Report."~~
~~56~~	~~U-1~~	~~2330 H-6:45~~	~~"Midnight Report" forward by AOC to CIC.~~
~~57~~	~~U-1~~	~~2315 H-7:00~~	~~DOLL HOUSE on station, begin listening watch on J-408.~~
✓58	U-1	~~*0020~~ H-5:45 → H-4:30	AOC fully manned. BUT LATER (H-4 HRS 0250)
✓59	U	0100 H-5:15	Time check AOC to tower and Unit Operations.
✓60	U	~~0100~~ H-5:15 ← TIME CHANGE	Wake up CIC Enlisted Crew. Receive final CIC Electronic Status Report. **
61	U	~~0130~~ H-5:15 ← TIME CHANGE	SAR alert crew and crash boat personnel in position at ENIWETOK.
62	U	*~~0120~~ H-4:55 ← TIME CHANGE	First aircraft position #1.
~~63~~	~~U~~	~~*0125 H-4:50~~	~~CIC Enlisted crew reports for duty.~~
~~64~~	~~U~~	~~*0125 H-4:50~~	~~CIC Scope Controller #5 reports for duty.~~
~~65~~	~~U~~	~~*0125 H-4:50~~	~~Control Destroyer CIC fully manned.~~
✓66	U	0130 H-4:45 ← TIME	CIC posts weather and sea conditions.**
~~67~~	~~U~~	~~0155 H-4:20~~	~~CIC Scope Controller #4 reports for duty.~~

*Items so marked will maintain same H-Hour factor. In the event of H-Hour time change, adjust clock time.

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ITEM	DAY	HOUR	EVENT
~~68~~	~~U~~	~~*0205 H-4:10~~	~~CIC Scope Controller #3 reports for duty~~
~~69~~	~~U~~	~~0230 H-3:45~~	~~CIC posts weather and sea conditions.~~
~~70~~	~~U~~	~~*0240 H-3:35~~	~~CIC scope controller #2 reports for duty.~~
✓71	U	*0245 H-3:30	CIC checks time broadcast with flag plot.
~~72~~	~~U~~	~~*0253 H-3:02~~	~~Time hack (Blink light 3 seconds - all aircraft for H-3 hours. CIC checks)~~
✓73	U	*0315 H-3:00	✓ Primarily H-2 hack is first time hack Time Hack, C.I.C. & A.O.C. MONITOR
~~74~~	~~U~~	~~*0315 H-3:00~~	~~CIC checks time broadcast with flag plot.~~
✓75	U	*0315 H-3:00	"Execute" order received by CIC from JOC; forward to AOC. OL VICE VERSA ✓
~~76~~	~~U~~	~~*0320 H-2:55~~	~~CIC Scope Controller #6 reports for duty.~~
~~77~~	~~U~~	~~*0320 H-2:55~~	~~CIC Scope Controller #1 reports for duty.~~
			CHAIR DROPS NEED SPECIAL IDY. REPORTS ✓✓
~~78~~	~~U~~	~~0330 H-2:45~~	~~CIC posts weather and sea conditions.~~ (George)
~~79~~	~~U~~	~~*0410 H-2:05~~	~~Last VIKING aircraft departs FRED, CIC reports to JOC.~~
~~80~~	~~U~~	~~*0413 H-2:02~~	~~Time Hack (Blink light 3 seconds - all aircraft for H-2 hours. CIC checks).~~
✓ 81	U	*0415 H-2:00	H-2:00 Time Hack, A.O.C. & C.I.C. MONITOR
✓82	U	0430 H-1:45	CIC posts weather and sea conditions. ✓✓
~~83~~	~~U~~	~~*0425 H-1:50~~	~~CIC checks CASSIDY Homer (450 kcs).~~
~~84~~	~~U~~	~~*0443 H-1:32~~	~~Time Hack (Blink light 3 seconds - all aircraft for H-1:30. CIC checks).~~
✓85	U	*0445 H-1:30	H-1:30 Time Hack. AOC & CIC MONITOR

*Items so marked will maintain same H-Hour factor. In the event of H-Hour time change, adjust clock time.

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ITEM	DAY	HOUR	EVENT
~~86~~	~~U~~	~~*0513 H-1:02~~	~~CIC Time Hack (Blink light 3 seconds - all aircraft for H-1:00 time hack, CIC checks).~~
✓ 87	U	*0515 H-1:00	H-1:00 Time Hack. AOC & CIC MONITOR
✓ 88	U	*0525 H-0:50	Actual winds aloft checked with airborne aircraft, ~~CIC~~ checks. CIC/AOC ✓ ✓
~~89~~	~~U~~	~~*0528 H-0:47~~	~~CIC Time Hack (Solid light 3 seconds - HARDTIME and Effects aircraft for H-45 minutes.)~~
✓ 90	U	*0530 H-0:45	H-0:45 Time Hack.
✓ 91	U	0530 H-0:45	CIC post weather and sea conditions.
~~92~~	~~U~~	~~*0535 H-0:40~~	~~DOLL HOUSE reports estimated position for H-Hour to CIC.~~
~~93~~	~~U~~	~~*0543 H-0:32~~	~~CIC Time Hack (Blink light 3 seconds all aircraft for H-30 minutes).~~
✓		H-35.	CRITICAL FIGHTER EFFECTS AIRCRAFT TAKE OFF FOR BIKINI.
✓ 94	U	*0545 H-0:30	H-0:30 Time Hack
✓ 95	U	*0550 H-0:25	Wake up relief CIC ~~Enlisted~~ crews, CIC receives JOC report. AOC & → MAYBE
96	U	*0550 H-0:25	Controller brief pilots ~~on Time Hack~~. on safety precautions
97	U	*0550 H-0:25	SAR SA-16, H-19 and crash boat alerted by AOC for first [redacted] take-off (15 minutes prior to ~~TIGER~~ SNIFFER flight take-off).
98	U	*0555 H-0:20	Radio transmissions held to a minimum.
99	U	*0555 H-0:20	CIC officer stands by in JOC on direct line to ~~Dr. Ogle to pass any message from Dr. Ogle~~ ADM. PARSONS to General Estes. ADM. HANLON — CTG 7.4
~~100~~	~~U~~	~~*0558 H-0:17~~	~~CIC time hack (Blink light 3 seconds all aircraft for H-15 minutes).~~

*Items so marked will maintain same H-Hour factor. In the event of H-Hour time change, adjust clock time.

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Note: Now Times Hacked at Latest Items

ITEM	DAY	HOUR	EVENT
101	U	*0600 H-0:15	H-0:15 Time Hack
~~102~~	~~U~~	~~*0600 H-0:15~~	~~Decision is made as to where ELAINE #2 will land.~~
~~103~~	~~U~~	~~*0603 H-0:12~~	~~Time Hack (Blink light 3 seconds all aircraft for H-10 minutes).~~
104	U	*0605 H-0:10	H-0:10 Time Hack.
105	U	*0605 H-0:10	First ~~B-84~~ sampler flight takes-off.
106	U	*0610 H-0:05	All CIC controller report positions of aircraft.
107	U	*0610 H-0:05	Senior Controller makes final positioning report to CTG 7.4.
~~108~~	~~U~~	~~*0610 H-0:05~~	~~REFLECTOR directed to return to FRED if relay equipment is inoperative.~~
109	U	*0611 H-0:04	JOC notified by CIC all aircraft in position.
~~110~~	~~U~~	~~*0611 H-0:04~~	~~CIC Time Hack (Blink light 6 seconds for all aircraft. All aircraft remain on VHF Channel "B" until H-Hour) for H-3 minutes.~~
111	U	*0615 H-0:00	H-Hour
112	U	*0615 H-0:00	Controllers record H-Hour positions of aircraft.
113	U	*0620 H-0:05	USS ESTES Begins movement to safe position.
114	U	*0630 H-0:15	CIC posts weather and sea conditions.
~~115~~	~~U~~	~~*0630 H-0:15~~	~~JOC notifies CURTIS to come up on 400 kcs.~~
116	U	*0630 H-0:15	CIC checks NAN's ~~RONGERIK, CURTIS AND CASSIDY~~ homers.

*Items so marked will maintain same H-Hour factor. In the event of H-Hour time change, adjust clock time.

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ITEM	DAY	HOUR	EVENT
117	U	*0630 H/0:15	AOC checks towing of sample return aircraft to SW parking ramp.
118	U	*0630 H/0:15	CIC checks JOC on status of TARE.
119	U	*0635 H/0:20	JOC instructs TG 7.3 to have one HRS on alert to pick up any crews forced to land on TARE. CIC checks.
120	U	*0645 H/0:30	Relieve CIC and Enlisted Crew.
121	U	*0645 H/0:30	General Estes transmits TARE report to AOC.
122	U	*0645 H/0:30	Advise SNIFFER pilots of TARE airfield conditions.
123	U	*0650 H/0:35	CIC reports GASSIDY positions to AOC.
~~124~~	~~U~~	~~*0715 H/1:00~~	~~CIC checks with AOC to insure completeness of sample removal plans for aircraft forced to land at KWAJALEIN.~~
~~125~~	~~U~~	~~*0715 H/1:00~~	~~Project Participants' aircraft depart operational area for destination.~~
126	U	*0720 H/1:05	WB-29 WILSON #2 cloud tracker departs ENIWETOK.
~~127~~	~~U~~	~~0730 H/1:15~~	~~CIC reports CASSIDY position to AOC.~~
~~128~~	~~U~~	~~0730 H/1:15~~	~~CIC posts weather and sea conditions.~~
~~129~~	~~U~~	~~*0735 H/1:20~~	~~CIC Scope Controller #7 reports for duty.~~
~~130~~	~~U~~	~~*0745 H/1:30~~	~~Personnel in position on ENIWETOK for processing B-50 aircraft for departure after completion of mission. AOC checks.~~
~~131~~	~~U~~	~~*0745 H/1:30~~	~~Sampler pilots advised of TARE airfield conditions.~~
~~132~~	~~U~~	~~0800 H/1:45~~	~~CIC reports CASSIDY position to AOC.~~

*Items so marked will maintain same H-Hour factor. In the event of H-Hour time change, adjust clock time.

[redacted]

[redacted]

ITEM	DAY	HOUR	EVENT
133	U	*0815 H/2:00	Filter sample plus one monitor transported from FRED to ELMER via L-13 (Time of flight dependent upon time WB-29 lands).
~~134~~	~~U~~	~~0830 H/2:15~~	~~CIC post weather and sea conditions.~~
~~135~~	~~U~~	~~0830 H/2:15~~	~~CIC reports CASSIDY position to AOC.~~
136	U	*0830 H/2:15	Cas sample bags and monitor transported from FRED to ELMER via H-19 helicopter.
137	U	*0830 H/2:15	Filter sample plus one monitor transported from FRED to ELMER by L-13.
138	U	0900 H/2:45	Director of Materiel inspects HARDTIME aircraft for damage.
~~139~~	~~U~~	~~0900 H/2:45~~	~~CIC reports CASSIDY position to AOC.~~
~~140~~	~~U~~	~~*0915 H/3:00~~	~~Initiate D. U. Action.~~
141	U	*0915 H/3:00	Helicopter dispatched to NAN, GEORGE and TARE to accomplish Rad/Safe survey and early recovery.
~~142~~	~~U~~	~~0930 H/3:15~~	~~CIC reports CASSIDY position to AOC.~~
143	U	0930 H/3:15	CIC posts weather and sea conditions.
~~144~~	~~U~~	~~1000 H/3:45~~	~~CIC reports CASSIDY position to AOC.~~
145	U	*1015 H/4:00	CIC receives JTF SEVEN directive and passes it to AOC. Reference WILSON #3, WB 29 cloud tracker.
~~146~~	~~U~~	~~*1015 H/4:00~~	~~Two (2) B-50 HARDTIME aircraft scheduled to depart ENIWETOK for GUAM. Third HARDTIME aircraft will depart for GUAM after crater photo mission is accomplished.~~

*Items so marked will maintain same H-Hour factor. In the event of H-Hour time change, adjust clock time.

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ITEM	DAY	HOUR	EVENT
~~147~~	~~U~~	~~1030 H/4:15~~	~~CIC posts weather and sea conditions.~~
~~148~~	~~U~~	~~1030 H/4:15~~	~~CIC reports CASSIDY position to AOC.~~
~~149~~	~~U~~	~~1100 H/4:45~~	~~CIC reports CASSIDY position to AOC.~~
150	U	*1115 H/5:00	Relieve CIC Enlisted Crew.
151	U	*1115 H/5:00	CIC checks with JOC Rad/Safe for recommendation concerning crater photography.
~~152~~	~~U~~	~~1130 H/5:15~~	~~CIC reports CASSIDY position to AOC.~~
~~153~~	~~U~~	~~1200 H/5:45~~	~~CIC reports CASSIDY position to AOC.~~
154	U	*1215 H/6:00	WB-29 cloud tracker begins 12 hour post-shot rad/safe mission.
~~155~~	~~U~~	~~1230 H/6:15~~	~~CIC posts weather and sea conditions.~~
~~156~~	~~U~~	~~1230 H/6:15~~	~~CIC reports CASSIDY position to AOC.~~
~~157~~	~~U~~	~~1300 H/6:45~~	~~CIC reports CASSIDY position to AOC.~~
~~158~~	~~U~~	~~1330 H/7:15~~	~~CIC posts weather and sea conditions.~~
~~159~~	~~U~~	~~1330 H/7:15~~	~~CIC reports CASSIDY position to AOC.~~
160	U	*1335 H/7:20	~~FLY-AWAYS 1 and 2~~ departs FRED for ZI with samples aboard.
~~161~~	~~U~~	~~1400 H/7:45~~	~~CIC reports CASSIDY position to AOC.~~
162	U	*1420 H/8:05	Bottle gas samples transported from FRED to ELMER via L-13 (or possibly H-19). H-19 will be required if a bag sample is involved.
~~163~~	~~U~~	~~1430 H/8:15~~	~~CIC posts weather and sea conditions.~~

*Items so marked will maintain same H-Hour factor. In the event of H-Hour time change, adjust clock time.

[redacted]

ITEM	DAY	HOUR	EVENT
~~164~~	~~U~~	~~1430 H/8:15~~	~~CIC reports CASSIDY position to AOC.~~
165	U	1430 H/8:15	CTG 7.4 and Senior Controller return to ENIWETOK.
166	U	*1430 H/8:15	One monitor plus 100 lbs of liquid samples (2 cu ft) transported from FRED to ELMER via L-19.
~~167~~	~~U~~	~~1500 H/8:45~~	~~CIC reports CASSIDY position to AOC.~~
168	U	1530 H/9:15	CIC posts weather and sea conditions.
~~169~~	~~U~~	~~1530 H/9:15~~	~~CIC reports CASSIDY position to~~ AOC.
170	U	1700	ENIWETOK open to normal traffic.
171	U	*2200 H/15:45	CIC advised of tracks for third WB-~~39~~ (WILSON 4) cloud tracking mission. Information passed to AOC through CIC, or from ELMER by telephone.
172	U/1	0730	Execute maintenance plan.
173	U/1	0800 H/25:45	Telemeter shot film records transported on PBM or C-47 from NAN to FRED.
174	U/1	*0815 H/26:00	CIC advised of tracks for fourth WB-~~39~~ (WILSON 5) cloud tracking mission. Information passed to AOC through CIC or from ELMER by telephone.
175	U/1	1000	Transport gas samples plus courier and baggage from ELMER by H-19. These samples are destined for ZI via FLY-AWAY 3.
176	U/1	1200	~~FLY-AWAY #3~~ departs FRED for ZI with samples aboard.
177	U/2	0800	Commander's Operational Briefing.
~~178~~	~~U/2~~	~~0800~~	~~Post mission inspection to determine extent of any aircraft damage begins.~~

*Items so marked will maintain same H-Hour factor. In the event of H-Hour time change adjust clock time.

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ITEM	DAY	HOUR	EVENT
179	U/2	0800	Decontamination of aircraft begins in accordance with established priority schedule.
180	U/2	1330	Unit Commanders report the operational status of their aircraft to CTG 7.4.
181	U/2	1500	Post-mission critique. Analysis of forecast weather (continues until completed).
182	U/2	1600	B-36 and scientific team meet to discuss UNION mission (continues until completed).

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ANNEX B

TO

OPERATIONS ORDER NO. 6-54

AIRCRAFT PARKING PLAN

(Limited distribution to be issued separately)

ANNEX C

TO

OPERATIONS ORDER NO. 6-54

AIRCRAFT MISSION EXECUTION CHART

(TO BE ISSUED SEPARATELY)

ANNEX "D"

TO

OPERATIONS ORDER NO. 6-54

AIRCRAFT H-HOUR POSITIONS AND FLIGHT PATTERNS

(TO BE ISSUED AT A LATER DATE)

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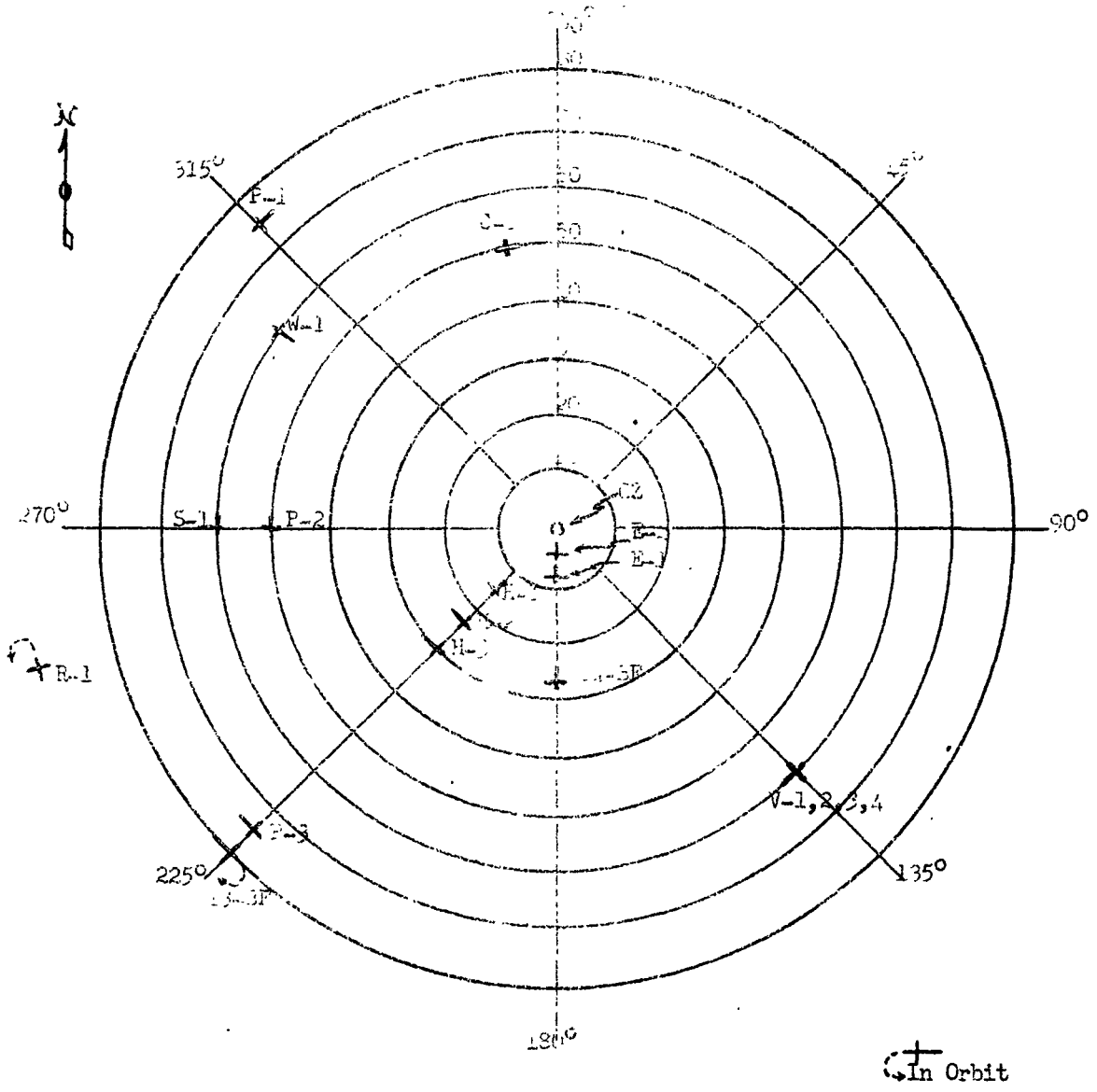

TASK GROUP 7.4
OPRS ORDER NO. 6-54
ANNEX D, APNDX 1

[redacted]

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APPENDIX 2
TO
ANNEX D
TO
OPERATIONS ORDER NO. 6-54

H-HOUR A/C FLIGHT PLANS

AIRCRAFT	RANGE	AZIMUTH	ATT	TAS	ALT (Thousand)	ROUTE
ELAINE 2 B-47	48,240 ftX	180°	Tail	430K	35 Absolute	Direct to Orbit position
ELAINE 1 B-36	50,000 ft	180°	Tail	270K	37 Absolute	Direct to Orbit position
CASSIDY 1 B-36 Control	50 NM X	350°	L Side	250K	40	Direct to Orbit position
HARDTIME 1 B-50 #1	15 NM X	225°	Tail	280K	32 Absolute	Direct to Orbit position
HARDTIME 2 B-50 #2	23 NM X	225°	L Side	280K	31 Absolute	Direct to Orbit position
HARDTIME 3 B-50 #3	30 NM X	225°	L Side	280K	30 Absolute	Direct to Orbit position
PEWTER 1 C-54 #1	75 NM X	315°	L Side	170K	14	Direct to Orbit position
PEWTER 2 C-54 #2	50 NM X	270°	L Side	170K	10.5	Direct to Orbit position
PEWTER 3 C-54 #3	75 NM X	225°	L Side	170K	12.5	Direct to Orbit position
STABLE 1 SA-16	60 NM X	270°	Orbit	120K	9.5	Direct to Orbit position
WILSON 1 WB-29	60-65 NM X	305°	Tail	210K	25	T.O. H-4 on ENIWETOK Weather Survey proceed to Command Ship to arrive at H-1:50
REFLECTOR 1 C-47	120 NM X	255°	Orbit	130K	8.5	Direct to Orbit position
13 BABYFOOD P2V 5	80 NM X	225°	Orbit	___	7.5	Direct to Orbit position
14 BABYFOOD P4Y 2	26 NM X	180°	Tail	___	8	Direct to Orbit position
VIKING 1 C-97	60 NM X	135°	L Side	___	10	Direct to Orbit position
VIKING 2 C-54	60 NM X	135°	L Side	___	11	Direct to Orbit position
VIKING 3 C-121	60 NM X	135°	L Side	___	12	Direct to Orbit position
VIKING 4	60 NM X	135°	L Side	___	9	Direct to Orbit position

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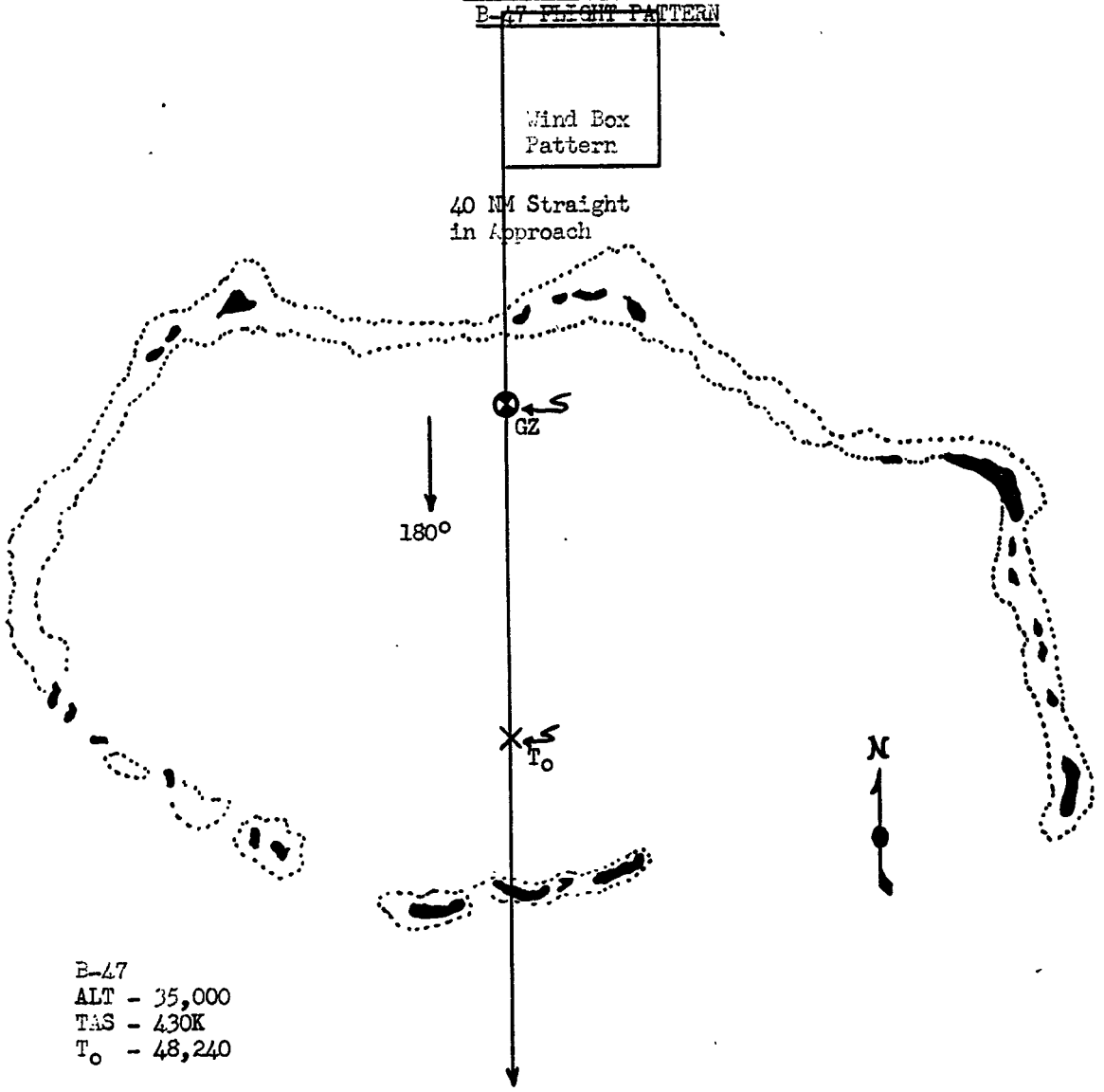
APPENDIX 3
TO
ANNEX D
OPERATIONS ORDER NO. 5-54
B-47 FLIGHT PATTERN



B-47
ALT - 35,000
TAS - 430K
T_o - 48,240

TASK GROUP 7.4
OPRS ORDER NO. 5-54
ANNEX D, APNDX 3

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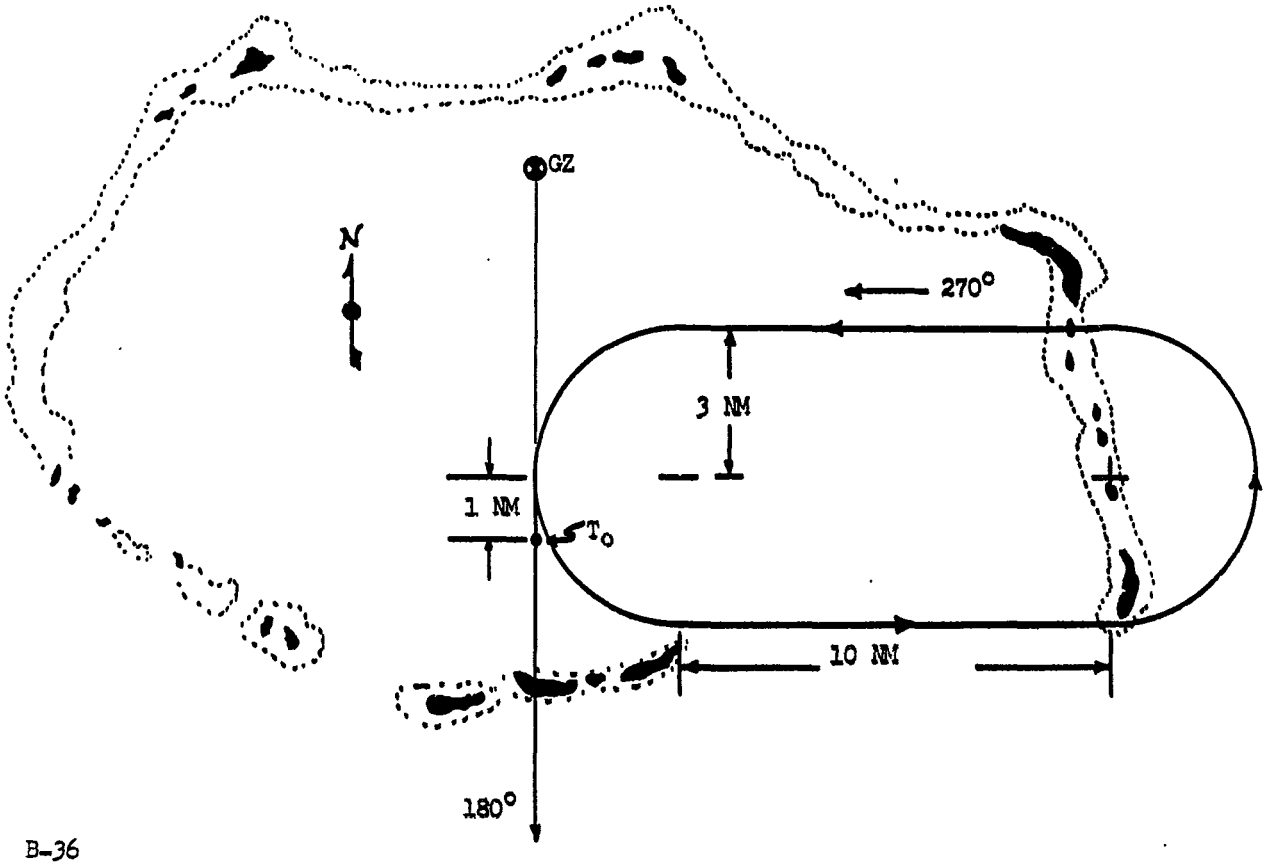
APPENDIX 4
TO
ANNEX D
OPERATIONS ORDER NO. 5-54
B-36 FLIGHT PATTERN



B-36
ALT - 37,000 ft
TAS - 270K
T_o - 50,000

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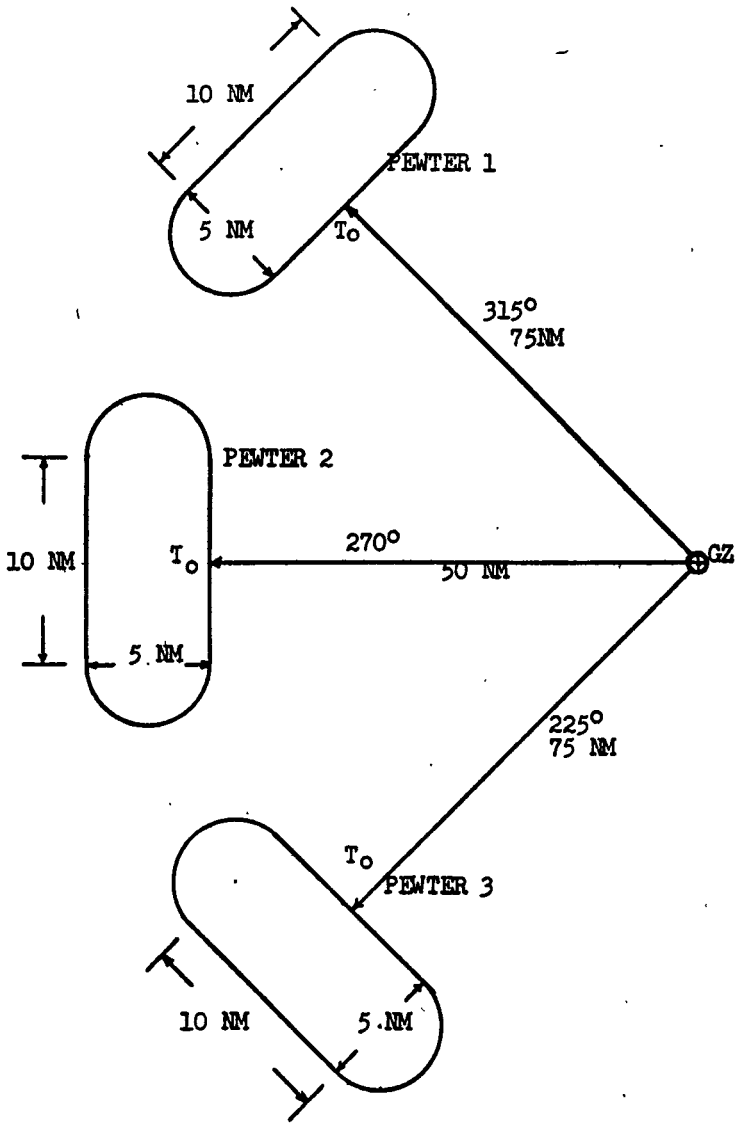
APPENDIX 5
TO
ANNEX "D"
C-54 FLIGHT PATTERNS



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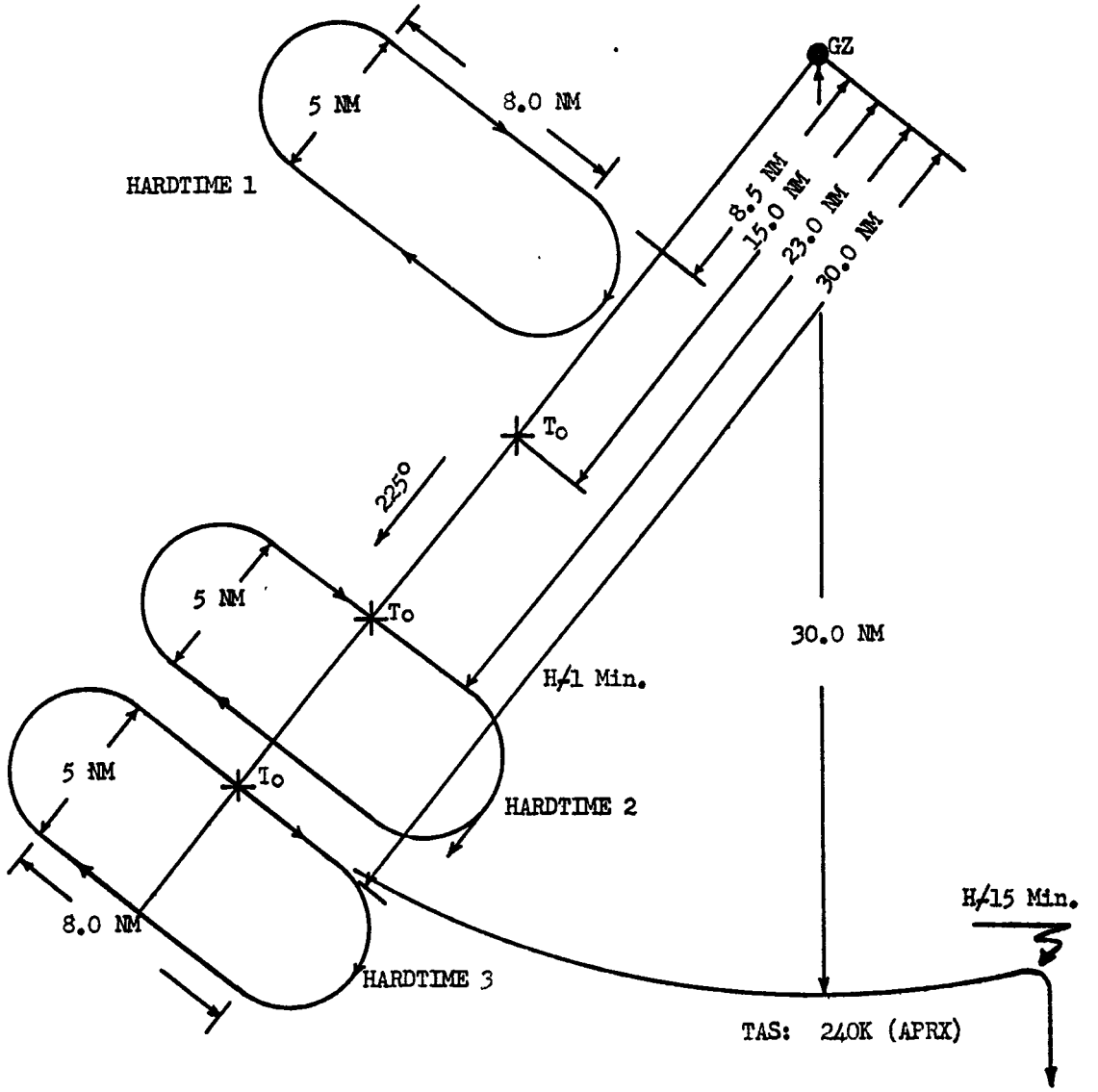
APPENDIX 6
TO
ANNEX D
B-50 IBDA FLIGHT PATTERNS



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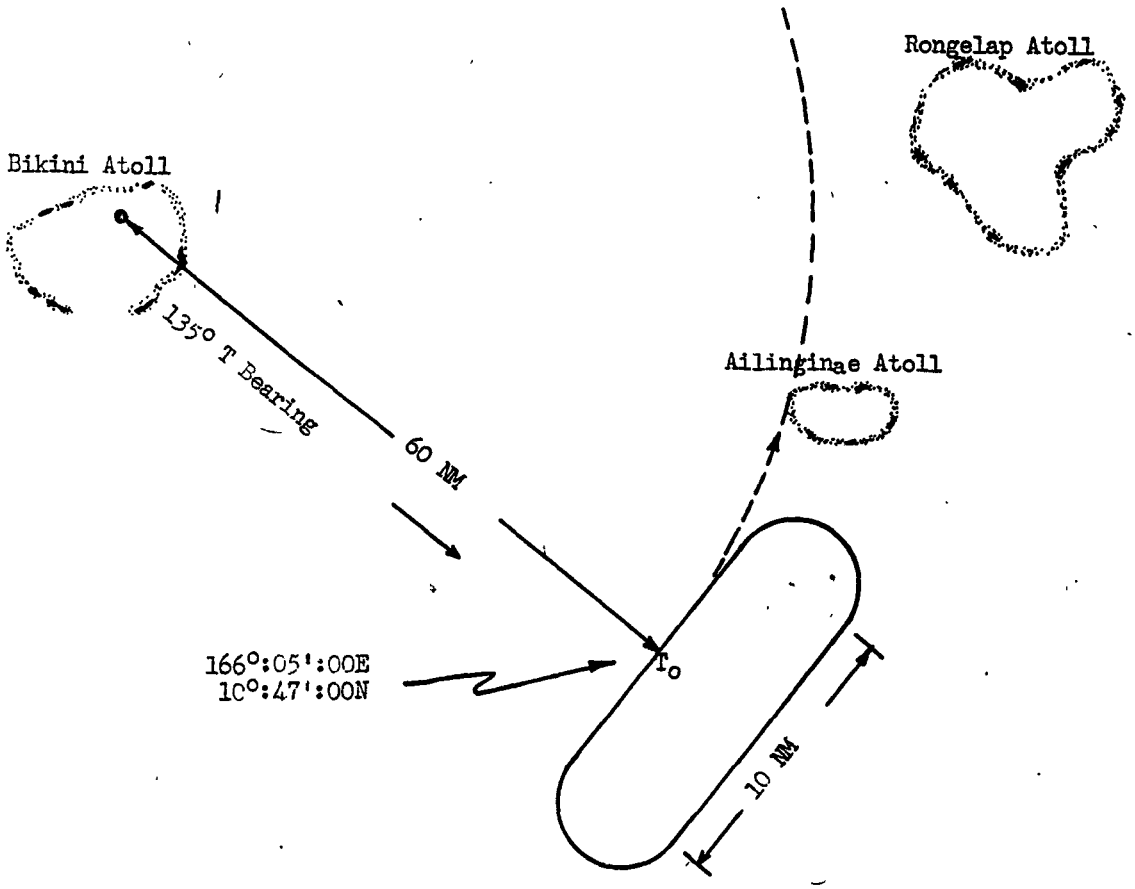
APPENDIX 7
TO
ANNEX D
VIKING FLIGHT PATTERNS



Standard righthand race track pattern. Ten minute legs. All aircraft at different altitudes.

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ANNEX "E"

TO

OPERATIONS ORDER NO. 6-54

COMMUNICATIONS

(TG 7.4 OPRS ORDER 2-54 & 4-54 APPLIES)

ANNEX "F"

TO

OPERATIONS ORDER NO. 6-54

SAR PLAN

(TG 7.4 OPS ORDER 6-54 APPLIES)

ANNEX "G"

TO

OPERATIONS ORDER NO. 6-54

CENTRAL PACIFIC TARGETS

(TG 7.4 OPNS ORDER 6-54 APPLIES)

ANNEX "H"

TO

OPERATIONS ORDER NO. 6-54

F-84 SAMPLER FLIGHT PROCEDURES

(TG 7.4 OPRS ORDER 2-54 APPLIES)

ANNEX I

TO

OPERATIONS ORDER NO. 6-54

B-36 EFFECTS FLIGHT PROCEDURES

(TG 7.4 OPRS ORDER 2-54 APPLIES)

ANNEX J

TO

OPERATIONS ORDER NO. 6-54

B-47 EFFECTS FLIGHT PROCEDURES

(TG 7.4 OPRS ORDER 2-54 APPLIES)

ANNEX K

TO

OPERATIONS ORDER NO. 6-54

B-36 HI-ALTITUDE SAMPLER FLIGHT PROCEDURES

(TG 7.4 OPRS ORDER 2-54 APPLIES)

ANNEX L

TO

OPERATIONS ORDER NO. 6-54

C-54 PHOTO FLIGHT PROCEDURES

(TG 7.4 OPRS ORDER 2-54 APPLIES)

ANNEX M

TO

OPERATIONS ORDER NO. 6-54

WB-29 WEATHER AND RAD SAFE FLIGHT PROCEDURES

(TG 7.4 OPRS ORDER 2-54 APPLIES)

ANNEX N

TO

OPERATIONS ORDER NO. 6-54

DECONTAMINATION PROCEDURES

(TG 7.4 OPRS ORDER 2-54 APPLIES)

ANNEX O

TO

OPERATIONS ORDER NO. 6-54

B-50 IBDA FLIGHT PROCEDURES

(TG 7.4 OPRS ORDER 2-54 APPLIES)

ANNEX P

TO

OPERATIONS ORDER NO. 6-54

C-47 RELAY FLIGHT PROCEDURES

(TG 7.4 OPRS ORDER 2-54 APPLIES)

ANNEX Q

TO

OPERATIONS ORDER NO. 6-54

OBSERVER AIRCRAFT FLIGHT PROCEDURES

(TG 7.4 OPRS ORDER 2-54 APPLIES)

ANNEX R

TO

OPERATIONS ORDER NO. 6-54

SAMPLE RECOVERY PROCEDURES

(TG 7.4 OPRS ORDER 2-54 APPLIES)

ANNEX S

TO

OPERATIONS ORDER NO. 6-54

AOC PROCEDURES

(TG 7.4 OPRS ORDER 2-54 APPLIES)

ANNEX T

TO

OPERATIONS ORDER NO. 6-54

CIC PROCEDURES

(TG 7.4 OPRS ORDER 2-54 APPLIES)

ANNEX U

TO

OPERATIONS ORDER NO. 6-54

CONTROL DESTROYER PROCEDURES

(TG 7.4 OPRS ORDER 2-54 APPLIES)

ANNEX V

TO

OPERATIONS ORDER NO. 6-54

AIRCRAFT ABORT CRITERIA

(TG 7.4 OPRS ORDER 2-54 APPLIES)

ANNEX W

TO

OPERATIONS ORDER NO. 6-54

MULTI-ENGINE AIRCRAFT RAD SAFE REPORTING CODE

(TG 7.4 OPRS ORDER 2-54 APPLIES)

ANNEX X

TO

OPERATIONS ORDER NO. 6-54

BRIEFINGS

(TG 7.4 OPRS ORDER 2-54 APPLIES)

ANNEX Y

TO

OPERATIONS ORDER NO. 6-54

NAVY AIRCRAFT FLIGHT PROCEDURES

(TG 7.4 OPRS ORDER NO. 2-54 APPLIES)

ANNEX "I"
TO
OPERATIONS ORDER NO. 1-54
B-36 EFFECTS FLIGHT PROCEDURES

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
APO 187, c/o Postmaster
San Francisco, California
9 February 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 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 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 90 miles from Bikini, 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 minues five (5) seconds. Positioning will be the responsibility of the aircraft commander and his navigator. 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 90 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

Annex "J"

In 2 pages

ANNEX "J"

TO

OPERATIONS ORDER NO. 1-54

B-47 EFFECTS FLIGHT PROCEDURES

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ANNEX "J"
TO
OPERATIONS ORDER NO. 1-54
B-47 EFFECTS FLIGHT PROCEDURES

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
APO 187, c/o Postmaster
San Francisco, California
9 February 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 and HF air-ground channel J-410, 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 90 miles from Bikini, 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 five (5) seconds. Positioning will be the responsibility of the aircraft commander and his navigator. BOUNDARY TARE will monitor the flight path and issue required emergency 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 base by BOUNDARY TARE. ELAINE TWO will remain on Channel "E" until instructed to switch to Channel "C" for DIRTY FACE control when approximately 90 miles from base. If at any time ELAINE TWO (2) cannot contact DIRTY FACE

[redacted]

on Channel "C" or BOUNDARY TARE on Channel "E", HF air-ground circuit J-410 will be used as alternate.

OFFICIAL:

PAUL H. FACKLER
Lt Colonel, USAF
Director of Operations

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

Annex "K"

In 1 page

ANNEX "K"

TO

OPERATIONS ORDER NO. 1-54

FB-36 SAMPLER FLIGHT PROCEDURES

SECRET

ANNEX "K"
TO
OPERATIONS ORDER NO. 1-54
FB-36 SAMPLER FLIGHT PROCEDURES

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

1. MISSION: To obtain 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 FB-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 to the sampling area, checking all IFF modes enroute. DIRTY FACE will then instruct aircraft commanders to return to mode 2. They will continue on course until approximately 90 miles out, at this point they will be instructed to switch to VHF Channel "F" for control by BOUNDARY TARE.

b. BOUNDARY TARE will vector FLOYD aircraft to the vicinity of CASSIDY. When BOUNDARY TARE determines that CASSIDY is capable of excepting control of FLOYD aircraft, control of these aircraft will be turned over to CASSIDY 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 toward base. When 90 miles out from base BOUNDARY TARE will turn control of FLOYD aircraft over to DIRTY FACE. DIRTY FACE will vector FLOYD aircraft to base using VHF, Channel "C".

d. In the event the cloud moves to the vicinity of ENIWETOK, BOUNDARY TARE will direct the AOC to vector FLOYD aircraft directly to CASSIDY for control.

4. Personnel and Decontamination procedures for aircraft and crew are outlined in Annex "N".

OFFICIAL:

Paul H. Fackler

PAUL H. FACKLER
Lt Colonel, USAF
Director of Operations

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

ANNEX "L"

TO

OPERATIONS ORDER NO. 1-54

C-54 PHOTO FLIGHT PROCEDURES

[redacted]

ANNEX "L"
TO
OPERATIONS ORDER NO. 1-54
C-54 PHOTO FLIGHT PROCEDURES

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

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 training of 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 proceeding to their H-Hour positions as designated in Annex D (Aircraft H-Hour Positions and Flight Patterns). DIRTY FACE will maintain control until PEWTER aircraft are approximately 90 miles from Bikini, then instruct PEWTER aircraft to contact the CIC, call sign BOUNDARY TARE. PEWTER ONE will call BOUNDARY TARE on VHF Channel "A"; PEWTER TWO (2) on "H"; PEWTER THREE (3) on "G". All PEWTER aircraft will squawk IFF mode 2.

b. The BOUNDARY TARE Controllers will establish radio and IFF contact with PEWTER aircraft and provide them with range and bearing to their H-Hour positions. PEWTER aircraft will remain under the direct control of BOUNDARY TARE 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 required to make good its designated H-Hour position, with BOUNDARY TARE providing 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, aircraft may still make good designated H-Hour positions. Position tolerances are plus or minus 15 seconds. After H-Hour, PEWTER aircraft will conduct required photographic missions. One aircraft may be directed by BOUNDARY TARE to act as VHF relay aircraft between BOUNDARY TARE and CASSIDY, until H+6 hours. When missions are complete, aircraft will call BOUNDARY TARE for a range and bearing to base. When approximately 90 miles from Bikini, inbound to base, the BOUNDARY TARE Controller will instruct PEWTER aircraft to switch to Channel "C" for DIRTY FACE control.

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 minutes time hack.

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

OFFICIAL:

PAUL H. FACKLER
Lt Colonel, USAF
Director of Operations

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

Annex "M"

In 6 pages w/4 Appendicies

consisting of 7 pages

ANNEX "M"

TO

OPERATIONS ORDER NO. 1-54

WB-29 OPERATIONS

ANNEX "M"
TO
OPERATIONS ORDER NO. 1-54
WB-29 OPERATIONS

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
APO 187, c/o POSTMASTER
San Francisco, California
9 February 1954, 1800 M

1. MISSION:

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

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 route reports on weather between ENIWETOK and BIKINI.

(c) Provide preshot reports on weather in the BIKINI Area affecting aircraft operations.

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

(e) 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 Appendicies 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:

(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.

4. 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. These aircraft will establish CW HF radio contact with the AOC on HF Circuit J-411 immediately after take-off 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 pilots intentions.

2. The AOC will initiate required emergency action, maintaining contact with the aircraft in distress on J-411 until VHF contact is possible.

(d) The USS ESTES will be located in the BIKINI Area during shot periods. The CIC will continually monitor VHF Channel "D" and HF Frequency 8364 kcs. WB-29's may contact this station for emergency assistance, including GCI radar vectors, VHF/DF steers and SAR 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 (H to H/12 Hours): This flight is to determine the characteristics of the radiological hazard likely to drift and fall out on ENIWETOK or UJELANG ATOLLS and the hazard upwind from the shot atoll. This aircraft will take-off, climb to 10,000 feet and hold at a position 90 nautical miles West of Ground Zero until H/5 minutes. The aircraft will then begin a 10,000 foot racetrack holding pattern of approximately five (5) hours duration, the eastern edge of which will be 50 nautical miles West of Ground Zero. This pattern will extend 100 nautical miles from north to south and 25 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. "E" type search pattern at 10,000 feet will be employed. 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.

2. Flight #2 (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 Marshal 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 #3 (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 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 #4 (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 Flights #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-TIB.

   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.

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 in VHF Channel "C" and on HF Circuit J-410 immediately after take-off. The aircraft will perform weather reconnaissance within 50 miles of the ENIWETOK Area and report any significant weather to the AOC. WILSON ONE will then proceed to BIKINI reporting weather enroute. When 90 miles out from ENIWETOK, WILSON ONE will be instructed by the AOC to call the COMMAND SHIP CIC for control and further instructions on VHF Channel "F". The COMMAND SHIP Controller will instruct WILSON ONE to report any further significant enroute weather, over VHF Channel "F", or HF Circuit J-410. WILSON will then be instructed to perform local weather reconnaissance in the BIKINI Area and to perform an "Upwind" weather run culminating in an H-Hour position as required in Annex "D", "H-Hour Positions and Flight Patterns". Immediately after H-Hour, WILSON ONE will be instructed to change to VHF Channel "A". At approximately H/2 hours, WILSON ONE will be directed by the CIC Controller 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 ENIWETOK by the CIC Controller. When 90 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.

~~SECRET~~

(b) Briefing:

1. The WILSON ONE crew will be thoroughly briefed on the sampling operation 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.

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

OFFICIAL:

Paul H. Fackler

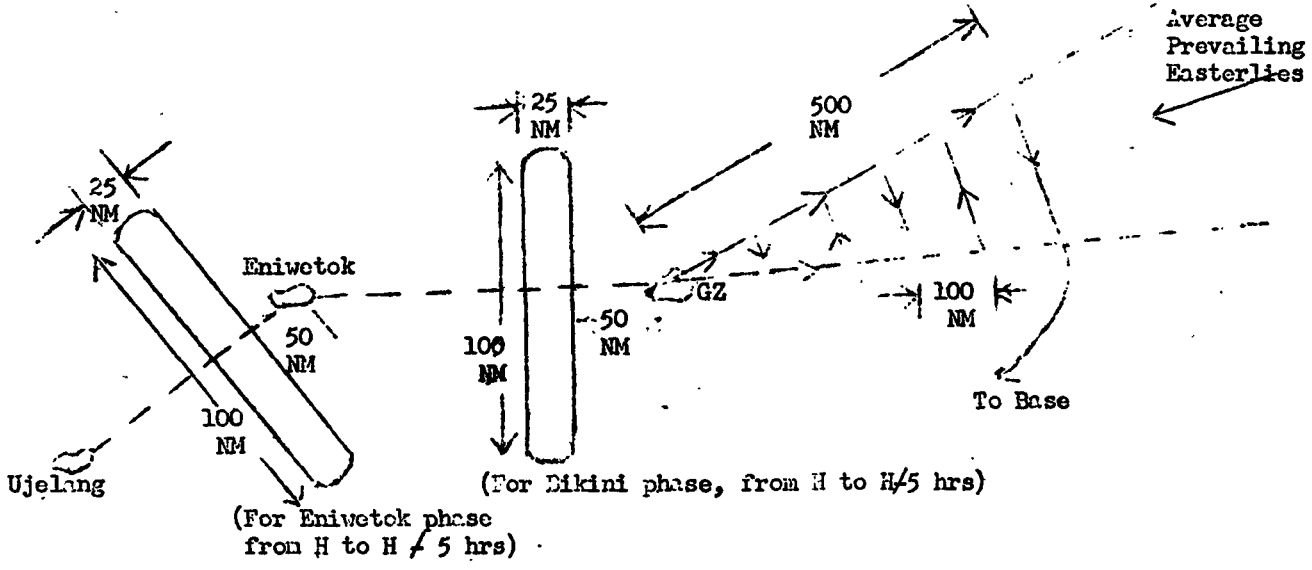
PAUL H. FACKLER
Lt Colonel, USAF
Director of Operations

4 Appendicies:
1. Cloud Tracking Chart. Flt #1
2. " " " " #2
3. Rad/Safe Code
4. Sequence Cloud report for WB-29 Sampling Operations

TASK GROUP 7.4
OPRS ORDER NO. 1-54
ANNEX "H"

~~SECRET~~

Flight #1, WB-29 Sector Search Mission for Cloud Tracking



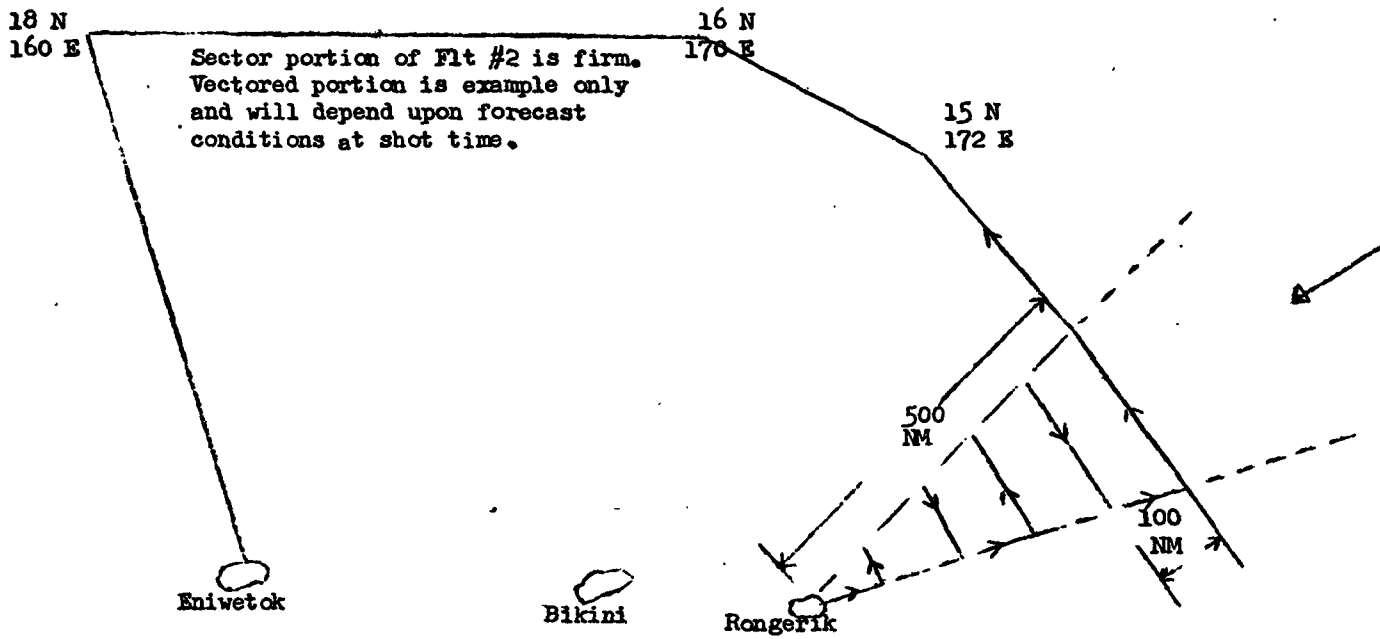
SECRET

Sample directive: "CLOUD TRACKING FLT ONE SEARCH BASE TO FIVE HOUR HOLDING PATTERN FIVE ZERO NM WEST GZ TO SECTOR LIMITING TRUE BEARINGS FROM GZ FIVE FIVE AND EIGHT FIVE DEGREES TO FIVE ZERO ZERO NM TO BASE PD REGULAR AND SPECIAL IN-FLIGHT REPORTS REQUIRED

TASK GROUP 7.4
OPRS ORDER NO. 1-54
APPENDIX 1, TO ANNEX "A"

M1-1

Flight #2, WB-29 Sector and Vector Search for Cloud Tracking



Sample Directive: CLOUD TRACKING FLT TWO SEARCH SECTOR LIMITING TRUE BEARING FROM RONGERIK FIVE FIVE AND EIGHT FIVE DEGREES TO FIVE ZERO ZERO NM PD FOLLOW WITH VECTOR TO ONE FIVE NORTH ONE SEVEN TWO EAST CMM ONE SIX NORTH ONE SEVEN ZERO EAST CMM ONE EIGHT NORTH ONE SIX ZERO EAST TO BASE PD REGULAR AND SPECIAL IN-FLIGHT REPORTS REQUIRED

M2-1

TASK GROUP 7.4
OPRS ORDER NO. 1-54
APPENDIX 2, ANNEX "M"

APPENDIX 3
TO
ANNEX M
OPERATIONS ORDER NO. 1-54
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 to 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	Dummy
0	7	2	4	Dummy
				Second Digit (Intensity reading above estimated aircraft background)
2	6	5	3	Less than 10 mr/hr, but above background
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	3	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).
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.

[redacted]

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 to 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, dummy, 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]

APPENDIX 4
TO
ANNEX M
OPERATIONS ORDER NO. 1-54

SEQUENCE CLOUD REPORT FOR WB-29 SAMPLING OPERATIONS

1. This report code has been designed to provide information on the initial break-up and radiation intensities in the cloud during the period H to H plus 6 hours. Information to be reported includes approximations of the altitudes of tops of each of the major cloud segment and an estimate of successive positions and diameters of these segments. Further, pertinent information will be reported on penetrations by the sampling aircraft as indicated below.

2. The report will be formulated by the WB-29 Sampler Crew and reported in the following sequence: (Item C,D,E,F and G and item O will be encoded as below. The code changing for each shot).

Item	Information	Report
A	Local time of report	0800
B	Number of major cloud segment	4
C	Top of first (highest) segment (coded, Est Alt in thousands)	66
D	Top of second segment (coded, Est Alt in thousands)	33
E	Top of third segment (coded, Est Alt in thousands)	00
F	Top of fourth segment (coded, Est Alt in thousands)	88
G	Top of fifth segment (coded, Est Alt in thousands)	Negative
H	Estimated position and extent of first (highest) segment (in NM with respect to GZ, in degrees from GZ and diameter in NM)	80 by 90 by 40
I	Estimated position and extent of second segment (in NM with respect to GZ, in degrees from GZ and diameter in NM)	75 by 45 by 30
J	Estimated position and extent of third segment (in NM with respect to GZ and diameter in NM)	50 by 00 by 40
K	Estimated position and extent of fourth segment (in NM with respect to GZ, in degrees from GZ and diameter in NM)	40 by 250 by 30
L	Estimated position and extent of fifth segment (in NM with respect to GZ, in degrees from GZ and diameter in NM)	Negative
M	Average penetration altitude (in thousands) (Negative if no penetration involved)	45
N	Average time of penetration (in seconds from 1.0 r/hr to 1.0 r/hr)(Negative if no penetration is involved)	125
O	Average maximum intensity encountered (in r/hr(Neg if no penetration involved)	44

3. Reports should be made atleast hourly. In addition, at least one abbreviated report will be made for each penetration of F-84 samplers, B-36 Featherweight and the heavy nuclide samples. Short reports should be identified as such (i.e., "ABBREVIATED REPORT") and should contain Item A (local time) plus M, N and O.

EXAMPLE: "This is_____/GILDA REPORT/0800/4/66/33/00/88/Negative/80/by 90 by 40/75 by 45 by 30/50 by 00 by 40/40 by 250 by 30/Negative/

or for abbreviated report
"This is_____/ABBREVIATED GILDA REPORT/0800/45/125/44/Over".

4. The altitude at the top of the various segment will be encoded as follows: (Code is example only and will be changed for each shot. Encode to nearest altitude).

ALTITUDE (In feet)	CODE
10,000	55
20,000	88
30,000	00
40,000	44
50,000	11
60,000	33
70,000	99
80,000	77
100,000	22
120,000	66

5. The average maximum intensity of radiation encountered on cloud penetrations will be encoded as follows; (Code is example only and will be changed for each shot. Encode to nearest intensity reading).

INTENSITY (In r/hr)	CODE
10	22
50	66
100	88
150	33
200	77
250	99
300	55
350	44
400	00
500	11

Annex "N"

In 3 pages

ANNEX "N"

TO

OPERATIONS ORDER NO. 1-54

DECONTAMINATION

~~SECRET~~

ANNEX "N"
TO
OPERATIONS ORDER NO. 1-54
DECONTAMINATION

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

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 effected 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 accidental 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 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 B-36's will be parked on the decontamination pad and checked for radiation intensities by the same monitor used in a. and b. above.

~~SECRET~~

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 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, until all aircraft have been released from the aircraft decontamination section.

PART II
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 10mr/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, estimates 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.

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 aircrew members of sampling aircraft and to aircrew 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 re-used. 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 preceding 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

PAUL H. FACKLER
Lt Col, USAF
Director of Operations

Annex "O"

In 3 pages

ANNEX "O"

TO

OPERATIONS ORDER NO. 1-54

B-50 IBDA FLIGHT PROCEDURES

ANNEX O
TO
OPERATIONS ORDER NO 1-54
B-50 "IBDA" FLIGHT PROCEDURES

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

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.

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 1000 hours in D minus two (2) days.

(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 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 in a night cell formation to the H-hour position assigned by Annex D (Aircraft H-hour Positions and Flight Patterns). DIRTY FACE will maintain control until the flight is approximately 90 miles from Bikini, then will instruct HARDTIME ONE (1) to contact the CIC, call sign BOUNDARY TARE, on VHF Channel "A", with IFF squawking mode 2. HARDTIME TWO (2) and THREE (3) will switch to Channel "A" 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.

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 patterns 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 and his navigator. 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 no time will these aircraft enter the atomic cloud or maneuver closer than 20 nautical miles from Ground Zero. BOUNDARY TARE will provide range and bearing to base and will retain control until the flight is approximately 90 miles from Bikini. 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 "A", HF air-ground circuit J-410 will be used as an alternate.

[redacted]

e. Crews will be debriefed immediately upon landing; mission VHF crystals, film badges and dosimeters will be turned in; aircraft will be refuled; 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 BRAVO, UNION, YANKEE, NECTAR, ROMEO and KOON.

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

OFFICIAL:

PAUL H. FACKLER
Lt Col, USAF
Director of Operations

[redacted]

Annex "P"

In 1 page

ANNEX "P"

TO

OPERATIONS ORDER NO. 1-54

C-47 RELAY FLIGHT PROCEDURES

~~SECRET~~

ANNEX P
TO
OPERATIONS ORDER NO 1-54
C-47 RELAY FLIGHT PROCEDURES

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

1. MISSION: To provide long range VHF communications between the AOC and CIC.

2. RESPONSIBILITIES:

a. The Test Support Unit Commander is responsible for the readiness of C-47 relay aircraft to meet take off schedules.

b. Senior Controllers on the Command Ship and AOC are responsible for the operational control of C-47 relay aircraft while on mission station.

c. The Test Support Unit Commander is responsible for installation, maintenance and operations of special relay equipment, assisted by technical personnel of Task Group 7.4.

3. PROCEDURES:

a. One (1) C-47 aircraft, call sign REFLECTOR ONE, equipped with automatic VHF radio relay equipment, will take off at time specified in Annex C (Aircraft Mission Execution Chart). Long range fuel tanks will be installed in the aircraft. This aircraft will contact DIRTY FACE on the Reflector VHF channel (VHF channel C is back up) when airborne. DIRTY FACE will control REFLECTOR until pre H-hour orbit position and altitude designated in Annex D is reached. REFLECTOR IFF will be squawking Mode 2.

b. When REFLECTOR reaches orbit position, DIRTY FACE will instruct the aircraft to call BOUNDARY TARE for control. This call will be made on the VHF reflector channel with VHF channel C as back up.

c. Immediately following H-hour, DIRTY FACE will vector REFLECTOR to a position approximately 100° and 120 miles from Eniwetok. REFLECTOR will relay VHF messages between the CIC and AOC automatically if equipment is operational; and manually if not. BOUNDARY TARE will exercise complete control of REFLECTOR during this period, adjusting the aircraft's position as required to accomplish the relay mission.

d. Upon completion of the relay mission at time designated in Annex C, REFLECTOR will be vectored to base by BOUNDARY TARE. When 90 miles out from base, BOUNDARY TARE will instruct REFLECTOR to contact DIRTY FACE for control on VHF channel C. DIRTY FACE will vector REFLECTOR to base for landing.

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ANNEX "Q"

TO

OPERATIONS ORDER NO. 1-54

(To be published if required)

Annex "R"

In 2 pages

ANNEX "R"

TO

OPERATIONS ORDER NO. 1-54

SAMPLE RECOVERY PROCEDURES

~~SECRET~~

ANNEX R
TO
OPERATIONS ORDER NO. 1-54
SAMPLE RECOVERY PROCEDURES

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
APO 187, c/o Postmaster
San Francisco, California
9 February 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.

(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 27 February 1954 and will be operated with heavy type transport equipment.

(b) Priority II trip will be in position and ready for departure at Eniwetok Island with a back-up aircraft at Kwajalein Island at 1800M on 1 March 1954 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 4 March 1954 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. These procedures will be thoroughly rehearsed during the full scale rehearsal.

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Annex "S"

In 2 pages

ANNEX "S"

TO

OPERATIONS ORDER NO. 1-54

AOC PROCEDURES

SECRET

ANNEX "S"
TO
OPERATIONS ORDER NO. 1-54
AOC PROCEDURES

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

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

2. SCOPE: This Annex discribes 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 exercise operational control of all aircraft operating in the ENIWETOK area and will supervise and coordinate operations of ENIWETOK control tower, Approach control, GCA, 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 (BOUNDARY TARE) 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) hour 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 (AOC) on 137.88MC (Channel C). DIRTY FACE will check all modes of IFF equipment and HF air-ground communications on all aircraft. 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 (CIC) 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.

(2) Position two (2) - Actual time CIC establishes contact and accepts control from AOC (approximately 90 miles from ENIWETOK).

(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 90 miles out).

(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. During all continuous plotting three plots for each aircraft will remain on the plotting board for the purpose of showing direction.

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

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Commander

Annex "T"

In 3 pages w/2 Appendicies

consisting of 8 pages

ANNEX "T"

TO

OPERATIONS ORDER NO. 1-54

CIC PROCEDURES

SECRET

ANNEX T
TO
OPERATION ORDER NO. 1-54

CIC PROCEDURES

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
APO 187, c/o Postmaster
San Francisco, California
9 February 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. An officer controller 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 instructions 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 to assigned 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 control (to maximum capabilities of electronic equipment). Aircraft equipped with HF air ground equipment will establish radio contact on assigned HF air ground frequency.

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 One (1) and six (6) will be received from the AOC and be the responsibility of the status supervisor for proper display, and provide the AOC with positions two (2) through five (5).

SECRET

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

(2) Position two (2) - Actual time CIC establishes and accepts control from AOC. (Approximately 90 miles out).

(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.

(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 (- - → - - → -E-1- - - - - - →). While aircraft are at
08 11 14
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 maximum 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 displa·.

g. Controllers will be thoroughly familiar with specific aircraft flight procedures, Annex C through M, and O through Q; H-hour aircraft position and flight patterns, Annex D; Communications, Annex E; and SAR Plan Annex F.

h. Scope Controller Assignments:

(1) Controller #1: Scope #1, Guard channels B and D as emergency controller for all aircraft.

(2) Controller #2: Scope #2, C-54 Photo Aircraft, call sign: Pewter 2. WB-29 Weather Aircraft, call sign: Wilson 1.

(3) Controller #3: Scope #3, C-54 Photo Aircraft, call sign: Pewter 3 and SAC B-50's IBDA Aircraft, call sign: Hardtime 1, 2 & 3.

(4) Controller #4: Scope #4, B-36 Effects Aircraft, call sign: Elaine 1.

(5) Controller #5: Scope #5, RB-36 Control, call sign: Cassidy. SA-16 Search and Rescue, call sign: Stable. F-84 Sampler Aircraft, call sign: Tiger Red, White and Blue. B-36 Sampler Aircraft, call sign: Floyd 1 and 2.

(6) Controller #6: Scope #6, B-47 Effects Aircraft, call sign: Elaine 2.

(7) Controller #7: Scope #7, C-54 Photo Aircraft, call sign: Pewter 1 and observer aircraft call sign: Viking 1, 2 and 3.

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

2 Appendices
1. Scope Controller Instructions
2. CIC Plotter Teller Instructions

OFFICIAL:

Paul H. Fackler
PAUL H. FACKLER
Lt Colonel, USAF
Director of Operations

APPENDIX 1
TO
ANNEX T
OPERATIONS ORDER NO. 1-54
SCOPE CONTROLLER INSTRUCTIONS

SCOPE CONTROLLER #1: Will begin his duties when Boundary Tare excepts control of the first mission aircraft. He will monitor VHF channel B on AN/ARC-1 at scope #1 equipped with URD-2. The AN/ARC-1 will provide automatic guard on D channel (Emergency). He will monitor all time hacks on B to assure they are going out over the air. Upon receiving a call on D channel, the controller will switch to D as primary and take bearings on all transmissions on channel D. He will be prepared to furnish the appropriate scope controller with this bearing or assume control of aircraft in emergency. If the emergency requires a Stable Aircraft Scope Controller #5 will provide Controller #1 with a range, bearing and call sign of appropriate Stable aircraft and switch Stable to channel D with Controller #1 assuming control. Immediately after H-hour Controller #1 will switch to D channel as primary and continue to monitor to receive any emergency calls. He will be thoroughly familiar with all emergency procedures in Annex F (SAR Plan) and sea conditions in the sampling area. Aircraft in emergency and aircraft or ships assisting in emergencies will be plotted continuously on the operations board to depict an accurate position and time. Controller #1's teller will be Teller #1 to Plotter #1 to display aircraft in emergency and assisting aircraft.

SCOPE CONTROLLER #2: Will begin his duties at start engine time 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 plotter #1. He will monitor VHF channel H from take off for Pewter 2 in Annex C, to receive a call from Pewter 2 when approximately ninety (90) miles from ENIWETOK on course to assigned mission station 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. When Pewter 2 reaches mission station, position three (3) 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 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. Range will be given on both North and South headings. 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 fly at his own discretion to photograph cloud for approximately fifteen (15) minutes. The controller will continue to track Pewter 2 and give him range and bearing to base 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 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 the following time hacks:

H - 2 hours and 2 minutes for H - 2 hour time hack

H - 1 hour and 2 minutes for H - 1 hour time hack

[redacted]

H - 32 minutes for H - 30 minute time hack

H - 3 minutes and remain on B until after H-hour

Immediately after Dirty Face excepts control of Pewter 2, Controller #2 will switch to channel A and notify controller #5 he is ready to accept control of Wilson 1. Controller #5 will provide Controller #2 with range and bearing of Wilson 1. Controller #2 upon accepting control of Wilson 1 will continue to track and report his position to the plotter. At approximately H / 2 hours, Wilson 1 will be directed to conduct Sampling Operation. The time of this operations will be decided by the JTF SEVEN Rad-safe Officer. Wilson 1 will be provided all significant Rad-safe forecasts prior to the Sampling Operation. Upon completion of Sampling Mission by Wilson 1 the controller will provide a bearing and range to ENIWETOK. When Wilson 1 is approximately ninety (90) miles from ENIWETOK he will switch to channel C and Call Dirty Face for control.

SCOPE CONTROLLER #3: Will begin his duties at start engine time for Pewter 3 or Hardtime aircraft determined by the first to take off 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 plotter #1. He will monitor VHF channel G from take off time in Annex C to receive a call from Pewter 3 and Hardtime aircraft when approximately ninety (90) miles from ENIWETOK on course to assigned mission station in Annex D (Aircraft H-hour Positions and Flight Patterns). When positive control is established with Pewter 3 and 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 Pewter 3 and Hardtime aircraft range and bearing to assigned mission stations. When Pewter 3 and Hardtime aircraft reach respective mission stations 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. Range will be given on both East and West headings. The Controller will provide position reports and necessary vectors to insure Pewter 3 meeting his H-hour position within accepted tolerance of plus or minus fifteen (15) seconds. Immediately after H-hour, Pewter 3 will fly at his own discretion to photograph cloud for approximately fifteen minutes. The Controller will continue to track Pewter 3 and give him range and bearing to base upon completion of mission. When Pewter 3 departs cloud area for base, the teller will give position four to the status clerk. The controller will maintain control until control is accepted by Dirty Face at which time position five will be told to the status board. Scope Controller #3 will have Pewter 3 switch to channel B for the following time hacks:

H - 2 hours and 2 minutes for H - 2 hour time hack

H - 1 hour and 2 minutes for H - 1 hour time hack

H - 32 minutes for H - 30 minute time hack

H - 3 minutes and remain on B until after H-hour

Hardtime 1 will be lead aircraft for formation and be the only aircraft showing IFF. The controller will vector Hardtime 1 to his assigned mission station in Annex D. Hardtime 2 and 3 will positon themselves on Hardtime 1. The controller will periodically check Hardtime 2 and 3's position relative to Hardtime 1 and issue necessary instructions to aid them in meeting H-hour positions. After H-hour, mission complete, Hardtime 1 will

[redacted]

assu me lead aircraft position and be given a range and bearing to ENIWETOK.

SCOPE CONTROLLER #4: Will begin his duties at start engine time for Elaine 1 in Annex C (Aircraft Mission Execution Chart). He will check scope #4 and VHF channel E to insure they are functioning properly and have his teller check his communications with the effects status clerk and plotter #2. He will monitor VHF channel E from takeoff time for Elaine 1 in Annex C to receive initial call from Elaine 1 when approximately ninety (90) miles from ENIWETOK on course to assigned mission station in Annex D (Aircraft H-hour Positions 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 the AOC and start giving three minute positions to the plotter. The Controller will give Elaine 1 range and bearing to assigned mission station. 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 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 from the Controller. Upon departing position three, mission station, the teller will give position four to the status clerk. The controller will continue to track and have Elaine 1 plotted until approximately ninety (90) miles from ENIWETOK at which time he will instruct Elaine 1 to switch to channel C and contact Dirty Face. He will continue to monitor E channel until position five is confirmed by Dirty Face. After releasing Elaine 1, Controller #4 will monitor the sampler operations on channel E to detect any emergency while Tiger aircraft are under the control of the Sampler Controller aboard Cassidy. He will report all unusual happenings or emergencies to Controller #5. If Tiger aircraft are unable to contact Cassidy 1 or Boundary Tare on F channel after sampling, Controller #4 will assume control on channel E and vector Tiger aircraft to ENIWETOK reporting positions four and five and maintaining continuous plots on Tiger aircraft.

SCOPE CONTROLLER #5: Will begin his duties at start engine time for Wilson 1, in Annex C (Aircraft Mission Execution Chart). He will check scope #5 and VHF channel F to insure they are functioning properly and have his teller check his communication with sampler status clerk and plotter #2. He will monitor VHF channel F from takeoff time for Wilson 1 in Annex C, to receive a call from Wilson 1, after he has checked the weather in the ENIWETOK area. Wilson 1 will contact Boundary Tare when approximately ninety (90) miles from ENIWETOK on course to assigned mission station 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 stand by 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. After H-hour Wilson 1 will be turned over to Controller #2 on VHF channel A to sample in the cloud area. Cassidy and Stable will be controlled in the same manner as Wilson through position three. After H-hour Cassidy will direct sampling operation in cloud area and assume control of Stable. Stable 1 will fly at 11,000 ft and due to possible fall out will remain outside Cassidy position from cloud and receive position assistance from Controller #5. Stable 2 will remain under the control of Boundary Tare and standby for specific emergency instructions. 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 monitor channel E and be prepared to assist Cassidy and brief controller #5 in case of unusual occurrences or 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, and vector them to Boundary Tare. Boundary Tare upon establishing radio and IFF contact will accept control from Cassidy and report position four to the status clerk. Controller #5 will then turn Tiger element over to controller #6, for control to position five, approximately ninety (90) miles from ENIWETOK. Dirty Face will accept control upon establishing radio and radar contact. The B-36 Samplers call sign Floyd 1 and 2 will be a back up for Cassidy if Cassidy should abort mission. Controller #5 will be prepared to position Floyd 1 or 2 in replacement position for Cassidy; although the primary mission of Floyd aircraft will be cloud sampling with Floyd 2 taking off when Floyd 1 returns to base. Floyd aircraft during sampling will position themselves with the controller maintaining a positive displayed position on all aircraft through his teller. Controller #5 will be prepared to furnish Rad-safe information to Cassidy 1 and Floyd aircraft during sampling operation and sea conditions to Stable aircraft and aircraft in emergency.

SCOPE CONTROLLER #6: Will begin his duties at start engine time for Elaine 2 in Annex C (Aircraft Mission Execution Chart). He will check scope #6 and VHF channel E to insure they are functioning properly and have his teller check his communications with the effects status clerk and plotter #2. He will monitor VHF channel E from take off time for Elaine 2 in Annex C to receive a call from Elaine 2 when approximately ninety (90) miles from ENIWETOK on course to assigned mission station 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. 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. Upon departing position three, mission station, the teller will give position four to the status clerk. The Controller will continue to track and have Elaine 2 plotted until approximately ninety (90) miles from ENIWETOK at which time he will instruct Elaine 2 to switch to channel C and contact Dirty Face. He will continue to monitor channel E until position five (5) is confirmed by Dirty Face. After Dirty Face assumes control of Elaine 2 Scope Controller #6 will switch to channel F and stand by to assume control of the Tiger aircraft proceeding to the Sampling Area. Controller #6 will assume control of Tiger aircraft and vector them to the Command Ship area. He will notify Controller #5 when Tiger aircraft approach the Command Ship area and Controller #5 will assume control and vector them to the sampling area. Controller #5 will turn Tiger aircraft over to Controller #6 for control upon departing the Command Ship area, mission complete, and returning to base. Controller #6 will maintain control of

Tiger elements until Dirty Face assumes control approximately ninety (90) miles from ENIWETOK.

SCOPE CONTROLLER #7: Will begin his duties at Start Engine Time for Pewter 1 (Annex C, Aircraft Mission Execution 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 plotter number 1. He will monitor VHF channel A from take-off time for Pewter 1 in Annex C to receive a call from Pewter 1 when approximately ninety (90) miles from ENIWETOK on course to assigned mission station in Annex D (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. Range will be given on both East and West headings. 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 approximately fifteen (15) minutes. The controller will continue to track Pewter 1 and give him range and bearing to base upon completion of mission. When Pewter 1 departs cloud area for base, the teller will give position four to the status clerk. The controller will maintain control until 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 the following time hacks:

H - 2 hours and 2 minutes for H - 2 hour time hack

H - 1 hour and 2 minutes for H - 1 hour time hack

H - 32 minutes for H - 30 minute time hack

H - 3 minutes and remain on B until after H-hour

Scope Controller #7, in addition to controlling Pewter 1, will position the observer aircraft, call sign Viking 1, 2 and 3. Takeoff times are given in Annex C and mission station in Annex D. Viking aircraft will call Dirty Face on takeoff, contact Boundary Tare when approximately ninety (90) miles from mission station. The Controller will be responsible to position Viking aircraft as outlined in Annex D monitoring their position to insure that no Viking aircraft porceed nearer to Ground Zero at H-hour than prescribed in Annex D. Position reports, telling and plotting will be used for Viking aircraft as outlined for Pewter 1.

SECRET

APPENDIX 2
TO
ANNEX T
OPERATIONS ORDER NO 1-54
CIC PLOTTER-TELLER 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, HF air to ground operator, and the VHF relay operator to insure that positions one through six 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 through the VHF relay circuit and will give positions two (2) through five (5) to DIRTY FACE. 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 communication difficulties will be reported to the Electronics Officer for Corrective action. The HF air to ground circuit will be continually monitored and when VHF contact cannot be made with an aircraft the air ground circuit will be used. An additional selector switch is provided for all circuits for coordination by the Senior Controller in the CIC.

A status log (Attachment 1) will be kept up to date by the status controller to insure 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 giving call sign, position and time (PEWTER 2, positions three, one zero two zero). Aircraft in emergency and assisting aircraft or ships will take priority over other aircraft plots to insure 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 for aircraft, 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, WILSON 1, STABLE 1 and 2, FLOYD 1 and 2, ELAINE 1 and 2, and TIGER aircraft to plotter #2. The Teller for scopes 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 and VIKING aircraft to Plotter #1. 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 controllers scope or obtain call sign, range and bearing from the scope controllers. His position will be behind and to the side of the Controller. After H-hour and the scope controllers release control of assigned aircraft to DIRTY FACE the tellers will be required, one for controllers #4 and 5 and the second for controllers #1 and 6 for duration of mission.

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

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continually monitor this circuit to receive any messages from aircraft out of VHF range and pass necessary messages to the aircraft. The HF air-to-ground circuit may 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 aircraft reaches the position (PEWTER 1 position two at zero six one five). The operator receiving the positions from the AOC will write the positon 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.

PLOTTER NUMBER ONE: Plotter Number One will receive positions on PEWTER 1, 2 and 3, HARDTIME 1, and VIKING aircraft from teller for scopes two, three and seven. 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. ($\rightarrow$ 08 $\rightarrow$ 11 $\rightarrow$ E-1/4 $\rightarrow$) Aircraft upon reaching assigned mission position 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. After H-hour, the communications of Teller #1 will be used by Teller at scope six to provide plots on TIGER aircraft, from position two until taken over by the Controller on scope five approaching positions three and on TIGER aircraft released by scope five to scope six after departing position four for position five.

PLOTTER NUMBER TWO: Plotter Number Two will receive positions on ELAINE 1, ELAINE 2, CASSIDY, STABLE, WILSON and TIGER 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 with the point of the arrow designating 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. ($\rightarrow$ 08 $\rightarrow$ 11 $\rightarrow$ E-1/4 $\rightarrow$). 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 tellers over his direct circuit. The Teller will state aircraft call sign, position and 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 Supervisor. Positions two through five for PEWTER One, Two and Three, HARDTIME, and VIKING aircraft will be received from the Teller for scopes Two, Three and Seven. The Teller on scopes Four and Six will give position Two through Five for ELAINE One and Two respectively.

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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 1 and 6 will be told to the Sampler Status Clerk by the Status Controller. Positions Two through Five will be received from the Teller.

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Annex "U"

In 2 pages

ANNEX "U"

TO

OPERATIONS ORDER NO. 1-54

CONTROL DESTROYER PROCEDURE

[redacted]

ANNEX "U"
TO
OPERATION ORDER NO. 1-54
CONTROL DESTROYER PROCEDURE

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
APO 187, c/o Postmaster
San Francisco, California
9 February 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 back-up 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 rehearsal periods.

3. PROCEDURES:

a. The Control Destroyer will be positioned as agreed by Task Group 7.3 and 7.4.

b. The initial destroyer position will be approximately 090°, 100 N.M. from ENIWETOK at H-Hour.

c. The Control Destroyer will be requested to change position after H-Hour as required by cloud movement and jet aircraft control requirements. Requests for position changes will be transmitted directly to the Control Destroyer by CIC, USS Estes on Circuit J-407.

d. 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.

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c. One (1) LF beacon.

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

5. SPECIFIC CONTROL DESTROYER CIC FUNCTIONS: (During rehearsals and shot periods).

a. Maintain a plotting board showing the planned positions of all aircraft and times aircraft are in positions one (1) thru six (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
PAUL H. FACKLER
Lt Colonel, USAF
Director of Operations

Annex "V"

In 2 pages

ANNEX "V"

TO

OPERATIONS ORDER NO. 1-54

MISSION ABORT CRITERIA

ANNEX "V"
TO
OPERATIONS ORDER NO. 1-54
MISSION ABORT CRITERIA

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

1. PURPOSE: To establish minimum criteria for aborting CASTLE missions.

2. SCOPE: 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: 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 effect 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 positioning radar in Effects B-36 or B-47.

(6) Inoperative IFF in F-84 Samplers.

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

(8) Inoperative HF Radio in WB-29's.

(9) 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.

(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.

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(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) Failure of positioning radar in effects aircraft.

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

(9) 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 RB-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 engine 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

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Annex W

In 2 pages

ANNEX "W"

TO

OPERATIONS ORDER NO. 1-54

MULTI-ENGINE AIRCRAFT RADIOLOGICAL REPORTING CODE

[redacted]

ANNEX W
TO
OPERATIONS ORDER NO. 1-54

MULTI-ENGINE AIRCRAFT RADIOLOGICAL REPORTING CODE

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
APO 187, c/o Postmaster
San Francisco, California
9 February 1954, 1800 T

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 ACC 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 mr/hr

00 5 to 10 mr/hr

88 More than 10 mr/hr

44 Dummy

[redacted]

[redacted]

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, centered at 50 NM northwest of (fix), leading edge is at 60 NM east-west of (fix)."

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

OFFICIAL:

Paul H. Fackler

PAUL H. FACKLER
Lt Colonel, USAF
Director of Operations

[redacted]

ANNEX "X"

TO

OPERATIONS ORDER No. 1-54

BRIEFINGS

(To be issued when available)