411027

[redacted]

RG 342

[redacted]

Location Technical Library/A-4

Collection AFWL

Folder Final History, Task Group 7.4

~~Operation~~ HARDTACK

1957 - 1958

NOTE: This is Folder 1 of 2 286

Containing pages 1 thru ~~287~~

DELETED VERSION ONLY

BEST COPY AVAILABLE

CLASSIFICATION CANCELLED **
WITH DELETIONS
BY AUTHORITY OF DOE/OC*

[signature] 5/6/96
REVIEWED BY DATE

* Flohr (CONAD)/DOE ltr 4/17/95
** Pg 1 - 286 of the Final History of Task Group 7.4, Operation Hardtack

Classified 5/12/96

BEST COPY AVAILABLE

[redacted]

CONTENTS

FOREWORD i

LIST OF DOCUMENTS ii

LIST OF CHARTS, PICTURES, AND ILLUSTRATIONS viii

CHRONOLOGY ix

I. REDWING/HARDTACK INTERIM PERIOD PLANNING 1
A. Introduction 1
B. Operations. 9
Planning Schedule 9
Book Message 10
Aircraft Requirements 12
Communications and Air Operations Control 18
Airlift and Island Re-Supply 21
Sampling 22
Very High and Ultra High Altitude Tests 23
C. Materiel 24
Major Materiel Planning Activities 24
Long Range Construction 29
Portable Buildings 30
Vehicle Requirements 32
Runway Arresting Devices 35
D. Personnel 36
E. Security 39
F. Funding 40
Notes 45

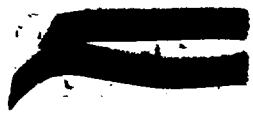
II. PLANNING AND BUILD-UP PHASE OF OPERATION HARDTACK 50
A. Command 50
Organization and Mission of Task Group 7.4 50
Book Message 54
Planning Directive 55
B. Operations 58
Operation Plan 58
Movement Directive 61
Aircraft Requirements 62
Communications and Air Operations Control 64
Sampling 72
Very High and Ultra High Altitude Tests 75
Nose Cone Recovery 77
Search and Rescue 78
Flight Safety 80

[redacted]

AFWL/HQ

[redacted]

Radiological Safety and Monitoring 83
Establishment of Weather Islands 85
Airlift and Island Re-Supply 91
Aerial Photography 92
C. Materiel. 93
Logistics Planning 93
Construction 96
Aircraft Modification 98
Aircraft Maintenance 99
Vehicle Requirements 102
Portable Buildings 103
Personal Equipment 105
D. Personnel 107
E. Security 117
F. Funding 119
G. Project 58 Nevada Test Site 121
Notes 124
III. OPERATIONAL PHASE OF OPERATION HARDTACK 126
A. Mission and Organizational Structure of Task Group 7.4 Units 126
Test Aircraft Unit 128
Test Base Unit 133
Test Service Unit 134
B. Personnel 140
C. Operation NEWSREEL (Johnston Island). 144
D. Shot Rehearsals 152
E. Shots and Aircraft Participation 153
YUCCA, 28 April 1958 153
CACTUS, 6 May 1958 154
FIR and BUTTERNUT, 12 May 1958 154
KOA, 13 May 1958 155
WAHOO, 16 May 1958 156
HOLLY, 21 May 1958 156
NUTMEG, 22 May 1958. 156
YELLOWWOOD, 26 May 1958 157
MAGNOLIA, 27 May 1958 157
TOBACCO, 30 May 1958 158
SYCAMORE, 31 May 1958 158
ROSE, 3 June 1958 158
ALDER, 9 June 1958 159
MAPLE, 11 June 1958 159
[illegible] and [illegible], 15 June 1958 160
[illegible], 18 June 1958 160
[illegible] and REDWOOD, 23 June 1958 161
[illegible] and [illegible], 29 June 1958 161
[illegible], 2 July 1958 162



AFWL/HQ

AFWL/HQ

CEDAR, 3 July 1958 162
DOGWOOD, 6 July 1958 163
POPLAR, 12 July 1958 163
SCAEVOLA, 14 July 1958 164
PISONIA, 18 July 1958 164
JUNIPER, 22 July 1958 164
OLIVE, 23 July 1958 165
PINE, 27 July 1958 165
TEAK, 31 July 1958 166
QUINCE, 6 August 1958 166
ORANGE, 11 August 1958 167
FIG, 18 August 1958 167
F. Communications and Air Operations Control 167
G. Maintenance Control 169
H. Airlift. 171
I. Aircraft Accidents 173
J. Ground Safety 175
K. Radiological Safety Activities 178
Notes. 180

IV. ROLL-UP PHASE OF OPERATION HARDTACK 184
A. Supplies and Equipment 184
B. Movement of Personnel to the Zone of Interior 186
C. Costs of Task Group 7.4 Operations 186
Notes 187
GLOSSARY OF ABBREVIATIONS. 188

AFWL/HQ

AFWLA/D

3

FOREWORD

This monograph recounts the activities of the United States Air Force, through Task Group 7.4, in the 1957-1958 nuclear test series, Operation HARDTACK, an operation conducted in the Eniwetok Proving Ground. All phases of the series are treated from an over-view standpoint. For detailed information on various aspects of the operation, the reader is invited to examine other related documents, chief among these being the Commander's Final Report and Task Group 7.4 Operation Plan 1-58. The cited documents are retained in the files of the Historian, 4950th Test Group (Nuclear), Kirtland Air Force Base, New Mexico.

Master Sergeant William A. Evans wrote all portions of this monograph. Airman Second Class Joaquim S. Geraldo Jr. performed the associated clerical tasks. The author is endebted to the Staff of Task Group 7.4 for guidance and cooperation in the preparation of the document.

This monograph is subject to revision. Thus, additional information or suggested corrections will be welcomed.

AFWL/HQ

[redacted]

AFWL/HQ

4

LIST OF DOCUMENTS

Inclosures

1. Ltr., Director, WETD, FC, AFSWP to Comdr. AFSWC, 10 Jun. 55, subj.: Forecast of Test Requirements.

2. Ltr., Director, WETD, FC, AFSWP to Comdr. AFSWC, 14 Dec. 55, subj.: Forecast of Test Requirements.

3. Schedule, Operation HARDTACK, 26 Feb. 57, AFSWC.

4. Schedule, Operation HARDTACK, 6 Jun. 57, AFSWC.

5. Memo for Record, Conference on Support Requirements for Operation HARDTACK, JTF-7, dtd. 4 Mar. 57.

6. Ltr., Maj. William A. Cunningham, DCS/C, AFSWC, to Dr. Hal Plank, J-Division, LASL, dtd. 3 Dec. 56, no subj.

7. Ltr., Comdr., 4950th Test Gp. (N) to Comdr., JTF-7, 24 Jul. 57, subj.: Comments to "Final Report of the Commander, Task Group 7.4, Operation REDWING".

8. Memo for Record, Col. Donnell Massey, JTF-7, 18 Jan. 57, subj.: Visit of Colonel E. A. Lucke, USA, and Colonel Robert Gattis, USAF, to Joint Task Force SEVEN Headquarters.

9. Ltr., Comdr., 4950th Test Gp. (N) to Comdr., AFSWC, 11 Apr. 57, subj.: Staff Visit to Eniwetok, 24 Mar. - 5 Apr. 57.

10. General Order No. 12, Hq. AFSWC, 15 Jul. 57.

11. Tentative Planning Schedule for Operation HARDTACK, JTF-7, 27 Nov. 56.

12. Tentative Planning Schedule for Operation HARDTACK, 4950th Test Gp. (N), no date.

13. TWX, 55434, C/S, USAF to major commands, 29 Apr. 57.

AFWL/HQ

[redacted]

AFWL/HQ

5

14. Ltr., Comdr., 4950th Test Gp. (N) to Comdr., JTF-7, 26 Jun. 57, subj.: Support Aircraft Required for HARDTACK Inter-Atoll (Eniwetok-Bikini) and Project Island Airlift.

15. Ltr., Comdr., JTF-7 to Comdr., 4950th Test Gp. (N) 30 Jul. 57, subj.: Air Operations Center (AOC) on BIKINI Atoll.

16. Ltr., Comdr., 4950th Test Gp. (N) to several units, 10 Jul. 57, subj.: Concept of Air Task Group Logistics Support, Operation HARDTACK.

17. Ltr., Comdr., JTF-7 to several units, 3 Jun. 57, subj.: Tentative Vehicle Allocation for HARDTACK.

18. Ltr., Comdr., AFSWC to Comdr., ARDC, 14 Mar. 57, subj.: Officer Personnel Requisitions for Operation "HARDTACK".

19. Ltr., Comdr., 4950th Test Gp. (N) to Comdr., AFSWC, 5 Dec. 56, subj.: Personnel Requisitions.

20. Ltr., Deputy Comdr., AFSWC to Comdr., ARDC, 12 Apr. 57, subj.: Personnel Manning of the 4951st Support Squadron (Test), Eniwetok, Marshall Islands.

21. 1st ind. (Ltr., Deputy Comdr., AFSWC to Comdr, ARDC, 12 Apr. 57, subj.: Personnel Manning of the 4951st Support Squadron (Test), Eniwetok, Marshall Islands), Comdr., ARDC to Comdr., AFSWC, 16 May 57.

22. Memo for the Commander, 4950th Test Gp. (N), 15 May 57, subj.: Use of Military Police in Lieu of Air Police on Eniwetok During Operational Periods.

23. General Order #51, Hq. AMC, 25 Sep. 57.

24. General Order #103, Hq. Military Air Transport Service, 3 Oct. 57.

25. General Order #113, Hq. Military Air Transport Service, 21 Oct. 57.

26. Memo, No. 7, Security Div. to several addressees, 30 Sep. 57, subj.: Pre-Test Announcement of Forthcoming Tests.

AFWL/ HQ

AFWL/HO

27. General Order #1, Hq. Task Gp. 7.4 (PROVISIONAL), 3 Oct. 57.

28. Personnel Actions Memo #83, par. 2, Hq. 4950th Test Gp. (M), 16 Oct. 57.

29. Special Order #1, TBU, Prov., 10 Oct. 57.

30. General Order #1, TBU, Prov., 7 Oct. 57.

31. TWX 51415, C/S, USAF to Comdr. TG 7.4, 11 Oct. 57.

32. Ltr., Comdr., Task Gp. 7.4 to several addressees, subj.: Monitor Training, 29 Oct. 57.

33. Memo for the Comdr., 10 Oct. 57, subj.: Trip Report, Lt. Col. W. B. Walker, Jr.

34. Photo, Test Array Board, CACTUS, 6 May 58.

35. Photo, Mission Execution Board, CACTUS, 6 May 58.

36. Photo, Test Array Board, Fin, 12 May 58.

37. Photo, Mission Execution Board, Fin, 12 May 58.

38. Photo, Test Array Board, BUTTERNUT, 12 May 58.

39. Photo, Mission Execution Board, BUTTERNUT, 12 May 58.

40. Photo, Test Array Board, KOA, 13 May 58.

41. Photo, Mission Execution Board, KOA, 13 May 58.

42. Photo, Test Array Board, [illegible], 16 May 58.

43. Photo, Mission Execution Board, [illegible], 16 May 58.

44. Photo, Test Array Board, [illegible], 21 May 58.

45. Photo, Mission Execution Board, [illegible], 21 May 58.

46. Photo, Test Array Board, [illegible], 22 May 58.

47. Photo, Mission Execution Board, [illegible], 22 May 58.

AFWL/HQ

[redacted]

AFWL/HO

7

[redacted]

v

48. Photo, Test Array Board, YELLOWWOOD, 26 May 58.

49. Photo, Mission Execution Board, YELLOWWOOD, 26 May 58.

50. Photo, Test Array Board, MAGNOLIA, 27 May 58.

51. Photo, Mission Execution Board, MAGNOLIA, 27 May 58.

52. Photo, Test Array Board, TOBACCO, 30 May 58.

53. Photo, Mission Execution Board, TOBACCO, 30 May 58.

54. Photo, Test Array Board, SYCAMORE, 31 May 58.

55. Photo, Mission Execution Board, SYCAMORE, 31 May 58.

56. Photo, Test Array Board, ROSE, 3 Jun. 58

57. Photo, Mission Execution Board, ROSE, 3 Jun. 58

58. Photo, Test Array Board, UMBRELLA, 9 Jun. 58.

59. Photo Mission Execution Board, UMBRELLA, 9 Jun. 58

60. Photo, Test Array Board, MAPLE, 11 Jun. 58.

61. Photo, Mission Execution Board, MAPLE, 11 Jun. 58.

62. Photo, Test Array Board, ASPEN, 15 Jun. 58

63. Photo, Mission Execution Board, ASPEN, 15 Jun. 58.

64. Photo, Test Array Board, WALNUT, 15 Jun. 58

65. Photo, Mission Execution Board, WALNUT, 15 Jun. 58.

66. Photo, Test Array Board, LINDEN, 18 Jun. 58

67. Photo, Mission Execution Board, LINDEN, 18 Jun. 58.

68. Photo, Test Array Board, REDWOOD, 28 Jun. 58.

[redacted]

AFWL/HQ

69. Photo, Mission Execution Board, ELDER and REDWOOD, 28 Jun. 58.

70. Photo, Test Array Board, ELDER, 28 Jun. 58.

71. Photo, Test Array Board, OAK, 29 Jun. 58.

72. Photo, Mission Execution Board, OAK, 29 Jun. 58.

73. Photo, Test Array Board, HICKORY, 29 Jun. 58.

74. Photo, Mission Execution Board, HICKORY, 29 Jun. 58.

75. Photo, Test Array Board, SEQUOIA, 2 Jul. 58.

76. Photo, Mission Execution Board, SEQUOIA, 2 Jul. 58.

77. Photo, Test Array Board, CEDAR, 3 Jul. 58.

78. Photo, Mission Execution Board, CEDAR, 3 Jul. 58.

79. Photo, Test Array Board, DOGWOOD, 6 Jul. 58.

80. Photo, Mission Execution Board, DOGWOOD, 6 Jul. 58.

81. Photo, Test Array Board, POPLAR, 12 Jul. 58.

82. Photo, Mission Execution Board, POPLAR, 12 Jul. 58.

83. Photo, Test Array Board, SCRUBOAK, 14 Jul. 58.

84. Photo, Mission Execution Board, SCRUBOAK, 14 Jul. 58.

85. Photo, Test Array Board, PINON, 18 Jul. 58.

86. Photo, Mission Execution Board, PINON, 18 Jul. 58.

87. Photo, Test Array Board, JUNIPER, 22 Jul. 58.

88. Photo, Mission Execution Board, JUNIPER, 22 Jul. 58.

89. Photo, Test Array Board, OLIVE, 25 Jul. 58.

90. Photo, Mission Execution Board, OLIVE, 25 Jul. 58.

[redacted]

AFWL/ HQ

AFWL/HO

91. Photo, Test Array Board, PINE, 27 Jul. 58.

92. Photo, Mission Execution Board, PINE, 27 Jul. 58.

93. Photo, Test Array Board, QUINCE, 6 Aug. 58.

94. Photo, Mission Execution Board, QUINCE, 6 Aug. 58.

95. Genreal Order #3, Hq., Task Gp., 7.4, Prov., 6 Aug. 58.

AFWL/HQ

[redacted]

LIST OF CHARTS, PICTURES, AND ILLUSTRATIONS

Title	Page
Colonel William B. Kieffer, Commander.	Frontispiece
Organizational Chart of Task Group 7.4	.following 126
Organizational Chart of Test Aircraft Unit	.following 128
Organizational Chart of Test Base Unit	.following 133
Organizational Chart of Test Services Unit	.following 134
Task Group 7.4 Organization Chart for NEWSREEL . . .	.following 144
Calendar of Events	.following 153
Aircraft Participation	.following 155

[redacted]

AFWL/HQ

[redacted]

[redacted]

CHRONOLOGY

4 March	1957	Joint Task Force SEVEN Conference on Support Requirements for Operation HARDTACK.
29 April	1957	Issuance of message constituting authority for initial planning for Operation HARDTACK.
1 October	1957	Organization of Task Group 7.4.
3 October	1957	Assignment of Colonel William B. Kieffer as Commander of Task Group 7.4.
11 October	1957	Final book message issued by United States Air Force.
29-30 October	1957	Logistics Planning Conference held at Kirtland Air Force Base, New Mexico.
29 November	1957	Planning Directive was published.
9 January	1958	Movement Directive was published by United States Air Force.
6 February	1958	First echelon of Task Group 7.4 arrived at Eniwetok.
19 February	1958	Operation Plan 1-58 was published.
11 March	1958	Opening of Task Group 7.4 at Eniwetok.
14 March	1958	Operational phase of HARDTACK began.
21 March	1958	Series of HARDTACK rehearsals was begun.
6 April	1958	Air Operations Center became fully operational.
28 April	1958	YUCCA detonated from a mid-air location.

AFWL/ HQ

[redacted]

AFWL/HO

[redacted]

6 May	1958	CACTUS detonated off YVONNE Island, Eniwetok Atoll.
12 May	1958	BUTTERNUT and FIR detonated in first dual shot accomplished for HARDTACK, BUTTERNUT at YVONNE Island, Eniwetok Atoll, FIR at CHARLIE Island, Bikini Atoll.
13 May	1958	KOA fired at GENE Island, Eniwetok Atoll.
16 May	1958	WAHOO fired at IRWIN Island, Eniwetok Atoll.
21 May	1958	HOLLY detonated at YVONNE Island, Eniwetok Atoll.
22 May	1958	NUTMEG fired at TARE Island, Eniwetok Atoll.
26 May	1958	YELLOWWOOD detonated at JANET Island, Eniwetok Atoll.
27 May	1958	MAGNOLIA fired at YVONNE Island, Eniwetok Atoll.
30 May	1958	TOBACCO fired at JANET Island, Eniwetok Atoll.
31 May	1958	SYCAMORE detonated at CHARLIE Island, Bikini Atoll.
3 June	1958	ROSE fired at YVONNE Island, Eniwetok Atoll.
9 June	1958	UMBRELLA detonated at HENRY Island, Eniwetok Atoll.
11 June	1958	MAPLE fired at FOX Island, Bikini Atoll.
15 June	1958	Second dual shot accomplished. WALNUT at JANET Island, Eniwetok Atoll, and ASPEN at CHARLIE Island, Bikini Atoll.

[redacted]

AFWL/HQ

18 June	1958	LINDEN fired at YVONNE Island, Eniwetok Atoll.
28 June	1958	ELDER fired at JANET Island, Eniwetok Atoll, and REDWOOD fired at FOX Island, Bikini Atoll in the third dual shot of the HARDTACK test series.
29 June	1958	Dual shot accomplished, HICKORY at TARE Island, Bikini Atoll, and OAK at ALICE Island, Eniwetok Atoll.
2 July	1958	SEQUOIA tested at YVONNE Island, Eniwetok Atoll.
3 July	1958	CEDAR fired at CHARLIE Island, Bikini Atoll.
6 July	1958	DOGWOOD detonated at JANET Island, Eniwetok Atoll.
12 July	1958	POPLAR detonated at CHARLIE Island, Bikini Atoll.
14 July	1958	SCAEVOLA fired at YVONNE Island, Eniwetok Atoll.
18 July	1958	PISONIA fired at YVONNE Island, Eniwetok Atoll.
22 July	1958	JUNIPER fired at TARE Island, Bikini Atoll.
23 July	1958	OLIVE detonated at JANET Island, Eniwetok Atoll.
27 July	1958	PINE fired at JANET Island, Eniwetok Atoll.
31 July	1958	TEAK, an ultra high altitude shot, fired near Johnston Island.
6 August	1958	QUINCE fired at YVONNE Island, Eniwetok Atoll.

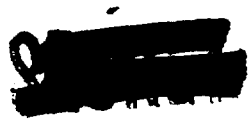
AFWL/HQ

AFWL/HQ

14

11 August	1958	ORANGE, a high altitude shot, detonated near Johnston Island.
18 August	1958	FIG detonated at YVONNE Island, Eniwetok Atoll.
15 August	1958	Headquarters Task Group 7.4 at Eniwetok closed at 2400Z hours.

AFWL/HQ



AFWL/HQ

[redacted]

CHAPTER I

REDWING/HARDTACK INTERIM PERIOD PLANNING

A. INTRODUCTION

The first official announcement of plans for Operation HARDTACK was provided to Air Force Special Weapons Center on 10 June 1955, when Colonel H. E. Parsons of the Armed Forces Special Weapons Project wrote that HARDTACK was scheduled for the spring of 1957 at an undetermined location. Approximately 10 shots were included in the planned series.[1]

By the end of 1955, scheduling for the testing program had become more firm, for an 14 December 1955 Colonel Parsons stated that "present plans call for Operation PILGRIM at the Nevada Test Site in the Spring of 1957 and for Operation HARDTACK at the Pacific Proving Grounds in the Spring of 1958." He stated, furthermore, that "no other information concerning the test is available and it is assumed that the support required of your command [that is, Special Weapons Center] will be similar to that required for TEAPOT and REDWING."[2]

From December 1955 to February 1957 very little definitive information concerning Operation HARDTACK was available. On 26 February 1957, however, the first version of the HARDTACK schedule accessible in the Special Weapons Center was announced.[3] The schedule reaffirmed that HARDTACK was planned "to be held in the Pacific in the Spring of 1958."

[redacted]

AFWL/HQ

AFWL/HO

The following is quoted from the schedule:

> It should be emphasized that this is the first information available relative to this operation; therefore, the schedule should be considered as very preliminary and will probably change considerably before a final program is established.

Some 12 devices of the Los Alamos Scientific Laboratory were listed in the test program, the largest being of [redacted] yield and the smallest of [redacted] Sixteen devices of the University of California Radiation Laboratory were included on the list, several of these shots being dependent upon the results of Operation PILGRIM*; the largest was expected to produce a yield of [redacted] and the smallest a yield of [redacted]

On 6 June 1957 another schedule containing "very preliminary information" was issued.[4] This schedule revealed several changes to the proposed program. Ten Los Alamos Scientific Laboratory devices were listed, the largest with a [redacted] yield and the smallest with a [redacted] these yield limits being similar to those of the 26 February schedule. Seventeen devices of the University of California Radiation Laboratory were under consideration, the largest of approximately [redacted] and the smallest of [redacted] six were [redacted]

---

* The designation Operation PILGRIM was changed to Operation PLUMBBOB, as announced in the third amendment (dated 21 Jan 57) to the Planning Directive 3-56, 4950th Test Gp. (W), 21 Nov 56. In this history the two designations are used interchangeably.

In addition to these of Los Alamos and the Radiation Laboratory, five more shots, listed as Department of Defense devices, were scheduled:

1. [redacted] with a readiness date of 1 May 1958. This was to be a very high altitude test, at 92,000 feet, the device being borne by a free balloon.

2. [redacted] yield, with a readiness date of 1 May 1958. An ultra high altitude test from a Redstone missile carrier, the device was to be detonated at 250,000 feet.

3. [redacted] yield, having a readiness date of 8 May 1958. The carrier of this weapon was unspecified, although the test was listed as a very high altitude test (100,000 feet).

4. [redacted] having a readiness date of 1 June 1958. This shot, named PERCOLATOR, was scheduled as a shallow water test.

5. [redacted] having a readiness date of 22 June 1958. Known as LITTLE WIGWAM, this was to be a deep water test.

Because of the lack of specific HARDTACK planning information, the 4950th Test Group (Nuclear) concentrated its effort during late 1956 and early 1957 on Operation PLUMBBOB, which entered its operational phase in May 1957. Nevertheless, several noteworthy HARDTACK planning activities were conducted by the 4950th during this period.

Colonel William B. Kieffer, the future Commander Task Group 7.4, and Colonel Paul R. Wignall, Commander of the 4950th Test Group (Nuclear),

AFWL/HQ

together with principal members of his staff, attended the Joint Operations, Supply, Construction, and Transportation Conference on 19 and 20 February 1957 at Headquarters Joint Task Force SEVEN. This conference had as its objective the establishment and coordination of operations requirements, base facility construction, supply, maintenance, equipment modification, transportation, and other logistical concepts for Operation HARDTACK. The agenda was divided into several subconferences.

Colonel Donnell Massey presented to the conferees a brief concept of Operation HARDTACK.[5] The test series, according to the concept, was to include 31 shots. A point of great importance was the announcement that HARDTACK would differ somewhat from REDWING in that the University of California Radiation Laboratory, having a large percentage of high yield shots, would conduct most of their operations at Bikini Atoll and the Los Alamos Scientific Laboratory would utilize the Eniwetok complex. The shots under sponsorship of the Department of Defense would be fired in both atolls, the underwater shots being conducted at Eniwetok and the high altitude shots probably at Bikini. In some instances "it may be necessary to move some of the shots from Eniwetok to Bikini and vice versa," making imperative the maintenance of operational flexibility. The requirement for a high yield dual atoll capability was thus explained and emphasized. Inasmuch as [redacted]

[redacted]

AFWL/HQ

AFWL/HQ

[redacted] there would be a requirement to have aircraft and surface transportation in sufficient quantity for sampling and for emergency evacuation at both atolls simultaneously.

As early as 3 December 1956, the Air Force Special Weapons Center had anticipated the possibility of providing and maintaining a dual shot capability during HARDTACK, as well as "the possibility of simultaneous testing in both the Pacific /Eniwetok/ Proving Ground and Nevada Test Site."[6] Center had learned from Joint Task Force SEVEN that

> The current concept being envisaged for Operation HARDTACK contemplates the probable firing of two shots on the same day on some occasions, and perhaps in a few instances, at the same time. However, while some additional aircraft will be required, it is realized that a complete dual sampling capability probably cannot be supported, nor is it justified. Therefore, in order to have an adequate number of sampling aircraft available on dual shot days, attempts will be made to have one of the scheduled shots a low yield detonation requiring relatively limited participation so far as sampling aircraft is concerned.

At the Joint Task Force SEVEN conference, Dr. Gaelen Felt of the Los Alamos Scientific Laboratory outlined broadly the scope of the HARDTACK technical phases, which included, besides the proposed number of shots, the readiness dates and predicted yields, stressing especially the two-atoll (or dual shot) concept of firing. The over-all HARDTACK operation was to follow generally the REDWING concept; the two-atoll firing concept had been used successfully during REDWING on two different occasions, when on 28 May 1956 ZUNI was detonated in the Bikini Atoll

[redacted]

AFWL/HQ

AFWL/HQ

and YUMA was fired in the Eniwetok Atoll, and on 12 June 1956 when FLATHEAD was accomplished in the Bikini Atoll and BLACKFOOT was fired in the Eniwetok Atoll. [7]

After these introductory addresses by Colonel Massey and Dr. Felt, the conference was given over to a general discussion of all support requirements which were to be presented to the Joint Chiefs of Staff for approval of adequacy. Subsequently, detailed consideration of the various aspects of HARDTACK was accomplished in the subconferences.

Indication of Task Group 7.4 plans for coping with the dual shot problem was contained in a letter [8] to Joint Task Force SEVEN on 24 July 1957. The letter stated:

> When definite aircraft participation is determined a turn-around study will be made for all aircraft and results will be given to TG 7.1. TG 7.1 will be requested to consider the turn-around capability and timings when scheduling dual shots. Sixteen (16) B-57's will be available for sampling operations and this should be sufficient to give us a dual shot capability.

The letter of 24 July also outlined the Task Group 7.4 plans for rehearsal programs to take place before the beginning of the operational period of HARDTACK. [9] Overseas rehearsals were to be scheduled on a scope similar to that of REDWING (which had six, one of which was a dual shot rehearsal) but dependent upon the number of participating aircraft. Inasmuch as fewer critically-placed aircraft were anticipated for HARDTACK, there appeared a need for fewer rehearsals. A rehearsal program

was to be determined upon the reception of definite information on the number and types of participating aircraft.

The use of Taongi Atoll as an additional firing site in the Eniwetok Proving Ground was contemplated in the early planning stages of HARDTACK. Task Group 7.1 in January 1957 expressed a desire to have an early decision whether or not the additional atoll would be used.[10] Many operational problems were inherent in the use of Taongi, and of the greatest importance to Task Group 7.4 was the necessity for extablishing control facilities for aircraft in the Taongi area. Colonel Massey of Joint Task Force SEVEN stated that the use of Taongi appeared to require a policy decision from the Atomic Energy Commission and the State Department. Until a decision was provided, no definite planning to include shots at Taongi could be completed.

By 1 May 1957, no decision on the Taongi issue had been reached, although the University of California Radiation Laboratory was still attempting to secure approval of the atoll as a shot site. A memo on 1 May stated:

> Operational plans envision that all operations /involving Taongi/ will be conducted from afloat. No personnel to be stationed ashore, and no runway to be constructed. Since Taongi lies 475 NM from Eniwetok, 324 from Wake, 356 from Kwajalein, and 285 from Bikini, there should at least be a strip prepared for real emergencies. This recommendation is made even in light of the heavy contamination Taongi will surely get.

Again, on 16 May 1957, a letter[12] from Joint Task Force SEVEN,

AFWL/HQ

[redacted]

AFWL/HO

regarding an aspect of airlift in the proving ground, advised the 4950th that the use of Taongi as a third firing site had not yet been either approved or disapproved. The letter made note of the fact that acquisition of Taongi would modify the HARDTACK operational concept, and support requirements would have to be revised accordingly.

The problem was eliminated when, on 30 July 1957, Joint Task Force SEVEN informed the 4950th that Taongi "will not be a firing site on Operation HARDTACK." Therefore, among other extensive problems circumvented, "the air control area in the Eniwetok Proving Ground will not be increased over that of Operation REDWING."[13]

Colonel Kieffer and the 4950th Commander, with principal members of his staff, visited the Eniwetok Proving Ground in late March 1957.[14] The group inspected several areas of activity of the 4951st Support Squadron (Test), including manning, flying and ground safety, control and maintenance of supplies and equipment, and operational procedures. Of particular interest to the Commander was the proving ground construction program which appeared to be adequate to support the needs of Task Group 7.4. Airfield rehabilitation, especially runway repair, was proceeding satisfactorily, although the runway seemed to be less well sealed than was the older surface, giving rise to the possibility of deterioration under the effects of jet blast and constant usage.

A development of major importance in the planning for HARDTACK,

and in the over-all nuclear testing program for future tests, was the establishment within the Special Weapons Center of the position of Deputy Commander for Overseas Tests. Colonel William B. Kieffer, who was relieved of duty as Special Weapons Center Deputy Commander, was assigned to the previously unfilled position on 15 July 1957.[15] This position was designed to provide for Colonel Kieffer, and for those officers who would later occupy the space, a period of orientation and observation preparatory to assumption of command of Task Group 7.4 upon its activation. The new commander of Task Group 7.4 would automatically assume the command of the 4950th Test Group (Nuclear).

B. OPERATIONS

During the REDWING/HARDTACK interim planning period, the Operations Directorate was engaged in the conduct of air support for Operation PLUMBBOB at the Nevada Test Site. Several HARDTACK planning actions were accomplished, however.

Planning Schedule. The Joint Task Force SEVEN tentative planning schedule for HARDTACK was published on 27 November 1956.[16] The cover letter to the schedule advised that, because of a lack of firm information, the schedule was based upon the assumption (1) that the scope of HARDTACK would be similar to but greater than that of Operation REDWING and (2) that the first detonation of Operation HARDTACK would occur on 1 May 1958.

[redacted]

AFWL/HQ

AFWL/HO

Based in part upon the Joint Task Force schedule, a planning schedule for the 4950th (Task Group 7.4) was compiled in March 1957 by the Operations Directorate.[17] This schedule, listing all known requirements and projects, was designed to provide a constant monitoring of all planning programs to insure punctual completion. According to this schedule:

1. Aircraft modifications were to be completed by 15 December 1957.

2. The Task Group 7.4 Operation Plan/Order was to be completed by 15 February 1958.

3. Materiel was to be pre-positioned in the forward area by 1 March 1958.

4. The Air Operations Center was to be in place at Eniwetok by 1 March 1958.

5. The advance echelon of Task Group 7.4, the Test Aircraft Unit, and the Test Services Unit was to depart for the proving ground on 1 February 1958, the move to be completed by 15 February.

6. Headquarters of the Test Services Unit, Test Aircraft Unit, and Test Base Unit were to be activated in the forward area on 20 March 1958.

7. Air rehearsals were to begin on 25 March 1958.

8. The roll-up phase was to be completed 45 days after the last shot.

Significantly, no estimated date for the termination of the operational phase of HARDTACK was given in either the Joint Task Force SEVEN or the 4950th schedule.

Book Message. A draft of the preliminary book message, which had

[redacted]
AFWL/ HQ

AFWL/HO

25

as its purpose the constitution of authority for Air Force commands to begin initial planning for HARDTACK, was prepared by the 4950th Test Group (Nuclear) early in March 1957 and forwarded through channels to Headquarters United States Air Force on 29 April 1957.[18] The message stated that the tentative starting date of HARDTACK was 1 May 1958, and that approximately 30 devices would be tested. Also,

> The United States Air Force will be the executive agent for the test series and Air Force participation will follow the general pattern established during previous overseas nuclear tests. ARDC will man, train, and organize Air Task Group 7.4. The Air Task Group will consist of three units, (1) a Test Base Unit provided by ARDC, (2) a Test Aircraft Unit provided by major USAF Commands and (3) a Test Support Unit [Test Services Unit] provided by MATS. The mission and function of Task Group 7.4 and subordinate units will parallel those assigned for Operation REDWING.

A draft of the final book message[19] more extensive and detailed than the preliminary book message, was prepared and forwarded in August 1957 to Special Weapons Center for submission to Headquarters United States Air Force. The final book message had not been issued at the end of September 1957. This final message, although known to be undergoing considerable revision at Headquarters United States Air Force was intended to outline the organizational structure of Task Group 7.4 for HARDTACK and to delineate broadly the responsibilities of Air Force Major Commands in providing personnel and resources to the Commander, Task Group 7.4.

AFWL/HQ

[redacted]

A supplement to the draft of the book message set forth Air Force policies concerning Air Force funding support of Task Group 7.4. This supplement defined funds, and sources of funds, under the two major categories, Normal Operating Expenses and Extra Expenses. Normal Operating Expenses "will be provided by the Service concerned," and included such expenses as pay and allowances of personnel, personnel subsistence, certain travel and transportation costs, and costs for standard equipment and supplies. Extra Expenses "will be financed with funds made available to the Task Force Commander," and included such expenses as equipment and aircraft modification costs, Test Site Construction costs, and costs of equipment required by the task force and not normally stocked or standard to the services.

Aircraft Requirements. At the HARDTACK conference at Headquarters Joint Task Force SEVEN on 20 February 1957, a major item of discussion was that concerning aircraft requirements. A preliminary list, containing approximately 62 aircraft, was compiled.[20]

The list included 10 WB-50 aircraft to be used for weather reconnaissance. A possibility existed that this number was insufficient in view of the proposed use of the two-atoll (dual shot) concept. Should further study justify the need for additional aircraft a supplement request would be submitted to United States Air Force.

Three C-54 aircraft were tentatively planned for documentary

photography; however, no requirements were yet defined for documentary photography. Inasmuch as such a requirement had existed during previous test series, the requirement for HARDTACK also was assumed to exist.

Seven SA-16 aircraft were listed, to be used for search and rescue operations and for weather island resupply. The conferees discussed the current over-all shortage of SA-16 aircraft, noting also that there was no substitute for this type inasmuch as there was no other operational amphibious aircraft in the Air Force. Colonel Massey of Joint Task Force SEVEN stated that UF-type aircraft (the Navy equivalent of the SA-16) were being sought for use at Kwajalein, but, because of the different mission intended for the UF's, they could not be substituted for the SA-16's. Colonel Massey asserted that, if the aircraft could not be provided from Air Force sources, a decision must be made at the level of the Joint Chiefs of Staff to provide similar equipment from other sources. The problem was to be outlined in a paper to the Joint Chiefs of Staff.

Three C-54 aircraft were planned tentatively for logistic support in providing inter-atoll passenger and freight transportation. The conferees were informed that General Canterbury, the Special Weapons Center Commander, was planning to replace the four C-47 aircraft permanently assigned to Eniwetok with two C-54 type aircraft. These would be in addition to the three planned for increased logistic support requirements during the Operation.

AFWL/HQ

Eight L-20's were planned to supplement helicopters in providing inter-island logistic support.

Ten H-21 or H-19 aircraft, to be utilized for inter-island airlift in the Eniwetok Atoll, were to replace the H-19's which were used during REDWING. Although less suitable in some respects than the H-19, the H-21 was considered the only feasible substitute for the H-19 which was being phased out of use by the Air Force. A temporary requirement for H-21's at Bikini during the build-up period was to be supplied from the total requirement.

Two L-21 aircraft were required to alleviate the heavy airlift burden placed upon the eight L-20's. The L-21's would provide inter-island transportation and also proficiency flying for rated flag and general officers.

Sampling would be accomplished by 16 B-57 aircraft, of which six should be B-57D's. Lieutenant Colonel W. H. Edwards of Headquarters United States Air Force advised that B-57D's were not available in large numbers, indicating that they probably could not be acquired for HARDTACK. Colonel Massey replied then that if there must be a substitute for the B-57D's, it must be B-57B's because scientific personnel did not feel that F-84 aircraft had sufficient range and ceiling to fulfill sampling requirements. Furthermore, a large number of sampling tanks designed for B-57's had been fabricated, and fabrication of tanks for other types

of aircraft would raise a requirement for additional funds.

The only Air Force effects aircraft listed was a B-52. Two aircraft, an FJ4 and an A4D, were programmed for Navy effects tests. Two RB-36's were planned for airborne instrumentation, primarily for the very high altitude balloon shot but possibly also for the other two high altitude shots.

A Department of Defense requirement for an unspecified number of helicopters also was announced. Lieutenant Colonel Judson D. Wilcox of the Armed Forces Special Weapons Project stated that Army had listed a requirement for six helicopters for sample recovery and that Air Force would need from 1 to 10 helicopters for the same purpose. Navy estimated that approximately eight helicopters would be required during the preparation of the target array for the underwater shots. Colonel Emil A. Lucke of Task Group 7.1 had discussed this requirement with several agencies and, thus, expressed the opinion that the numbers listed represented a duplication in that the requirements were to be met by Air Force helicopters at Eniwetok and Navy or Marine helicopters at Bikini. He advised, however, that a firm decision could not be made until more information were available regarding the test projects to be authorized. Colonel Massey, on the other hand, added that early planning should allow for all probable requirements and unnecessary allotments could later be deleted.

Colonel Massey, early in February 1957, learned that a "rumored"

increase in Air Force effects aircraft participation during HARDTACK was possible.[21] To verify this information, Colonel Massey contacted Armed Forces Special Weapons Project and was assured that no increase was then planned. The proposed effects participation still included only a B-52 and the two Navy aircraft, an FJ4 and an A4D, which represented a considerable decrease of the effects program under that of REDWING.

In a letter[22] to Joint Task Force SEVEN on 26 June 1957, the 4950th outlined the HARDTACK airlift aircraft requirement. The requirement was based upon several assumptions:

> 1. That the frequency of flights required by Joint Task Force SEVEN and the task groups, between Eniwetok and Bikini, must be of primary consideration in determining aircraft support required.
>
> 2. That two C-54 aircraft will be assigned to the 4951st Support Squadron (Test) and that all C-47 aircraft currently assigned to the 4951st will be withdrawn prior to, or at the beginning of, the operational period of HARDTACK (approximately 1 March 1958).
>
> 3. That there will be no Documentary Photography Element participating in HARDTACK from which some airlift support would be available. If it develops that there will be a Documentary Photography Element of three C-54's and the same support is received from them as during REDWING, the number of C-54's planned for the 4951st can be reduced by one. During REDWING the Documentary Photography aircraft provided all airlift to Tarawa; an additional site at Naru [Nauru], some 800 miles from Eniwetok, will require support.
>
> 4. That there will be a 25 per cent traffic increase over the support provided for REDWING, based upon a Joint Task Force SEVEN statement that the scope of HARDTACK

would be greater than that of REDWING and that Nauru would be added to the weather network.

5. That the length of the operational period of HARDTACK will correspond to that of REDWING.

6. That support aircraft will be able to maintain an average of 65 flying hours per month throughout the operational period.

Based upon these assumptions and upon REDWING airlift operations records a monthly requirement, in addition to the two C-54's of the 4951st, was submitted. This requirement, together with the projected number of flying hours, for each month (March through July) is shown below:

	March	April	May	June	July
Flying hours	130	195	260	195	195
Aircraft required	2	3	4	3	3

Several changes in the aircraft requirements list occurred before the end of July 1957. A second list, used at a Joint Task Force SEVEN aircraft requirements conference in July 1957, contained some 85 aircraft, including the following:

1. 10 WB-50's for weather reconnaissance.

2. 4 C-54's for documentary photography.

3. 7 SA-16's for search and rescue and for weather island resupply.

4. 4 C-54's for inter-atoll airlift.

5. 8 L-20's for inter-island airlift.

6. 15 H-19's or H-21's for inter-island airlift at Eniwetok.

7. 2 L-19's for inter-island airlift and proficiency flying.

8. 10 B-57B's for sampling.

9. 6 B-57D's for sampling.

10. 1 B-52 for effects.

11. 2 RB-36's for data collection on the high altitude shots.

12. 2 FJ4's for Navy effects.

13. 2 A4D's for Navy effects.

14. 3 B-57's for indirect bomb damage assessment, operating from Guam.

15. 1 P2V for Navy effects support.

16. 8 UF aircraft for search and rescue and for island resupply. (Placement of these aircraft for operational control was undetermined.)

Communications and Air Operations Control. The Task Group 7.4 draft of the Preliminary Communications Plan for HARDTACK, based essentially upon the REDWING plan, was completed in November 1956 and was submitted through channels to Headquarters United States Air Force for coordination. The plan, with modifications, was approved also by Special Weapons Center, Air Research and Development Command, and Joint Task Force SEVEN. During the spring of 1957 several communications conferences were held with Air Research and Development Command, Headquarters United States Air Force,

AFWL/HQ

[redacted]

AFWL/HO

33

and Joint Task Force SEVEN to determine communications requirements and procedures. From these conferences and from comments received on the Preliminary Plan, the final Communications Plan for HARDTACK was written, being published on 18 June 1957.[23] The final plan set an "operational ready" date of 1 January 1958 for all communications facilities.

The plan stated that most of the communication and electronics equipment required for Task Group 7.4 facilities was returned to the Zone of Interior at the completion of REDWING and was being processed through Sacramento Air Materiel Depot for overhaul. The equipment was to enter storage at Maywood Air Force Station under a special project designated [redacted] After re-assembly according to scheme numbers at Maywood, the equipment was to be shipped to Eniwetok for installation.[24]

According to the plan, the Task Group 7.4 communication-electronics mission was tripartite: (1) to provide communication facilities and navigation aids for safe and efficient air operation in the Eniwetok Proving Ground; (2) to provide communication facilities for the collection and dissemination of weather and radiological data in support of Operation HARDTACK; and (3) to provide means of handling administrative and operational messages to and from points outside the proving ground.

Major differences between the HARDTACK plan and the plan used for REDWING were as follows:

1. TACAN would replace TVOR as a navigational aid. A Task Group 7.4 request early in 1957 for a permanent

TACAN facility in the proving ground was disapproved by Joint Task Force SEVEN: instead, a mobile unit was to be used, to afford utilization of the facility at other sites during interim periods. A need for approximately 75 AN/ARN-21 radar units (airborne TACAN) for installation in HARDTACK aircraft had been declared as early as February 1956.25

2. Raydist would be eliminated as a positioning device.

3. The 1st Mobile Communications Squadron would furnish communications personnel and equipment as a unit for HARDTACK.

A letter,[26] accompanied by a study, in June 1957, requested that Joint Task Force SEVEN approve the establishment of a shore-based Air Operations Center at Bikini. This request was disapproved by the task force in July;[27] the reply to the request revealed several important developments in regard to aircraft control for HARDTACK. First the Combat Information Center aboard the USS Estes or another suitable vessel was being modified to effect communication and control improvements; these improvements would insure UHF air-ground communication for longer distances, would provide multi-channel selection, equipment operation flexibility, and inter-position communications within the Combat Information Center, as had been recommended by Task Group 7.4 after REDWING, and would provide broad-band receivers to contact aircraft not precisely on frequency. Lack of these improvements had proved troublesome throughout REDWING.

Second, inasmuch as Taongi was not to be a firing site for HARDTACK, the air control area would not be increased over that of REDWING.

AFWL/HQ

AFWL/HQ

35

Third, the control of high performance aircraft on Bikini shots would be far less complex than was the control during REDWING because of the smaller number of effects aircraft programmed for HARDTACK.

Fourth, sampling aircraft would again be controlled with airborne assistance from dual-place B-57's.

Fifth, "evacuation of Bikini will be required on at least 4 and perhaps 5 of the high yield Bikini shots," making necessary air operations control from shipboard during these shots.

Therefore, as in REDWING, air control in the Eniwetok area would be provided by the Air Operations Center and in the Bikini area by the improved Combat Information Center.

Airlift and Island Re-Supply. During Operation REDWING, accurate records were kept of all airlift flights, including flying time, and passengers and cargo transported. These figures were used to plan for the HARDTACK airlift support requirements. Support requirements for both inter-island and inter-atoll airlift then were submitted on a basis of a proposed 25 per cent increase over those of REDWING.

By July 1957, therefore, a request had been forwarded for six C-54 or C-123 aircraft for inter-atoll and weather island re-supply airlift; for 15 H-19 or H-21 aircraft for inter-island airlift; and for three SA-16 aircraft for re-supply of those weather islands having no airstrip.

Six L-20 aircraft and four helicopters were to be used to fulfill interim airlift requirements at both Eniwetok and Bikini. Approximately 15 February 1958, a Marine helicopter unit was to begin phasing-in at Bikini. A total of ten Air Force helicopters was to be required in the proving ground by 1 February 1958, some of these to be used until the Marine unit reached full operational strength.

(For more information on airlift and island re-supply, see "Aircraft Requirements," this chapter.)

Sampling. In January 1957, Colonel Massey of Joint Task Force SEVEN stated that the task force had received a letter

> . . . originated by the UCRL and transmitted by Dr. Felt [Dr. Gaelen Felt of Task Group 7.1] stating that several more B-57B's and a few B-57D's will be requested for sampling in HARDTACK. Colonel Massey also stated that Dr. Graves [Dr. Alvin C. Graves of Task Group 7.1] intends to pursue this requirement through Air Force channels. Dr. Graves feels that since the sampler requirement is a continuing one, this line of attempted procurement is proper. . . . It was pointed out that due to the high priority projects in which the B-57D's are now engaged, it is extremely doubtful that they will be available for assignment as samplers. . . .[29]

In the aircraft requirements submitted to Joint Task Force SEVEN, 16 B-57's were requested, to provide a dual shot sampling capability. Of this number, ten B-57's were to be provided by the 4926th Test Squadron, and six B-57D's were to be provided by Strategic Air Command, all to be in place at Eniwetok by 1 April 1958 and to be operational 15 days later.

Very High and Ultra High Altitude Tests. During December 1956, Major George L. Trimble of the Directorate of Operations was appointed Task Group 7.4 Project Officer for the high altitude tests scheduled for HARDTACK. Major Trimble assisted the Center Research and Development Directorates in preparing a Center study on the Ultra High Altitude Project. The principal problems of this study were the determinations of (1) the type of carrier vehicle to transport a [redacted] to 200,000 feet, (2) the type warhead to be utilized and (3) the instrumentation requirements. Major Trimble and other representatives of the 4950th Test Group (Nuclear) attended several conferences while this study was being prepared.

In January 1957, Armed Forces Special Weapons Project recommended to the Department of Defense that the Army Redstone missile be used as a carrier vehicle for the Ultra High Altitude shot. This proposal was accepted, and responsibility for subsequent planning thus fell to other agencies with which the 4950th had no direct relationship. Because of this assignment of responsibility, the 4950th would not be involved in the Ultra High Altitude Test except perhaps to position aircraft in the test array, a problem which would require no great degree of preliminary planning.

Similarly, the 4950th was not scheduled to perform planning for the Very High Altitude shots, inasmuch as the 4925th Test Group (Atomic), another Special Weapons Center organization, was given the responsibility for furnishing aircraft support. Task Group 7.4 would be concerned only

AFWL/HQ

with positioning of aircraft in the final test array and with providing certain maintenance and administrative services for project equipment and personnel in the Eniwetok Proving Ground.

C. MATERIEL

Major Materiel Planning Activities. Lieutenant Colonel Carl W. Robbins, Jr., 4950th Director of Materiel, among other 4950th representatives, attended the Joint Supply, Construction, and Transportation Conference held at Joint Task Force SEVEN on 19 February 1957. The conference was called to discuss and coordinate such Materiel matters as construction, supply, maintenance, transportation, and equipment modification.[30] This conference was divided into subconferences for consideration of various aspects of the HARDTACK logistical effort.

The first of these subconferences was a joint construction conference, designed to finalize Fiscal Years 1957-1958 construction projects and to establish the Fiscal Years 1959-1960 construction program for the Eniwetok Proving Ground. Several Air Force items were added to the Fiscal Years 1957-1958 program, including rehabilitation of runway and aprons at Eniwetok, pavement of the airfield road, and lean-to additions to the hangar. The Fiscal Year 1959 program established at the conference gave high priority to several Air Force needs which had long been of considerable concern to Task Group 7.4. These high priority items were as follows:

	ITEM	PRIORITY NUMBER
1.	New Hangar including two lean-to's	1-59
2.	Replacement of rawinsonde weather facility	2-59
3.	Rehabilitation of POL farm	4-59
4.	Landscaping of south perimeter of airfield	6-59
5.	Construction of Communications and Electronics shop	7-59
6.	Construction of AACS supply and maintenance building	8-59
7.	Construction of a 72-man barracks	10-59
8.	Rehabilitation of field maintenance shop, Building #82	12-59
9.	Construction of tire warehouse	13-59
10.	Construction of an airlift support building	14-59
11.	Construction of maintenance run-up pads and blast fences	16-59
12.	Construction of a control tower	17-59
13.	Replacement of Building #632 with squadron flight line maintenance building	21-59
14.	Construction of new quarters for Task Group 7.4 Commander	31-59
15.	Construction of a seaplane beaching ramp	32-59

AFWL/HQ

AFWL/HO

40

Thus, of the first 32 items in the Fiscal Year 1959 program, 15 items were for Air Force, several of which had been carried over from the Fiscal Year 1958 program.

Only three Air Force items were included in the Fiscal Year 1960 construction program, all of which were replacements for buildings already existing. These buildings were (1) Building #631, carpenter shed, (2) Building #90G, generator shop, and (3) Building #91A, old crash station.

The design of the proposed FRED runway extension was discussed in considerable detail among members of the 4950th, Albuquerque Operations Office (Atomic Energy Commission), Holmes and Narver, and Joint Task Force SEVEN. The existent runway, 6,850 feet long, was to be extended to a total length of 8,300 feet, including a 200 foot addition on the south and a 1,250-foot addition on the north end. On the north, the runway would extend to the water edge, with a slope not exceeding one per cent. This design was suggested by Holmes and Narver on 14 February 1957.

At a second subconference, policies and procedures for the submission of requisitions and for maintenance of equipment were discussed. The policies for submission and control of Air Force requisitions were essentially the same as were those for REDWING. The supply source was Headquarters Sacramento Air Materiel Area, Sacramento, California; Major Donald J. Brush, as in REDWING, was to be the Logistics Liaison Officer. Equipment and spare parts for the duration of the operation were to be shipped to

the forward area in time to support the operation. Vehicular requirements (see "Vehicle Requirements," this history) were to be made known to Task Group 7.2 no later than 210 days prior to the start of the operation.

Requirements for fuels and lubricants for Eniwetok and Bikini were to be assembled by the Air Force Accountable Officer and submitted to the Subarea Petroleum Office, Fuel Supply Depot, Pearl Harbor, Hawaii. (A planned expansion of the POL storage facilities at FRED would increase aviation fuel storage capacity by 840,000 gallons, thus eliminating outstanding current storage problems. [31])

Initial Air Force Supplies for all units of Task Group 7.4 were to be provided through the project kit procedure established on 20 August 1955 for Operation REDWING.

In a third subconference, transportation support, policies and procedures were delineated. Airlift was to be reserved for essential movement of cargo and personnel; routine movement of cargo and personnel would be made by surface craft as far as practicable. The Military Air Transport Service and its relationship to the test series was discussed at length, as was the sample return program and its requirements.

This conference clarified many aspects of HARDTACK Materiel support and provided a basis for the writing of the Logistics Concept for HARDTACK by the Director of Materiel. [32] The Logistics Concept, published on 10 July 1957, was developed as an aid for preliminary planning. More detailed

logistics information was to be provided in the Logistics Plan. The Logistics Concept described the logistics relationships of Task Group 7.4 to its elements, particularly in matters of supply, maintenance, and transportation.

The planning schedule still effective on 24 July 1957 called for the submission not later than September 1957 of requirements for prepositioned supplies and equipment. The late designation of elements to compose Task Group 7.4, however, prevented timely submissions of the requirements. This problem was expected to exist until issue of the book message.[33]

Planning was underway to establish a Maintenance Control Unit for HARDTACK, based upon the system utilized successfully during REDWING. Planning was completed by July 1957 to have Maintenance Control Unit personnel deploy to the proving ground in sufficient time to allow a complete operational check of the control unit prior to the beginning of the operational phase of HARDTACK. The control unit during REDWING assisted aircraft maintenance organizations in performing the maintenance mission. To enable Maintenance Control to expedite maintenance, to acquire supplies rapidly, and to supervise maintenance technicians, a Maintenance Control Unit communications network was established. This network provided communications between the various maintenance and supply offices and the offices of the Group Commander, the Director of Materiel, and Maintenance Control; flight line maintenance stations also were a part of the network.

This same system was planned for HARDTACK.

Planning for the movement of short-range aircraft was in progress by July 1957. According to the aircraft listed on requirements requests, the problem of shipping of short-range aircraft did not appear to approach the magnitude of the problem for REDWING when some 16 aircraft, including an F-101, were shipped to Eniwetok by surface vessel. Only approximately eight aircraft were to be transported by surface vessel for HARDTACK.

Long Range Construction. Because no agency other than the 4930th Support Group (Test) before REDWING had actively monitored interim Air Force construction in the proving ground, many difficulties were encountered from operation to operation. After a series of conferences and discussions during Operation REDWING, The Task Group 7.4 Commander, Colonel John S. Samuel, and his staff developed a long range construction program based upon five general principles:

1. The assumption that future test operations would be of a magnitude comparable to that of REDWING.

2. Foundation of the long range program on a master plan concept with construction being phased over a period extending through Fiscal Year 1962.

3. Allowance for full utilization of Complete Assembly Shelters in Fiscal Year 1958, partial elimination of these buildings in Fiscal Year 1960, and complete elimination of them in Fiscal Year 1962. These buildings were used in REDWING to provide working space for Task Group 7.4 elements, as a temporary measure to relieve the dire shortage of office and shop facilities.

AFWL/HQ

4. Assumption that certain facilities based on economical termination of useful life, would be eliminated gradually.

5. Inclusion in the long range program of certain items deleted from the Fiscal Year 1958 program.

The permanent establishment of the 4950th Test Group (Nuclear) "has permitted the continued monitoring of this program." [35] The 4950th coordinated closely with Joint Task Force SEVEN "to reorient the construction program from time to time to adapt it to changing requirements" and to obtain as much of the necessary construction as possible in the periods between tests. (See also, "Major Materiel Planning Activities," this history.)

Portable Buildings. Closely related to the construction program throughout REDWING and in the planning for HARDTACK was the matter of the use of portable buildings to alleviate the lack of sheltered working space.

On 28 January 1957, the 4950th requested assistance of Air Materiel Command in obtaining information regarding the availability of prefabricated (portable) buildings for use at Eniwetok during HARDTACK. Air Materiel Command advised the 4950th that seven Complete Assembly Shelters were on hand at Wilkins Air Force Depot awaiting disposition instructions from Headquarters United States Air Force. Also available were other portable buildings, 20 by 48 feet, without generators, air conditioners, heating systems, flooring, or electrical wiring.

The comparative merits and suitability of both the shelters and portable buildings then were considered for use for HARDTACK. A decision was

made that only the Complete Assembly Shelters were suitable for Task Group 7.4 purposes. Seven of these shelters had been provided for REDWING. Upon termination of REDWING activity, the shelters had been dismantled and shipped to Shelby Air Force Depot, Ohio.

Therefore, on 15 April 1957, a request was submitted to Air Materiel Command to obtain, repair, and ship the seven shelters currently at Wilkins Air Force Depot, together with generators, to arrive at Oakland port of embarkation by 1 January 1958. [37]

In late April 1957, the Director of Materiel visited Camp Mercury, Nevada, and inspected several air supported structures which were being field tested at that site. These structures, of rubberized nylon and inflated by a continuous supply of low pressure air, appeared to be a possible answer to the portable building problem; but, as determined by the testing engineer, the air structures were not at that time giving fully satisfactory results. The Director of Materiel, however, obtained addresses of the manufacturers for future reference.

Headquarters United States Air Force on 10 May 1957 advised Air Materiel Command that eight Complete Assembly Shelters on hand at Wilkins were marked for Air Force Special Weapons units for high priority use and were not available for Operation HARDTACK. Therefore, Air Materiel Command was requested to investigate the use of Butler type prefabricated buildings, 40 by 100 feet. [38]

In turn, Air Materiel Command informed the 4950th on 21 May 1957 that the suggested Butler type buildings could be made available for HARDTACK but that these buildings were without generators, flooring, and other accessories. Some 280 feet of wiring and cable, plus electrical receptacles, would be required to condition the buildings for use. [39]

The Director of Materiel, in examining the possibility of using Butler type buildings, found that some $6,000 for each building would be required for construction of foundation, flooring, and other utilities and that each Butler type building was much too large to afford the flexibility necessary in the utilization of temporary shelters. Thus, Joint Task Force SEVEN was requested by electrical message [40] to assist the effort to acquire the more desirable and more suitable Complete Assembly Shelters. The problem was still unresolved by mid-September 1957.

Vehicle Requirements. The Director of Materiel in June 1956, before the conclusion of Operation REDWING, began the compilation of general purpose vehicle requirements for HARDTACK. The requirements included 137 vehicles, some 35 more than the number needed for REDWING. The list was studied at great length in the 4950th before submission of the list on 13 February 1957 to Joint Task Force SEVEN. This list showed a requirement for 57 1/4 -ton trucks (jeeps), 37 1/2-ton commercial trucks (pick-ups), 28 3/4-ton trucks (weapon carriers), 7 1 $\frac{1}{2}$-ton trucks, and [redacted] 2$\frac{1}{2}$-ton trucks. [41]

[redacted]

AFWL/HQ

On 8 April 1957, Joint Task Force SEVEN advised the task group that the submitted requirements were 33 per cent greater than those for REDWING, although over-all vehicle resources for Joint Task Force SEVEN were not expected to exceed those for REDWING. Therefore, the task group was requested to reduce the number submitted on the original list.[42]

When the Joint Task Force SEVEN general purpose vehicle allocation was announced in June 1957,[43] Task Group 7.4 was allowed 116 vehicles, representing a reduction of 21 under the number originally requested. Of these 116, 49 were 1/4-ton trucks, 54 were 1/2-ton trucks, 8 were 1½-ton trucks, and 5 were 2½-ton trucks. Significantly, the requirements for 3/4-ton trucks (weapon carriers) had been consolidated with the requirements for 1/2-ton trucks. The Joint Task Force SEVEN allocation letter stated that "all vehicles will be shipped to arrive in the Eniwetok Proving Ground no earlier than 180 days and no later than 90 days prior to the start of HARDTACK"; that is, the vehicles would arrive in the proving ground no later than 1 February 1958.

Because of the proposed expansion of weather island stations, two separate requests for additional general purpose vehicles were submitted to Joint Task Force SEVEN. These requests were approved by the task force, increasing the total Task Group 7.4 allocation by eight.

According to Joint Task Force SEVEN Administrative Order 2-56,[44] general purpose vehicles, spare parts, and maintenance and supply for the

vehicles were to be provided by Task Group 7.2, the Eniwetok housekeeping organization. Maintenance personnel assistance was to be provided to Task Group 7.2 by the Test Base Unit of Task Group 7.4, by virtue of a mutual agreement.

Requirements for special purpose vehicles for HARDTACK were submitted to the Special Weapons Center in April 1956 while REDWING was underway. This list contained 182 vehicles. Then, during the logistics planning conference on 20 February 1957, a determination was made that special purpose vehicles for Task Group 7.4 would be furnished from Air Force resources. Air Research and Development Command, thus, submitted a revised requirements list for Task Group 7.4 to Memphis Air Force Depot for 117 vehicles. The cover letter [45] asserted that the requirements for special purpose vehicles had increased over those for REDWING for three reasons: (1) the planned increase in flying operations; (2) the increased duration of the tests; and (3) the dual shot concept "which involves the use of both Bikini and Eniwetok simultaneously." The letter noted further that six vehicles used at the Nevada Test Site during PLUMBBOB would be available for shipment to, and use in, the Eniwetok Proving Ground. All special purpose vehicles drawn from Zone of Interior stocks were to be ready at the port of embarkation for shipment to Eniwetok by 1 January 1958.

A subsequent letter from Air Research and Development Command to Headquarters United States Air Force [46] stated that only 104 vehicles had been

requested from Memphis Air Force Depot, inasmuch as 18 others would be available from Indian Springs Air Force Base upon completion of Operation PLUMBBOB. The total requirement from Zone of Interior stocks for HARDTACK was 122.

Runway Arresting Devices. Early planning for runway arresting devices in the proving ground made provision only for a cross-deck pendant and a barricade at FRED (Eniwetok). Although an MA-1 barrier was used also at FRED during REDWING, none was planned for HARDTACK because of the absence of aircraft requiring this type of arresting mechanism. The basic hardware for a barricade remained in the proving ground after the completion of REDWING.

An entry in the Director of Materiel Black Book[47] on 8 August 1957 confirmed that no MA-1 barriers would be used during HARDTACK and that the current location of barricade stanchions was satisfactory. The proposed barricade was suitable for arresting B-57, A4D, and FJ4 aircraft, all of which were proposed for the HARDTACK operation. No requirement was declared for barriers or barricade on emergency strips, although barriers had been used at JANET, NAN, and PETER-OBOE during REDWING.

A letter[48] on 10 September 1957 to Task Group 7.5 stated that the FRED arresting devices for HARDTACK would be located in the same positions as during REDWING: that is, the barricade would be located approximately 100 feet from the northeast end of the existing runway, and the cross-deck

pendant would be located approximately 1,700 feet from the northeast end of the runway. Task Group 7.5 was requested to take action to rehabilitate the installation sites, so that both devices would be installed and operational by 1 March 1958.

D. PERSONNEL

Initial personnel planning for Operation HARDTACK was begun in March 1957, when the 4950th Director of Personnel met with Center Personnel representatives to determine officer personnel requirements. From decisions reached in this meeting, a requisition for the required personnel was prepared and submitted to Air Research and Development Command. The requirements totaled 28 and included officers to fill the positions of Personnel Staff Officer, Provost Marshal, Flying Safety Officer, Historical Officer, Communications-Electronics Officer (two), Operations Officer (two), Supply Staff Officer (two), Air Electronics Officer, Aircraft Maintenance Officer, Pilot (six), Supply Officer (four) Aircraft Observer (two), Accountant, Air Police Officer, Medical Service Officer, and Interceptor-Controller. Sixteen of these positions were in the 4952nd Support Squadron. [49] All 28 positions "must be filled from other than this Center's resources," and the filling of all positions was requested by 1 October 1957. No difficulty was anticipated in the acquisition of these 28 officers.

Airman manning within the 4951st Support Squadron (Test), the permanent 4950th unit at Eniwetok, became a source of difficulty in the early

AFWL/HQ

stages of the existence of the 4950th Test Group (Nuclear). In December 1956, personnel shortages in the 4951st reached serious proportions: no replacements had been received for those personnel who returned in November on normal rotation to the Zone of Interior. The problem was brought to the attention of the Center Deputy Chief of Staff for Personnel.[50] Center, in turn, informed Air Research and Development Command that requisitions submitted to Air Research and Development apparently had not been filled.

In February 1957, manning in the 4951st degenerated to an extremely critical point. Of a total authorization for 148 airmen, over 60 positions were vacant and the 4951st had no information on projected gains which would indicate a favorable change in the situation. Therefore, a detailed report of this circumstance was forwarded to Special Weapons Center on 11 February 1957, listing those requisitions for which no action had been taken and requesting that the procurement system be evaluated to determine its practicability and suitability for personnel requisitioning. The Center Deputy Chief of Staff for Personnel, while not declaring a need for a new requisitioning system, again queried Air Research and Development Command regarding the status of all unfilled requisitions.

During the period 22 March to 5 April 1957, representatives of the 4950th and of the Special Weapons Center visited Eniwetok to inspect aspects of 4951st operation. Colonel William B. Kieffer and Lieutenant

Colonel R. H. Koltz, Center Deputy Commander and Assistant Deputy Chief of Staff for Personnel, respectively, were the Center representatives. Upon his return from Eniwetok, Colonel Kieffer wrote a letter [51] to Air Research and Development Command explaining the personnel problem in the 4951st and requesting establishment of a new system.

The Air Research and Development Command reply [52] stated:

> A thorough review of the personnel situation at Eniwetok and of past procedures used for manning the 4951st indicates that most of the previous difficulty encountered was caused by inadequate control of personnel manning actions. The need for immediate action to establish regid manning controls for this unit is apparent. All manning actions related to this unit consequently are now being monitored by this headquarters to insure that procedures are effective and that manning is timely and adequate. However, it is not intended that the direct responsibility for manning the 4951st be changed. This is, and should be, the responsibility of Air Force Special Weapons Center.

By direction of the Center Commander, the Deputy Chief of Staff for Personnel was designated the Center monitoring agency for all 4951st personnel requisitions; the 4950th then became an "info copy" agency in the conduct of the program. To insure standardization of procedures four representatives, three from the 4950th, visited Headquarters Air Research and Development Command in mid-July to discuss and coordinate on aspects of the system.

In another important Personnel development, augmentation requirements for Operation HARDTACK were determined in May 1957, utilizing recommendations

made by the REDWING Task Group 7.4 Staff as a guide in determining requisite numbers and skills. Based upon the grade structure authorized for augmentation of the 4935th Air Base Squadron for Operation PLUMBBOB, a Unit Manning Document was produced for the 4952nd Support Squadron as augmentation for the 4951st Support Squadron. (The 4952nd Support Squadron was originally established as an augmentation organization to provide personnel to either the 4935th Air Base Squadron at Indian Springs during Nevada nuclear tests, or the 4951st Support Squadron at Eniwetok during overseas tests.) The newly produced document was sent also to the 4951st in June 1957 to determine further its adequacy for manning. The 4951st concurred in the authorizations.

E. SECURITY

Initial Security planning for HARDTACK was conducted in a manner similar to that of REDWING, the major area of concentration being the preparation of the Security Annex for the Planning Directive. Included in this annex were the policies and procedures for personnel security clearances requirements, censorship of mail, security inspections at Eniwetok, security violations and compromise, patrols and guards, public information news releases, and entry to the proving ground.

Incoming personnel of the Group Headquarters, the 4926th Test Squadron (Sampling), and the 4952nd Support Squadron upon their arrival were being

processed for the necessary security clearances. These personnel also were being briefed on security aspects of Operation HARDTACK.

Also, as in REDWING, a letter to the 9th District, Office of Special Investigation, Hickam Air Force Base, was prepared, requesting the provision of agents for HARDTACK. Agents were to be under supervision of the Task Group 7.4 Security Officer to give investigative assistance in cases involving espionage, sabotage, security compromise, abnormal personal activity, and other actions deemed by the Security Officer to warrant such investigation.

After REDWING, the feasibility of deleting the requirement for Air Police at Eniwetok was investigated by the Special Weapons Center. A staff study was prepared by the Security Section on 15 May 1957 setting forth the justification for retaining Air Police during operational periods. The Special Weapons Center on 3 June 1957 approved the continued use of the Air Police. [53]

F. FUNDING

After the completion of REDWING, preparatory work was begun on the budget covering the balance of Fiscal Year 1957. Budget requirements were outlined from a series of discussions among the 4950th Staff. Estimates were completed by mid-November 1956. The Comptroller then separated the estimates into Extra Military Expenses (to be funded by Joint Task Force

AFWL/HQ

AFWL/HO

55

SEVEN) and Normal Service Operating Expenses (to be funded by Air Force Special Weapons Center). [54]

Concurrent with this action, estimates for Fiscal Year 1957 expenses for PLUMBBOB were made; requirements for funds in the category Extra Military Expenses were then forwarded to the Armed Forces Special Weapons Project. The Special Weapons Project provided the necessary funds in all but two areas: "Supplies and Materials" and Contractual Services, the funds in both categories intended for use at Indian Springs. Special Weapons Project stated that funds in these two areas were not authorized by the McNeil Letter (Mr. N. J. McNeil, Comptroller, Department of Defense, "Assumptions for Operating Expenses for Atomic Weapons Tests," dated 9 March 1953). [55] The McNeil Letter delineated the sources of funds for nuclear testing programs. The funds in these categories finally were funded by Air Force Special Weapons Center.

Beginning in August 1956, the Comptroller attempted to secure an agreement from Joint Task Force SEVEN for the task force to provide funds for all local purchases made by the Pacific Logistics Liaison Officer (Major Donald J. Brush). After several exchanges of correspondence, the Joint Task Force SEVEN Comptroller visited the Special Weapons Center on 8 February 1957 for a discussion of the subject. Ultimately, informal agreement was made for the task force to fund for these local purchases, in all categories. [56]

On 15 December 1956, the third and fourth quarter budgets for Fiscal Year 1957 HARDTACK planning requirements were prepared and submitted to Joint Task Force SEVEN; and in February 1957, the Fiscal Year 1958 PLUMBBOB budget requirements were sent to Armed Forces Special Weapons Project.[57]

Early in March 1957, the budget call for Operation HARDTACK was given to the 4950th for estimates for the Task Group 7.4 Fiscal Year 1958 budget. The Fiscal Year 1958 budget, as well as a tentative Fiscal Year 1959 planning budget, was completed and forwarded on 24 April 1957 to Joint Task Force SEVEN. Early in June, the Comptroller attended a conference at Headquarters Joint Task Force SEVEN and was given complete verbal approval for the budgets. Formal approval was given in July 1957 to obligate funds for the first quarter.[58]

In August, Colonel William B. Kieffer, the Center Deputy Commander for Overseas Tests, visited Joint Task Force SEVEN and was requested to screen the Fiscal Year 1958 budget for the purpose of reducing costs. In the subsequent inspection of the budget, a reduction of approximately $85,000 in certain areas of Temporary Duty expenses was effected, this reduction being described in a supplemental budget.

Just as the supplemental budget was completed, the operational date of HARDTACK was advanced to 1 April 1958;[59] this caused an increase of some $100,000 for Temporary Duty expenses, offsetting the previous reduction and resulting in a net increase of $15,000 in the Temporary Duty area.[60]

The Supplies and Equipment area was revised also in line with the latest supply knowledge, resulting in an increase of $292,000 in the category which subsequently was called "Operation and Logistic Support." In the Aircraft Modification and Equipment area, the 4950th Test Group reported that funds for a second USQ-12, radar reflector, and other equipment could be deleted; hence, a decrease in that area of approximately $143,000 was effected. The net result of this 16 August budget revision was to increase the budget by $164,799.00 over the previous estimate, bringing the total to $1,070,495.

Inasmuch as Lieutenant Colonel Carl W. Robbins, Jr., 4950th Director of Materiel was at the proving ground on temporary duty, the Comptroller was unable to assess accurately the effect, in the Supplies and Equipment area, of the 30 day advance in the starting date.

Consequently, a second FY 58 fund revision dated 10 September 1957 was submitted to Joint Task Force SEVEN. This revision covered only the Supply and Equipment area. The new requirement in this area amounted to $646,805, which was an increase of $99,426 over the first supplemental budget revision.

During September a Special Weapons Center conference was scheduled for 8 October 1957 to examine thoroughly the Supply and Equipment area with particular emphasis to be given to the probable impact of procurement upon the Logistics Liaison Officer, Major Donald J. Brush, at Sacramento

Air Materiel Area.

Representatives of the Joint Task Force SEVEN Comptroller and Supply Division were invited to attend this conference. Final approval of the over-all budget thus was being withheld by the Task Force Comptroller until conclusion of the conference.

During the final days of September, authority was requested from Joint Task Force SEVEN for the 4950th to cite funds within the budgetary figures for the second quarter of Fiscal Year 1958. This authority was granted; however, the total expenditure in each budget category was severely limited. The total expenditure for the entire first six months of Fiscal Year 1958 was limited to $203,000.

NOTES

1. Incl. 1: Ltr., Director, WETD, FC, AFSWP to Comdr. AFSWC, 10 Jun. 55, subj: Forecast of Test Requirements.

2. Incl. 2: Ltr., Director, WETD, FC, AFSWP to Comdr. AFSWC, 14 Dec. 55, subj: Forecast of Test Requirements.

3. Incl. 3: Schedule, Operation HARDTACK, 26 Feb. 57, AFSWC.

4. Incl. 4: Schedule, Operation HARDTACK, 6 Jun. 57, AFSWC.

5. Incl. 5: Memo for Record, Conference on Support Requirements for Operation HARDTACK, JTF-7, dtd. 4 Mar. 57 (Hereinafter cited as JTF-7 Conferenced Memo on HARDTACK).

6. Incl. 6: Ltr., Maj. William A. Cunningham, DCS/O, AFSWC, to Dr. Hal Plank, J-Division, LASL, dtd., 3 Dec 56, no subj.

7. See pp. 35-39, 106-107, and 108-109, Final History, Operation REDWING, Task Group 7.4, in files of the Historian, 4950th Test Gp. (N).

8. Incl. 7: Ltr., p. 6, Comdr., 4950th Test Gp. (N) to Comdr., JTF-7, 24 Jul. 57, subj: Comments to "Final Report of the Commander, Task Group 7.4, Operation REDWING" (hereinafter cited as REDWING Final Report Comments).

9. Ibid., p. 6.

10. Incl. 8: Memo for the Record, Col. Donnell Massey, JTF-7, 18 Jan. 57, subj: Visit of Colonel E. A. Lucke, USA, and Colonel Robert Gattis, USAF, to Joint Task Force SEVEN Headquarters (hereinafter cited as the Lucke-Gattis Visit Memo, 18 Jan. 57).

11. Memo for the Record, no signature, H. AFSWC, 1 May 57, re a visit on 29 Apr. 57 to Albuquerque Operations Office, AEC, in 4950th D/O files.

12. Ltr., E. A. Lucke, J-3, JTF-7 to Comdr., TG 7.4, 16 May 57, subj.: In Place Dates for Operation HARDTACK Inter-Island Support Aircraft, in 4950th D/O files.

AFWL/HQ

[redacted]

AFWL/HO

13. Ltr., C/S, JTF-7 to Comdr., 4950th Test Gp. (N), 30 Jul. 57, subj.: Air Operations Center (AOC) on Bikini Atoll, in 4950th D/O files.

14. Incl. 9: Ltr., Comdr., 4950th Test Gp. (N) to Comdr., AFSWC, 11 Apr. 57, subj.: Staff Visit to Eniwetok, 24 Mar. - 5 Apr. 57.

15. Incl. 10: General Order No. 12, Hq. AFSWC, 15 Jul. 57.

16. Incl. 11: Tentative Planning Schedule for Operation HARDTACK, JTF-7, 27 Nov. 56.

17. Incl. 12: Tentative Planning Schedule for Operation HARDTACK, 4950th Test Gp. (N), no date.

18. Incl. 13: TWX, 55434, C/S, USAF to major commands, 29 Apr. 57.

19. Draft of USAF Book Message, in files of Historian, 4950th Test Gp. (N).

20. Incl. 5: JTF-7 Conference Memo on HARDTACK.

21. Incl. 8: Lucke-Gattis Visit Memo, 18 Jan. 57.

22. Incl. 14: Ltr., Comdr., 4950th Test Gp. (N) to Comdr., JTF-7, 26 Jun. 57, subj.: Support Aircraft Required for HARDTACK Inter-Atoll (Eniwetok-Bikini) and Project Island Airlift (hereinafter cited as Airlift Support Aircraft Ltr., 26 Jun. 57).

23. Communications-Electronics Plan 4-57, Operation HARDTACK, Task Group 7.4, 18 Jun. 57, in files of Historian, 4950th Test Gp. (N).

24. Ibid., p. 3.

25. 2nd Ind. (Ltr., subj.: Airborne TACAN Equipment), Comdr., AFSWC to Comdr., Dayton AFB, 14 Feb. 56, in files of Historian, 4950th Test Gp. (N).

26. Ltr., Comdr., 4950th Test Gp. (N) to Comdr., JTF-7, 14 Jun. 57, subj.: Air Operations Center (AOC) on BIKINI Atoll, in D/O (4950th) files.

27. Incl. 15: Ltr., Comdr., JTF-7 to Comdr., 4950th Test Gp. (N) 30 Jul. 57, subj.: Air Operations Center (AOC) on BIKINI Atoll.

28. Ltr., Comdr., TG 7.1 to Comdr., 7.4, 16 May 57, subj.: In-Place Dates for Operation HARDTACK Inter-Island Support Aircraft, in files of Historian, 4950th Test Gp. (N).

29. Incl. 8: Lucke-Gattis Visit Memo, 18 Jan. 57.

30. Memo for the Chief of Staff, JTF-7, 25 Feb. 57, subj.: Minutes of the Joint Supply, Construction, and Transportation Conference of 19 February 1957, in files of Historian, 4950th Test Gp. (N).

31. Incl. 7: REDWING Final Report Comments.

32. Incl. 16: Ltr., Comdr., 4950th Test Gp. (N) to several units, 10 Jul. 57, subj.: Concept of Air Task Group Logistics Support, Operation HARDTACK.

33. Incl. 7: REDWING Final Report Comments, p. 2.

34. See pp. 140-149, Final History, Operation REDWING, Task Group 7.4, in files of Historian, 4950th Test Gp. (N).

35. Incl. 7: REDWING Final Report Comments, p. 12.

36. See pp. 63, 135, 145, Final History, Operation REDWING, Task Group 7.4, in files of Historian, 4950th Test Gp. (N).

37. 2nd ind. /Ltr., Comdr., 4950th Test Gp. (N) to Comdr., AMC, 28 Jan. 57, subj.: Prefabricated Buildings Requirement/. Comdr., 4950th Test Gp. (N) to Comdr., AMC, 15 Apr. 57, in D/M (4950th) files.

38. 4th ind. /Ltr., Comdr., 4950th Test Gp. (N) to Comdr., AMC, 28 Jan. 57, subj.: Prefabricated Buildings Requirement/, C/S Hq. USAF to Comdr., AMC, 10 May 57, in D/M (4950th) files.

39. 5th ind. /Ltr., Comdr., 4950th Test Gp. (N) to Comdr., AMC, 28 Jan. 57, subj.: Prefabricated Buildings Requirement/, Comdr., AMC to Comdr., 4950th Test Gp. (N), in D/M (4950th) files.

40. TWX, SWSM-9-17E, Comdr., 4950th Test Gp. (N) to Comdr., JTF-7, 5 Sep. 57.

41. Ltr., Comdr., 4950th Test Gp. (M) to Comdr., JTF-7, 13 Feb. 57, in D/M (4950th) files.

42. TWX, date-time group 082005Z, C/S, JTF-7 to Comdr., TG 7.4, 8 Apr. 57, in D/M (4950th) files.

43. Incl. 17: Ltr., Comdr., JTF-7 to several units, 3 Jun. 57, subj.: Tentative Vehicle Allocation for HARDTACK.

44. Administrative Order 2-56, p. A-5-1, JTF-7, 1 Aug. 56, in files of Historian, 4950th Test Gp. (").

45. Ltr., Comdr., ARDC to Comdr., MAFD, no date, subj.: USAF Special Purpose Vehicular Requirements in Support of Project HARDTACK, in D/M (4950th) files.

46. Ltr., Comdr., ARDC to Dir. of Maintenance Engineering, Hq. USAF, no date, subj.: Repair of Excess USAF Special Purpose Vehicles Utilized in Support of DOD-AEC Projects, in D/M (4950th) files.

47. HARDTACK Black Book, D/M, P. 19, in D/M (4950th) files.

48. Ltr., Comdr., 4950th Test Gp. (M) to Comdr., TG 7.5, 10 Sep. 57, subj.: Installation of Aircraft Arresting Devices in the EPG, in D/M (4950th) files.

49. Incl. 18: Ltr., Comdr., AFSWC to Comdr., ARDC, 14 Mar. 57, subj.: Officer Personnel Requisitions for Operation "HARDTACK".

50. Incl. 19: Ltr., Comdr., 4950th Test Gp. (M) to Comdr., AFSWC, 5 Dec. 56, subj.: Personnel Requisitions.

51. Incl. 20: Ltr., Deputy Comdr., AFSWC to Comdr., ARDC, 12 Apr. 57, subj.: Personnel Manning of the 4951st Support Squadron (Test), Eniwetok, Marshall Islands.

52. Incl. 21: 1st ind. (Ltr., Depurty Comdr., AFSWC to Comdr., ARDC, 12 Apr. 57, subj.: Personnel Manning of the 4951st Support Squadron (Test), Eniwetok, Marshall Islands), Comdr., ARDC to Comdr., AFSWC, 16 May 57.

53. Incl. 22: Memo for the Commander, 4950th Test Gp. ("), 15 May 57, subj.: Use of Military Police in Lieu of Air Police on Eniwetok During Operational Periods.

54. Historical Rpt., Comptroller, Asst. Comptroller for Nuclear Affairs, 15 Apr. 57.

55. Ibid., p. 1.

56. Ibid., pp. 1-2.

57. Ibid., p. 2.

58. Historical Rpt., 4950th Test Gp. (N), 21 Aug. 57.

59. TWX, FCNTS 1830-0, FC, AFSWP to several agencies, 3 Sep. 57, in D/C (4950th) files.

60. Historical Rpt., 4950th Test Gp. (N), 21 Aug. 57.

61. Ibid., p. 2.

[redacted]

II

PLANNING AND BUILD-UP PHASE OF OPERATION HARDTACK

A. COMMAND

Organization and Mission of Task Group 7.4. By Air Research and Development Command General Order Number 51,[1] Headquarters Task Group 7.4, Provisional for Operation HARDTACK was designated and organized at Kirtland Air Force Base, New Mexico, effective 1 October 1957. Inasmuch as Headquarters Task Group 7.4 (Provisional) for Operation CASTLE had never officially been terminated, this same general order discontinued the CASTLE task group, effective 30 September 1957.

Concurrent with this action, two of the major subordinate units of Task Group 7.4 were organized: the Test Aircraft Unit, Provisional at Kirtland, and the Test Base Unit, Provisional at Eniwetok.[2] Four elements of the Test Aircraft Unit were also organized: (1) the Cloud Sampling Element, Provisional at Kirtland; (2) the Ultra High Altitude-Very High Altitude Aircraft Element at Kirtland; (3) the Air Force Effects Element, Provisional at Wright-Patterson Air Force Base, Ohio; and the Ionosphere Element, Provisional at Laurence G. Hanscom Field, Bedford, Massachusetts.[3] The Support Element, Provisional was organized at Eniwetok and was assigned to the Test Base Unit.[4]

The general order stated that the mission of Task Group 7.4 "is to provide, operate, control and support all necessary Air Force participation for Joint Task Force SEVEN engaged in testing at the Eniwetok

AFWL/HQ

[redacted]

Proving Ground." The mission of the Test Aircraft Unit was to provide, Maintain, and operate aircraft for the task group; and, the mission of the Test Base Unit was to provide necessary support to Air Force elements of Task Group 7.4.[5]

Upon its organizations, Headquarters Task Group 7.4, Provisional was attached to Air Force Special Weapons Center for administration, logistic support, and operational control while on location at Kirtland. Operational planning for the task group "will be accomplished by Joint Task Force SEVEN." Furthermore, the Effects Element was attached to Wright Air Development Center for administration and logistic support; and the Ionosphere Element was attached to Air Force Cambridge Research Center for administration and logistic support. The general order stipulated that, upon arrival at Eniwetok in accordance with competent movement orders, each of these organizations was to be relieved from the specified attachment and to become an operational part of Task Group 7.4 and Joint Task Force SEVEN.[6]

Effective 7 October 1957, the third major subordinate unit of the task group, Headquarters Test Services Unit, Provisional, was designated and organized at Andrews Air Force Base, Maryland, with an authorized strength of six officers and eleven airmen. The personnel were attached for duty to the Test Services Unit from organizations within Military Transport Service to which they were permanently assigned.[7]

AFWL/HQ

[redacted]

AFWL/PAO

66

The following provisional elements were designated and organized at locations, and with the authorized strengths, as indicated, and were assigned to the Test Services Unit, effective 21 October 1957.[8]

ELEMENT	OFFICERS	AIRMEN	LOCATION
Communications Element	13	263	Eniwetok
Air Terminal Element	3	26	Eniwetok
Search and Rescue Element	31	131	Norton AFB, Calif.
Weather Reconnaissance Element	62	320	Hickam AFB, T. H.
Weather Reporting and Forecasting Element	8	121	Tinker AFB, Okla.
Photo Element (Technical)	4	5	Lookout Mt. Lab., Hollywood, Calif.
Photo Element (Air Support)	16	48	Palm Beach AFB, Fla.

Personnel were attached for duty to these elements from organizations within Airways and Air Communications Service (Pacific Division), Air Rescue Service, Air Weather Service, and Air Photographic and Charting Service. These elements were attached to Task Group 7.4 for operational control.[9]

The Weather Central Element was also activated as a Test Services Unit element at the Naval Base, Pearl Harbor, Hawaii, with an authorized strength of 9 officers and 12 airmen. This activation, however, was not to become effective until 6 January 1958. The Weather Central Element was to be attached to Headquarters Joint Task Force SEVEN for operational control.[10]

AFWL/HQ

[redacted]

AFWL/HQ

67

All these organization actions were based on official information from Joint Task Force SEVEN confirming the Atomic Energy Commission-Department of Defense announcement that nuclear tests, under the code-word Operation HARDTACK, would be conducted in the Eniwetok Proving Ground in 1958.[11]

Colonel William B. Kieffer, 1409A, assumed command of Task Group 7.4 Provisional on 3 October 1957.[12] Colonel Paul R. Wignall, 4935A, was assigned as Deputy Commander on 16 October 1957.[13] Colonel Kieffer and Colonel Wignall also simultaneously occupied the respective positions in the 4950th Test Group (Nuclear). Upon assumption of the duty of Deputy Commander of Task Group 7.4 by Colonel Wignall, Colonel Alden G. Thompson, 7126A, was released from that duty and was assigned the primary duty of Director of Operations of the 4950th,[14] and the additional duty of Commander, Test Aircraft Unit in Task Group 7.4.[15] Lieutenant Colonel Richard J. Hynes, 9795A, was relieved of the primary duty of Director of Operations and assigned the primary duty of Deputy Director of Operations of the 4950th, with the additional duty as Director of Operations in Task Group 7.4.[16]

Upon the organization of the Test Base Unit, Lieutenant Colonel Walter R. Hedrick, Jr., 9353A, assumed command of the unit;[17] and effective 7 October 1957, Colonel Wilson H. Neal, 1076A, assumed command of the Test Services Unit.[18]

Book Message. The preliminary book message, which had as its purpose the constitution of authority for Air Force Commands to begin initial planning for Operation HARDTACK, was issued by Headquarters United States Air Force on 29 April 1957.

A draft of the final book message, more extensive and detailed than the preliminary book message, was prepared by the 4950th Test Group and forwarded in August 1957 to Air Force Special Weapons Center for submission to Headquarters United States Air Force. The final book message, after some two months of coordination and revision, was published on 11 October 1957.[19] The message stated that on 24 September 1957, the Joint Chiefs of Staff approved Department of Defense participation in Operation HARDTACK, a series of atomic tests at the Eniwetok Proving Ground beginning about 1 April 1958 and ending approximately 15 July 1958. To support this operation, Headquarters United States Air Force in the message directed the organization of Task Group 7.4. By the date of the publication of the book message, however, several elements of Task Group 7.4 had already been designated and administratively organized. Only the Test Services Unit, drawn from Military Air Transport Command resources, remained to be organized. This unit, as already described, was subsequently organized by a general order published on 21 October 1957.

According to the book message, the Test Base Unit was to consist of a support squadron and a helicopter element; the Test Aircraft Unit was

to consist of the Cloud Sampling Element (augmented by six B-57D aircraft of the Strategic Air Command), the Indirect Bomb Damage Assessment Element, the Very High Altitude-Ultra High Altitude Aircraft Element, the Ionosphere Element, the Air Force Effects Element, and the Navy Effects Element (to be provided by the Naval Air Special Weapons Facility, Kirtland Air Force Base, and attached to the Test Aircraft Unit for operational control); the Test Services Unit was to consist of the Search and Rescue Element (to include Weather Island re-supply), the Weather Reporting and Forecasting Element, the Weather Reconnaissance Element, the Communications Element, the Weather Central Element, the Military Air Transport Service Terminal Element, and the Aerial Photography Element.

The book message, among other things, also described the types and numbers of aircraft to be used during HARDTACK (see "Aircraft Requirements," this chapter), authorized direct communication between participating organizations, cited the authority for funding procedures, set forth broadly the security clearance requisites for personnel engaged in the operation, and provided authorization for logistical support and for necessary modification of certain aircraft.

Planning Directive. The Task Group 7.4 Planning Directive 5-57,[20] having been under preparation since early September 1957, was published on 17 October 1957. This directive outlined the general scheme for

AFWL/HQ
[redacted]
AFWL/HO

Task Group 7.4 as a guide in planning for Operation HARDTACK, although much of the planning information then available was highly tentative.

The planning directive stated that the primary mission of the task group would be to provide support and control of all aircraft necessary to collect and record data required by the test programs and as directed by Joint Task Force SEVEN. Among the additional tasks listed were the following:

1. Provide an inter-atoll air transportation system and inter-island air transportation systems at Eniwetok and Bikini Atolls, the latter at Bikini until assumption of the duty by a Marine helicopter squadron.

2. Provide weather reconnaissance and forecasting service for the Joint Task Force.

3. Provide search and rescue facilities within the proving ground.

4. Operate aircraft control systems on Eniwetok and aboard the Joint Task Force SEVEN Command Ship, USS Boxer.

5. Provide aerial re-supply of weather and project islands.

6. Supervise the operation of a field maintenance system and of supply activities on Eniwetok.

The directive also outlined the missions of the units and elements of Task Group 7.4.

An important portion of the directive was the schedule of planning events for all build-up activities, based on 1 April 1958 as the date of the first shot of HARDTACK. According to the schedule, the following

AFWL/HQ

[redacted]

AFWL/HO

91

actions were to take place on the indicated dates:

1.	Publication of Task Group 7.4 Operation Plan/Order	1 February 1958
2.	Arrival at Eniwetok of advance echelons of Headquarters, Test Aircraft Unit, and Test Services Unit	1 February 1958
3.	Readiness in place in the proving ground of the Weather Reporting and Forecasting Element	15 February 1958
4.	Readiness in place of Communications Element	15 February 1958
5.	Assumption of Bikini inter-island airlift by Marine helicopters	15 February 1958
6.	Tarawa, Nauru, Kapingamarangi, Kusaie, and Utirik manned by Weather personnel	15 February 1958
7.	Air Operations Center equipment in place	1 March 1958
8.	Weather Central Element in place	1 March 1958
9.	Weather Reconnaissance Element in place	1 March 1958
10.	Search and Rescue Element in place	1 March 1958
11.	Wotho, Ujelang, and Rongelap manned by Weather personnel	1 March 1958
12.	Transfer of Group Headquarters, Test Aircraft Unit, and Test Services Unit to Eniwetok.	1 March 1958
13.	Technical Photography Element in place	1 March 1958
14.	Indirect Bomb Damage Assessment Element in place	1 March 1958

AFWL/HQ

[redacted]

AFWL/HQ

15.	Effects Element in place	1 March 1958
16.	Cloud Sampling Element in place	15 March 1958
17.	Ionosphere Element in place	15 March 1958
18.	UHA/VHA Aircraft Element in place	15 March 1958
19.	Beginning of air rehearsals in the proving ground	15 March 1958

The planning directive also (1) showed the organization of Task Group 7.4 and its units, (2) delineated security, intelligence, and public information policies, (3) described Operations and Training activities, (4) set forth logistics policies, and (5) outlined the mission of flight safety programs. No shot schedule appeared in the planning directive.

B. OPERATIONS

Until early October 1957, the 4950th Test Group (Nuclear) was engaged in the operational and roll-up phases of Operation PLUMBBOB, conducted at the Nevada Test Site. The last shot (Morgan) of PLUMBBOB, was completed on 7 October, concluding the PLUMBBOB test activities of the Operations Directorate and thus making available all personnel of the 4950th for the planning of HARDTACK.

Operation Plan. Development of Operation Plan 1-58[21] for HARDTACK was one of the first major planning activities. The plan was begun in October 1957 and was published on 6 January 1958, providing for Task

AFWL/HQ

[redacted]

AFWL/HO

73

Group 7.4 elements a firm basis for detailed planning activities. The plan, following broadly the earlier concepts set forth in Planning Directive 5-57, made available to participating elements extensive information on all predicted phases of the test series. Major advancements of the operation plan over the planning directive were particularly noticeable in areas concerned purely with operational functions.

The operation plan, for example, presented definitive data on the requirements of test effects aircraft, showing test projects in which each aircraft was to be involved and giving a brief summation of the objectives of each project. Shot schedules for Eniwetok and Bikini were included in the plan as originally published, but by direction of the Joint Task Force SEVEN Commander, these schedules subsequently were removed from the plan and destroyed. In these schedules, 13 shots were planned to be fired at Bikini Atoll.

A principal portion of the plan was devoted to communications. Annex E established the policies and general plans for the installation, maintenance, and operation of Task Group 7.4 communications and electronic facilities. (See "Communications and Air Operations Control," this chapter, for a fuller treatment of communications.)

The estimate of the general situation for HARDTACK was one of the most interesting aspects of the operation plan. The plan, summarizing much of the early information on the test series, stated that the series would consist of some 25 detonations, the first shot being scheduled for 15 April 1958. The tests were to be conducted as expeditiously as

AFWL/HQ

AFWL/HQ

74

practicable, the completion target date being no later than 1 July 1958.

Operation HARDTACK then, including more detonations of atomic devices than had been involved on any previous overseas test program, would have its shots approximately evenly divided between Eniwetok and Bikini Atolls. University of California Radiation Laboratory devices were to be detonated at Bikini Atoll, and Los Alamos Scientific Laboratory devices were to be tested at Eniwetok Atoll. However, should the planned detonations at one atoll be completed ahead of schedule, to provide a more efficient use of the proving ground, remaining shots should be rescheduled. Capability of firing a high yield device at each atoll simultaneously was to be maintained.

Reiterating previously released information, the operation plan stated that two high altitude detonations would be launched by Redstone Missiles from Bikini Atoll, and the high altitude balloon device would be launched from the deck of the USS Boxer. Two underwater detonations were to be effected at Eniwetok.

Thus, the operation plan (which was to become Operation Order 1-58 upon initiation of the operational phase of HARDTACK), the Book Message, and the Planning Directive were the major planning documents produced by the 4950th Test Group and Task Group 7.4. Virtually all subsequent planning actions were founded upon these documents which were broad in scope and extensive in content. After these documents appeared to provide the

AFWL/HQ

AFWL/NHO

95

general guide lines for planning, supplemented by the Movement Directive and the Logistics Plan, detailed planning was begun throughout the elements of the group.

Movement Directive. The Movement Directive for Task Group 7.4 elements was drafted by the Operations Directorate and was forwarded to Joint Task Force SEVEN on 15 November 1957. The directive, after coordination at Headquarters Joint Task Force SEVEN, was published on 9 January 1958 by Headquarters United States Air Force.[22] The directive contained the basic authority for preparation and movement of Task Group 7.4 elements to the Eniwetok Proving Ground. Based upon this primary authority, Major Air Commands then issued specific movement orders for the participating elements. The Movement Directive provided for the movement of 282 officers and 1,404 airmen, and covered a movement period extending from mid-December 1957 (retroactively) to mid-April 1958.

The Movement Directive gave pertinent information regarding the placement of personnel on temporary duty orders. Temporary duty was to be limited as closely as possible to 180 days, although extensions beyond that limit "may be approved by CDR JTF-7 upon request of CDR TG 7.4," these extensions to be limited to those personnel whose presence would be essential to the continuance and safety of operations. Whenever possible, personnel whose period of temporary duty would exceed 180 days

AFWL/HQ

were to be replace and no time extension would be requested.*

The Movement Directive also (1) provided for the return of personnel to their permanent stations after completion of the assigned missions, (2) delineated the appropriate publications to be employed in preparation and movement of personnel, (3) gave authority for clothing and equipment allowances, (4) listed readiness dates and port designations, (5) described methods of movement, (6) set forth security policies governing certain aspects of the movement and participation in Operation HARDTACK.

Aircraft Requirements. Lieutenant Colonel Walter B. Walker, Jr., Deputy Director of Operations, after a staff visit in October 1957 to Headquarters Joint Task Force SEVEN and Headquarters United States Air Force, determined that the planned program of aircraft requirements for HARDTACK appeared to present no outstanding problems. Only a few revisions had occurred since the first list had been compiled in February 1957.

An account of the planned aircraft inventory of Task Group 7.4 was provided in some detail in the Book Message issued on 11 October. According to the message, the Test Base Unit would be authorized the following aircraft, furnished from the indicated sources:

1. Five C-54's, two from Air Research and Development Command and three from Pacific Air Force, for inter-atoll airlift and Weather Island re-supply.

---

*Strict compliance with these procedures was essential to comply with the letter and intent of Comptroller General ruling B-131145, 3 May 1957, and to avoid the possibility of jeopardizing or compromising the privilege accruing to temporary duty personnel.

AFWL/HO

97

2. Eight L-20's from Air Research and Development Command for inter-island airlift.

3. Three L-19's from Air Research and Development Command for inter-island airlift.

4. Fifteen H-19's, or a combination of H-19 and H-21 aircraft, from Pacific Air Force for airlift.

The Test Aircraft Unit would have the following aircraft from the indicated sources:

1. Sixteen B-57's (ten B-57B's of the 4926th Test Squadron and six B-57D's from the Strategic Air Command) for cloud sampling.

2. One B-52 from Wright Air Development Center for effects projects.

3. Two B-36's from Air Force Special Weapons Center for the Very High Altitude-Ultra High Altitude projects.

4. One C-97 from Cambridge Reasearch Center for ionospheric studies.

5. Two A4D's, two FJ4's, and one P2V, from Naval Air Special Weapons Facility, Kirtland Air Force Base, for effects and other study projects.

6. Three B-47's from Strategic Air Command for indirect bomb damage assessment, operating from Guam.

The Test Services Unit would have the following aircraft all furnished from Military Air Transport Service:

1. Seven SA-16's for search and rescue.

2. Three C-54's for aerial photography and airlift back-up.

3. Ten WB-50's for weather reconnaissance.

4. Two RB-50's for photography.

AFWL/HQ

[redacted]

AFWL/HQ

These requirements, as has been noted, underwent few changes since February 1957. The few revisions, however, were noteworthy. For example, only two Navy effects aircraft, an FJ4 and an A4D, appeared on the February list, whereas three others, an FJ4, and A4D, and a P2V, had been added to the inventory by October. Furthermore, two L-21 aircraft which were included on the February list had been deleted by October and replaced by three L-19's.

The requirement for three B-47 aircraft for the indirect bomb damage assessment project was deleted in mid-February 1958 by Strategic Air Command. The message[23] which directed the deletion indicated that information obtained from low level indirect bomb damage assessment projects in Operation PLUMBBOB was sufficient to satisfy standing requirements, and that a further expenditure of sorties with the same equipment was not warranted. The elimination of this Operations and Training requirement, thus, was announced in the first amendment to Operation Plan 1-58.

In all other areas the inventory was considered to be firm by the end of October 1957 and remained stable, with only minor exceptions, throughout the planning phase of HARDTACK.

Communications and Air Operations Control. Both the communications and the aircraft control procedures and systems to be employed on HARDTACK were outlined in Operation Plan 1-58. Major aspects of the concept of communications operations were listed as follows:

1. Headquarters Airways and Air Communications Service was to support the Air Task Group mission with existing facilities augmented by mobile equipment where necessary.

AFWL/HQ

AFWL/HQ

2. The Joint Relay Center (Eniwetok) and associated facilities were to be manned, operated, and maitained by personnel furnished by all the task groups involved on an equitable basis.

3. Task Group 7.5 was to provide primary and back-up power for communications facilities within the proving ground and on certain Weather and radiation safety monitor islands.

4. Task Group 7.5 was to provide necessary voice and teletype circuits between Eniwetok and Bikini Atolls for point-to-point, air movement, and control messages.

5. One voice circuit was to be provided between the Air Operations Center on the USS Boxer and the Eniwetok Air Operations Center, through side band facilities.

6. Adequate facilities were scheduled to be available through GLOBECOM (Global Communications), SACCOMNET (Strategic Air Command Communications Net), AIRCOMNET (Air Communications Net), and ACAN (Army Command and Administrative Net) systems for handling traffic from and to points outside the proving ground.

7. The voice count-down for aircraft requirements was to be on 243.0 megacycles. This facility was to be installed, maintained, and operated by Task Group 7.1, the radio equipment being provided by Task Group 7.4.

8. All aircraft (except liaison and helicopter aircraft) operating in the Eniwetok Proving Ground area were to be equipped with MK-10 or MK-25 Identification Friend or Foe transponders.

9. Task Group 7.3 was to provide and maintain communications and electronic facilities aboard the USS Boxer for control and positioning of aircraft in the Bikini area.

10. All aircraft participating in test operations were to be equipped with UHF communications equipment.

More specific responsibilities were assigned to the Units. For example, Test Aircraft Unit was to install, maintain, and operate communications and electronics facilities in designated aircraft to provide

AFWL/HQ

[redacted]

AFWL/HO

(1) air-to-ground progress and position reporting, (2) air-to-air and cloud sampling control, (3) air-to-air homing, (4) radar for navigation and positioning, (5) identification equipment for control and positioning, and (6) dual UHF equipment in aircraft which may be designated for air drops and in all B-57 sampling aircraft.

Test Base Unit was to be responsible for providing field maintenance shops and service for airborne communications and electronics equipment, for installing and maintaining a fire crash radio communications system, and for installing and maintaining a field maintenance expediter communications system (as a part of the Maintenance Control Unit).

The responsibilities of the Test Services Unit, as outlined in the operation plan, were many and varied. Among these responsibilities were the installation, maintenance, and operation of the Air Force portion of facilities associated with the Joint Relay Center at Eniwetok Atoll, of the Weather Central facilities on Parry Island (ELMER) and Base Weather facilities on Eniwetok Island (FRED), of the control tower facilities at Eniwetok and Bikini Atolls, and of the Task Group 7.4 Communications Center in Building 90 at FRED. The unit was also directed to install and operate (1) one GCA and one TACAN unit at Eniwetok, (2) low frequency homing beacons at Eniwetok, Bikini, Kapingamarangi, Kusaie, and Utirik, and (3) UHF and VHF Direction Finders at Eniwetok. Other responsibilities included the provision and operation of a radio telegraph net between

Weather Central and the Weather and rad-safe islands; of a radio teletype intercept of weather broadcasts from Tokyo, Pearl Harbor, Guam, and Truk; of radio facsimile intercept of Pearl Harbor and Tokyo facsimile broadcasts; of radio communications from Weather Central to weather reconnaissance aircraft.

As explained in Chapter I of this history, aircraft operations control in the Eniwetok area was to be provided by the Eniwetok Air Operations Center (MANHUNT). During the last part of 1957, because of the decommissioning of the USS Estes which had provided air operations control in the Bikini area for Operation REDWING, the aircraft carrier USS Boxer was made available for use during HARDTACK. The Boxer, then, was to provide the Bikini Air Operations Center (BARRYMORE) for HARDTACK, and the over-all air operations control system again was patterned on that employed for REDWING.

Operational control of HARDTACK aircraft was defined by the operation plan as the exercise of control over all aircraft participating in each shot event and individual or groups of aircraft operating within the Eniwetok Control Area between events. Operational control, thus, embraced both over-all (area) control and direct (primary) control.

Area control was described as supervisory control of all aircraft operating in the Eniwetok Air Control Area, and was to be exercised through the Air Operations Center or Eniwetok Approach Control. Specifically, the

air control of task force aircraft and other aircraft entering the Eniwetok Air Control Area for other than shot or rehearsal purposes was to be performed through Eniwetok Approach Control. Approach control for the Eniwetok Air Control Area was planned as a functional part of the Air Operations Center, the Approach Control activities to be integrated with those of the Air Operations Center but to operate continuously regardless of the hours of operation of the Air Operation Center.

Inasmuch as all aircraft operations in the Eniwetok Proving Ground would be over water and would require strict, accurate control, the installation of Mark 10 or Mark 25 transponders in all aircraft except helicopters and liaison aircraft and the installation of UHF radio equipment in all aircraft entering into or operating in the control area were required.

Air control facilities and procedures were established to provide dual air control capability for devices fired at either Eniwetok or Bikini Atolls. Capability also was planned to provide required control should more than one shot be fired on any single day. The dual shot capability had been tested during Operation REDWING in 1956 and was found to be adequate.

Primary air-ground communications for HARDTACK was to be UHF radio. However, VHF radio was to be available for use by Approach Control, the control tower, direction finding facilities, and Ground Controlled Approach.

[redacted]

AFWL/HQ

AFWL/HO

S 3

For control of aircraft at ranges precluding use of UHF and VHF radio, HF radio frequencies were planned to be available in the Air Operations Center. The Eniwetok Air Operations Center was to be equipped with twelve channels of UHF radio and two channels of HF radio; and, the Bikini Air Operations Center was to be equipped with eight channels of UHF radio and two channel of HF radio. These channels, during shot and rehearsal operations, were to be monitored continuously.

The Eniwetok Air Operations Center was to be equipped with the AN/USQ-12 Air Operations Control System utilizing the AN/UPX-6 Mark 10 IFF Interrogator and seven UPA-35 Universal Indicators (controller consoles) for control and observation of aircraft positions and movements. The IFF system (not radar), although providing range and azimuth, was to include no height finding capability. The equipment was known to obtain positioning accuracies of plus or minus one-half mile in range and plus or minus one degree in azimuth. For aircraft requiring more precise positioning, subordinate control facilities, such as MSQ and M-33 radars, were to be available.

BARRYMORE in the Bikini area (aboard the USS Boxer) was scheduled to utilize the AN/UPX-6 Mark 10 IFF Interrogator and three AN/SPA-8A radar repeater indicators (controller consoles) for aircraft control and observation. The BARRYMORE IFF system, like that at Eniwetok, would furnish range and azimuth information only and was to be used only for gross positioning.

AFWL/HQ

In Bikini shots, MANHUNT and BARRYMORE would cooperate in passing aircraft from one control system to another. Control of aircraft proceeding from Eniwetok to Bikini was to pass from MANHUNT to BARRYMORE when the aircraft reached a point approximately 90 miles from Bikini; BARRYMORE then was to assume positive control of aircraft until completion of the shot mission. Upon return from Bikini, BARRYMORE, at a point approximately 90 miles from Eniwetok, was to instruct the pilot of each aircraft to contact MANHUNT for primary control.

In September 1957, Major James A. Ashcraft of the Operations Directorate visited the USS Boxer to examine the air control facility. He found the facility to be satisfactory for use by Task Group 7.4 in aircraft control operations, there being, or planned to be, available the following gear: (1) TACAN, low frequency homing beacon, and direction finding facilities; (2) nine GRC-27 radios; and (3) a communications console to provide ten channel transmitting and receiving at each operating position. This last named facility, which had been programmed for the USS Estes, would represent a decided improvement over the system used for REDWING. Aircraft control in the Bikini area during REDWING had been hampered because of a lack of UHF air-ground communication range for more desirable distances, a lack of channel selection and equipment operation flexibility, and a lack of inter-position communication within the Combat Information Center (that is, the Estes Air Operations Center).

AFWL/HQ

On 7 October 1957, after conclusion of the PLUMBBOB test series, utilization of the air control equipment at the Nevada Test Site was terminated. Therefore, on 14 October the AN/USQ-12, to be used at Eniwetok, was moved, less tower, from the Nevada Test Site to Kirtland Air Force Base, where refurbishing of the equipment was begun immediately. By the end of October the AN/USQ-12 was established and operational in Area H at Kirtland.

Arrangements also were made in October to transport the USQ-12 to Eniwetok aboard the USS Boxer about 1 February 1958. Together with the equipment, newly-arrived Task Group 7.4 controllers would travel to Eniwetok aboard the Boxer, receiving training enroute on the Boxer Air Operations Center equipment. The USQ-12 subsequently was sent to North Island Naval Station, California, on 31 January 1958, for transportation to the forward area.

The radio transmitting and receiving equipment for the aircraft control system was placed in readiness by Sacramento Air Materiel early in 1958. The equipment, housed in a trailer van, was shipped by the depot to the Boxer in January 1958. The depot also obtained an additional trailer van for conversion to meet communications needs; the second van was modified to accept UHF radio receiving equipment. The acquisition of this additional van permitted the full mobilization of the air-ground communications system and provided greater flexibility of the system.

AFWL/HQ

The USS Boxer with the USQ-12 and the communications equipment, departed from the Zone of Interior on 15 February 1958 and arrived in the Eniwetok Proving Ground on 3 March 1958. The second van, without equipment, was delayed in the maintenance process at Sacramento Air Materiel Area and did not arrive in the proving ground until mid-April 1958.

Holmes and Narver (Task Group 7.5) began in early March to refurbish and modify the Air Operations Center room in Building 90 at Eniwetok to accomodate the control equipment and associated communications gear. Installation of the equipment was completed and the center became operational on 18 March, even though some communications hot lines were not yet installed. The center engaged in two rehearsals late in March partially to test the operation of the control system.

The receiver portions of the air-ground communications equipment were installed in Building 89 and functioned from that location until the arrival of the second van from Sacramento Air Materiel Area in mid-April. When the van arrived at Eniwetok and was made available, the receiver equipment was transferred from Building 89 and was put into operation without interrupting the functioning of the over-all control and communications system.

Sampling. According to the book message, 16 B-57 aircraft were to be used for sampling operations during HARDTACK. Ten of these, B-57B's, were to be provided by the 4926th Test Squadron, and six (B-57D's) by Strategic Air Command. During the last months of 1957, the 4926th was

engaged in an extensive B-57B training program, the purpose of which was to cross-train F-84G pilots in the newer type aircraft. Eleven F-84G aircraft, used for REDWING sampling, were transferred to Air Materiel Command for salvage; however, the destruction of six of the F-84G's was delayed until a definite determination was made that Strategic Air Command would be able to participate in HARDTACK.

Modification of the B-57B aircraft from conventional configuration to sampler configuration and for the installation of communications and electronics equipment, took place during late 1957 and early 1958. The B-57D aircraft also were modified during this period. (See "Aircraft Modification," this chapter, for additional information regarding B-57 modification.

Virtually all members of the 4926th Test Squadron had experience in sampling procedures during nuclear tests, or had received adequate preliminary training by April 1958. The B-57B transition training program suffered some early delays while the aircraft were undergoing modification; however, by February 1958, the program had been intensified to such a degree that crew members were acquiring sufficient training for HARDTACK operations. The training program concentrated upon long range navigation flights and Link trainer flights, the latter simulating all instrument approaches likely to be encountered during HARDTACK operations. The program also included shakedown flights on each aircraft to determine exact fuel consumption rates.

AFWL/HQ

AFWL/HO

Crew members of the 4926th also were given radiological safety courses as a part of the over-all training preparation. Because of a lack of qualified air crew observers in the 4926th, other qualified personnel of Task Group 7.4 underwent this radiological safety training in order to provide an adquate supply of trained observers and to allow a spreading of radiation dosages among the several observers.

The 4926th supervised a similar over-all training program at Laughlin Air Force Base during February 1958 for Strategic Air Command crews which would be flying the B-57D aircraft during the HARDTACK series. Both the B-57B and the B-57D training programs were completed by the end of March 1958.

On 1 April 1958, the ten B-57B aircraft of the 4926th Test Squadron departed from Kirtland Air Force Base on the first leg of the trip to the Eniwetok Proving Ground. At McClellan Air Force Base, California, the first stop enroute, the aircraft encountered a delay of some 12 days, a delay caused by adverse winds over the Pacific Ocean. On 12 April, seven of the aircraft departed for Hickam Air Force Base, finally arriving at Eniwetok on 18 April. The three remaining B-57B's departed from McClellan on 16 April and arrived at Eniwetok on 21 April. They were readied immediately for sampling missions.

The B-57D aircraft left Laughlin Air Force Base, accompanied by two C-124 support aircraft carrying maintenance personnel and equipment, on

6 April 1958. Enroute the B-57D's also encountered adverse winds, and their arrival at Eniwetok was delayed until 14 April.

With few exceptions, the personnel and equipment of the Sampling Element were in place and ready for sampling operations in mid-April.

Very High and Ultra High Altitude Tests. The operation plan specified that two RB-36 aircraft would be employed during Operation HARDTACK to support certain technical projects on the very high altitude and ultra high altitude shots.

Test requirements for these shots dictated that the two B-36's be highly instrumented and placed under Task Group 7.4 for operational control during the operational phase of HARDTACK. Because of the type of instrumentation and data desired, extremely accurate aircraft position was considered imperative. The currently installed aircraft radar, AN/APQ-24, thus, was not adequate for these events, inasmuch as the aircraft patterns in the test array were approximately 100 miles from the closest land or radar return.

Therefore, a decision was made in mid-1957, by the directors of the concerned scientific projects, to modify the B-36 aircraft by installing an upward-oriented E-4 fire control radar system which would provide the crew with a means to position the aircraft on the radar return received from the balloon weapon carrier on the YUCCA event. This radar system had been used effectively in fighter type aircraft but had never before

been adapted to the B-36 aircraft system. Considerable delay was experienced during the modification period; and when the aircraft was returned from the modification contractor the E-4 systems on the aircraft were lacking some components and had not been checked out. Despite several attempts by the crews at Kirtland Air Force Base to flight check the systems, no successful check was completed by the time the aircraft departed for the proving ground in March 1958. Therefore, the crews arrived at Eniwetok with little training or experience with their primary positioning radars; the E-4 radars did not produce satisfactory results; no established B-36 aircraft positioning methods were capable of development prior to the first proving ground rehearsal; more rehearsals than originally planned were necessary for adequate positioning; and, alternate optical and "eyeball" methods had to be developed to overcome the E-4 deficiency. Two E-4 technical representatives were secured from the Zone of Interior in an attempt to rectify the circumstance; however, this belated effort did not result in satisfactory operation in time for YUCCA D-day.

The two B-36 aircraft departed from Kirtland Air Force Base on 4 March, and arrived in the proving ground on 11 March. Planning and training for HARDTACK participation was begun immediately. Except for the malfunctioning of the E-4 systems, the aircraft and the crews were adequately prepared for the operational phase of the test series.

AFWL/HQ

[redacted]

AFWL/HQ

91

Nose Cone Recovery. On 15 October 1957, representatives of the Task Group 7.4 Operations Directorate attended a Joint Task Force SEVEN conference concerning procedures and logistics problems involved in the recovery of rocket nose cones during HARDTACK. In this program, plans were made to fire sampling and instrumentation rockets in various test events, their nose cones being parachuted into the lagoon or open sea. Inasmuch as these cones were declared essential to the collection of valuable data, expeditious recovery was held to be imperative. Task Group 7.4 would take only a minor part in the project, providing to other Joint Task Force SEVEN agencies SA-16, helicopter, or L-20 aircraft for spotting and possibly an Air Force type crash boat for pick-up of the cones.

On 4 December, Colonel Kieffer and Lieutenant Colonel Walter B. Walker, Jr. (Deputy Director of Operations) attended a Task Group 7.1 conference on sampling rocket and nose cone recovery, held at Salton Sea Test Base. Recovery tests were observed during the program. The main objective of this visit was to coordinate and comprehend more fully that part of the task that would be the responsibility of Task Group 7.4 during the actual recovery program in the proving ground.

Another conference and recovery demonstration was conducted by Joint Task Force SEVEN from 20 to 24 January 1958 at Point Mugu Naval Air Station, California. Representatives of Task Group 7.4 participated in this program. One determination made at this meeting was that Navy P2V aircraft

AFWL/HQ

AFWL/MNO

would be utilized rather than Air Force SA-16 aircraft. Provision of helicopter and L-20 aircraft and a crash boat for the HARDTACK test series, however, remained as a firm Task Group 7.4 requirement.

Further practices were conducted in the proving ground after the arrival of Task Group 7.4 elements, and the group provided the required aircraft support for the actual shots, starting with YUCCA on 28 April 1958.

Search and Rescue. Plans for search and rescue during HARDTACK were outlined at some length in the operation plan. In general, the search and rescue mission for HARDTACK was to be essentially the same as it was for REDWING. Seven SA-16 aircraft were to be made available for search and rescue missions, although some of these aircraft were designated to support Weather island re-supply projects. At least four SA-16's were to be available at all times for search and rescue.

The over-all control of Joint Task Force SEVEN search and rescue forces during rehearsal and shot periods was to be a responsibility of the Task Group 7.4 Senior Air Controller and the Air Operations Center. During all other periods, this control was to be exercised by the Search and Rescue Element Commander (see "Mission and Organizational Structure of Task Group 7.4 Units," chapter III, this history, for a general statement of the mission and the organization of the Search and Rescue Element).

More specifically, the Test Services Unit Commander was to provide up to three airborne SA-16 aircraft for shot and rehearsal periods, one SA-16 for back-up and for 24-hour airstrip alert during the entire test series, and a search and rescue control section in the Air Operations Center, starting 15 March 1958 and continuing throughout the test series. During all rehearsal and shot periods, two search and rescue helicopters were to be provided by Test Base Unit.

The SA-16 on airstrip alert at Eniwetok was to furnish assistance to aircraft in distress in the proving ground vicinity during periods when rehearsal and shot operations were not in progress. However, on single shot events, one SA-16, and on dual shot events, two SA-16 aircraft were to be stationed at strategic points in the array pattern, remaining airborne until the recovery of all aircraft from their missions.

Detailed search and rescue plans were contained in a document of standard operating procedures[25] compiled by Task Group 7.4. The document had as its objective the provision of information and procedural instructions to those agencies participating in search and rescue operations in the Eniwetok Air Control Area. Based upon directions contained in the Joint Task Force SEVEN Operation Order 1-58, this document served as an area agreement for search and rescue operations in the Eniwetok Air Control Area. The Task Group 7.4 Commander, thus, was designated as the Task Force Search and Rescue Commander, having search and rescue

AFWL/HQ

AFWL/HQ

[redacted]

responsibility for all Joint Task Force SEVEN air and surface units in the Control Area during HARDTACK.

An important portion of the document defined the limits of the Eniwetok Air Control Area: the arcs of two circles of 100 nautical mile radii drawn from Eniwetok and Bikini Atolls and joined by straight line tangents (as shown in the current Radio Facilities Chart). Joint Task Force SEVEN units, however, "will participate as may be appropriate in SAR operations outside of this area."

By the beginning of the operational phase of HARDTACK, the plans for search and rescue were firm and no outstanding problems were encountered.

Flight Safety. As during Operation REDWING, many factors were present for HARDTACK in the proving ground to make flight safety a momentous and persistent problem. The limited size of the airfield at Eniwetok, for example, was an especially important aspect of flight safety for it would expose HARDTACK aircraft to many operational hazards that could not be eliminated. Many structures required for flying activities were of necessity sited in violation of established Air Force airfield clearance regulations. This was true of the location of the Control Tower, the Ground Controlled Approach unit, communications antenna poles, the hangar, parking aprons, and many miscellaneous structures. Furthermore, the prospect of a high concentration of aircraft in critical positions on mission days was to require precise indoctrination and close coordination between

AFWL/HQ

AFWL/HQ

[redacted]

05

air crews and Air Traffic Control agencies. Consequently, planning was begun early to emphasize the necessity for a well defined and rigid flight safety program.

Among the actions taken and policies established to promote the safe and expeditious flow of air traffic were the following: (1) policies and procedures were prescribed to govern ground handling of aircraft and operation of motor vehicles in the landing and parking areas; (2) air traffic control procedures were developed and disseminated to all participating agencies; (3) those airfield obstructions which violated clearance criteria were properly marked and/or lighted for night operation; (4) a mission execution chart was to be prepared by the Test Aircraft Unit for each mission to assist all personnel concerned in maintaining a safe, orderly flow of aircraft operation from start of engines to landing; and (5) a task group Operations Officer was to be stationed in the control tower during mission days to coordinate with tower personnel all instructions from the Air Operations Center.

Task Group 7.4 early began the preparation of a flying safety survey check list. This list, distributed to all Task Group 7.4 elements possessing participating aircraft, was in question and answer form and was designed to provide a ready guide for policies and procedures covering all known aspects of flying and related ground operations in the proving ground. The list proved to be of immense value to the elements during

AFWL/HQ

[redacted]

AFWL/HO

9 6

the late planning phase and helped to insure a general state of readiness in meeting flying safety criteria.

Several construction projects during the planning phase of HARDTACK were favorable to safer operation and maintenance of aircraft. The most important of these projects was the extension of the FRED (Eniwetok) runway, beginning in October 1957. The existing 6,850-foot runway was to be extended to a length of 8,300 feet, including a 200-foot addition on the south end and a 1,250-foot addition on the north end. On the north end, the runway would extend to the water edge.

The construction of a run-up pad and accessways, parts of the runway extension project, also began in October, as did the rehabilitation of the runway and aprons and installation of ramp lighting. These projects, with few exceptions, were completed or near completion by the beginning of the operational phase of HARDTACK.

The Group Commander directed that a flying safety council be established for HARDTACK and meet once each week during the operational phase to discuss and consider safety problems and policies on a continuing basis. Similar bodies also were formed in each of the Units to stress the magnitude of potential flying safety problems.

Therefore, because of these efforts to indoctrinate flying personnel in proper procedures, to reduce or eliminate physical obstacles, and to continue the accentuation of problems and hazards, the flight safety program

AFWL/HQ

[redacted]

AFWL/HC

97

was considered to be of at least minimum adequacy at the end of the planing phase of HARDTACK.

Radiological Safety and Monitoring. The general concepts for radiological safety and monitoring for HARDTACK were based on those of REDWING. No outstanding problems were encountered on any aspect of the planning for radiological safety and monitoring. Several radiological matters, however, were noteworthy during this period.

On 29 October 1957, a letter[26] to interested agencies set forth the Task Group 7.4 requirements for monitor training for HARDTACK. The letter stated that there would be a requirement for each multiplace aircraft participating in D-day and D plus 1 missions in the test area to have on board a qualified radiation safety monitor. Task Group 7.4 elements "may require monitors for other purposes," the letter said. Each element was required, additionally, to furnish two monitors for each 50 personnel assigned, for emergency fallout survey teams.

Thus, monitors, other than personnel assigned as primary duty monitors, were required to have completed an approved monitor training program during a period six months prior to the start of the operational phase of HARDTACK. All monitors thus appointed by the elements and "who have not completed an approved program will be trained in a 40 hour Rad-Safe course to be given by Task Unit 6, Task Group 7.1 at Eniwetok."

The monitor training for 75 selected students was conducted by Task

AFWL/HQ

[redacted]

AFWL/HO

95

Unit 6 in two increments; the first class entered the course on 24 March 1958, and the second on 7 April 1958. The course actually consisted of only 16 hours of training but did provide an adequate number of trained personnel to meet the needs of Task Group 7.4.

Radiation exposure requirements of sampler crews were discussed at length during the planning phase of HARDTACK. Task Group 7.4 early planned to request special maximum permissible exposures for sampler crews, and the radiation safety representatives of both Task Group 7.1 and Task Group 7.5 agreed to support this request. The request was made formally at a meeting on 7 November 1957 of Joint Task Force SEVEN radiation safety officers. The ultimate permissible exposure was finally set at ten rems.

Another conference of note was held at Los Alamos Scientific Laboratory on 28 December 1957, when representatives of Task Group 7.4 met with members of Task Group 7.1 to consider sampling requirements for B-57D samplers of the Strategic Air Command. Exposure rates were a primary area of discussion. Two Strategic Air Command pilots for each shot of more than [redacted] yield were to participate in the sampling mission; approximately two rem exposure per aircraft for each Los Alamos Scientific Laboratory shot and three rem exposure per aircraft for each University of California Radiation Laboratory shot were to be required. Thus, on five LASL events and five UCRL events, a total exposure of 50 rems, or approximately six to eight rems per pilot, was predicted. The conferees concluded that

AFWL/HQ

AFWL/HQ

a ten rem figure would be an adequate planning factor for Strategic Air Command pilot total exposure during HARDTACK.[27]

Early in March 1958, plans were made by the Nuclear Research Officer to procure and issue film badges to all personnel of Task Group 7.4. Consequently, Group Regulation 160-1, published on 22 March, established the procedures and provided information for determining and recording exposures of personnel to ionizing radiation. To provide for the radiological safety of personnel participating in the test series, it was necessary to determine the accumulated exposure of each individual, a determination accomplished through the use of "film badges." The film badge, similar to that used for REDWING, consisted of a small plastic encased piece of special photographic film; and, when developed and analyzed, the film indicated the amount of ionizing radiation to which it had been exposed. All personnel, therefore, received an initial issue before the first shot of the HARDTACK series, and replacement issues were to be made, depending upon the duties and length of tour in the proving ground of each individual.

Establishment of Weather Islands.* By early August 1957, because of certain Joint Task Force SEVEN survey and planning actions, much thought was already being given to the establishment of surface and rawinsonde stations at Kusaie, Kapingamarangi, Tarawa, Nauru, and Utirik, and of surface and pibal (pilot balloon) observation stations at Rongelap, Wotho, and Ujelang.

---

* Most of the information for this section has been extracted from the history of the Weather Reporting and Forecasting Element, Provisional for HARDTACK, 1958.

AFWL/HQ

[redacted]

AFWL/HO

Headquarters Air Weather Service by directive on 27 November 1957 designated the 6th Weather Squadron (Mobile) as the task organization to support Task Group 7.4 by providing ground weather support, and charged the 4th Weather Group, through the facilities of the 6th Weather Squadron, among other tasks, to establish and operate weather observing stations at Tarawa, Nauru, and Kapingamarangi. These stations were to be fully operational by first shot minus 30 days and were to provide eight surface and up to five rawinsonde observations daily. The directive also called for the establishment and operation of similar stations at Kusaie and Utirik, these stations to be fully operational by first shot minus 30 days, providing eight surface and up to eight rawinsonde observations daily. Furthermore, weather observing stations at Wotho, Ujelang, and Rongelap were to be established and operational by first shot minus 15 days, providing four surface and two pibal observations daily.

As early as October 1957 new construction or rehabilitation of existing facilities had commenced at some of the stations. At Utirik, for example, new construction was completed during the period 14 October 1957 to 6 November 1957; at Rongelap, from 26 December 1957 to 18 January 1958; and at Nauru, from 3 March 1958 to 4 April 1958. Rehabilitation generally required less time: at Ujelang, from 10 to 27 November; at Kapingamarangi, from 30 November to 10 December; at Wotho, from 30 November to 16 December; at Kusaie, from 10 to 23 December; and at Tarawa, from

AFWL/HQ

AFWL/HC

191

28 January to 10 February 1958.

Some delays encountered in negotiating with the Australian Trust Territory government at Nauru caused much early concern regarding the possibility of using a location at that isalnd for weather activities. By 12 February 1958, however, basic agreements had been made, the site had been selected, the site survey was in process, and the airstrip had been examined. Extension and improvement of the Nauru airstrip appeared to be the greatest single impediment to prompt establishment and operation of the weather station. The airstrip, 150 feet by 4,200 feet, was not expected to be capable of handling C-54 aircraft until mid-March 1958, thus deferring much of the activity at the site until March and April.

Consequently, a Holmes and Narver (Task Group 7.5) construction force arrived at Nauru on 3 March to begin erection of the weather camp. By 31 March, Team 18 of the Weather Reporting Element had moved to Nauru to put the camp into operational order, and by 7 April, the site was fully operational. The airstrip, by that time, had been rehabilitated to accommodate C-54 aircraft.

No more than nominal difficulties were encountered in establishing the camp at Kusaie. After the rehabilitation of the Kusaie site by Holmes and Narver personnel, Team 21, the first to deploy to an operating location, began its preparation to move from Eniwetok to the Kusaie camp. The team, with its equipment and supplies, arrived at Kusaie on 17 February

AFWL/HO

1958. The eleven members of the team reached a routine operational status on 17 March 1958.

The teams for Kapingamarangi (Team 21) and Tarawa (Team 19) departed on the USS Comstock (LSD-19) from Eniwetok on 9 March 1958. The ship arrived at Kapingamarangi on 12 March and the team began operating at that site on 18 March. Even less difficulty was experienced at Tarawa, where Team 19 arrived on 18 March. At the end of that month the weather station at Tarawa was functioning routinely.

Two other teams departed from Eniwetok together: Team 3 for Rongelap, and Team 1 for Wotho, on 10 March. Meeting with no eminent problems, the teams were operating at Rongelap on 17 March and at Wotho on 24 March.

Team 22 departed from Eniwetok on 17 March, and at the end of the month the Utirik station was operational, having encountered no outstanding problems. Similarly, no trouble delayed the activation of the Ujelang camp by Team 2. The team left Eniwetok on 21 March and six days later assumed on operational status.

The Weather Reporting Element contacted Headquarters Task Group 7.4 in January 1958 regarding procedures for reimbursement of indigenous personnel for labor performed at the weather sites. The element suggested that the natives might be paid for services by the transfer to them of broken lot food supplies and/or POL (petroleum, oil, and lubricant) products which might be excess to the needs of the camps. All payments

would be within the established wage scales at the respective islands.

The Weather Reporting Element's Unit Manning Document had been prepared on the assumption that native labor would be utilized at the weather camps. Therefore, the Element Commander pointed out that if broken lot food stocks and POL could not be used for payment, a sum of $4,800 would be required to pay for indigenous labor. Task Group 7.4 favored payment in food and POL items, and made this proposal to Joint Task Force SEVEN.

Colonel Paul R. Wignall, Deputy Commander of Task Group 7.4, with another representative, conferred with the High Commissioner of the United States Trust Territory at Agana, Guam, in early February. A principal portion of the discussion was devoted to the reimbursement problem. Colonel Wignall proposed that food and other items be used for payment, as had been done on Operation REDWING. The Commissioner, exploring other possibilities also, ultimately agreed to this proposal. In accordance with this proposal, the local Governor would provide the labor force need by the camp concerned and would also pay the laborers. Broken lots of food would be furnished to the Commissioner to distribute to local stores for sale, the proceeds of which would be returned to the Governor.

The Trust Territory authorities, however, stated that direct payment to the natives should be made in case of property damage at the sites,

AFWL/HQ

[redacted]

AFWL/HO

104

particularly damage to trees.

These general arrangements were appropriate to the sites at Kusaie, Kapingamarangi, Utirik, Wotho, Rongelap, and Ujelang, but not to the sites at Tarawa or Nauru, inasmuch as Tarawa and Nauru were not under United States Trust Territory jurisdiction.

Joint Task Force SEVEN in March directed that native personnel would be reimbursed from appropriated funds; and, in the case of Tarawa and Nauru, before employing native laborers at these sites, permission would have to be obtained from the local government authorities and appropriate terms of employment and reimbursement arranged.

A final Joint Task Force SEVEN decision stated that the Kusaie team was to continue paying its indigenous laborers as originally arranged, that is, in broken lots of food. Rice, principally, was the payment medium. At Tarawa and Kapingamarangi payment was to be in cash, negotiated through the appropriate Trust Territory representatives. No indigenous employees were to be hired at Nauru for any purpose. Finally, payment of natives at Utirik, Ujelang, Wotho, and Rongelap was determined no to be a Task Group 7.4 responsibility but a concern of Holmes and Narver which was the responsible agency for camp housekeeping at these sites.

The necessary paperwork for payment of indigenous employees under Task Group 7.4 control was processed by the Task Group 7.4 Comptroller

AFWL/HQ

[redacted]

AFWL/HQ

late in March 1958, and the problem was considered resolved soon afterward.

Airlift and Island Re-Supply. Aircraft requirements for airlift and weather island re-supply were set forth in the Air Force book message of 11 October. Five C-54 aircraft, plus the three photography C-54's of Test Services Unit to provide back-up, would be available for inter-atoll and weather island re-supply airlift; and seven SA-16's serving a primary function as search and rescue aircraft, would also be available for re-supply services. Eight L-20's and fifteen helicopters were to furnish inter-island airlift at the two atolls.

The helicopter aircraft began airlift support operations in the proving ground in mid-1957. By 1 October 1957, three H-19's were in use at Bikini, and one H-19 and seven H-21 aircraft were operating at Eniwetok. The helicopter force was augmented beginning in January 1958 so that, by 14 March, six H-19's and nine H-21's were available. The three H-19 aircraft at Bikini were replace late in January 1958 by a Marine helicopter squadron, and the H-19's were transferred to support the Eniwetok Atoll airlift requirements.

Early in October 1957, Task Group 7.4 learned that the airstrip at Nauru (a newly-added weather island) might be unsuitable for C-54 operation because of a lack of rehabilitation. This possibility caused the group to consider the retention of a C-47 at Eniwetok for re-supply purposes. Because Holmes and Narver (Task Group 7.5) had experienced

AFWL/HQ

[redacted]

AFWL/HQ

difficulty in securing diplomatic clearance for entry to Nauru, rehabilitation of the airstrip had been considerable delayed. This problem, however, was eliminated by early April 1958 after the necessary clearance was obtained, and the airstrip was rehabilitated to accept C-54 aircraft.

At the end of the planning phase, the entire airlift effort was considered to be in adequate condition to provide required satisfactory service for HARDTACK.

Aerial Photography. The requirement for technical photography of nuclear fireballs for the HARDTACK series became known in July 1957. To meet this requirement of photography for two underwater shots, aircraft of Task Group 7.4 were to be provided. Until late August 1957, B-57D aircraft were under consideration for the task; however, in October the firm decision was reached that three C-54 and two RB-50 aircraft would be available, the latter from either the Pacific Air Force or, most likely, the Air Photographic and Charting Service. Ultimately, all these photographic aircraft were provided from the resources of the Air Photographic and Charting Service. On 13 March two of the C-54's arrived at Eniwetok; on 28 March one C-54 and one RB-50 arrived; and, on 13 April the remaining RB-50 arrived.

Until late in 1957 no requirement for photography of a documentary nature had been declared by Joint Task Force SEVEN, although Task Group 7.4 learned in October 1957 that Armed Forces Special Weapons Project had

[redacted]
AFWL/HQ

AFWLJur

already funded for a documentary type film and that the Atomic Energy Commission would require an unknown amount of film footage.[28] Because no firm requirement for documentary type photography was known at that time, no action was taken by Task Group 7.4 to include such a requirement in the early HARDTACK planning program. However, the operation plan provided for a Documentary Photography Element drawn from Air Photographic and Charting Service resources to accomplish such photography if specified by JointTask Force SEVEN.

In December 1957, Joint Task Force SEVEN outlined the requirements for documentary type photography, and Task Group 7.4 included these requirements in the over-all mission. Personnel to accomplish the photographic task arrived in the proving ground early in March 1958.

C. MATERIEL

Logistics Planning. The HARDTACK logistics planning conference for Task Group 7.4 was held at Kirtland Air Force Base on 29 and 30 October 1957. In attendance were representatives of all Task Group 7.4 participating elements and Headquarters Air Materiel Command, together with monitors from Air Materiel Command Depots, Headquarters United States Air Force, Air Research and Development Command, Strategic Air Command, Military Air Transport Service, Field Command of Armed Forces Special Weapons Project, Task Group 7.1 and Task Group 7.5. The main categories of

AFWL/HQ

discussion at the conference were the following: (1) supply and equipment requirements; (2) work space and maintenance facilities requirements; (3) field maintenance requirements; and (4) transportation requirements.

The conference served a two-fold purpose, that of explaining to the participating elements the logistics support consept and that of briefing the monitors on the part assumed by Air Materiel Command in the processing and filling of requirements generated. All representatives who arrived at the conference without a listing of their predicted requirements were requested to submit these lists as soon as possible after their return to their home stations. No major materiel problem areas were uncovered by the conference; however, several mino problems were clarified and resolved.

The general HARDTACK logistics plan for Task Group 7.4 was outlined in Operation Plan 1-58. According to the plan, based largely upon the plan employed for REDWING, the Task Group 7.2 Commander would be responsible for furnishing certain housekeeping supply support to all units of Task Group 7.4 housed and operating on FRED (Eniwetok Island). This support was to include billeting, messing, commissary, laundry, salvage, general purpose vehicles, bus transportation, clothing and personal equipment repair, post exchange and sales stores, and supply of all expendables and consumables common to both task groups.

The operation plan emphasized that "each unit will furnish to the

AFWL/HQ

maximum extent possible supplies and equipment needed in the overseas operating area." Each unit, excepting the Test Base Unit (permanently based at Eniwetok), also was directed to prepare lists of supplies and equipment needed in the proving ground, these lists to be submitted to the Director of Materiel for processing and procurement of listed items. The lists were to be divided into two categories: "A" kits, containing those items which were to be transported to the proving ground by the unit; and "B" kits, containing those items to be prepositioned in the proving ground by Task Group 7.4. The first category items were defined as those peculiar to the unit aircraft, including items needed for enroute support. The second category items were defined as prepositioned items such as aircraft spare engines and other parts, and special ground handling and maintenance equipment. Supply levels for at least 120 days were planned.

The "B" kits, then, were of most concern to agencies having responsibilities in the matter of procuring and transporting the required supplies. The Director of Materiel, after receiving the lists from the elements, reviewed and screened the requirements against reported stocks in the Test Base Unit (already at Eniwetok), earmarking items on hand by notifying AFB 2872 (Base Supply, Test Base Unit). The "A" kits lists were then returned to the submitting unit for requisitioning action and preparation for shipment. The "B" kits lists were forwarded to the Task Group 7.4

AFWL/HQ

Logistics Liaison Officer at Headquarters Sacramento Air Materiel Area, McClellan Air Force Base, who initiated supply action for direct shipment to the proving ground.

At the conclusion of the logistics conference in October, approximately 70 per cent of the supply and equipment requirements lists for Task Group 7.4 elements had been received by the Materiel Directorate. By 14 March 1958, more than 80 per cent of the requirements for all elements had been shipped from Air Materiel Command Depots to the proving ground. The percentage increased perceptibly for most elements by the end of April 1958; at that time, all remaining items of "B" kits not in pipe-line status were cancelled.

Construction. The Director of Materiel in October 1957 reported that all except one of major construction projects in the Task Group 7.4 program for Fiscal Year 1958 had been approved by the Atomic Energy Commission and other approving agencies. The one exception was the planned expansion of the farm for petroleum, oil, and lubricants. Late approval of necessary funds and the long procurement lead time for equipment for the farm resulted in the inability of the contractor (Holmes and Narver) to complete this facility for HARDTACK. The lack of this expanded facility was expected to make mandatory the extremely careful monitoring of supply and consumption functions involving petroleum, oil, and lubricants.

The extension of the FRED (Eniwetok) runway, the largest and most

AFWL/HQ

[redacted]

AFWL/HQ

critical project in the Fiscal Year 1958 program, got underway during October 1957 and at that time was expected to be completed in late January 1958. The old runway, 6,850 feet in length, was to be increased to 8,300 feet by virtue of a 200-foot addition on the south end and a 1, 250-foot addition on the north end. The runway on the north end was to extend to the water edge on the ocean side of the island; the extension would have a slope not to exceed one per cent.

Construction of a run-up pad and accessways and rehabilitation of the runway and aprons were also begun in October. The construction of an additional parking apron was begun late in October, being scheduled for completion late in December 1957. Several other construction projects either were initiated or were already in process in October: (1) the construction of aircraft and personnel decontamination facilities, scheduled for completion late in February 1958; (2) construction of ramp lighting, planned to be finished by late February 1958; (3) construction of special equipment maintenance facilities; (4) pavement of the technical area road (combined with the runway extension project), scheduled for completion late in January 1958; (5) addition of two lean-to's on the hangar, scheduled for completion in mid-February; and (6) construction of an explosive storage facility on FRED, having no scheduled completion date.

At the end of February 1958, the Director of Materiel reported that the various projects all were underway but that all were behind schedule. Many

of the projects, however, were terminated in March 1958 and others in April; but the delays, while vexatious, did not hinder the beginning of the operational phase of HARDTACK.

Aircraft Modification. The major Task Group 7.4 modification task for HARDTACK was that involving B-57 sampler aircraft. Four B-57B aircraft of the 4926th Test Squadron (Sampling) entered Warner Robins Air Materiel Area in July 1957 to be changed from conventional configuration to sampler configuration and to undergo installation of TACAN equipment. All except one of these B-57B aircraft, approaching their IRAN inspection dates, were simultaneously being subjected to the IRAN requirement. The last of the aircraft from Warner Robins was returned to the 4926th in late January 1958. Six other B-57B's, already modified, were in use by the 4926th. All ten of these aircraft were earmarked for use on Operation HARDTACK.

To augment the sampling effort for HARDTACK, six B-57D aircraft of the 4025th Strategic Reconnaissance Squadron at Laughlin Air Force Base, Texas, were also designated for HARDTACK use. These six Strategic Air Command aircraft were entered in the modification process at the Glenn L. Martin plant at Baltimore, Maryland, in October 1957. They completed the process in January 1958. This modification consisted primarily of the addition of sampler tanks and compressor platforms not necessitating major chages to the basic configuration of the aircraft. After sampler modification the B-57D aircraft were still in such a configuration that

reconversion to Strategic Air Command specifications could be accomplished within a 24-hour period.

While these Strategic Air Command aircraft were undergoing sampler modification, all B-57D's by Air Force directive were grounded for a check of the honeycomb wing structure. A status report from the Martin company in October indicated that those B-57D's planned for HARDTACK use appeared to have no wing structure deficiencies which would prevent timely completion of the sampler modification, but that in case other related deficiencies were discovered, the required equipment was on hand at Martin to effect the necessary modification without delaying the sampler capability change. No related deficiencies were found to delay the process.

Instrumentation of the B-52 was largely a routine matter for Wright Air Development Center. No difficulties in this modification project were reported. Instrumentation of the B-36 aircraft was a responsibility of the Air Force Cambridge Research Center. No delays or difficulties were encountered.

Aircraft Maintenance. By the end of October 1957, approximately 50 per cent of the requirements lists for work space and maintenance facilities had been received by the Materiel Directorate from Task Group 7.4 elements. Final allocation of space and facilities were made prior to 1 January 1958, after all requirements were formulated. Much attention was given to the close proximity of maintenance facilities and the parking of

aircraft in an effort to eliminate maintenance delays and to increase efficiency.

Some 80 per cent of the requirements for field maintenance had also been declared to the task group by the end of October, the final allocation for these services being made in December 1957. The maintenance plan was outlined by the operation plan in February 1958, based upon the concept used successfully in Operation REDWING. The plan provided for an organizational maintenance capability within each element having assigned aircraft, utilizing assigned personnel and equipment.

The operation plan also provided for the establishment by Test Base Unit of a field maintenance capability utilizing assigned personnel, base shops, and consolidated equipment. The field maintenance activity was to be augmented with personnel from all the participating elements.

As in REDWING, the planning also included the establishment of a Maintenance Control Unit to exercise management control of the over-all maintenance effort and to expedite the delivery of supplies and equipment. An inter-communication system was planned to link the various maintenance and supply functions with Maintenance Control. Among these functions were each element Maintenance Office, Base Supply, Base Shops, Auxiliary Equipment Shop and the POL farm. A radio net was planned between Maintenance Control and radio-equipped vehicles, the vehicles to be used for expediting the flow of supplies and follow-up on maintenance assistance.

[redacted] AFWL/HQ

AFWL/HO

115

A somewhat detailed outline of the scheme for accomplishing aircraft maintenance and for the coordinated use of Base facilities "which will achieve the most economical utilization of existing facilities and personnel at Eniwetok" was contained in the Aircraft Maintenance Plan, published on 23 October 1957.[29]

The Aircraft Maintenance Plan stated that the Units performing organization maintenance would be responsible for (1) accomplishing scheduled and non-scheduled maintenance of aircraft and associated equipment within the capability of available personnel and equipment, (2) servicing of aircraft with fuel, oil, oxygen, and ADI fluid, (3) providing personnel to assist in aircraft decontamination, and (4) maintaining of adequate bench stocks to support the mission.

According to the Aircraft Maintenance Plan the consolidated Base Maintenance Unit was scheduled to have the following responsibilities:

(1) Limited engine build-up.

(2) Limited air-frame repair.

(3) Field maintenance of ground-powered and aircraft handling equipment.

(4) Field maintenance of communication-electronic equipment.

(5) Build-up of tires and wheels.

(6) Field maintenance of aircraft electrical systems, instrument systems, hydraulic systems, and propeller systems.

(7) Manufacture of liquid and gaseous oxygen.

AFWL/HQ

AFWL/HO

16

Specific instructions for the responsibilities of the Maintenance Control Unit also were set forth in the Aircraft Maintenance Plan. These responsibilities included the following:

(1) Maintenance of the current status of all participating aircraft.

(2) Maintenance of the current status of aircraft support equipment.

(3) Assignment of work priorities and allocation of resources.

(4) Scheduling of maintenance assistance and services provided by Test Base Unit to all elements.

(5) Scheduling of the use of the hangar and wash rack.

(6) Scheduling of reservicing of aircraft fuel, oil, and ADI systems.

(7) Scheduling of reservicing of oxygen carts.

(8) Provision of a delivery service between Base Shops, the supply warhouse, and aircraft, for field maintenance personnel and supplies.

(9) Functioning as the control point for reclamation of aircraft in case of aircraft accident on the airstrip.

Personnel to direct the activity of the Maintenance Control Unit and to establish the field maintenance system were among the first increments to arrive at Eniwetok in February 1958. By the end of that month the system was considered operational and prepared to meet the requirements of HARDTACK.

Vehicle Requirements. As a result of the receipt of equipment requirements from the elements, a tentative allocation of general purpose

AFWL/HQ

vehicles was made by Task Group 7.4 in October 1957. The initial allotments were made to Unit Commanders for further allocation to the elements. Some 124 general purpose vehicles had been allocated to Task Group 7.4 by Joint Task Force SEVEN prior to October 1957, an allocation which was somewhat greater that that for REDWING when 103 vehicles were provided to the group (see "Vehicle Requirements," Chapter I, this history). These vehicles arrived in the Eniwetok Proving Ground during the last part of 1957 and were made ready by Task Group 7.2 for issue to Task Group 7.4. The full issue was received by Task Group 7.4 before the beginning of the operational phase of HARDTACK.

The plan for shipment to Eniwetok of special purpose vehicles, which were being acquired from Air Force resources and which involved 122 vehicles, was made firm in October 1957 with Headquarters Air Research and Development Command. The vehicles arrived at the port of embarkation by 1 January 1958 for further conveyance to the proving ground. All the special purpose vehicles arrived at Eniwetok in January and February 1958 and were placed in a common pool, to be issued to the requiring agencies as needed.

No outstanding problems were encountered in the acquisition, transportation, or allocation of these vehicles.

Portable Buildings. The problem of securing portable buildings for HARDTACK, to provide an increased amount of sheltered working space for

AFWL/HQ

[redacted]

AFWL/HO

15

certain Task Group 7.4 organizations, proved to be a lengthy problem, finally resolved ust before the beginning of the operational phase of HARDTACK.

Task Group 7.4 had learned in May 1957 that the Complete Assembly Shelters utilized during REDWING would not be available for use on HARDTACK. Task Group 7.4 attempted immediately to secure adequate substitute structures (see "Portable Buildings," Chapter I, this history). Air Materiel Command suggested that use be made of Butler type buildings which could be made available, although these buildings were without generators, flooring, and other accessories. The Director of Materiel, in exploring the possibility of using Butler type buildings, found indications that approximately $6,000 for each building would be required for the construction of foundation, flooring, and utilities and that each building of this particular type seemed to be much too large to afford the flexibility necessary in the utilization of temporary shelters.

Thus, in September, Task Group 7.4 requested Joint Task Force SEVEN to assist the effort to secure suitable buildings, preferably Complete Assembly Shelters. In October Joint Task Force SEVEN notified the group that Complete Assembly Shelters definitely could not be acquired for HARDTACK but that a substitute type was being sought.

In November, Joint Task Force SEVEN informed Task Group 7.4 that ten prefabricated shelters, 20 feet by 42 feet, had been approved by

appropriate agencies for HARDTACK use and were being withdrawn from stocks at Maywood Air Force Depot, California. Early in January 1958 these shelters arrived at the port of embarkation and were subsequently transported to Eniwetok. By 15 April the shelters were erected and in use by Task Group 7.4.

Personal Equipment. When Colonel Paul R. Wignall, Task Group 7.4 Deputy Commander, visited the proving ground in November and December 1957, one area of interest was the planning for billeting and personal accommodation of Task Group 7.4 personnel. Colonel Wignall at this time conferred with Colonel Stanley Sawicki, the Task Group 7.2 Commander about the provision of such items as "Class X" clothing and hot lockers. Colonel Sawicki believed that it would not be necessary for Task Group 7.4 to purchase hot lockers for its personnel, inasmuch as Task Group 7.2 was considered to have on hand enough materials for the rehabilitation or construction of an adequate number. Task Group 7.2 agreed to furnish two lockers each of 48 cubic feet capacity for each tent housing eight to ten persons. A "hot locker tent" for dead storage of clothing also was planned.

Task Group 7.4 had porjected its clothing requirements to Task Group 7.2 in early November 1957, these requirements to provide four shirts, four pairs of short trousers, and one pair of service shoes for each of 2,500 individuals. Since no shoes were available, the requirement for service footwear was later deleted.

[redacted] AFWL/HQ

AFWL/HQ

When Task Group 7.4 elements began to arrive at Eniwetok, it was found that sufficient quantities of clothing (trousers and shirts) were available but that adequate sizes were largely lacking. The lack of proper sizes continued until May 1958. Task Group 7.2 engaged in a "crash" procurement program in April and early May, which finally led to a resolution of the problem.

The requirements of Task Group 7.4 for hot lockers also were declared to Task Group 7.2 in October 1957, based on an expected Air Force population of 2,500 persons, allowing approximately 15 cubic feet of hot locker space for each individual. No difficulty was encountered until the bulk of Task Group 7.4 personnel began to arrive at Eniwetok in March and April and not enough of this equipment was available. When the needs became crucial, both the task groups hastened to use all hot locker resources available. Through contractual services at Hawaii, Task Group 7.2 acquired some 400 aluminum hot lockers. Meanwhile, Task Group 7.4 engaged in a rehabilitation and new construction program, using recovered materials, to supply a portion of the necessary lockers. Therefore, these combined efforts led to elimination of the hot locker problem by mid-June 1958. Task Group 7.2, however, continued the procurement program to secure aluminum lockers eventually to replace the less durable and efficient wooden types on hand.

D. PERSONNEL

Headquarters Task Group 7.4 was designated and organized at Kirtland Air Force Base on 1 October 1957, from the resources of Headquarters 4950th Test Group (Nuclear). The former was organized to accomplish the Air Force mission in support of overseas nuclear testing; the latter had the responsibility for supporting both overseas and continental nuclear test programs. To accomplish the continental test mission, the 4950th Test Group (Nuclear) consisted of (1) the Headquarters, (2) the 4935th Air Base Squadron at Indian Springs Air Force Base, Nevada, the primary support organization for continental tests (but having no direct part in overseas tests), (3) the 4951st Support Squadron at Eniwetok, which provided Air Base support in the Eniwetok Proving Ground, (4) the 4926th Test Squadron (Sampling), permanently stationed at Kirtland Air Force Base but performing sampling missions in either the Eniwetok Proving Ground or the Nevada Test Site, and (5) the 4952nd Support Squadron, made up of Air Force specialists and technicians provided on temporary duty at either the Nevada Test Site or the Eniwetok site to augment support activities. The 4952nd Support Squadron had a normal strength of some 250 airmen and 12 officers, but its strength and composition was subject alterations after each test, because the augmentation required at Eniwetok (where some base support activities were the responsibility of Task Group 7.2) was much different from

AFWL/HQ

AFWL/HQ

that required at Indian Springs, where the entire Base support was a 4950th responsibility.

During the summer and fall of 1957 when the 4950th Test Group was engaged in Operation PLUMBBOB in Nevada, the Directorate of Personnel and Administration was engaged in revising the Unit Manning Document of the 4952nd Support Squadron and in requisitioning personnel necessary to augment and support the Test Base Unit (4951st Support Squadron) in the Eniwetok Proving Ground for Operation HARDTACK. The UMD revision and augmentation requisitioning required a computation of the over-all strength of the task group in order to predict the personnel support requirements that would have to be fulfilled. Austerity in the computation was necessary because of the limitation of billeting space on Eniwetok; yet the computation had to be sufficiently large to meet mission requirements which at that time were not firmly established. Conferences were held with persons who were later to man the Test Services Unit, Test Aircraft Unit, and Test Base Unit, at which meetings the strength and billeting figures of their respective organizations were discussed. Eventually, estimates were obtained regarding the length of time the various units would require to move to the proving ground and become operational. From these estimates movement dates of the various organizations were determined.

After determining firm personnel figures and movement dates, the accurate revision of the preliminary budget estimate was made possible.

Furthermore, it was then possible for the Test Base Unit to predict with a fair accuracy the dates for movement of augmentation personnel from the 4952nd Support Squadron to the proving ground. Establishment of realistic time phasing of personnel was made imperative in the summer of 1957 by a Comptroller General decision that periods of temporary duty in excess of 180 days would be regarded as unwarranted. Later, however, by a mutual agreement between various organizations of the military establishment, Joint Task Force SEVEN was granted authority to extend these periods beyond 180 days for persons for whom no replacements were available and for whom extension was thus deemed essential. Although all the complications of this comptroller decision were not yet descernible, the greatest problem was predicted to involve personnel in the supply career field. Personnel in supply areas were urgently required at Eniwetok in December 1957, seven months before the test series was expected to be completed; they were also required throughout the operation and for two months after the close of the operational phase of HARDTACK for roll-up duties. Thus anticipating the problem, the group made early plans to replace the earliest augmentation personnel sent to Eniwetok and to stagger the movement of the remaining required personnel so that an adequate force would be available from December 1957 throughout most of August 1958.

Personnel requirements for the Test Services Unit were established by Headquarters Military Air Transport Command, based on planning information

AFWL/HQ

AFWL/HO

made available to that Command in relation to the predicted scope of Test Services Unit participation in HARDTACK. Inasmuch as the elements constituting the Test Services Unit were drawn from Military Air Transport Service resources, that Command assumed the responsibility for the manning of these elements. Those Test Aircraft Unit and Test Base Unit elements composed of personnel from other than Air Force Special Weapons Center resources were manned by appropriate Major Air Commands. Because of this manning by other Air Force agencies, the principal manning responsibility of Task Group 7.4, therefore, was the skills manning for the Test Base Unit augmentation force, the Sampling Element of the Test Aircraft Unit, and the Headquarters itself.

Some peculiarities of the Test Base Unit were particularly apparent when its manning problems were approached. During Operation REDWING in 1956, the Eniwetok Air Base unit was a large organization having a permanent strength of over 400 men. After its placement under the 4950th Test Group as a squadron, it became a much smaller organization and necessitated a sizeable augmentation by temporary duty personnel of the 4952nd Support Squadron in order to meet its increased requirements for the HARDTACK operation.

Requisitions for the manning of necessary Task Group 7.4 officer spaces had been submitted to Air Research and Development Command in March 1957. Airmen manning requisitions were submitted in May 1957. Then, during the

Task Group 7.4 Logistics Conference in October 1957, brief mention was made of the probable future need to place levies upon HARDTACK units for personnel to augment the consolidated field maintenance system at Eniwetok and to support supply roll-up operations. Such levies would be only for those skills which could not be provided from established Task Group 7.4 resources.

In December 1957, a review of maintenance man-hour requirements, as submitted by each element of the group, revealed that several specialists in various maintenance areas would be needed and could not be provided from within the group's manning capability. Hence, levies were placed on such Air Force organizations as Military Air Transport Service, Strategic Air Command, and Special Weapons Center, as well as other agencies in relation to their declared man-hour needs for these personnel, to report to the proving ground by 1 March 1958. Arrangements were made in a similar manner to procure supply roll-up personnel, these personnel to report to Eniwetok by 1 July 1958.

Several other aspects of the Personnel situation in the 4950th Test Group and Task Group 7.4 during the planning phase of HARDTACK, particularly in the last months of 1957, were noteworthy. For example, an Air Force directive in mid-October expanded on the airmen early separation procedures first announced in August 1957, authorizing separation of airmen first class and airmen second class from three to six months in

AFWL/HQ

[redacted]

AFWL/HQ

126

advance of their normal dates of separation. Some 69 airmen within the group were to be affected by this program. Because of non-retainability of these airmen for duty throughout HARDTACK, procurement of adequate replacements was imperative. The primary problem of the early release was defined as that of training and indoctrinating replacement personnel prior to their movement to the proving ground. A process of identifying those persons who were to be affected by early release policy was begun in October so that requisitioning action could be taken to secure replacements.

Ultimately, however, another course of action was pursued to secure replacements for these early release personnel. After identification these individuals were transferred to other Special Weapons Center organizations and the receiving organizations replaced those received by an equal number of similarly skilled personnel. In most cases, an adequate skill level was maintained among the replacements. The replacement program was concluded in sufficient time to preclude prominent problems before the beginning of the HARDTACK operational phase.

Another aspect of the Personnel situation was that of consolidation of Personnel functions. On 1 November 1957, a letter was received by the 4950th Test Group from the Chief of Staff, Air Force Special Weapons Center, directing consolidation of Personnel functions at Special Weapons Center level.[8] The consolidation was to become effective 1 December,

involving the transfer of one officer and ten airmen from 4950th units to the Center. Three of the involved airmen were in the 4952nd Support Squadron; the remainder (7) were in Group headquarters.

The consolidation was completed on 1 December 1957, and all personnel made surplus by the resulting Unit Manning Document adjustments were transferred from the 4950th Test Group. At least one important Personnel problem arose from the consolidation: the transfer of 4952nd personnel spaces to Special Weapons Center, which reduced the capability of Task Group 7.4 to support the Test Base Unit in the Eniwetok Proving Ground in the operation of consolidated Task Group 7.4 Personnel function. The plan for the operation of the consolidated Personnel function in the Test Base Unit during HARDTACK was presented to Special Weapons Center in mid-December. The required personnel were requested for assignment to the 4952nd. The Center Deputy Chief of Staff for Personnel agreed to provide the required Personnel manning to the 4952nd on an overage basis.

A further aspect of Personnel activity was a manning survey of the 4926th Test Squadron (Sampling), completed on 25 November 1957. A letter was submitted by the group to Special Weapons Center listing 13 airmen spaces vacant or requiring immediate replacement. The majority of these spaces were made vacant by early separation of airmen or by limited retainability requiring reassignment from the 4926th prior to departure of that unit to the proving ground. Even though additional maintenance personnel also were needed, the requisition was limited to these 13 spaces,

AFWL/ HQ

[redacted]

[redacted]

on the premise that 22 jet-fighter type mechanics would be retrained into B-57 maintenance skills before movement to the proving ground. The request for authorization of the required training was forwarded to Center, along with the requisition for the 13 airmen.

Furthermore, information was received by the 4950th Test Group on 20 November from Special Weapons Center that the 4950th must absorb a grade readjustment made necessary by budgetary limitations imposed upon the Center. In brief, the adjustment in spaces was as follows: the gaining of 1 master sergeant, 2 technical sergeants, and 35 airmen second class; and the loss of 6 staff sergeants and 32 airmen first class. As in the case of the last major readjustment in August 1957, there was no loss in total authorized spaces, but there was an appreciable loss in manning within the skill levels of career areas. Over-all, since 1 July 1957, the 4950th Test Group had absorbed a total loss of 16 supervisor-technician spaces and 83 skilled 5-level positions, all of which were replace by authorizations for 3-level airmen second class. Inasmuch as the majority of requisitions for personnel in support of Operation HARDTACK were based on manning figures in effect prior to August 1957, the actual manning of Task Group 7.4 was at much higher skill level than that authorized. Hence, the current capability of the Group to support Operation HARDTACK was not seriously impaired. Some concern, however, was noted in regard to manning for future test programs, when the impact of such

AFWL/HQ

[redacted]

AFWL/HQ

159

budget reductions would reduce available skill levels as a result of personnel losses through normal attrition and the procurement of replacement personnel having lower skill levels. Thus, the future capability of the Group to perform the Air Force mission with airmen of lesser skills was questionable.

Because of the readjustment of the Unit Manning Document, a new function was planned in November 1957 for establishment in Headquarters Task Group 7.4. This new function, the Administrative Services Branch, was formed to consist of all functions previously under jurisdiction of the Adjutant, together with personnel and functions needed to accomplish Personnel planning for nuclear testing programs. This establishment was made necessary because of the Personnel consolidation at Center level and because of decision not to identify any positions with Personnel type functions. The newly created branch, to be implemented on the January 1958 Unit Manning Document, was to have authorizations for the following personnel: (1) a Lieutenant Colonel, AFSC 7316, Director of Administrative Services, (2) a Major, AFSC 7016, Deputy Director of Administrative Services, (3) a Master Sergeant, AFSC 73370, Manpower Management Technician, and (4) a Master Sergeant, AFSC 70270, Sergeant Major. Other authorizations previously carried in Adjutant functions were to remain unchanged.

Another new function within the group was added in January 1958, as a result of considerable discussion between the Center Comptroller and the

Group Commander, based upon a known requirement for a permanent Budgeting and Accounting Officer to represent the group during tests at either testing site. This position afforded the group a full Comptroller planning capability in the proving ground.

In another Personnel action a visit of the Special Weapons Center Ground Safety Officer to Eniwetok in December resulted in a recommendation that an authorization for a Ground Safety Technician should be included in test requirements. A previous authorization for such an individual in the 4951st Support Squadron had been deleted during a manpower survey of that unit in May 1957. Re-establishment of the position, or the provision of the technician in some manner, thus was requested for the test series. Special Weapons Center ultimately agreed to provide a Ground Safety Technician to Task Group 7.4 on a temporary duty basis, and this technician joined the task group in March 1958.

When Colonel Wignall, the Group Deputy Commander, visited the proving ground in November and December 1957, one of the matters discussed with the Task Group 7.2 Commander was the question of augmentation of certain Task Group 7.2 activities by Task Group 7.4. The Task Group 7.2 Commander expressed a desire for Task Group 7.4 augmentation of bakers, cooks, mess attendants, motor vehicle mechanics, and Air Police. The Air Police were considered necessary to perform duties normally related to Air Base defense and security for which Military Police were not trained.

AFWL/HQ

[redacted]

AFWL/HQ

131

After much consideration of the augmentation question, Task Group 7.4 determined that it could provide 12 Air Police for Air Base police functions and could furnish to Task Group 7.2 50 mess attendants and 2 mess supervisors. A decision by Joint Task Force SEVEN declared that Task Group 7.4 would have no responsibility in providing motor vehicle maintenance personnel, bakers, or cooks.

In February 1958, a determination was made that many problems could be eliminated by the hiring of personnel through Holmes and Narver to perform mess attendant duties. These personnel at the beginning of the operational phase of HARDTACK were being recruited in the Territory of Hawaii. The complete acceptance of mess attendant duties, thus, was delayed because of the need for clearance of the recruited personnel according to existing security specifications.

E. SECURITY

Indoctrination and security testing of Task Group 7.4 personnel was the initial step in creating the proper understanding of the HARDTACK operation and of individual responsibility toward security of the tests. Additional indoctrination programs were presented at frequent intervals throughout the planning phase. Security was stressed by means of information letters, posters, and briefings culminating in the signing by individuals before departure to Eniwetok of affidavits indicating the assumption of responsibility for maintaining security on all classified

AFWL/HQ

AFWL/HO

132

matters pertaining to the test operations.

Other security planning activities included (1) the development of a clearance program for all personnel going to the proving ground and having access to classified information; (2) arrangements for the security of certain classified HARDTACK aircraft staging through Hickam Air Force Base, Hawaii, enroute to Eniwetok; (3) designation of entry requirements for personnel moving to the proving ground; (4) setting up of controls for use and maintenance of photographic equipment in the proving ground; (5) formulation and development of a program for assignment of resident agents of the Office of Special Investigation to the proving ground; and (6) establishment of a liaison system with other security agencies of Joint Task Force SEVEN and the Atomic Energy Commission.

Physical controls were established and administered at Eniwetok by the Test Base Unit. Besides the performance of normal Air Base duties, the Air Police of the Test Base Unit maintained a Badge and Identification Section and were responsible for the security of the sample return aircraft arriving at Eniwetok, for guarding at accident scenes, and for providing Air Police representation on the Eniwetok Military Police patrols.

Before the departure of Task Group 7.4 to the proving ground, the Security Section compiled from all the participating elements lists of names, together with rank and security clearance status, of all persons

AFWL/HQ
[redacted]
133
AFWL/HO

moving to Eniwetok. These lists were provided to the Test Base Unit for the development of a control security file.

F. FUNDING

Funding policies of Task Group 7.4 for HARDTACK were based in large part upon those policies used successfully for REDWING. After the group began the planning phase of HARDTACK, these funding policies were coordinated with, and approved by, Air Force Special Weapons Center, Air Research and Development Command, Joint Task Force SEVEN, and Headquarters United States Air Force. The policies were published by Air Force as a part of the book message on 11 October 1957. Funding, generally, was considered routine in all except a few minor areas, being based upon provisions of the "McNeil Letter" (Mr. W. J. McNeil, Comptroller, Department of Defense, "Assumptions for Operating Expenses of Atomic Weapons Tests," dated 18 August 1956).

Funds for Task Group 7.4 operations during HARDTACK were to be derived from two major sources: Normal Service Operating Expenses were to be financed by participating Air Force Commands, in accordance with the "McNeil Letter"; Extra Expenses were to be financed by Joint Task Force SEVEN or Armed Forces Special Weapons Project.

Normal Service Operating Expenses were to include the following: (1) pay and allowances of personnel; (2) costs of personnel subsistance; (3)

AFWL/HQ

[redacted]

AFWL/HO

134

costs of travel and transportation of personnel to the first Task Force duty station upon initial assignment to Task Group 7.4 and from the last Task Force duty station to the next regular duty assignment, including the costs of travel and transportation of the member, his family, and household goods; (4) medical and dental costs for personnel; (5) costs of aircraft and boats and other standard equipment and supplies necessary for the test operation, including costs for maintenance, parts, petroleum, oil, lubricants, and consumable supplies required in support of Department of Defense participation; and (6) costs for packing, handling, and transportation of equipment and supplies furnished by the services for support of the Task Force.

Extra Expenses were to be financed from funds made available directly to the Task Force Commander or the Chief of Armed Forces Special Weapons Project, provided the facilities, equipment, and/or modifications were not to be continued in use by the service after the completion of HARDTACK. These Extra Expenses were to include the following: (1) costs of modification to, and subsequent restoration of, equipment and aircraft required by the test operation; (2) costs of required construction and rehabilitation of structures at the test site, in connection with approved Department of Defense programs; (3) costs of transportation of personnel attached to the Task Force and traveling under orders of the Task Force Commander, including costs of temporary duty travel as well as of any permanent changes of station other than those covered by Normal Service Operating Expenses

[redacted]

AFWL/HQ

AFWL/HO

135

while assigned to the Task Force; (4) costs of materials or services required from activities operated under working capital funds; and (5) costs of equipment not normally stocked or is not standard to any of the military services.

The Deputy Chief of Staff for Comptroller, Air Force Special Weapons Center, was responsible for providing all necessary Comptroller services for Task Group 7.4. To assist him in this mission, the Center Assistant Comptroller acted as Rear Comptroller of Task Group 7.4. The 4950th Test Group Budget Officer had the responsibility for budget and financial plan preparation and acted as advisor to the Task Group 7.4 Director of Personnel and Administration on Comptroller matters and as the liaison medium between the group and Center. The Budget Officer after moving to the forward area became known as the Forward Area Comptroller.

Among the other duties of the Forward Area Comptroller were the administering of the program for paying indigenous laborers at Kapingamarangi, Tarawa, and Kusaie, and for paying aircraft guard fees at Nauru (see "Establishment of Weather Islands," this chapter).

(For a detailed accounting of the specific duties of the Forward Area Comptroller, see the Comptroller portion of the Commander's Final Report.)

G. PROJECT 58 NEVADA TEST SITE

In November 1957, during the planning phase of Operation HARDTACK,

the Air Force Special Weapons Center Commander directed the 4950th Test Group (Nuclear) to provide air support for Project 58 Nevada Test Site, a series of one-point detonations to be held at the Nevada Test Site during December 1957. Specifically, the requirements of this project called (1) for the collection of particulate samples by sampling aircraft, and (2) for the provision and operation of cloud tracking aircraft. These requirements were delineated in Operation Order 6-57, published by the 4950th on 2 December 1957. Two shots were planned for this series, [redacted] on 6 December 1957 and [redacted] on 9 December 1957.

To accomplish the sampling phase of the operation, the 4950th directed the 4926th Test Squadron (Sampling) to provide two B-57B sampling aircraft, one to be employed as the primary sampling aircraft and the other as an airborne spare. The two aircraft staged from Kirtland Air Force Base, collected samples from each shot, and returned. It was necessary for the aircraft to land at Indian Springs Air Force Base, Nevada, for refueling prior to the second shot because of a four-hour delay of the event. No difficulties were experienced in the sampling phase. Samples collected on each shot were returned to Kirtland, removed by the Nuclear Applications Section of the 4926th, and transferred to Los Alamos Scientific Laboratory project personnel.

The 4935th Air Base Squadron at Indian Springs Air Force Base was given the task of providing cloud tracker aircraft and crews to support the operation. Headquarters 4950th Test Group (Nuclear) furnished an

experienced cloud tracker monitor. A B-25 was appointed as the primary cloud tracker aircraft, and an L-20 was appointed as back-up. The L-20 ultimately was used on the COULOMB C shot because of the anticipated small cloud; the B-25 was used on the COULOMB D event. On each shot, the appointed aircraft were in appropriate orbit at H-hour and were recovered after completion of the sampling mission.

Air-to-ground and point-to-point communications were activated in the Air Operations Center to provide aircraft control and to transmit pertinent shot information to the group headquarters at Kirtland. Radio equipment, high frequency and ultra high frequency, installed at the site prior to Operation PLUMBBOB, was used. A communications console was provided by the 4950th, and contractor personnel of the Test Manager installed the console and provided radio technicians for the operation.

Three channels of ultra high frequency radio were used successfully for aircraft control; point-to-point were accomplished with one channel of high frequency radio. Adequate maintenance of communications equipment was performed by Reynolds Electric Company radio technicians throughout the operation.

The Air Operations Center was manned by one Operations Officer who attended weather outlook briefings, disseminated shot information to interested Air Force agencies, controlled mission aircraft, and maintained close liaison with the staffs of the Test Director and Test Manager.

AFWL/HQ

AFWL/HO

135

NOTES

1. Incl. 23: General Order #51, Hq. ARDC, 25 Sep. 57.
2. Ibid., p. 1.
3. Ibid., p. 2.
4. Ibid., p. 2.
5. Ibid., p. 2.
6. Ibid., p. 2.
7. Incl. 24: General Order #103, Hq. Military Air Transport Service, 3 Oct. 57.
8. Incl. 25: General Order #110, Hq. Military Air Transport Service, 21 Oct. 57.
9. Ibid., p. 1.
10. Idem.
11. Incl. 26: Memo, TG 7.4 Security Off. to several addressees, 30 Sep. 57, subj.: AEC-DOD Announcement of Forthcoming Tests.
12. Incl. 27: General Order #1, Hq. Task Gp. 7.4 (PROVISIONAL), 3 Oct. 57.
13. Incl. 28: Personnel Actions Memo #83, par. 2, Hq. 4950th Test Gp. (N), 16 Oct. 57.
14. Ibid., par. 3.
15. Ibid., par. 4.
16. Ibid., par. 5.
17. Incl. 29: Special Order #1, TBU, Prov., 10 Oct. 57.
18. Incl. 30: General Order #1, TSU, Prov., 7 Oct. 57.
19. Incl. 31: TWX 51415, C/S, USAF to Comdr. TG 7.4, 11 Oct. 57.

20. Planning Directive 5-57, Operation HARDTACK, Task Gp. 7.4 (Prov.), 17 Oct. 57, in Task Gp. 7.4 hist. files.

21. Operation Plan 1-58, Operation HARDTACK, Task Gp. 7.4, Prov., 6 Jan. 58, in Task Gp. 7.4 hist. files.

22. Joint messageform AFOOP-OP-U3, Hq. USAF to several addressees, 9 Jan. 58.

23. TWX DOOPW 1908, fr. CINCSAC to Comdr. Task Gp. 7.4, 14 Feb. 58, in D/O files.

24. Amend. #1 (dtd. 19 Feb. 58) to Operation Plan 1-58, in Task Gp. 7.4 hist. files.

25. Standard Operating Procedures for Search and Rescue Operations during Operation HARDTACK, H. Task Gp. 7.4, no date, in D/O files.

26. Incl. 32: Ltr., Comdr., Task Gp. 7.4 to several addressees, subj.: Monitor Training, 29 Oct. 57.

27. Memo for the Comdr. fr. Dep. Dir. of Ops., Task Gp. 7.4, no date, Subj.: Staff Visit to Task Group 7.1, in D/O files.

28. Incl. 33: Memo for the Comdr., 10 Oct. 57, subj.: Trip Report, Lt. Col. W. B. Walker, Jr.

29. Aircraft Maintenance Plan, Hq. Task Gp. 7.4, 23 Oct. 57, in D/M files.

AFWL/HQ

[redacted]

CHAPTER III

OPERATIONAL PHASE OF OPERATION HARDTACK

A. MISSION AND ORGANIZATIONAL STRUCTURE OF TASK GROUP 7.4 UNITS

The organizational structure and strength of the task group were based upon the character and magnitude of its assigned missions. Essentially, this structure was patterned after that used successfully during Operation REDWING in 1956.

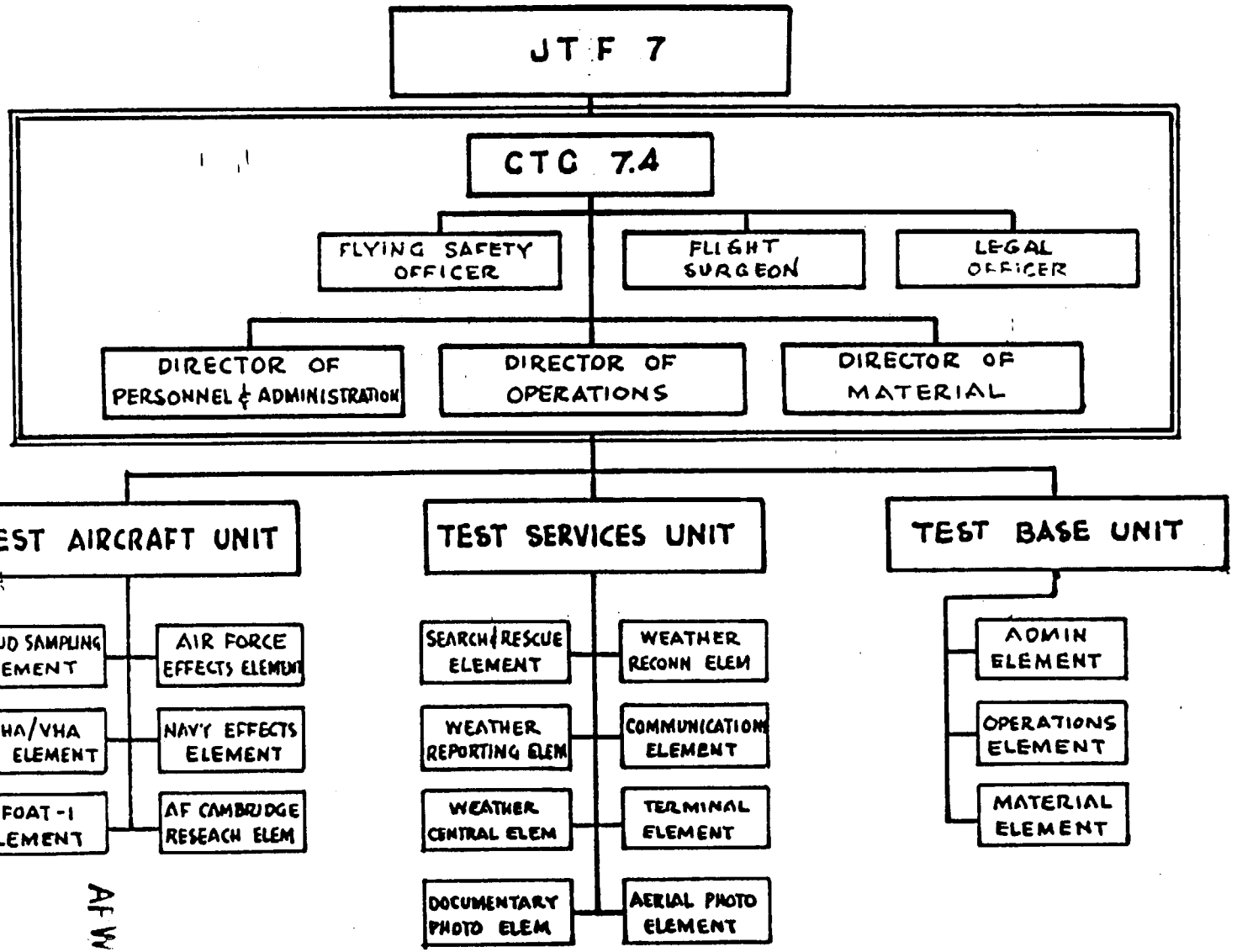
The Task Group was functionally organized into three subordinate units in addition to the headquarters. The units were manned by personnel from five major Air Commands. Upon publication of the Air Force book message in October 1957, a document which constituted the task group charter and designated the participating organizations, the task group was granted authority to exercise operational control of all Air Force units and detachments manned to participate in planning and coordination before movement of the group to the proving ground. After their arrival in the proving ground beginning in February 1958, units and elements came under the operational control of Task Group 7.4 for the duration of the test series.

Headquarters Task Group 7.4 began movement to Eniwetok early in February 1958, when the first increment of the advance echelon departed from Kirtland Air Force Base. This increment arrived in the proving ground on 5 February. The last of the main body arrived at Eniwetok on

AFWL/HQ

[redacted]

AFWL/HO


JTF 7
CTG 7.4
FLYING SAFETY OFFICER
FLIGHT SURGEON
LEGAL OFFICER
DIRECTOR OF PERSONNEL & ADMINISTRATION
DIRECTOR OF OPERATIONS
DIRECTOR OF MATERIAL
TEST AIRCRAFT UNIT
TEST SERVICES UNIT
TEST BASE UNIT
CLOUD SAMPLING ELEMENT
AIR FORCE EFFECTS ELEMENT
UHA/VHA A'C ELEMENT
NAV'Y EFFECTS ELEMENT
AFOAT-1 ELEMENT
AF CAMBRIDGE RESEACH ELEM
SEARCH/RESCUE ELEMENT
WEATHER RECONN ELEM
WEATHER REPORTING ELEM
COMMUNICATION ELEMENT
WEATHER CENTRAL ELEM
TERMINAL ELEMENT
DOCUMENTARY PHOTO ELEM
AERIAL PHOTO ELEMENT
ADMIN ELEMENT
OPERATIONS ELEMENT
MATERIAL ELEMENT

AFWL/HO

13 March. The advance echelon was under the command of Colonel Paul R. Wignall, Deputy Commander, who relinquished his command to Colonel Kieffer when the latter arrived at Eniwetok on 10 March 1958. The rear echelon, which remained at Kirtland throughout the operational period, was under the command of Major James A. Ashcraft until 1 July 1958, when Major George L. Trimble, Jr. returned from Eniwetok to Kirtland and assumed command.

As the transition was begun from the planning phase to the operational phase, most of the principal planning projects had reached, or nearly reached, completion. For example, the Air Operations Center, an especially important planning item, began operation in mid-March and provided training for newly-assigned controllers who had little or no experience with control functions in nuclear test operations. During this transitional period, also, the B-36 crews, which had previously received little training under conditions completely simulating shot circumstances, were put in trained readiness for the test program. The problem of acquisition and transportation of supplies and equipment had been reduced, although some backlogs continued to accumulate but did not seriously impede normal operations.

The operational phase of Operation HARDTACK was begun on 14 March 1958, according to a Joint Task Force SEVEN message1 received by Task Group 7.4 on 13 March.

AFWL/HQ

Test Aircraft Unit. The Test Aircraft Unit, comprised of six elements, exercised operational control over all test aircraft and was responsible for briefing all aircrews involved in test projects. Command of the Test Aircraft Unit was assumed by Colonel Alden G. Thompson.

The six elements, their compositions, and their missions are described in the following paragraphs.

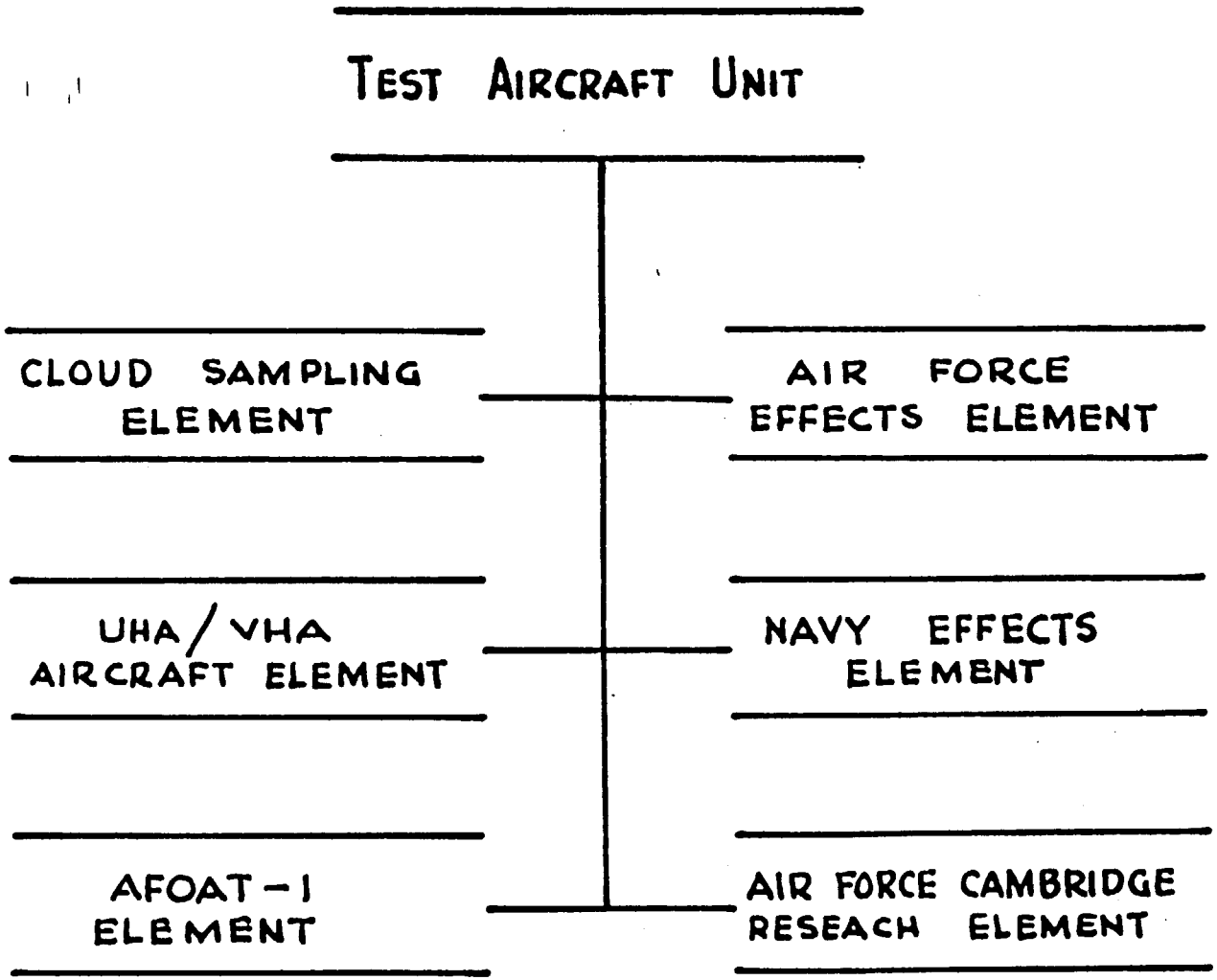
The Sampling Element was composed of the 4926th Test Squadron (Sampling), Kirtland Air Force Base, augmented by personnel from the 4025th Strategic Reconnaissance Squadron, 4080th Strategic Reconnaissance Wing, Strategic Air Command. The element conducted nuclear cloud sampling with ten B-57B aircraft provided by the Air Research and Development Command and six B-57D aircraft provided by Strategic Air Command.

Sampling requirements for HARDTACK, as specified by Air Force and by Los Alamos Scientific Laboratory and University of California Radiation Laboratory, made necessary a number of samples ranging from one to ten (depending upon the nature of each shot), collected at various altitudes. A sample consisted of a predetermined amount of radioactive material, generated from the detonation of a nuclear device, collected on a special filter paper or in gas bottles. After return of each aircraft from the sampling mission, the filter paper and gas bottles were removed from the aircraft and processed for immediate shipment to Atomic Energy Commission laboratories in the Zone of Interior for radio-chemical analysis.

AFWL/HQ

[redacted]

AFWL/HQ


TEST AIRCRAFT UNIT
CLOUD SAMPLING ELEMENT
AIR FORCE EFFECTS ELEMENT
UHA / VHA AIRCRAFT ELEMENT
NAVY EFFECTS ELEMENT
AFOAT-1 ELEMENT
AIR FORCE CAMBRIDGE RESEACH ELEMENT

AFWL/HQ

The Sampling Element also functioned as an administrative group headquarters for the Test Aircraft Unit.

The Air Force Effects Element used a B-52 aircraft from Wright-Patterson Air Force Base in the pursuit of its mission. This Element was manned, trained, and equipped by Wright Air Development Center.

The objective of the B-52 effects program, formally called Project 5.1, was to determine the capability of the B-52 aircraft for multiple aircraft strikes, as well as to verify or modify certain weapons delivery criteria and techniques. To achieve the objective, the structural responses of a B-52, when carrying full 3,000-gallon external fuel tanks, were measured when the aircraft was subjected to symmetrical and asymmetrical blast and thermal effects from nuclear explosions. Data accumulated for the primary objective were also to be useful for the determination of modifications pertinent to the improvement of B-52 nuclear weapon delivery capabilities, and for the related research for the design of future military aircraft.

The B-52 employed during HARDTACK was structurally identical to the aircraft used in Operation REDWING, with the exception that two 3,000-gallon external wing tanks had been added. During REDWING, all tests of the B-52 were conducted from a symmetrical tail-on position. The HARDTACK tests, therefore, differed from the REDWING tests on B-52 aircraft in that the HARDTACK tests in the main involved asymmetrical, especially

AFWL/HQ

AFWL/HQ

side-on positions.[2]

On 18 March, the B-52, after being specially instrumented at the boeing Aircraft plant at Seattle for HARDTACK participation, departed from the Boeing site. After several days of delay at Hickam Air Force Base, because of adjustment and maintenance problems, the aircraft arrived at Eniwetok on 31 March and was prepared for test activity. The B-52 engaged in several rehearsals and practices and 14 shots, and departed from Eniwetok to the Zone of Interior on 15 July 1958, concluding the activities of the Air Force Effects Element.

A third element of the Test Aircraft Unit was the Navy Effects Element, manned, trained, and equipped by Naval Air Special Weapons Facility, Kirtland Air Force Base, New Mexico. The element operated two FJ4, two A4D, and one P2V aircraft in support of Bureau of Aeronautics projects. The element also provided, maintained, and operated M-33 radars for precise positioning of Navy effects aircraft in the Eniwetok area.

The P2V departed from Kirtland Air Force Base on 25 January 1958 and arrived at Eniwetok on 11 March. The fighter aircraft, all of short range characteristics, left Kirtland on 10 March for Alameda Naval Air Station California, where they were prepared for shipment to Eniwetok. They arrived at Eniwetok on 2 April 1958.

Much of the supply burden of Task Group 7.4 was alleviated by arrangements of the Navy Effects Element to draw most of its maintenance

AFWL/HQ

[redacted]

AFWL/HQ

149

supplies from Navy resources at Kwajalein and Hawaii. To avoid transportation delays, certain critical spare parts and spare engines were positioned at Eniwetok.

The A4D aircraft fulfilled test requirements specified by Project 5.2, concerned principally with weapon effects. The FJ4 aircraft were required by Project 5.3 also to record weapon effects data. The P2V, under Project 8.5, was engaged in making airborne infra-red measurements from nuclear explosions. These aircraft, participating in a total of nine shots, completed their requirements early and departed from Eniwetok for return to the Zone of Interior on 24 June 1958. The short range fighter aircraft were transported aboard the USS Boxer.

A fourth element of the Test Aircraft Unit was the AFOAT-1 (Office of the Assistant for Atomic Energy, detachment) Element, manned, trained, and equipped by the Office of the Assistant for Atomic Energy. This element utilized certain aircraft of the Test Aircraft Unit and the Test Services Unit in the pursuit of its mission.

The Ionosphere Element, operating under Project 6.10, was manned, trained, and equipped by Air Force Cambridge Research Center. The element operated a C-97 aircraft equipped with ionospheric sounding equipment in the TEAK and ORANGE events to investigate ionization and related effects created in the high atmosphere by nuclear detonations.

AFWL/HQ

[redacted]

AFWL/HQ

145

III

The Ionospheric Element moved to Eniwetok on 6 April 1958, and, after the TEAK and ORANGE events were rescheduled for Johnston Island [see "Operation NEWSREEL (Johnston Island)", this chapter], the C-97 returned on 12 April 1958 to the Zone of Interior. The aircraft moved to Hickam Air Force Base in July 1958 and operated from that location while participating in the TEAK and ORANGE rehearsals and shots.

The last Test Aircraft Unit element was the Very High Altitude-Ultra High Altitude Element. This element was manned, trained, and equipped by Air Force Special Weapons Center. Its objective was to maintain and operate two RB-36 aircraft to support technical projects on the very high altitude and ultra high altitude shots. More specifically, the two aircraft were engaged in Programs 8.2 (thermal radiation measurements), 8.3 (early fireball photography), and 8.4 (thermal radiation spectrum measurements), on the YUCCA, TEAK, and ORANGE shots.

The B-36 aircraft arrived at Eniwetok on 11 March and immediately were put to use in the planning and training for YUCCA, having engaged in two practice missions for that event by the end of March. When the decision was made to accomplish the TEAK and ORANGE events at Johnston Island in August 1958, the B-36's were returned on 2 May to Kirtland Air Force Base. In July the two aircraft returned to Hickam Air Force Base to train for and participate in the Johnston Island rehearsal and shots. After accomplishment of these missions, the B-36's departed for the Zone of Interior.

AFWL/HO

[redacted]

AFWL/HO

49

Test Base Unit. The Test Base Unit was manned, trained, and equipped by the Air Force Special Weapons Center, using the resources of the 4951st Support Squadron (Test) at Eniwetok and the 4952nd Support Squadron (for personnel augmentation only), Kirtland Air Force Base. Five C-54, eight L-20, and 15 helicopter aircraft were operated by the unit, providing both inter-island and inter-atoll support airlift.

The Test Base Unit, commanded by Lieutenant Colonel Walter R. Hedrick, Jr., consisted of three principal elements, the Materiel Element, the Administrative Element, and the Operations Element.

The Materiel Element included such functions as Base Supply, Maintenance, Unit Supply, Installations, and POL, all of which were concerned with the operation of air base facilities at FRED (Eniwetok) and NAN (Bikini).

The Administrative Element provided a consolidated Personnel and Administrative Section for Group Headquarters, Test Aircraft Unit, and Test Base Unit. Besides the normal administrative services provided by this element, it included also a Comptroller Section, an Air Police Section, and an Information Services Section.

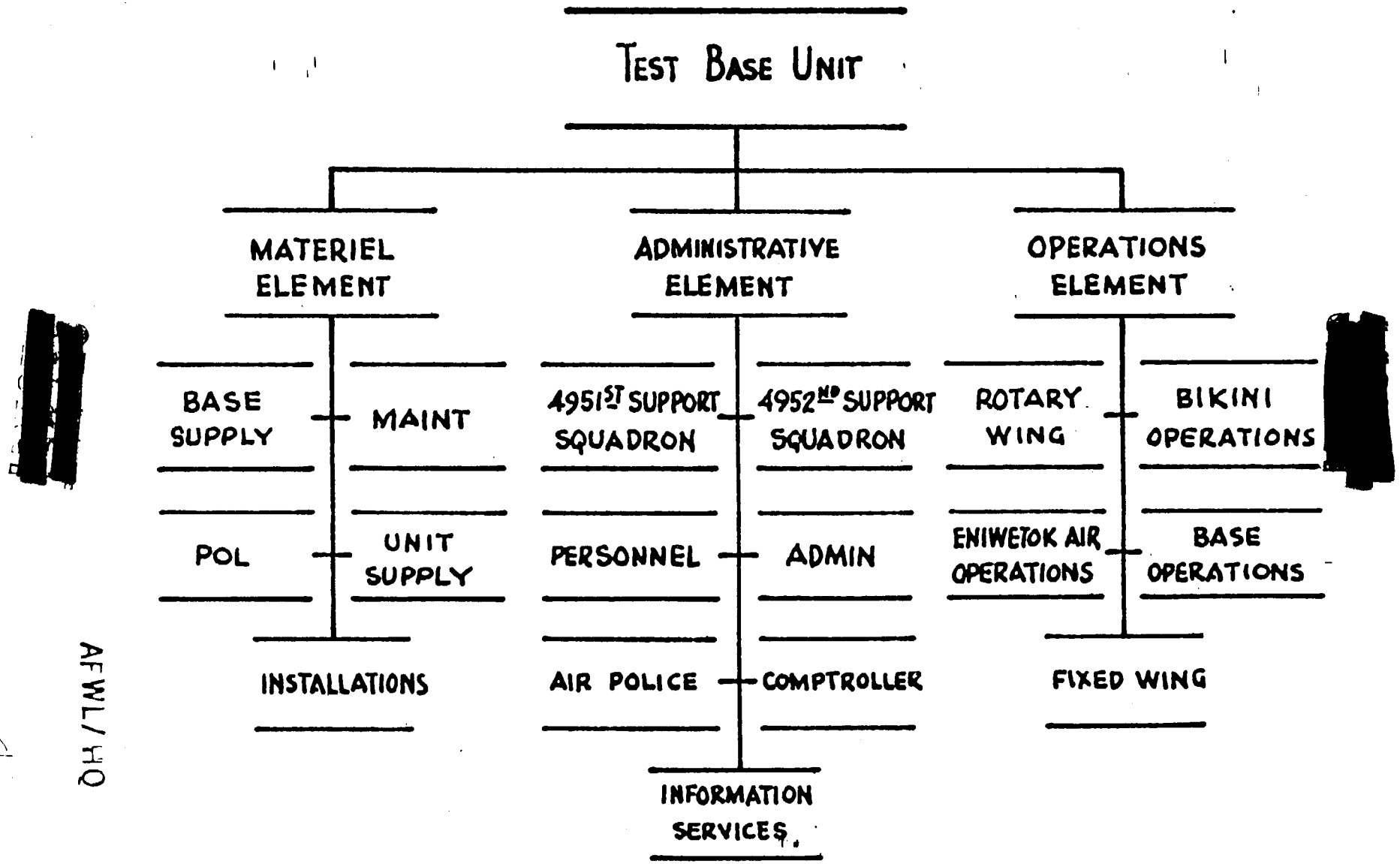
The Operations Element was composed of a Rotary Wing Section, a Fixed-Wing Section, a Base Operations Section, a Bikini Operations Section, and an Eniwetok Air Operations Section.

Among those aircraft assigned to the Test Base Unit were three C-54

AFWL/HQ

[redacted]

AFWL/HO


TEST BASE UNIT
MATERIEL ELEMENT
ADMINISTRATIVE ELEMENT
OPERATIONS ELEMENT
BASE SUPPLY
MAINT
POL
UNIT SUPPLY
INSTALLATIONS
4951ST SUPPORT SQUADRON
4952ND SUPPORT SQUADRON
PERSONNEL
ADMIN
AIR POLICE
COMPTROLLER
INFORMATION SERVICES
ROTARY WING
BIKINI OPERATIONS
ENIWETOK AIR OPERATIONS
BASE OPERATIONS
FIXED WING

AFWL/HQ

151

aircraft and fifteen helicopter aircraft provided from Pacific Air Force resources.

The following were major areas of responsibility of the Test Base Unit:

1. Operation of air base facilities at Eniwetok and Bikini, including supply, POL, crash rescue, firefighting, refueling, base operations, and inter-atoll air freight terminals.

2. Operation of an inter-atoll airlift system between Eniwetok, Bikini, and other islands and atolls (utilizing, when necessary, C-54 aircraft assigned to the Test Services Unit).

3. Operation of an inter-island airlift system at Eniwetok throughout HARDTACK, and the operation of a similar system at Bikini until relieved by a Marine helicopter squadron in January 1958.

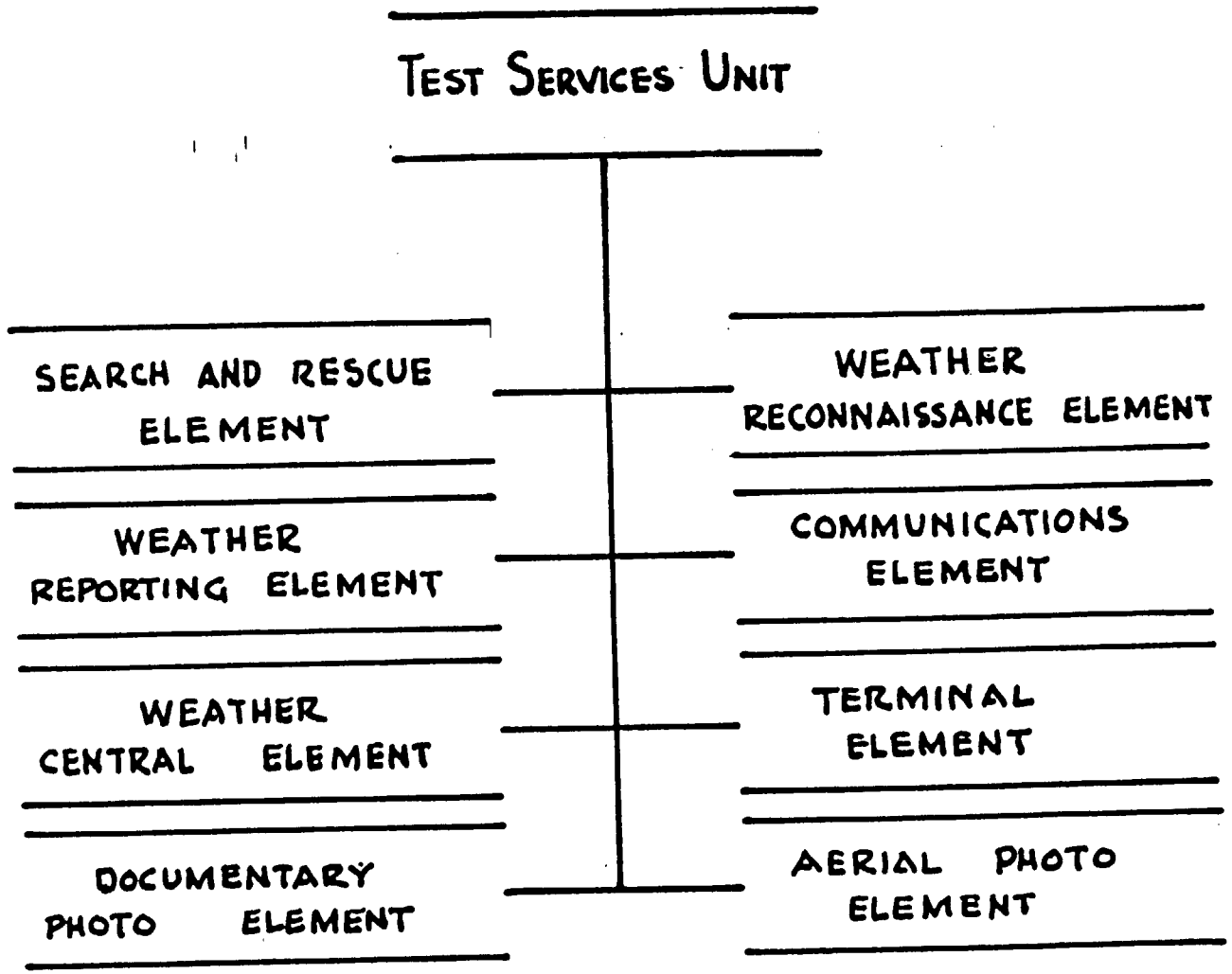
4. Establishment of a field maintenance system, operated on a production control concept, augmented by maintenance personnel from other units and elements of Task Group 7.4.

5. Maintenance of an air evacuation capability.

Test Services Unit. The Test Services Unit, commanded by Colonel Wilson H. Neal, was composed of eight elements and was a contribution of Military Air Transport Service. The unit had several missions consisting basically of providing technical support service. Military Air Transport Service was responsible for the organization, manning, training and deployment of the elements to the proving ground.

The Test Services Unit was the largest unit of Task Group 7.4, having at the peak of the operation more than 1,100 officers, airmen, and civilians, serving at fourteen separate island locations. The unit had 22 aircraft assigned: seven SA-16's, three C-54's, ten AB-50's, and

AFWL/HQ


TEST SERVICES UNIT
SEARCH AND RESCUE ELEMENT
WEATHER REPORTING ELEMENT
WEATHER CENTRAL ELEMENT
DOCUMENTARY PHOTO ELEMENT
WEATHER RECONNAISSANCE ELEMENT
COMMUNICATIONS ELEMENT
TERMINAL ELEMENT
AERIAL PHOTO ELEMENT

AFWL/HQ

III

two RB-50's. The eight elements comprising the Test Services Unit are described in the following paragraphs.

The Weather Reconnaissance Element, operating ten WB-50 aircraft, was committed to fly two weather tracks each day, a commitment which was increased to three tracks daily immediately prior to, during, and subsequent to certain shot days. In addition to their use in collection of weather data, the element's aircraft were used for typhoon reconnaissance, post-shot cloud tracking, and related activities. All of the WB-50's were prepared to function as back-up sampler control aircraft.

The Weather Reporting Element manned weather reporting stations, including the permanent station at Eniwetok and others located on the remote islands of Kusaie, Kapingmarangi, Tarawa, Nauru, Utirik, Rongelap, Wotho, and Ujelang. The weather reporting stations collected surface and upper air meteorological data with rawinsonde equipment. Up to sixteen surface and rawinsonde observations were made daily at some of the stations.

The Weather Reconnaissance Element and the Weather Reporting Element supplied the results of their observations to a third Test Services element, the Weather Central Element, which was responsible for weather forecasting, under the direct operational control of the Joint Task Force Seven Commander. Because of the vital importance of accurate

AFWL/HQ

and timely weather data for Command decisions, the weather Central Element was located on Parry Island in Joint Task Force SEVEN Headquarters. Weather Central received data from all United States agencies in Pacific areas, the United States Weather Service, the Navy, and other Air Force weather organizations, and from various collection agencies of other nations. Facsimile transmissions and data collectives were received from other Weather Central agencies at Tokyo and Pearl Harbor.

The fourth Test Services Unit subordinate organization was the Aerial Photography Element, which utilized three C-54's for the two-part mission of providing a photographic platform for camera crews and of providing supplemental airlift, and two RB-50 aircraft for technical photography. The primary mission of the C-54 aircraft was concerned with the documentary photography effort, the provision of a platform for camera crews over and adjacent to shot zones during tests and for other air-to-air and ground-to-ground photography as required. The supplemental airlift mission was of almost equal importance, its objective being the re-supply of radiological and weather units on outlying islands and the general re-supply and transportation of personnel to and from Bikini.

The Aerial Photography Element, utilizing RB-50 aircraft, also was responsible for obtaining technical photographs of aspects of nuclear detonations for certain agencies of the military establishment. This

AFWL/HQ

AFWL/HO

155

element was placed under the control of the Test Services Unit largely because of its RB-50 maintenance compatibility with that of the aircraft of the Weather Reconnaissance Element.

The Documentary Photography Element provided photographic equipment and technical personnel for accomplishing the documentary photography mission for HARDTACK.

The Communications Element was responsible for the operation of the communications-electronic and Air Traffic Control facilities in support of HARDTACK. The facilities included navigational aids, ground communications, Weather Central communications, and Weather Island and special facilities.

Eniwetok was a tributary relay station in the Global Communications System. This multiple service was a counterpart of the United States Army Signal Corps and was a joint endeavor, with both the Air Force and Army furnishing personnel to operate the Joint Tape Relay Center, the Joint High Frequency Transmitter Site, and the Joint High Frequency Receiver Site.

The Communications Element operated the Task Group 7.4 Communications Center which consisted of a full duplex to the Joint Tape Relay Center, half duplex straight patch to the Kwajalein Major Relay Center, half duplex to Parry Weather Central, full duplex to Task Group 7.5 Communications Center, and full duplex to the USS Boxer.

AFWL/HQ

[redacted]

AFWL/HQ

Communications for the Weather Island facilities operated by the Communications Element included a radio telegraph net between Weather Central and the following weather and radiological safety islands: Kusaie, Tarawa, Kapingamarangi, Nauru, Utirik, Ujelang, Wotho, and Rongelap.

The Communications Element also provided several additional facilities. The facilities included the high frequency point-to-point voice and control/warning net with Bikini Control Tower, Kwajalein Air Route Traffic Control, and Eniwetok Approach Control. The primary purpose of this net was to pass Air Traffic Control messages between the above enumerated agencies. Another special type facility operated by the element was the Parry Island Dispatch, an ultra high frequency air/ground facility used to control the flights of helicopter and liaison type aircraft around Eniwetok Atoll.

The Military Air Transport Service Terminal Element, prior to HARDTACK, was a detachment of the 1502nd Air Terminal Squadron, Hickam Air Force Base, Hawaii. The Terminal Element was responsible for the efficient movement and manifesting of passengers, cargo, and mail to and from Eniwetok; for the loading of test samples and the unloading of atomic devices; for the maintenance of Military Air Transport Command aircraft; and for customs activities and dispatch of those aircraft.

AFWL/HQ

[redacted]

AFWL/HQ

159

The Joint Task Force SEVEN search and rescue capability was the responsibility basically of the Test Services Unit's eighth element, the Search and Rescue Element. The element utilized seven SA-16 aircraft and crews.

Besides the search and rescue capability, re-supply support of project and weather islands was a prime function of the element. The re-supply support mission actually required more time and effort than did the search and rescue mission. Aircraft of the element, because of their water landing capability, were used extensively in re-supply functions to such outlying islands as Kapingamarangi, Kusaie, Utirik, Ujelang, Rongelap, and Rotho.

The element's aircraft participated in every shot rehearsal and actual shot day mission, always with one SA-16 on orbit and frequently with two or more aircraft in the air. Intercepts of disabled aircraft also were a major activity of the rescue aircraft; numerous aircraft with engine failure or other difficulty were intercepted and escorted to safe landings.

AFWL/HQ

[redacted]

B. PERSONNEL

As the operational phase of Operation HARDTACK began on 14 March 1958, the following officers occupied the indicated key positions in Task Group 7.4:

Commander, Colonel William B. Kieffer.
Deputy Commander, Colonel Paul R. Nignall.
Director of Operations, Lieutenant Colonel Richard J. Hynes.
Director of Materiel, Colonel Carl W. Hobbins, Jr.
Director of Personnel & Administration, Lieutenant Colonel Jack E. Wormington.
Staff Supply Officer, Major Steven J. McLain.
Staff Transportation Officer, Major James L. Hill.
Staff Maintenance Officer, Captain Fred A. Thayer.
Staff Operations Officer, Major George L. Trimble.
Communications-Electronics Officer, Major Bobbie L. Johnston.
Flight Safety Officer, Major LeRoy A. Young.
Flight Surgeon, Lieutenant Colonel Carl L. Hansen, Jr.
Task Group Rear Echelon Commander, Major James A. Ashcraft.
Commander, Test Aircraft Unit, Colonel Alden G. Thompson.
Commander, Test Base Unit, Lieutenant Colonel Walter R. Hedrick, Jr.
Commander, Test Services Unit, Colonel Wilson H. Neal.

These positions remained firm throughout the operational phase, with only one exception. In July Major Trimble returned to Kirtland Air Force Base and assumed the position Rear Echelon Commander, and Major Ashcraft arrived at Eniwetok to replace Major Trimble as Staff Operations Officer.

On 14 March 1958, 1,610 Task Group 7.4 personnel were in the proving ground, including one civilian. The aggregate strength of Task Group 7.4 continued to increase until it reached a peak of 2,260 on 30 April. A gradual decline extended through May and June; then, in July, as the

[redacted]

AFWL/HQ

AFWL/HQ

end of the operational phase approached, the strength decline was accelerated until on 31 July it stood at 1,510.

Virtually all elements indicated that their personnel, with few exceptions in field maintenance areas, were well qualified to perform HARDTACK duties, particularly those airmen in the five and seven levels of the Air Force Specialty Code. Morale, too, was considered to be favorable, despite the crowded and temporary living conditions, the isolated location of the proving ground, and the irregularity of mail and news publications. At least two factors were conducive to good morale: (1) the stressed athletic and entertainment programs sponsored jointly by Task Group 7.2 and Task Group 7.4 Special Services activities; and (2) the hiring of civilian mess attendants through Holmes and Narver, beginning early in the operational phase.

Concurrent with the official establishment of Task Group 7.4 in the Eniwetok Proving Ground, the responsibilities for the conduct of Personnel Administration were clarified. Test Services Unit, by earlier arrangements, assumed full responsibility for administration of all that Unit's personnel; Test Base Unit assumed the responsibility for administration of all other personnel of the group. However, for the purpose of strength accounting, personnel of all Test Aircraft Unit elements were attached to the Sampling Element (4926th Test Squadron)

for morning reports; and all Test Base Unit personnel assigned to elements not having a morning report function physically present in the proving ground were attached to the 4951st Support Squadron (Test). No major problems were encountered in providing Personnel services to individuals of the Task Group.

In mid-June, when it became apparent that Operation HARDTACK would extend over a longer period of time than had been anticipated, a review of the manning status of Task Group 7.4 became necessary in order to determine the need for extension or replacement of personnel in the proving ground. An original plan provided for a replacement of only 31 persons for whom a mission requirement would exist in excess of the 179-day limitation. However, extension of the operational phase made necessary the establishment of a program to insure that a much larger number of personnel required for the operation either be returned to the Zone of Interior and replaced by parent organizations or be extended beyond 179 days under authority granted Joint Task Force SEVEN in the Air Force Movement Directive.

To effect replacement or extension of temporary duty, the procedure first employed consisted of the submission of a roster by the Unit concerned to Headquarters Task Group 7.4, listing all information essential to constitute a request. Formal requests, then, were prepared in the

AFWL/HQ

[redacted]

AFWL/HQ

Directorate of Personnel and Administration and were transmitted to the appropriate parent organizations. After utilizing this procedure several times, a determination was made that preparation of requests in the Units and coordination by the headquarters was a more feasible method. Each element identified those individuals who had to be replaced or extended and submitted those names to the parent organizations of those persons. If a determination was made that replacements were not available from the parent organizations, requests for extensions of temporary duty were forwarded from the Units to Headquarters Task Group 7.4 for subsequent submission to Joint Task Force SEVEN. By this method, the group satisfied its personnel requirements for the completion of the operation.

Task Group 7.4 furnished personnel from the Eniwetok complement to augment the task force effort in Operation NEWSREEL [see "Operation NEWSREEL (Johnston Island)", this chapter]. The bulk of Task Group 7.4 personnel engaged in that operation were moved to Hickam Air Force Base. Three officers and two airmen were transferred to Hickam to comprise the Headquarters Task Group 7.4 (Hickam). The Weather Reconnaissance Element also transferred 35 officers and 175 airmen, together with four of its WB-50 aircraft, during July. In the same month, the Ionosphere Element, having one C-97 aircraft, returned to Hickam from Cambridge Research Center with five officers and eleven airmen; and the Very High Altitude-Ultra High Altitude Element, having two B-36 aircraft, with

13 officers and 45 airmen, returned from Kirtland Air Force Base to Hickam for the commencement of several rehearsals involving the TEAK and ORANGE shots.

C. OPERATION NEWSREEL (JOHNSTON ISLAND)

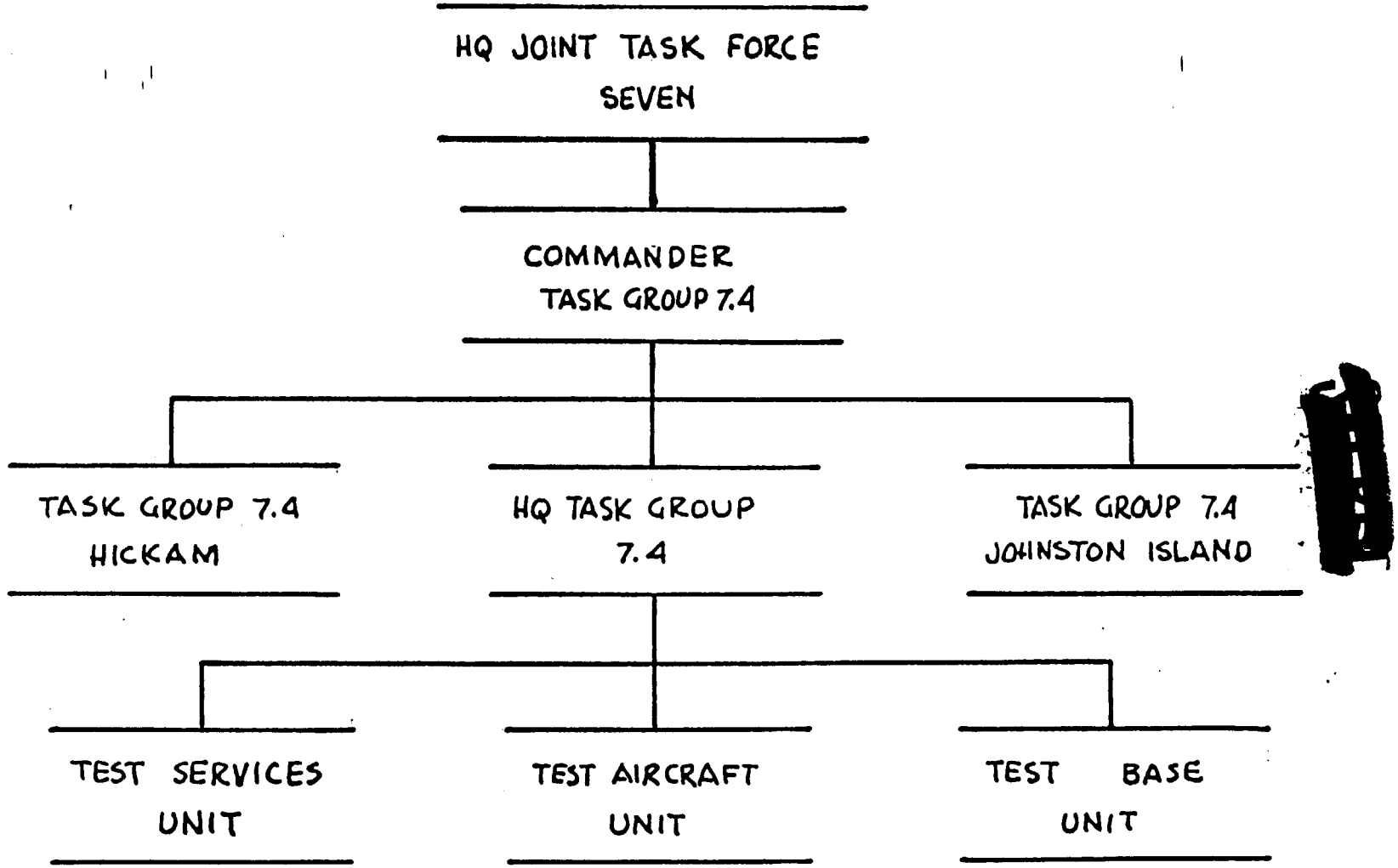
Among the first concrete announcements, as early as June 1957, were indications that the HARDTACK test series would include the testing of two devices at high altitudes. An [redacted] was planned to be fired at 100,000 feet; another [redacted] in an ultra high altitude test, was to be fired at 250,000 feet. As the planning for HARDTACK reached its later stages, these devices were scheduled tentatively for firing in late April and early May 1958 in the Eniwetok Proving Ground. The very high altitude test became known as ORANGE; the ultra high altitude test was designated TEAK.

In early April 1958, however, the Department of Defense and the Atomic Energy Commission handed down a decision that, because of the possible retinal burn hazards associated with the devices and because of possible political implications, these two events would be conducted at Johnston Island in a series called Operation NEWSREEL. The planned date for the firing of the first device was 1 August 1958. The operational phase of NEWSREEL was expected to reach completion about 1 September 1958, followed by a roll-up phase. The operation and control of

AFWL/HQ

AFWL/HO

TASK GROUP 7.4 ORGANIZATION CHART FOR NEWSREEL



AFWL/HO

Johnston Island by Joint Task Force SEVEN "will be considered in the same relative sense as though it were another location within the ENIWETOK Proving Ground," stated Operation Order 35-58, published by the Task Force on 13 June 1958.[3]

The operation plan listed the following aircraft of Task Group 7.4 to participate in the tests: from Hickam Air Force Base, Hawaii, two KB-36's, two C-97's, five SA-16's and five WB-50's; and from Barber's Point Naval Air Station, Hawaii, one P2V and two WV2's. These aircraft were scheduled to take part in at least one full-scale rehearsal prior to each event.

In the summation of NEWSREEL tasks for Task Group 7.4, the following were listed:

1. Safe positioning of test and other attached aircraft at shot time.

2. Provision of personnel for, and support of, the Johnston Island Base Weather Station.

3. Provision, support, and operation of an aircraft weather reconnaissance unit based at Hickam Air Force Base.

4. Provision, maintenance, and operation of aircraft in support of TEAK and ORANGE diagnostic missions.

5. Provision of air controller personnel for the Air Operations Center afloat (aboard the USS Boxer).

6. Provision of search and rescue service in the Johnston Island local area, with assistance from the Task Group 7.3 Commander, and as augmented and within the cognizance of the Search

and Rescue Area Commander (Hickam Air Force Base) upon completion of the Eniwetok Proving Ground operational phase.

7. Action as representative of the Joint Task Force SEVEN Commander at Hickam Air Force Base regarding all Joint Task Force SEVEN activities located at that site.

A preliminary plan for Task Group 7.4 participation in NEWSREEL was issued on 14 April 1958, soon after the decision was made to transfer the TEAK and ORANGE events to Johnston Island. This plan was based upon the points that Task Group 7.4 would (1) retain the existing complement of five C-54's for airlift between Eniwetok, Johnston Island, and Hickam, the aircraft being based at Eniwetok; (2) retain five SA-16 aircraft for search and rescue, two being based at Johnston Island and three at Hickam; (3) base the two B-36's, one C-97, and one P2V in Hawaii; (4) operate the USS Boxer Air Operations Center; (5) employ approximately 31 officers and 188 airmen on Johnston Island; and (6) require an approximate total of $99,774 in additional Fiscal Year 1958 funds.

The plan also asserted that Task Group 7.4 would have the same responsibilities for Joint Task Force SEVEN operations at Johnston as those in the Eniwetok Proving Ground. A significant point, however, was that no cloud sampling would be required.

The first change to the preliminary plan, issued on 14 April 1958, showed that 37 officers, 234 airmen, and 5 civilians would be required to support NEWSREEL at Johnston Island, with an additional 52 officers and 106 airmen at Hickam Air Force Base.

AFWL/HQ

[redacted]

AFWL/HC

Operation Plan 3-58[5] superseded the preliminary plan on 30 April 1958, and presented a much broader and definitive concept of the NEWS REEL operation. Making a reference to the preliminary plan, it said that initial planning had been based on the assumption that Task Group 7.4 would be responsible for many tasks which now were planned to be performed by a Johnston Island Base Command, reporting directly to Joint Task Force SEVEN. The operation plan listed requirements for airlift, certain test aircraft, search and rescue, air control, documentary photography, and weather reconnaissance.

The airlift requirement of one flight or more per week was to be met with the eight C-54 aircraft in the Eniwetok inventory. Test Aircraft for the two Johnston Island shots included two B-36's, one C-97, and one P2V, all operating from Hawaii bases. All these specified aircraft were among those which had been returned to the Zone of Interior at various stages of the Eniwetok Test series.

Search and rescue responsibilities were still planned to be a Task Group 7.4 commitment, to be discharged through the use of two SA-16 aircraft based at Johnston Island and three others at Hickam.

Air Control was to be exercised by four Task Group 7.4 controllers from the Air Operations Center aboard the USS Boxer. Precise positioning of aircraft, however, if made necessary for scientific purposes, would require an MSQ or M-33 radar installation similar to that used in the Eniwetok Proving Ground.

AFWL/HQ

The documentary photography requirement was to be met through the use of C-54 aircraft at Eniwetok. Two civilian photographers and requisite equipment were to be transferred to Johnston Island in late May.

Joint Task Force SEVEN laid down a requirement for one weather flight per day at both high and low altitudes, beginning approximately 25 July, six hours of each flight to be in the vicinity of Johnston Island. To meet this requirement, Task Group 7.4 planned to deploy five WB-50 aircraft from the Weather Reconnaissance Element at Eniwetok to Hickam Air Force Base "at the end of operations at Eniwetok." Significantly, this assumed a completion of operations within the Eniwetok Proving Ground by about 1 July 1958.

Regarding command matters, the operation plan stated that Headquarters Task Group 7.4 would be maintained at Eniwetok during the Eniwetok Proving Ground phase of HARDTACK, the Commander transferring his headquarters to Johnston Island about 12 July 1958. The Johnston Island headquarters was to consist of two officers and two airmen. In addition, a complement of two officers and two airmen from Headquarters Task Group 7.4 at Eniwetok were to be stationed at Hickam to coordinate support and operational matters during the build-up and operational phases of [redacted]. Two other officers and one other airman were to be detached from the staff of the headquarters at Eniwetok to the staff of the Johnston Island Base Commander for the duration of Operation HARDTACK.

AFWL/HQ

When Operation Plan 3-58[6] for the TEAK and ORANGE events was published on 25 June 1958, the general concept of the NEWSREEL operation and of Task Group 7.4 responsibilities became much more crystallized. Several prominent changes were now noticeable.

For example, a C-97 and two WV2 aircraft which had not been listed in the original inventory of test aircraft by Task Group 7.4, had now been included for NEWSREEL participation. These aircraft, however, had been listed in the Joint Task Force SEVEN Operation Order 35-58 on 13 June 1958. The B-36 aircraft were to engage in (1) a project to ascertain eye effects resulting from high altitude, high yield detonations, (2) a project to measure and analyze the thermal phenomena resulting from the detonation of nuclear weapons at very high altitudes, (3) a project to determine the modes by which energy is propagated and dissipated from nuclear explosions at high altitudes and to document all visible aspects of the detonation, and (4) a project to photograph at 40,000 feet the spectrums of both shots as a function of time during early fireball growth.

The P2V aircraft was to take part in a project dealing with airborne infra-red measurements, the aircraft flying at 25,000 feet.

One C-97, sponsored by the Air Force Medical Center, was to engage in a project with the two B-36's, that of ascertaining eye effects resulting from high altitude, high yield detonations. The other C-97,

AFWL/HQ

of Air Force Cambridge Research Center (and formerly a part of the Ionospheric Element at Eniwetok), was scheduled for a project investigating the ionization and associated effects created in the high atmosphere by a large nuclear detonation.

The two WV2 aircraft were to be used on a project to investigate the propagation of radar transmission through the ionized regions produced by high altitude nuclear detonations.

A second significant change contained in the operation order regarded search and rescue coverage. This coverage now was to be furnished by the 76th Air Rescue Squadron, Hickam Air Force Base.

The weather reconnaissance requirement remained stable: one weather track daily beginning 25 July. However, the task was to be accomplished in conjunction with the flying of a track also for the Eniwetok Proving Ground area. One track would originate at Eniwetok and terminate at Hickam, while a second overlapping track would originate at Hickam and terminate at Eniwetok.

The operation order also provided a summary of the air control effort. Air Control of test and test support aircraft during practices, rehearsals, and events was to be performed through the use of IFF and radar capability of the Air Operations Center on the USS Boxer. The Center (call sign DESERT) would monitor safe aircraft separation, provide search and rescue assistance, and afford a secondary method of positioning test array aircraft. Primary aircraft positioning, however, was to be accomplished

AFWL/HQ

[redacted]

DECLAS

by airborne radars, in addition to an AN/MSQ-1 radar for one B-36.

When the operation plan was published, two full-scale rehearsals, two practices, and two shots were planned.* A practice for TEAK was scheduled for 18 July, a rehearsal for 21 July, and the actual event for 1 August. For ORANGE, a practice was scheduled for 24 July, a rehearsal for 28 July, and the actual event for 11 August.

The Task Group 7.4 Operation Order 32-58 for TEAK was published on 6 July 1958.[7] The order stated that TEAK was to be a night ultra high altitude detonation occurring approximately five nautical miles south of Johnston Island, sometime between 2200 hours on 31 July 1958 and 0500 hours on 1 August 1958 (Johnston Island local time). Blast and nuclear radiation effects below 50,000 feet mean sea level were not expected to be significant at or beyond the air thermal safety distance of 31 nautical miles from Surface Zero. TEAK was not expected to produce significant fallout; hence, no post-shot cloud tracking or radiation safety re-entry surveys were declared to be necessary.

Ten aircraft were scheduled to take part in TEAK: two B-36's, two C-97's, two P2V's (one for nose cone recovery), two WV2's, and two C-54's (one for search and rescue and one for observation).

---

* A rehearsal was defined as a simulation of all phases of a planned operation; a practice, as a simulation of one or a few, but not all, phases.

AFWL/HQ

AFWL/HQ

12

A practice for TEAK was conducted on 21 July, and a rehearsal on 26 July. On the rehearsal, particularly, aspects of the operation were successfully executed. The TEAK event occurred on 1 August 1958. (See additional information on TEAK in "Shots and Aircraft Participation," this chapter.)

The plan for ORANGE, the very high altitude shot, was virtually identical to that for TEAK, involving the same numbers and types of aircraft. Largely because of the general success of the TEAK practice, rehearsal, and event, a decision was made early in August to conduct only a rehearsal prior to the ORANGE event. This rehearsal was held on 8 August, and the shot was fired on 11 August 1958. (See additional information on ORANGE in "Shots and Aircraft Participation," this chapter.)

D. SHOT REHEARSALS

Soon after the Air Operations Center at Eniwetok became operational, a series of rehearsals in preparation for the shot events was begun. Several practices involving individual aircraft and small groups of aircraft also were conducted. These practices and rehearsals, in general, were performed to test various aspects of the communications and control systems, of aircraft positioning, and of related functions, and to orientate personnel in proper methods and procedures of operation.

The rehearsal period got underway on 21 March 1958 and concluded on the day of the firing of the YUCCA device, 28 April 1958. In all, 13

rehearsals were conducted: seven for YUCCA, on 21 and 25 March and 1, 5, 8, 14, and 18, April; four for CACTUS, on 16, 18, 22, and 28 April; one for SYCAMORE, on 15 April; and one for FIR, on 17 April. A dual shot rehearsal involved the CACTUS and YUCCA missions on 18 April 1958.

These rehearsals were extremely beneficial to Task Group 7.4 for several reasons. Many persons having important missions during shot periods (for example, sampler crews and air controllers) were able to gain valuable experience during the rehearsals and, thus, were well prepared for actual test operations. Many and varied difficulties with equipment were discovered and eliminated before the test period was inaugurated. Furthermore the rehearsal period permitted a thorough checkout of the various operational systems and a closer familiarity of personnel with equipment, as well as it made possible an efficient integration of all Task Group 7.4 elements.

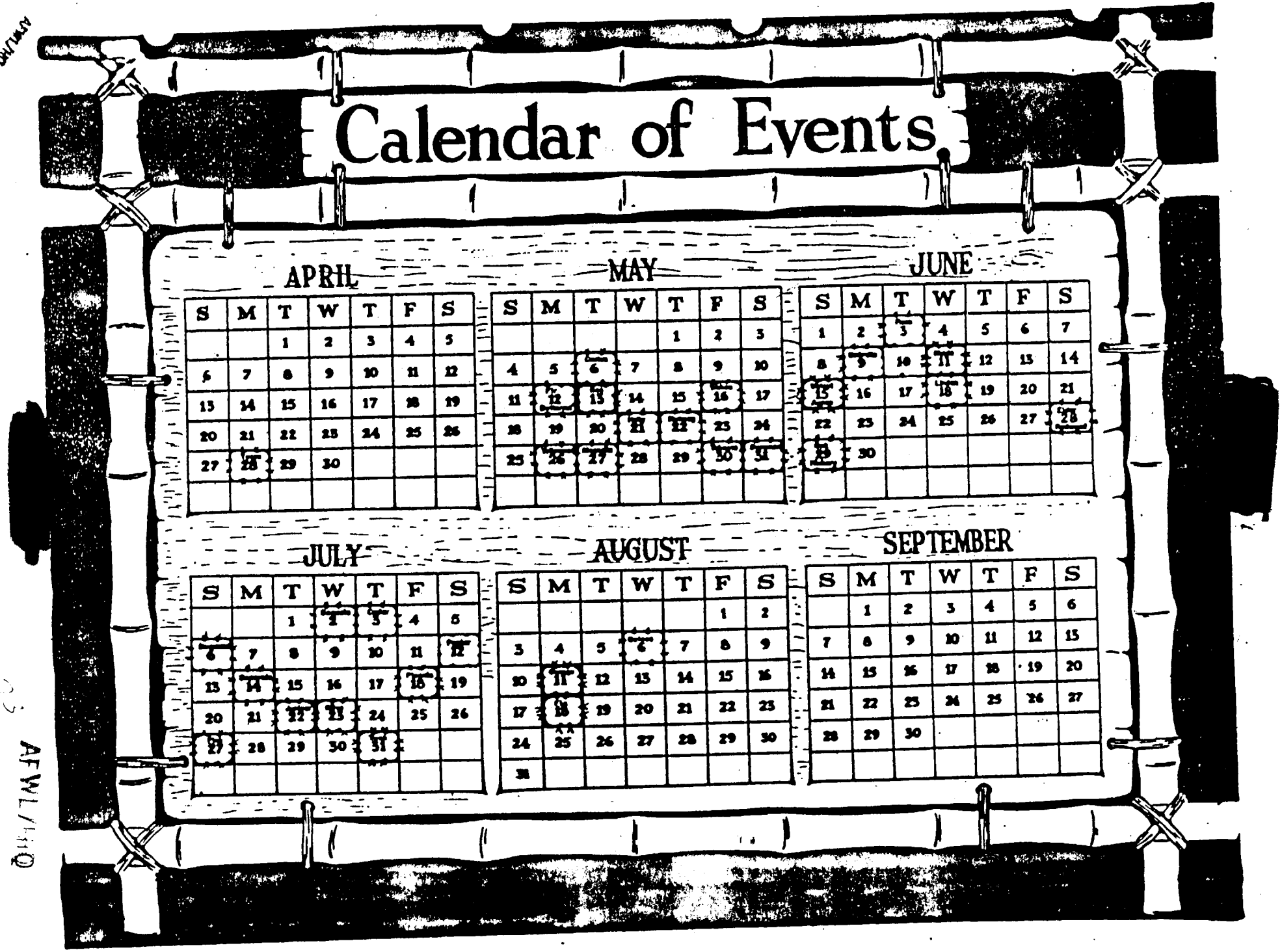
B. SHOTS AND AIRCRAFT PARTICIPATION

Throughout the rehearsals and 35 shots on Operation HARDTACK, the aircraft scheduling, mission execution, and aircraft recovery proceeded without major difficulty. For those missions which culminated in an actual shot, 93.9 per cent of all aircraft scheduled to participate made good their missions.

YUCCA. The first shot of the 1958 nuclear test series was YUCCA,

AFWL/HQ

AFWL/HQ


Calendar of Events
APRIL
S M T W T F S
1 2 3 4 5
6 7 8 9 10 11 12
13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28 29 30
MAY
S M T W T F S
1 2 3
4 5 6 7 8 9 10
11 12 13 14 15 16 17
18 19 20 21 22 23 24
25 26 27 28 29 30 31
JUNE
S M T W T F S
1 2 3 4 5 6 7
8 9 10 11 12 13 14
15 16 17 18 19 20 21
22 23 24 25 26 27 28
29 30
JULY
S M T W T F S
1 2 3 4 5
6 7 8 9 10 11 12
13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28 29 30 31
AUGUST
S M T W T F S
1 2
3 4 5 6 7 8 9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 30
31
SEPTEMBER
S M T W T F S
1 2 3 4 5 6
7 8 9 10 11 12 13
14 15 16 17 18 19 20
21 22 23 24 25 26 27
28 29 30

detonated in mid-air at 1440 hours on 28 April 1958. The shot had originally been scheduled for firing on 26 April, but was delayed because of inclement weather. YUCCA was [redacted] launched by balloon from the USS Boxer and fired approximately 60 miles northeast of FRED (Eniwetok Atoll).

Three instrument carrier aircraft participated, two B-36's (MARDIGRAS 1 and 2) and a P2V (STUDENT). Three B-57 aircraft (HOTSHOT SNIPPER, HOTSHOT CHARLIE, and HOTSHOT WX) engaged in sampler or weather activities; and a search and rescue SA-16 (STABLE 2) was in orbit until the other aircraft were recovered from the mission.

CACTUS. The first of eleven shots to be fired in May 1958 occurred on 6 May, when CACTUS, a land surface shot was detonated from a ground location on YVONNE Island, Eniwetok Atoll, at 0615 hours. CACTUS was a [redacted], fired after six shot postponements.

A total of 15 aircraft participated in this event, four of which were effects aircraft.[8] Eight of the aircraft were on sampling missions.[9] The Air Operations Center operated in a normal manner, as did the M-33 radar system which exercised primary control of the four effects aircraft.

FIR and BUTTERNUT. The first dual shot of the HARDTACK series occurred on 12 May 1958, when at 0550 hours FIR was detonated at CHARLIE Island, Bikini Atoll, from a barge location after 22 delays, and when at 0615 hours BUTTERNUT was fired at YVONNE Island, Eniwetok Atoll, from a barge location.

AFWL/HQ

[redacted]

AFWL/HQ

FIR was a [redacted] BUTTERNUT was a [redacted]

Ten aircraft were scheduled for the FIR event, and all participated as planned without cancellation or abort. One effects aircraft, a B-52 (WATCHDOG) took part.[10] Seven samplers were engaged in the FIR shot.[11] Over-all control of all aircraft at Bikini was effected by the Boxer Air Operations Center without difficulty; however, the Boxer TACAN and Homer were out of commission during the test period. The Task Group 7.5 time count-down was exceptionally weak and barely readable by participating aircraft.

For BUTTERNUT, which had suffered three delays, 15 aircraft were scheduled for participation, and all performed without incident, cancellation, or abort. Five of the aircraft were effects aircraft,[12] and nine were samplers.[13] Aircraft control was effected without malfunction.

KOA. The fifth HARDTACK shot was KOA, [redacted] detonated from a land surface site on GENE Island, Eniwetok Atoll, at 0630 hours on 13 May 1958. This event had been delayed one day.

Twenty-one scheduled aircraft participated, six of which were effects aircraft,[14] and ten of which were sampling aircraft.[15] No cancellations or aborts occurred. Operation of the Air Operations Center was satisfactory; however, a portion of the M-33 precise positioning radar system,

AFWL/HQ

[redacted]

AFWL/HQ

AIRCRAFT PARTICIPATION

		B-36	B-52	P2V NASWF	A4D	FJ4	B-57B	B-57D	RB-50	RC-54	SA-16	WB-50	OTHER
YUCCA	28 APR	2		1			3				1	1	
CACTUS	6 MAY				2	2	7				1	1	
FIR	12 MAY		1				4	3			1		
BUTTERNUT	12 MAY			1	2	2	5	4			1		
KOA	13 MAY		1	1	2	2	5	5		2	1	2	
WAHOO	16 MAY						3		2	3	2	1	
HOLLY	21 MAY						3	2		2	2		
NUTMEG	22 MAY						7		1	2	1	1	
YELLOWWOOD	26 MAY		1		2	2	5	2			1		
MAGNOLIA	27 MAY				2	2	5				1		
TOBACCO	30 MAY		1		2	2	4	1			1		
SYCAMORE	31 MAY		1				7	1		2	1	1	
ROSE	3 JUN		1		2	2	5				1		
UMBRELLA	9 JUN						4		2	3	2		
MAPLE	11 JUN		1				5	2			1		
ASPEN	15 JUN		1				5	2			1		
WALNUT	15 JUN		1		2	2	2	5			1	2	
LINDEN	18 JUN						6				1		

AIRCRAFT PARTICIPATION

		B-36	B-52	P2V NASWF	A4D	FJ4	B-57 B	B-57 D	RB-50	RC-54	SA-16	WB-50	OTHER
ELDER	28 JUN		1				3	2		2	1		
REDWOOD	28 JUN		1				4	2			1		
OAK	29 JUN		1				4	5			3	1	
HICKORY	29 JUN						6				1		
SEQUOIA	2 JUL						5				1		
CEDAR	3 JUL		1				4	3			2		
DOGWOOD	6 JUL		1				5	4			1		
POPLAR	12 JUL		1				4	4		1	2		
SCAEVOLA	14 JUL						2				1		
PISONIA	18 JUL						4	2			1		
JUNIPER	22 JUL						6	1		1	1		
OLIVE	23 JUL						6	2			1		
PINE	27 JUL						4	3			1		
TEAK	31 JUL	2		1								1	6
QUINCE	6 AUG						3				1		
ORANGE	12 AUG	2		1								1	6
FIG	18 AUG						3				1		

AFWL/HO

controlling the A4D (BARLEY) effects aircraft malfunctioned until H-30 minutes. Communications also were satisfactory, the voice count-down showing considerable improvement over that of the previous day.

WAHOO. On 16 May at 1300 hours WAHOO was fired, after one delay. This was an underwater shot, detonated at a 500 foot depth on the ocean side of Eniwetok Atoll near IRWIN Island. WAHOO was [redacted]

Eleven aircraft were scheduled and participated in the event, of which there were no effects aircraft.[16] Three samplers took part.[17] Air Operations Center and communications facilities performed without incident.

HOLLY. The HOLLY shot was fired without delay on 21 March 1958 at 0630 hours, from a barge installation at YVONNE Island, Eniwetok Atoll. Only 7 aircraft were originally scheduled for the mission; however, a P2V (WILDROOT), staging from Kwajalein, was added for a post-shot radiation safety survey. No effects aircraft participated,[18] but five samplers were engaged.[19] No aborts or cancellations occurred, and air control was performed normally. Communications were also satisfactory, although channel 5 was inoperative for approximately five minutes.

HOLLY was [redacted]

NUTMEG. No aborts or cancellations were reported for the NUTMEG shot at 0920 hours on 22 May 1958. This shot had been delayed three times.

AFWL/HQ

Eleven scheduled aircraft took part, none of which were effects aircraft,[20] but seven of which were samplers.[21] The Eniwetok Air Operations Center encountered difficulty with several ultra high frequency communications channels. This difficulty did not prevent the establishment and maintenance of air control.

Having a predicted yield of from [redacted] the NUTMEG weapon was [redacted] detonated from a barge at TARE Island, Bikini Atoll. This was the second Bikini nuclear event in the 1958 test series.

YELLOWWOOD. Fired from a barge at JANET Island, Eniwetok Atoll, at 1400 hours on 26 May 1958, YELLOWWOOD was the ninth test of the HARDTACK program. Four postponements were encountered. YELLOWWOOD was [redacted]

No aborts or cancellations occurred among the 17 scheduled aircraft. Five of these were effects aircraft,[22] and six were samplers.[23] Air Operations control and communications performed satisfactorily.

MAGNOLIA. Again during the MAGNOLIA event, air operations control and communications performed without malfunction. All the eleven scheduled aircraft were in their appointed H-hour positions. Four of the eleven were effects aircraft;[24] five were samplers.[25]

MAGNOLIA, [redacted] was expected to produce a yield of [redacted] It was detonated on a barge anchored near YVONNE Island, Eniwetok Atoll, at 0600 hours on 27 May 1958, after two postponements.

AFWL/HQ

[redacted]

TOBACCO. At 1415 hours on 30 May 1958, TOBACCO was fired from a barge location near JANET Island, Eniwetok Atoll. This weapon, of a predicted yield of [redacted]

Twelve aircraft were scheduled and participated, five of which were effects aircraft,[26] and five sampler aircraft.[27] Air operations control and communications again performed satisfactorily.

SYCAMORE. Excellent air control and communications were maintained for the SYCAMORE shot on 31 May 1958. The weapon, [redacted] having a predicted yield of [redacted] was detonated at 1500 hours from a barge location near CHARLIE Island, Bikini Atoll. The firing of the device had been postponed ten times.

Fifteen aircraft had been scheduled. Four pre-takeoff cancellations were reported: three B-57B sampler aircraft were substituted for B-57D aircraft because of the unexpected low cloud height; and one cloud tracker WB-50 was cancelled by Joint Task Force SEVEN. One effects aircraft,[28] and eight sampler aircraft[29] participated.

ROSE. The first of ten devices fired during June 1958 was ROSE, an [redacted] ROSE was detonated from a barge anchored near YVONNE Island, Eniwetok Atoll, at 0645 on 3 June.

Twelve scheduled aircraft participated in the event which experienced no postponements. Five effects aircraft,[30] and five sampling aircraft[31] performed. Communications and air control functioned satisfactorily.

AFWL/HQ

AFWL/HO

150

The Air Operations Center performed let-down of all aircraft to VFR conditions on all recoveries because of a loss of precision radar by Ground Controlled Approach.

UMBRELLA. The second underwater shot of the HARDTACK series was UMBRELLA, detonated at a 150-foot depth on the lagoon side of HENRY Island, Eniwetok Atoll, at 1115 hours on 9 June 1958. Predicted to produce a [redacted] yield, UMBRELLA was [redacted] No postponements of this event occurred.

Twenty aircraft were originally scheduled, but 21 participated. No effects aircraft were engaged in this test,[32] but four samplers took part.[33] Eight support aircraft participated in post-shot project recovery operations in and around the test array. One SA-16 (STABLE ECHO aborted because of an oil leak in the left engine; another SA-16 replaced the aborted aircraft. Both the Air Operations Center and communications facilities performed satisfactorily.

MAPLE. On 11 June 1958 at 0530 hours, MAPLE was detonated on a barge near FOX Island, Bikini Atoll after two postponements. The weapon, a [redacted] had a predicted yield of [redacted]

Ten aircraft were scheduled, and 11 participated. One air abort occurred; a B-57 sampler aborted because of a flame-out, being replaced by a spare aircraft. One effects aircraft[34] took part, as did eight samplers.[35] Communications were excellent, and air control was satisfactory. The

AFWL/HQ

USS Benner was used for the first time as the Air Operations Center at Bikini.

WALNUT and ASPEN. The second dual shot event was conducted on 15 June 1958, when ASPEN was detonated from a barge near JANET Island, Eniwetok Atoll. The former detonation occurred at 0530 hours, according to plan; the latter detonation occurred at 0630 hours, after two postponements. ASPEN was [redacted] WALNUT was an [redacted]

Eight scheduled aircraft took part in ASPEN. No effects aircraft were required.[36] Six samplers participated.[37] No air control or communications difficulties were encountered.

All the 21 scheduled aircraft took part in WALNUT, of which five were effects aircraft,[38] and ten were samplers.[39] Communications and air control were satisfactory.

On the WALNUT mission one A4D (BARLEY) received paint burns on the underside of both wings and canvas burns beneath staoilizer and control surfaces, as well as having one broken wing recognition light. An FJ4 (KIMONO) received blistered paint on the underside of the fuselage from cockpit to the rear, on the rear end of both external tanks, and on the underside of the right wing. Damage to both aircraft was considered superficial.

LINDEN. At 1500 hours on 18 June 1958, LINDEN was fired on a barge near YVONNE Island, Eniwetok Atoll, as scheduled. LINDEN was [redacted]

DELE

[redacted]

AFWL/HQ

[redacted] No effects aircraft were among the seven aircraft which participated.[40] Five samplers were used.[41] Air control and communications were satisfactory.

ELDER and REDWOOD. The third dual event of the HARDTACK series was conducted on 28 June 1958. REDWOOD was detonated on a barge near FOX Island, Bikini Atoll, at 0530 hours; ELDER was also a barge shot near JANET Island, Eniwetok Atoll, at 0630 hours. ELDER had been postponed eight times. [redacted] REDWOOD was expected to produce a yield of [redacted] ELDER, a weapon of [redacted] predicted yield, was a [redacted]

The B-52 was the only effects aircraft of the ten aircraft on the REDWOOD mission.[42] Six samplers were used for REDWOOD, and five were used for ELDER.[43] The B-52, returning from the Bikini event was the only effects aircraft in the ELDER array,[44] which included a total of eleven aircraft.

No air control or communications problems, for either shot, were encountered in the Eniwetok Air Operations Center; however, the Benner Air Operations Center was without IFF radar for a short period, although this circumstance did not greatly hamper the mission execution.

OAK and HICKORY. For the second successive day, on 29 June 1958, a dual event was conducted, when OAK was fired on a barge near ALICE Island, Eniwetok Atoll, at 0730 hours, and HICKORY was detonated on a barge near

[redacted]

AFWL/HQ

TARE Island, Bikini Atoll at 1200 hours. This was the fourth and last dual event of HARDTACK. OAK was a [redacted] device of a predicted [redacted] HICKORY, a [redacted] device of a predicted [redacted] yield.

One effects aircraft, a B-52 (WATCHDOG), took part in the OAK event,[45] as did eleven sampler aircraft.[46] Eight of the twenty-three aircraft participating in this test were light aircraft which were in orbit 35 miles southeast of FRED Island as a precautionary measure against damage to the aircraft.

Eight scheduled aircraft participated in HICKORY. The array included no effects aircraft,[47] but six samplers took part.[48] Air control and communications functions at both atolls were normal.

SEQUOIA. Nine nuclear detonations took place in the Eniwetok Proving Ground in July 1958. The first of these was SEQUOIA, a [redacted] of a predicted yield of [redacted] detonated on a barge stationed near YVONNE Island, Eniwetok Atoll, on 2 July 1958 at 0630 hours.

Only seven aircraft were engaged in SEQUOIA, none of which were effects aircraft,[49] but of which five were samplers.[50] Normal air control and communications activity was reported.

CEDAR. Air control and communications again were reported normal for the CEDAR shot on 3 July 1958, which shot involved ten aircraft. One effects aircraft,[51] and seven sampler aircraft[52] were engaged in this

AFWL/HQ

AFWL/HQ

operation. One B-57D had a dual flame-out while sampling at 50,000 feet. One engine was re-started at a lower altitude, and a search and rescue SA-16 intercepted the disabled aircraft 30 miles from FRED Island and escorted the B-57 to a successful landing.

CEDAR, a barge shot near CHARLIE Island, Bikini Atoll, was a [redacted] device of [redacted] predicted yield. The shot, after nine postponements, was fired at 0530 hours.

DOGWOOD. The sixteenth Eniwetok shot of the 1958 test series was conducted on 6 July at 0630 hours, when DOGWOOD, a [redacted] device of a predicted [redacted] yield, was detonated on a barge near JANET Island.

Communications and air control were normal for this event, in which eleven aircraft participated. One effects aircraft[53] and eight sampler aircraft[54] took part. A B-57B (HOTSHOT PHOTO) aborted before takeoff because of a sheared starter shaft.

POPLAR. One effects aircraft[55] and six sampler aircraft[56] were among the thirteen aircraft participating in the 12 July event, POPLAR, at Bikini Atoll. Air control and communications were satisfactory. This shot had been postponed four times.

A [redacted] device of a predicted [redacted] yield, POPLAR was detonated on a barge near CHARLIE Island, at 1530 hours.

[redacted]

AFWL/HQ

85

SCAEVOLA. No effects aircraft[57] and no sampler aircraft[58] participated in the two-point safe test, SCAEVOLA, on 14 July 1958 at 1600 hours. This [redacted] was a barge shot near YVONNE Island, Eniwetok Atoll. Only three aircraft, all support types, took part; however, a B-57B (HOTSHOT 1) aborted on the ground because of a sheared starter shaft, the crew utilizing a spare aircraft. No other incidents were reported for any phase of the operation.

PISONIA. On 18 July 1958 at 1100 hours, PISONIA, a [redacted] device of [redacted] predicted yield, was fired from a barge near YVONNE Island, Eniwetok Atoll.

Ten aircraft participated; none was an effects aircraft;[59] five were samplers.[60] An SA-16 (STABLE ECHO) aborted in the air because of inoperative ultra nigh frequency radio. This search and rescue aircraft was replaced by another SA-16 aircraft (STABLE ECHO 2). A B-57B (HOTSHOT 11) also aborted, because of a single engine flame-out; it was replaced by a B-57D (HOTSHOT SPARE). Another B-57B (HOTSHOT PHOTO), a spare, experienced a ground abort arising from inoperative IFF equipment.

Air control and communications were normal.

JUNIPER. The twenty-ninth shot of the HARDTACK series, and the last of ten to be fired at Bikini Atoll, was detonated on a barge at TARE Island on 22 July 1958 at 1620 hours. This weapon, JUNIPER, was a [redacted]

[redacted]

AFWL/HQ

AFWL/HO

device; its preliminary fireball yield was estimated at [redacted].

Eleven aircraft took part in this event which ad been postponed five times. No effects aircraft participated,[61] but four sampler aircraft performed in the mission.[62] An SA-16 (STABLE BRAVO) aborted in the air because of a malfunctioning engine; it was replaced by another SA-16 (STABLE BRAVO 2). A B-57D sampler (HANDTIME 11) blew two tires on landing, stopping some 6,000 feet from the approach end of the runway. This incident delayed the recovery of some samplers for approximately 15 minutes. Recovery of aircraft was made under marginal weather conditions. No air control or communications problems were encountered.

OLIVE. On 23 July 1958 at 0830 hours, OLIVE was detonated on a barge near JAMET Island, Eniwetok Atoll. OLIVE was a [redacted] having a preliminary fireball yield of [redacted]

Ten aircraft participated. No effects aircraft were required,[63] but five sampler aircraft took part.[64] All parts of the mission were accomplished satisfactorily.

FIG. At 0830 hours on 27 July 1958, FIG, [redacted] device, was detonated on a barge at JAMET Island, Eniwetok Atoll. The preliminary fireball yield was [redacted]

Eighteen aircraft took part in the FIG event, three of which were L-19's and three L-20's, all of these liaison aircraft having an 8-hour

AFWL/HQ

position 15 miles southeast of FRED Island for protective purposes. No effects aircraft were in the array.[65] Seven samplers participated.[66]

Two air aborts occurred. The radiation safety P2V (7 WILDROOT) aborted after takeoff because of mechanical difficulty. It was replaced by a second P2V (5 WILDROOT), which also aborted after takeoff. The mechanical difficulty on the first P2V having been rectified, the original aircraft joined the array and completed the mission.

TEAK.* The first of the Operation NEWSREEL shots at Johnston Island was the ultra high altitude detonation of [redacted] device of a predicted yield of [redacted] The device was carried aloft by a Redstone Missile. The detonation occurred some five nautical miles south of Johnston Island, at 2350 hours on 31 July, Johnston Island local time (at 2150 hours on 1 August, Marshall Islands time). All ten aircraft scheduled to participate carried out their missions as planned, and all were in pre-appointed positions at H-hour. No damage was sustained by any aircraft.

All aircraft reported high frequency communications difficulty after H-hour. The voice count-down was received by the participating aircraft by either ultra high frequency or high frequency radio.

ORANGE. A [redacted] device of a predicted [redacted] yield, ORANGE was fired from a land surface position on YVONNE Island, Eniwetok Atoll, at 1115 hours on 6 August 1958, after a one-day postponement. Four aircraft

---

* See also "Operation [illegible] (Johnston Island)," this chapter.

AFWL/HO

AFWL/HO

took part in QUINCE, none of which were effects aircraft.[67] Three sampler aircraft engaged in the mission.[68] No operational difficulties were reported in any phase of the mission.

ORANGE.* The last Johnston Island shot was fired at 2330 hours on 11 August 1958, Johnston Island local time (at 2130 hours on 12 August, Marshall Islands time). ORANGE was a very high altitude test of [redacted] of a predicted [redacted] yield and was carried aloft by a Redstone Missile. Ten aircraft were scheduled and all participated.

FIG. The concluding shot of the 1958 Operation HARDTACK nuclear test series was FIG. This shot, similar to QUINCE, occurred on 18 August 1958 at 1600 hours. It was a land surface shot of a [redacted] device, of [redacted] predicted yield. Four aircraft, all samplers, participated. No difficulties were encountered.

F. COMMUNICATIONS AND AIR OPERATIONS CONTROL

The Eniwetok Air Operations Center had a battery of seven DPA-35 scopes, a capability of twelve ultra high frequency communications channels, and the facilities for six controllers to work simultaneously. The basic equipment of this center was the AN/USQ-12 Air Operations Control System, manufactured by the Hazeltine Corporation prior to HARDTACK in 1956 especially for air control during nuclear tests. The USQ-12 system was adequate only for gross positioning; precise positioning of aircraft, particularly of

---

* See also "Operation [redacted] (Johnston Island)," this chapter.

AFWL/HQ

effects aircraft in test arrays, was attained by the use of M-33 and AN/MSQ-1 radar.

The Air Control Center at Bikini originally was established on the USS Boxer, but when the Boxer left the Eniwetok Proving Ground in July 1958 to prepare for the NEWSREEL tests, the Center was established on the USS Benner. On these craft, the ultra high frequency communications and the number of scopes were adequate; however, in spite of maximum cooperation by Navy communications personnel, such important navigational aids as TA-CAN and homing beacons were inoperative or unusable because of interference with scientific projects. The Eniwetok Air Operations Center and the Bikini Air Operations Center were able to coordinate aircraft movements and operations through the use of a hot line, backed up by a high frequency radio circuit which often was inadequate. The primary inadequacy of the high frequency circuit was a result of the unsatisfactory generation of power, particularly by the Boxer high frequency transmitter. The great distances between the centers, thus, was the cause of much of the inter-atoll air control and communications difficulty, although the over-all system met the minimum requirements for Task Group 7.4 during HARDTACK.

The USQ-12 radar and communications equipment was installed soon after its arrival at Eniwetok. Some delay was encountered while Holmes and Narver prepared the location for acceptance of the equipment; another delay in locating the transmitter van and in installing antennas, also proved

troublesome; however, these difficulties were overcome gradually, permitting a calibration and check-out of equipment, and on 6 April 1958, the Air Operations Center reached operational status, ever though a lack of required ultra nigh frequency crystals still hampered the over-all use of the system. The lack of crystals eventually was overcome when Task Group 7.4 was able to borrow a sufficient number from other organizations in the proving ground.

The maintenance of communications and electronics equipment often was deterred because of the 24 hour operation of the center. Maintenance, however, was performed as much as possible during non-test periods, and this method ultimately proved to be adequate.

Despite inevitable supply difficulties, the deteriorating effects of the proving ground climate, and the high rate of usage of available equipment, the air control system and its related communications systems were adequate to meet the needs of Task Group 7.4..

G. MAINTENANCE CONTROL

The Maintenance Control Unit, consisting of the task group Maintenance Officer and nine airmen, was established by the Director of Materiel soon after arrival at Eniwetok of the advance echelon, to assist the aircraft maintenance organizations in performing the maintenance mission.

To enable Maintenance Control to expedite maintenace, to acquire supplies, and to supervise maintenance technicians, a Control Unit communications network was established. Inter-communications were provided between the various maintenance and supply offices and offices of the Group Commander, Director of Materiel, and Maintenance Control. Two-way radios in vehicles and in the Unit office provided communications to the flight maintenance stations.

All requests for maintenance assistance, urgently needed aircraft parts, fuel servicing, fire guards, hangar space, and use of the wash rack were channeled through Maintenance Control and assigned priorities consistent with mission requirements. Materiel requirements were passed to the Control Unit Supply Technician, who did research on the required parts to verify availability. To effect rapid maintenance, a radio-equipped vehicle was dispatched to obtain the parts and accelerate their delivery. In cases of unavailability of parts in the proving ground, a message request for parts was sent immediately to the Group Logistics Liaison Officer at Sacramento Air Materiel Area, and the Control Unit continued to follow the acquisition process until the parts were received and installed in the aircraft.

Throughout Operation HARDTACK, the aircraft in-commission rate was 82.8 per cent, and the rate for aircraft out of commission for parts was 1.26 per cent. These percentages give an indication of the value to HARDTACK of the Maintenance Control Unit system and of the efficiency of the procedure for emergency procurement of supplies and equipment.

An important part of the Maintenance Control Unit was the emergency team, constituted, as in REDWING, to effect rapid removal of immobilized aircraft from the Eniwetok runway in case of accident.

On 18 June 1958, a B-57D of the Sampling Element landed on the FRED runway with an unsafe nose gear. The gear collapsed during the landing run, and was immobilized. The emergency team utilized a crane belonging to Holmes and Narver to raise the aircraft, enabling the team to lower the gear and tow the aircraft to a maintenance area. The removal process required 13 minutes. After 113 maintenance man-hours the aircraft was again put in commission.

H. AIRLIFT

Airlift for HARDTACK was divided into three categories, inter-island airlift, inter-atoll airlift, and re-supply of Weather and Project Islands. The inter-island airlift involved the servicing of sites within the Eniwetok and Bikini Atolls. The Bikini phase was, in the main, accomplished by a squadron of 15 Marine helicopters.

At Eniwetok, six H-19's and nine H-21's performed the airlift mission to sites where no landing strips were available. Eight L-20 aircraft of the Test Base Unit fulfilled commitments to sites where landing strips were available.

Some difficulty arose in April in supporting the airlift mission with H-21 aircraft. Deterioration of rotor blades became serious, and sea water spray was thought to be a major cause of this deterioration, largely because the aircraft were parked in positions particularly vulnerable to spray and because the blades were of wood construction susceptible to rapid deterioration. However, an immediate action Technical Order was received by Task Group 7.4 soon after the difficulty became apparent; the order specified that H-21 rotor blades should be inspected and that a mandatory replacement of certain blades would be effected after 150 hours of use. Several H-21 aircraft, therefore, were out of commission awaiting parts, a condition not rectified until 15 May. This circumstance lowered the H-21 lift capability to an eminent degree until the difficulty was removed. To avoid the further possibility of rotor blade deterioration caused by spray, the H-21 aircraft were moved to another parking site on the lagoon side of the airfield.

During the period March 1958 through August 1958, H-19 aircraft of the group flew 1,263 hours, transporting 6,710 passengers and 28.7 tons of cargo; H-21 aircraft flew 2,454 hours, transporting 23,328 passengers and 153.6 tons of cargo; and L-20 aircraft flew 2,622 hours, moving 15,298 passengers and 22.5 tons of cargo.

Inter-atoll airlift was defined as airlift between Eniwetok and Bikini atolls. The C-54 aircraft of the Test Base Unit accomplished the majority of this airlift, but were augmented occasionally by the C-54's of

the Aerial Photography Element. The C-54 aircraft also were engaged in re-supply flights to Tarawa and Nauru.

The third airlift mission was the re-supply of Weather and Project Islands located at remote locations in the Pacific. These islands included Napingamarangi, Kusaie, Ujelang, Utirik, Wotho, and Rongelap. This airlift was performed by SA-16 aircraft primarily (Tarawa and Nauru were supplied by C-54's), because this type aircraft was especially suited for airlift to these bases which had only water landing facilities.

During the period March 1958 through August 1958, C-54 aircraft transported 12,785 passengers and 939.5 tons of cargo, while flying some 2,522 hours; and SA-16 aircraft flew 2,169 hours, moving 1,390 passengers and 86.9 tons of cargo.

I. AIRCRAFT ACCIDENTS

Aircraft of Task Group 7.4 during HARDTACK flew 18,307 hours with four major accidents. The accident rate therefore, was 6.8 per hundred thousand flying hours. The four major accidents involved an L-20 and three helicopters.

On 7 April 1958, the pilot of an L-20 took off from [redacted] (Parry Island) with a nearly empty fuel tank. The engine stopped soon after take-off, and the pilot crash-landed the aircraft on the reef. Although major damage was sustained by the aircraft, no personnel injuries were recorded. The aircraft was recovered and sent to the Zone of Interior for repair or salvage.

[redacted]

AFWL/HQ

On the same day, while flying an H-19B aircraft near JANET in the Eniwetok Atoll, the pilot crashed into the lagoon. The accident was a result of the pilot's being unable to maintain VFR flight during a heavy rain shower. A civilian passenger, Dr. Mark M. Mills of the University of California Radiation Laboratory was killed; however, four other persons aboard the aircraft survived without major injury. The aircraft was recovered from some eight feet of water for investigative purposes and then salvaged.

On 10 July 1958, an H-21 aircraft crashed into the ocean near GLENN in the Eniwetok Atoll after encountering a material failure in the control system. This failure, however, could not be determined precisely inasmuch as the aircraft sank in very deep water and was not recoverable. All persons aboard the helicopter escaped without injury.

An H-21B aircraft crashed near YVONNE Island in deep water on 14 August 1958. No injury to personnel was recorded. No passengers were involved. A blow-out of the master cylinder, which severed the engine ignition harness, was determined as the cause of the accident.

Several other incidents occurred during the operational phase of HARDTACK, and these incidents together with the major accidents emphasized the hazards of aircraft operation in the Eniwetok Proving Ground.

In one incident, a B-57 aircraft in flight experienced failure of the nose gear hydraulic actuator. The runway was foamed to assist the

safe landing of the aircraft. During the landing role, the nose gear collapsed causing slight damage to the aircraft. Upon a close inspection many nose gear actuators on B-57 aircraft were found to be defective and the aircraft were grounded until the actuators could be tested and replaced, if defective.

In another incident, a life raft inflated and ejected from a WB-50 in flight. The raft struck the left horizontal stabilizer and damaged the aircraft to such an extent that normal pilot control of the WB-50 was reduced, although not to serious proportions. The aircraft was landed safely at Wake Island.

The Group Commander instituted a vigorous flight safety program as soon as the operational phase of HARDTACK was begun. The Group Flying Safety Council, a vital part of this program, was established and convened weekly. Under its supervision, individual safety programs were conducted by the units and elements, continually stressing the unusual hazards and obstacles attending flying operations in the proving ground. This strict over-all flying safety program aided immeasurably in maintaining a high standard of air discipline.

J. GROUND SAFETY

The ground safety program was a major item of concern to Task Group 7.4 during Operation HARDTACK, inasmuch as crowded conditions and lack of space affected virtually every aspect of life and activity in the proving

ground. The program, a responsibility of the Director of Personnel and Administration, was supervised by a Ground Safety Technician provided to the group by Air Force Special Weapons Center. Among the objectives of the program, implemented in March 1958, were the following:

1. The over-all planning, organizing, and initiation of the program for all Task Group 7.4 units and elements.

2. The safety supervision over all activities in the three Units and their elements and in off-island locations.

3. The continuation of a safety education program through media of safety meetings, safety posters, and other types of promotional means.

4. The frequent safety inspection of all organizations to determine and isolate unsafe conditions and point out inadequate safety measures.

5. The maintenance of an accident reporting system between Task Group 7.4 and the medical facility of Task Group 7.4, and the coordination on safety problems between all Group Staff Sections.

Some 246 safety discrepancies were noted by the Ground Safety Technician and brought to the attention of supervisory personnel for corrective action during the operational phase of HARDTACK. All the discrepancies were corrected or minimized, thus eliminating many unsafe conditions or reducing exposure of personnel to hazards.

A fatal accident on 22 February 1958, before the operational phase was begun, early accentuated the need for a strict safety program. This accident involved two airmen from the Weather Reporting Element, who were undergoing familiarization with the operation of an amphibious vehicle.

The vehicle, plying the Eniwetok lagoon waters, struck a submerged coral head and began to sink. No life preservers other than kapok seats were aboard the craft. The two airmen abandoned the craft, and only one was able to reach the shore.

Extensive damage to an aircraft in April 1958 as a result of inadequate ground operation further emphasized the need for continuous supervision of ground operations. In this incident, while towing a C-54 aircraft from the hangar, the tug operator and wing walkers were not employing coordinated signals. The aircraft was turned before the stabilizer and rudder were clear of the upper door slot, resulting in a collision which caused damaged to the aircraft tail section. The cost of this accident was calculated to be $3,786. Subsequently, action was taken to require a spotter on each wing tip and one at the tail when towing aircraft from or to the hangar.

Through the collection and analysis of accident and inspection reports the fact was made apparent that many ground accidents during HARDTACK were preventable. Furthermore, a determination was made that personnel were more prone to ground accidents just before and just after the beginning of the operational phase because (1) individuals were then becoming adjusted physically and psychologically to island living, (2) individuals were not yet fully familiar with the hazards of congested and limited working and living space, (3) individuals were not yet aware of all safety and operating requirements applicable to the Eniwetok area but not encountered at most other Air Force installations, and (4) individuals were not yet adjusted to inter-service operations.

AFWL/HQ

AFWL/DM

[redacted]

There was a total of 77 minor and 8 disabling injuries, which resulted in the loss of 68 work days, because of ground accidents during the March to August 1958 period. Personnel exposure during this period was 1,511,640 man-days. Ground accidents resulted in damage to six vehicles, five aircraft, and five other Air Force properties. Thus, the calculated cost for injuries was $2,579, and the cost for damaged property was $3,985 — a total cost for ground accidents of $6,564.

K. RADIOLOGICAL SAFETY ACTIVITIES

The activities of the Nuclear Research Section during the operational phase of HARDTACK became largely routine. The procurement and issue of film badges to all Task Group 7.4 personnel was completed before the firing of the first HARDTACK device; courses for the training of radiological safety monitors were completed in March and April 1958; and the general policies and procedures for radiological safety activities were established during the planning phase. Only a few non-routine tasks, then, remained to be completed after the operational phase got underway.

On 11 April 1958, a conference was held at Headquarters Joint Task Force SEVEN for the purpose of establishing policies and procedures for the return of radioactive cloud samples to Zone of Interior laboratories. The Task Group 7.4 Nuclear Research Officer was charged with the responsibility of monitoring the loading of the sample return aircraft and the briefing of the sample return project officers. In this connection, a

special one-day training course was arranged to prepare permanently assigned Air Force and Army officers at Eniwetok to serve as project officers. (couriers).

Also during April, two important radiological safety regulations were published: Group Regulation 55-8, "Radiological Defense of Eniwetok," and 55-17, "Handling of Radioactive Materials and Equipment." These two regulations completed the establishment of radiological safety procedures begun in the planning phase. The first of these regulations presented the procedures for monitoring Eniwetok Island for detection of radiological contamination following test events; the second prescribed the policies for handling radioactive materials and equipment, particularly those maintenance and supply personnel working with contaminated aircraft equipment.

After the beginning of the nuclear tests, the Nuclear Research Officer was engaged with the routine duties of providing pre-shot fallout predictions, estimates of expected overpressures, and information relative to the post-shot radiological conditions of airstrips and helicopter pads, as well as the briefing of military cloud sample couriers.

Only one significant instance of radioactive fallout of FRED (Eniwetok) Island was noted during HARDTACK. The fallout was encountered first at 0300 hours on 14 May 1958, and ended at approximately 1500 hours; the deposited material decayed in a normal predicted manner. By 19 May, the major portion of the fallout had decayed, leaving personnel with an exposure ranging from 500 to 1,500 milli-roentgens. This exposure constituted only about one-fifth of that which individuals were permitted to receive during Operation HARDTACK.

AFWL/HQ

[redacted]

AFWL/HQ

201

NOTES

1. TWX, CTG 111602Z, Comdr., TG 7.5, USAEC to Comdr., TG 7.4, in Task Gp, 7.4 reading file of 13 Mar. 58.

2. Boeing Aircraft Company form 1546 L-83, subj.: Positioning of the B-52 for Operation HARDTACK Tests, no date (control no.: SWC 8S 21352/1), in D/O files.

3. Operation Order 35-58, "HARDTACK-Johnston Island Phase," Hq. JTF-7, 13 Jun. 58, in Task Gp. 7.4 hist. files.

4. Preliminary Operation Plan 3-58 for Task Group 7.4 Participation in TEAK and ORANGE Events at Johnston Island, Task Gp 7.4, 14 Apr. 58, in Task Gp. 7.4 hist. files.

5. Operation Plan 3-58, Task Gp. 7.4, 30 Apr. 58, in Task Gp. 7.4, 30 Apr. 58, in Task Gp 7.4 hist. files.

6. Operation Order 3-58, Task Gp. 7.4, 25 Jun. 58, in Task Gp. 7.4 hist. files.

7. Operation Order 32-58 (TEAK Event), Task Gp. 7.4, 6 Jul. 58, in Task Gp. 7.4 hist. files.

8. Incl. 34: Photo, Test Array Board, CACTUS, 6 May 58.

9. Incl. 35: Photo, Mission Execution Board, CACTUS, 6 May 58.

10. Incl. 36: Photo, Test Array Board, FIR, 12 May 58.

11. Incl. 37: Photo, Mission Execution Board, FIR, 12 May 58.

12. Incl. 38: Photo, Test Array Board, BUTTERNUT, 12 May 58.

13. Incl. 39: Photo, Mission Execution Board, BUTTERNUT, 12 May 58.

14. Incl. 40: Photo, Test Array Board, KOA, 13 May 58.

15. Incl. 41: Photo, Mission Execution Board, KOA, 13 May 58.

AFWL/HQ

16. Incl. 42: Photo, Test Array Board, WAHOO, 16 May 58.
17. Incl. 43: Photo, Mission Execution Board, WAHOO, 16 May 58.
18. Incl. 44: Photo, Test Array Board, HOLLY, 21 May 58.
19. Incl. 45: Photo, Mission Execution Board, HOLLY, 21 May 58
20. Incl. 46: Photo, Test Array Board, NUTMEG, 22 May 58.
21. Incl. 47: Photo, Mission Execution Board, NUTMEG, 22 May 58.
22. Incl. 48: Photo, Test Array Board, YELLOWWOOD, 26 May 58.
23. Incl. 49: Photo, Mission Execution Board, YELLOWWOOD, 26 May 58.
24. Incl. 50: Photo, Test Array Board, MAGNOLIA, 27 May 58.
25. Incl. 51: Photo, Mission Execution Board, MAGNOLIA, 27 May 58.
26. Incl. 52: Photo, Test Array Board, TOBACCO, 30 May 58.
27. Incl. 53: Photo, Mission Execution Board, TOBACCO, 30 May 58.
28. Incl. 54: Photo, Test Array Board, SYCAMORE, 31 May 58.
29. Incl. 55: Photo, Mission Execution Board, SYCAMORE, 31 May 58.
30. Incl. 56: Photo, Test Array Board, ROSE, 3 Jun. 58.
31. Incl. 57: Photo, Mission Execution Board, 3 Jun. 58.
32. Incl. 58: Photo, Test Array Board, UMBRELLA, 9 Jun. 58.
33. Incl. 59: Photo, Mission Execution Board, UMBRELLA, 9 Jun. 58.
34. Incl. 60: Photo, Test Array Board, MAPLE, 11 Jun. 58.
35. Incl. 61: Photo, Mission Execution Board, MAPLE, 11 Jun. 58.
36. Incl. 62: Photo, Test Array Board, ASPEN, 15 Jun. 58.

AFWL/HQ

37. Incl. 63: Photo, Mission Execution Board, ASPEN, 15 Jun. 58.

38. Incl. 64: Photo, Test Arr y Board, WALNUT, 15 Jun. 58.

39. Incl. 65: Photo, Mission Execution Board, WALNUT, 15 Jun. 58.

40. Incl. 66: Photo, Test Array Board, LINDEN, 18 Jun. 58

41. Incl. 67: Photo, Mission Execution Board, LINDEN, 18 Jun, 58.

42. Incl. 68: Photo, Test Array Board, REDWOOD, 28 Jun. 58.

43. Incl. 69: Photo, Mission Execution Board, ELDER and REDWOOD, 28 Jun. 58.

44. Incl. 70: Photo, Test Array Board, ELDER, 28 Jun. 58.

45. Incl. 71: Photo, Test Array Board, OAK, 29 Jun. 58.

46. Incl. 72: Photo, Mission Execution Board, OAK, 29 Jun. 58.

47. Incl. 73: Photo, Test Array Board, HICKORY, 29 Jun. 58.

48. Incl. 74: Photo, Mission Execution Board, HICKORY, 29 Jun. 58.

49. Incl. 75: Photo, Test Array Board, SEQUOIA, 2 Jul. 58.

50. Incl. 76: Photo, Mission Execution Board, SEQUOIA, 2 Jul. 58.

51. Incl. 77: Photo, Test Array Board, CEDAR, 3 Jul. 58.

52. Incl. 78: Photo, Mission Execution Board, CEDAR, 3 Jul. 58.

53. Incl. 79: Photo, Test Array Board, DOGWOOD, 6 Jul. 58.

54. Incl. 80: Photo, Mission Execution Board, DOGWOOD, 6 Jul, 58.

55. Incl. 81: Photo, Test Array Board, POPLAR, 12 Jul. 58.

56. Incl. 82: Photo, Mission Execution Board, POPLAR, 12 Jul. 58.

57. Incl. 83: Photo, Test Array oard, SCHEVOLA, 14 Jul. 58.

AFWL/HQ

[redacted]

58. Incl. 84: Photo, Mission Execution Board, SCABVOLA, 14 Jul. 58.

59. Incl. 85: Photo, Test Array Board, PISONIA, 18 Jul. 58.

60. Incl. 86: Photo, Mission Execution Board, PISONIA, 18 Jul. 58.

61. Incl. 87: Photo, Test Array Board, JUNIPER, 22 Jul. 58.

62. Incl. 88: Photo, Mission Execution Board, JUNIPER, 22 Jul. 58.

63. Incl. 89: Photo, Test Array Board, OLIVE, 23 Jul. 58.

64. Incl. 90: Photo, Mission Execution Board, OLIVE, 23 Jul. 58.

65. Incl. 91: Photo, Test Array Board, PINE, 27 Jul. 58.

66. Incl. 92: Photo, Mission Execution Board, PINE, 27 Jul. 58.

67. Incl. 93: Photo, Test Array Board, QUINCE, 6 Aug. 58.

68. Incl. 94: Photo, Mission Execution Board, QUINCE, 6 Aug. 58.

[redacted]

AFWL/HQ

AFWL/HQ

[redacted]

CHAPTER IV

ROLL-UP PHASE OF OPERATION HARDTACK

The operational phase of Operation HARDTACK was terminated on 18 August 1958. Considerable roll-up activity, however, had been completed prior to this date; in fact, several aircraft not required in the last events had already departed from the proving ground. The Navy Effects Element, for example, ended its test activities after the firing of WAHOO on 15 June, and departed soon afterward to the Zone of Interior. A steady decline in personnel strength was perceptible from early May to late July; then, from approximately 28 July until the cessation of the operational phase the decline became greatly accelerated. By 31 August only a small number of temporary duty personnel, virtually all concerned with roll-up duties, remained at Eniwetok.

By General Order Number 3,[1] the headquarters of Task Group 7.4 closed at Eniwetok on 15 August 1958 at 2400Z hours, reopening the following day at Kirtland Air Force Base. Concurrently, the Cloud Sampling Element and the Support Element (of Test Base Unit) terminated operations at Eniwetok, and returned to Kirtland.

A. SUPPLIES AND EQUIPMENT

Planning for the roll-up of supplies and equipment began as early as 24 January 1958, when Materiel Roll-up Plan 1-58[2] was published by Task Group 7.4. The objective of this plan was to achieve an orderly and

AFWL/HQ

[redacted]

complete disposal of all materiel excess to the interim requirements and/or stockage requirements of the 4951st Support Squadron (Test) at Eniwetok.

Inasmuch as the 4951st was a permanent organization at Eniwetok, known in test periods as the Test Base Unit, the unit was charged with the difficult roll-up task of receiving from the elements all surplus supplies and equipment and of processing, documenting, and arranging for transportation of these items of materiel. The other Units provided personnel to the Test Base Unit to assist in roll-up operations, these personnel being mostly specialists in such areas as supply, automobile maintenance, and woodworking. The greater part of the augmentation, however, was provided by the 4952nd Support Squadron, a subordinate unit of the 4950th Test Group (nuclear). The roll-up, thus, was completed, or near completion, in all except isolated areas as early as the first week in September, although the roll-up plan had called for a termination of roll-up functions within 60 days subsequent to the day of the last shot.

After some five months of excellent performance, the Air Operations Center was closed on 8 August 1958. Some dismantling of unneeded equipment was begun soon after the firing of Shot on 27 July 1958. Upon the closing of the center, the remaining equipment was removed and packaged. All the equipment, measuring some 15,000 pounds, was shipped to Kirtland Air Force Base on 10 August by Special airlift, arriving at Kirtland on 11 August. The equipment was to be retained for future use at the Nevada Test Site and in the Eniwetok Proving Ground.

AFWL/HQ

IV

B. MOVEMENT OF PERSONNEL TO THE ZONE OF INTERIOR

A conference was held on 27 March 1958 at Headquarters Joint Task Force SEVEN to discuss passenger roll-up planning, among other topics. Representatives of all the task groups and Task Force Headquarters were present. Task Group 7.4 was represented by the Staff Transportation Officer, Major James L. Hill. The conferees determined that Task Group 7.4 had a requirement for Military Air Transport Service airlift of approximately 1,200 passengers. Passenger space on aircraft provided by that Service was prorated so that Headquarters Joint Task Force SEVEN would receive 9 per cent, Task Group 7.1 would receive 22 per cent, Task Group 7.2 would receive 14 per cent, Task Group 7.3 15 per cent, Task Group 7.4 26 percent, and Task Group 7.5 16 per cent. Prior to 1 August, some 750 personnel of Task Group 7.4 departed from the proving ground; and by 18 August, approximately 459 more had departed.

C. COSTS OF TASK GROUP 7.4 OPERATIONS

An indication of the Task Group 7.4 effort in Operation HARDTACK may be gained from preliminary funding information furnished from Air Force Special Weapons Center. Early but inconclusive data showed the aggregate cost of the group's operation to be $6,975,862. Sources for these funds and the amount provided from each source were as follows: (1) Joint Task Force SEVEN, $926,069; (2) Armed Forces Special Weapons Project, $166,867; (3) Air Research and Development Command, $5,882,924.

AFWL/HQ

NOTES

1. Incl. 95: General Order #3, Hq., Task Gp. 7.4, Prov., 6 Aug. 58.

2. Materiel Roll-Up Plan 1-58, Task Gp. 7.4, 24 Jan. 58, in Task Gp. 7.4 hist files.

[redacted]

AFWL/HQ

AFWL/HO

GLOSSARY OF ABBREVIATIONS

-A-

ACAN	Army Command and Administrative Net
ADI	Alcohol Anti-Detonation Injection
AFOAT	Office of the Assistant for Atomic Energy
AFSC	Air Force Specialty Code
AFSWC	Air Force Special Weapons Center
AFSWP	Armed Forces Special Weapons Project
AIRCOMNET	Air Communications Net
AOC	Air Operations Center
Apr.	April
ARDC	Air Research and Development Command

-C-

Capt.	Captain
CDR	Commander
CINCSAC	Commander-in-Chief, Strategic Air Command
Col.	Colonel
Comdr.	Commander
C/S	Chief of Staff

-D-

DCS/O	Deputy Chief of Staff for Operations
Dec.	December

AFWL/HQ

[redacted]

Dep.	Deputy
Dir.	Director, directorate
D/M	Director of Materiel
D/O	Director of Operations
Dr.	Doctor
Dtd.	Dated

-F-

FC	Field Command
Feb.	February

-G-

GCA	Ground Controlled Approach
GLOBECOM	Global Communications
Gp.	Group

-H-

HF	High Frequency
Hist.	History, historical
Hq.	Headquarters

-I-

Ibid.	Ibidem (in the same place)
Idem.	The same
IFF	Identification Friend or Foe
Incl.	Inclosure

AFWL/HQ

[redacted]

AFWL/HC

212

-J-

Jan.	January
JTF-7	Joint Task Force SEVEN
Jul.	July
Jun.	June

-L-

LASL	Los Alamos Scientific Laboratory
Lt.	Lieutenant
Ltr.	Letter

-M-

Maj.	Major
Mar.	March
Memo.	Memorandum
M. I.	Marshall Islands

-N-

(N)	Nuclear
NASWF	Naval Air Special Weapons Facility
NM	Nautical miles; New Mexico
No.	Number
Nov.	November

-P-

P.	Page
Pp.	Pages

AFWL/HQ

AFWL 41

213

POL	Petroleum, Oil, and Lubricants
Prov.	Provisional
	-S-
SACCOMNET	Strategic Air Command Communications Net
Sep.	September
Subj.	Subject
	-T-
TAU	Test Aircraft Unit
TBU	Test Base Unit
TG	Task Group
TSU	Test Services Unit
TWX	Teletypewriter Exchange
	-U-
UHA	Ultra High Altitude
UHF	Ultra High Frequency
UMD	Unit Manning Document
USA	United States Army
USAF	United States Air Force
USS	United States Ship
	-V-
VHA	Very High Altitude
VHF	Very High Frequency

AFWL/HQ

[redacted]

AFWL/HQ

[redacted]

-W-

WETD — Weapons Effects Test Division

-Z-

ZI — Zone of Interior

AFWL/HQ

[redacted]

AFWL/HO

[redacted]
HEADQUARTERS FIELD COMMAND
ARMED FORCES SPECIAL WEAPONS PROJECT
SANDIA BASE, ALBUQUERQUE, NEW MEXICO

FCWET 10 JUN 1955

SUBJECT: Forecast of Test Requirements

TO: Commander
Air Force Special Weapons Center
Kirtland Air Force Base
Albuquerque, New Mexico
ATTN: DCS/Operations

1. Reference is made to:

a. Letter, your headquarters, subject as above, SWOTO, dated 29 October 1954.

b. Letter, this headquarters, subject as above, FC/WET 55-629-0, dated 24 March 1955.

2. The forecast of test requirements as outlined in reference 1b should be amended to show the following information on planned nuclear tests:

a. REDWING. Information already available to 4925th Test Group (A).

b. HARDTACK. Location undetermined; Spring of 1957; Probable number of shots, 10.

c. PILGRIM. Location undetermined; Spring of 1958; Probable number of shots, 9.

FOR THE COMMANDING GENERAL:

/s/ H. E. Parsons
/t/ H. E. PARSONS
Colonel, USAF
Director,
Weapons Effects Tests

Copy furnished;
Comdr, 4925th Test Group (A)
AFSWC, KAFB, N Mex

AFWL/HQ

[redacted]

[redacted]

HEADQUARTERS FIELD COMMAND
ARMED FORCES SPECIAL WEAPONS PROJECT
SANDIA BASE, ALBUQUERQUE, NEW MEXICO

FCWETI 14 DEC 1956

SUBJECT: Forecast of Test Requirements (U)

TO: Commander
Air Force Special Weapons Center
Kirtland Air Force Base
Albuquerque, New Mexico
ATTN: DCS/Operations

1. Reference is made to letter SWOTO, Headquarters, Air Force Special Weapons Center, 29 October 1954, subject as above.

2. Referenced letter requested that Field Command, Armed Forces Special Weapons Project furnish AFSWC a quarterly forecast of test requirements for air support by AFSWC.

3. Present plans call for Operation PILGRIM at the Nevada Test Site in the Spring of 1957 and for Operation HARDTACK at the Pacific Proving Grounds in the Spring of 1958. No other information concerning the tests is available and it is assumed that the support required of your command will be similar to that required for TEAPOT and REDWING.

FOR THE COMMANDER:

/s/ H. E. Parsons
/t/ H. E. PARSONS
Colonel, USAF
Director,
Weapons Effects Test Division

Copy furnished:
Comdr 4925th Test Group
(A), AFSWC, KAFB, N Mex

[redacted]

AFWL/HQ

Inclosure 2, page 1

[redacted]

HEADQUARTERS
AIR FORCE SPECIAL WEAPONS CENTER
Air Research and Development Command
Kirtland Air Force Base, New Mexico

SWRW 6 March 1957

SUBJECT: Operation HARDTACK

TO: Headquarters, USAF
DCS/Operations
ATTN: AFOAT, Major Clayne Tripp
Washington 25, D. C.

1. Inclosed for your information is the first version of OPERATION HARDTACK schedule planned for Spring 1958 at the Pacific. It should be emphasized that this information is very preliminary and will undoubtedly change considerably prior to operation time. (UNCLD)

2. Periodic revisions will be made to this schedule and will be forwarded accordingly. (UNCLD)

FOR THE COMMANDER:

1 Incl
SWC 7S30,141/17
3pgs (SRD)

DORENCE C. JAMESON
Lt Colonel, USAF
Chief, Warheads Division

AFWL/HQ

[redacted]

[redacted]

[redacted]

SWRW

26 February 1957

OPERATION HARDTACK

Operation HARDTACK is scheduled to be held in the Pacific in the Spring of 1958. The following devices are tentatively planned for inclusion in Operation HARDTACK by the AEC laboratories.

It should be emphasized that this is the first information available relative to this operation; therefore, this schedule should be considered as very preliminary and will probably change considerably before a final program is established.

DELETED

DELETED

DELETED

AFWL/HQ

[redacted]

[redacted]

24

[redacted]

Los Alamos Scientific Laboratory (Continued)

DELETED

AFWL/HQ

[redacted]

[redacted]

[redacted]

Probably 3 out of the following 6 small devices will be tested.

DELETED

/s/ Haven C. Brown
/t/ HAVEN C. BROWN
2nd Lt, USAF
Warheads Division

AFWL/HQ

[redacted]

[redacted]

[redacted]

SWAW

Operation HARDTACK

Warheads Division

11 Jun 57
Lt Brown/ecm/2651

1. Inclosed for your information is the revised version of the Operation HARDTACK schedule which is planned for the Spring of 1958 at the Pacific Proving Ground. It should be emphasized that this information is very preliminary and will undoubtadly change considerably prior to operation time. (CONF)

2. Periodic revisions will be made to this schedule and will be forwarded accordingly. (UNCLD).

1 Incl
SWC 7S30,266/18
3 pgs (SRD)

DORENCE C. JAMESON
Lt Colonel, USAF
Chief, Warheads Division

AFWL/HQ

[redacted]

[redacted]

SWRW [redacted] 6 June 1957

OPERATION HARDTACK

Operation HARDTACK is scheduled to be held in the Pacific in the Spring of 1958. The following devices are tentatively planned for inclusion in Operation HARDTACK by the AEC laboratories and the Department of Defense.

It should be emphasized that this is very preliminary information and will probably change considerably before a final program is established.

Los Alamos Scientific Laboratory

DELETED

AFWL/ HQ

[redacted]

[redacted]

[redacted]

University of California Radiation Laboratory

DELETED

AFWL/HQ

[redacted]

[redacted]

[redacted]

University of California Radiation Laboratory (Continued)

DELETED

DELETED

HAVEN C. BROWN
2nd Lt, USAF
Warheads Division

AFWL/ HQ

[redacted]

[redacted]

AFWL/HQ

225

MEMORANDUM FOR RECORD [redacted] 4 March 1957

SUBJECT: Conference on Support Requirements for Operation HARDTACK

1. PURPOSE: A Conference was conducted at Joint Task Force SEVEN Headquarters on 20 February 1957 to determine items of military support required for Operation HARDTACK. The purpose of this memorandum is to provide a record of the significant items discussed and conclusions reached during this conference. A list of agencies represented and individuals attending is attached hereto as an inclosure.

2. INTRODUCTION: The conference was opened at 0900 hours by Brigadier General Griffith (JTF-7) who welcomed the conferees from the various AEC and DOD agencies represented. General Griffith outlined briefly the purpose of the conference and emphasized the importance of determining our support requirements at this early date. He also stated that from decisions reached at this conference, this headquarters will prepare a draft paper for the conduct of Operation HARDTACK to be presented to the JCS via the Executive Agent. After introducing General Dick to the group, General Griffith then turned the conference over to Colonel Massey.

3. ADMINISTRATIVE ANNOUNCEMENTS: Colonel Massey (JTF-7) took over as presiding officer and made several administrative announcements concerning security, coffee breaks, arrangements for lunch, etc. He also outlined the manner on which the conference would be conducted. He stated that the conference would move as rapidly as was the apparent will of the group. He further stated that in any event the conference would be completed in one day and that any unresolved questions would be solved by coordination and/or visits of representatives of this headquarters with other agencies.

4. CONCEPT OF THE OPERATION: Following the necessary administrative announcements, Colonel Massey presented a brief concept of Operation HARDTACK based on information previously provided this headquarters by Dr. Ogle (JTF-7 Deputy for Scientific Matters) and Dr. Felt (CTG 7.1). This concept is covered in detail by a secret Memorandum for Record dated 12 February 1957 on file in this headquarters. A chart was used to depict the 31 shots currently being considered. It was pointed out that Operation HARDTACK will be somewhat different from REDWING in that UCRL will conduct most of their operations at Bikini while LASL will utilize the Eniwetok complex. It is anticipated that most of the barge shots at Eniwetok will be fired in the vicinity of the Mike crater while most of those at Bikini will be set up near the [redacted] crater and the FOX-GEORGE complex. The DOD shots will utilize both atolls, the underwater shots being conducted at Eniwetok and the high altitude shots probably at Bikini. Colonel Massey also stated that it may be necessary to move some of the shots from Eniwetok to Bikini and vice versa, and that flexibility must be maintained. The requirement for a high-yield dual atoll capability was explained and emphasized. It was pointed out that [redacted] and that it will be essential to DE[redacted] have aircraft and surface transportation in sufficient quantity to sample shots and provide for emergency evacuation at both atolls simultaneously. Failure to provide this capability in either category will result in delays or hazards that will be economically or tactically infeasible.

[redacted]

Incl 5, p. 1

AFWL/HQ

[redacted]

5. AIRCRAFT REQUIREMENTS (AIR FORCE): The next item on the conference agenda was a discussion and determination of aircraft requirements to be fulfilled by the Air Force. Colonel Massey prefaced this discussion by introducing Colonel Bonnot (AFOAT) and informed the group that he is now the Air Force Liaison Officer to whom we go to discuss matters concerning Air Force support. He also stated that with the help of the staff of TG 7.1 and 7.4, a preliminary list containing about 62 aircraft to be provided by the Air Force had been compiled to cover our requirements. The list indicated below was then tabulated on the blackboard for discussion.

No.	Type	Discussion
10	WB-50	To be used for weather reconnaissance. Col Bonnot said that he was not in complete agreement with this number. It was his opinion that the two atoll concept will probably require additional aircraft. It was decided that if further study justified additional aircraft, a supplemental request would be submitted to the Air Force.
3	C-54	To be used for documentary photography. Col Massey pointed out that while we had received no information concerning requirements for documentary photography, it is assumed that such information will be forthcoming since this requirement has always existed in the past. Col Bonnot was asked to find out, if possible, if high altitude technical photography will be required. Col Coleman (FC, AFSWP) replied that he had heard nothing about a requirement for RB-50's so far. It was his opinion that enough data may be currently available, and this requirement may be eliminated.
7	SA-16	To be used for search and rescue and weather island resupply. The shortage of this type aircraft was discussed, but it was pointed out that there is no substitute for the SA-16's, since it is the only known operational amphibious aircraft in the Air Force. Col Massey stated that we are also asking for UF's to be stationed at Kwajalein, but due to the different missions for which these aircraft were being requested, they could not be substituted for the Air Force planes. He stated that we must have the same kind of flexibility that we had during Operation REDWING and that we could not put this headquarters in a position of asking for something less than is considered a minimum requirement. It was his opinion that if the Air Force cannot provide the SA-16's, a decision must be made at the JCS level to provide similar equipment from other sources. Col Bonnot asked if the mission would be stated in the JCS paper, to which an affirmative reply was given.

Incl 5, p 2 AFWL/HQ

[redacted]

2	C-54	To be used for logistic support in providing inter-atoll passenger and freight lift. It is the understanding in this headquarters that General Canterbury (AFSWC) has asked for 2 C-54's to replace the C-47's now based at Eniwetok. Colonel Massey stated that this headquarters will support this request and that the requirement will be included in the proposed JCS directive to the Air Force concerning logistic support.
4	C-123	To be used for augmented logistic support in inter-atoll airlift during the operational period. Characteristics of the C-123 seem most suitable in providing JTF-7 airlift of cargo and people between atolls. On this basis, they are far preferable to the C-47's.
8	L-20	To be used in conjunction with helicopters in providing inter-island logistic support.
10	H-21	To be used for inter-island support at Eniwetok. The H-21's will be used in lieu of the H-19's assigned during Operation REDWING. Since the Air Force is phasing out the H-19, the H-21, although less suitable in some respects, is considered the only feasible substitute. A temporary requirement for some H-21's at Bikini during build-up period will be met out of the total number.
2	L-21	It is intended to utilize these aircraft to alleviate the otherwise heavy burden placed on the L-20's of providing intra-atoll transportation for VIP's. They will also be used as proficiency planes for rated flag and general officers.
16	B-57	To be used as sampling aircraft. Six of these samplers should be B-57D's. In the discussion which followed concerning this type of aircraft, LTCOL Edwards pointed out that they were very scarce and just were not available at the present time. Colonel Massey replied that if there must be a substitute for the B-57D's, then it should be the B-57B's, as the laboratory people do not feel the F-84 has sufficient range and ceiling to fulfill the sampling requirements for HARDTACK. He also noted that a significant point to be considered is that the laboratories have fabricated a large number of tanks designed for the B-57's and that if the JCS decides that something other than the B-57 must be provided, it is going to involve a requirement for additional funds in order to fabricate a different type of tank.

AFWL/HQ

Incl 5, p 3

25

[redacted]

Colonel Massey then asked LTCOL Wilcox (AFSWP) to provide the group with an estimate of the type and number of aircraft to be involved in the DOD programs. Colonel Wilcox summarized as follows:

1	FJ4	Navy effects test aircraft.
1	B-52	Air Force effects test aircraft.
1	A4D	Navy effects test aircraft.
2	RB-36	To be used for airborne instrumentation. Colonel Wilcox stated that while these aircraft were required primarily for the balloon shot, they may also participate in the other two high altitude shots.
?	Helicopters	Colonel Wilcox stated that the Army had listed a requirement for 6 helicopters for sample recovery, and that the Air Force will need from 1 to 10 helicopters for the same purpose. The Navy estimates that approximately 8 helicopters will be required during preparation of the target array for the underwater shots. Colonel Lucke stated that he had discussed this requirement with several agencies and feels that the numbers listed represent a duplication in that the requirements will be provided for by the Air Force helicopters at Eniwetok and the Navy or Marine helicopters at Bikini. However, he pointed out that a firm decision on this matter could not be made until further information is available on the projects to be authorized. In the ensuing discussion, Colonel Massey pointed out that it was impossible at this time to determine such requirements in exact numbers. This headquarters will therefore write a proviso into the draft JCS paper that any added requirements may be negotiated for directly with the three services. He also pointed out, however, that it is advisable for us to adequately cover all probable requirements at this time, and that it may be possible to make certain deletions at some future date.

6. SHIP REQUIREMENTS: Following the discussion of aircraft requirements, Commander Ellison (JTF-7) presided over the meeting during the discussion and determination of Naval ship requirements. He prefaced the discussion by stating that two basic concepts had to be kept in mind. Namely: -

AFWL/HQ

a. That the task force must have a capability of firing large yield weapons at both atolls simultaneously.

b. That the task force must have the capability of conducting sustained full scale operations at Bikini Atoll from afloat.

The group was then informed that the list of requirements to be presented was the result of preliminary conferences between representatives of this headquarters, Task Group 7.1, Task Group 7.3, and the Chief of Naval Operations. It was explained that the list did not contain Navy Service Craft

AFWL/HQ

[redacted]

Incl 5, p 4

[redacted]

since information from which this requirement could be extracted was already available in the JTF-7 Headquarters. (Subsequent to this conference, members of the JTF-7 and TG 7.3 staffs met to consolidate service craft requirements. A memorandum for record on that subject is appended hereto as supplementary information to conferees.) Commander Ellison also emphasized that the dual atoll capability was dependent to a large degree on the ability of the task force to provide a complete emergency evacuation capability at both atolls.

No.	Type	Discussion
1	AGC	To be used as a flagship for CTG 7.3 and as a headquarters for CJTF-7 and staff when afloat. This ship must have adequate CIC and communications facilities for conduct of a complicated operation such as HARDTACK. A CLC would be emminently suitable for this purpose if an AGC is not available. During the last operation, this ship was normally based in the Bikini area. However, due to the different nature of certain shots being planned for HARDTACK, it is anticipated that time between Bikini and Eniwetok will be about equally divided during the operation.
2	LSD	To be used for the transport of shot barges, support of the boat pool and in the construction and resupply of off-atoll sites. Two LSD's will not be required for the entire operation, and some rotation would be acceptable. It was the feeling of the TG 7.3 representatives present that the stationing of one LSD in the forward area from the beginning of the buildup phase until completion of the roll-up phase was an undue hardship on assigned personnel, and that some relief should be afforded. During the ensuing discussions, it was pointed out that the LSD to be used for shot barge transport must have its helicopter platform removed to permit loading of the barges. Captain Utter (TG 7.3) noted that one of the assigned LSD's would be engaged to a large extent during the operational phase in supporting the underwater shots at Eniwetok and that this ship should have its helicopter platform intact if possible.
4	DD	To be used for security patrols, weather observations, search and rescue, and possibly for transport of samples from Bikini to Eniwetok. The group was informed that during the last operation 2 DD's and 2 DE's were assigned. The assignment of the DE's limited operational flexibility in that they did not possess the speed essential to many of the tasks assigned. It was pointed out that it was often necessary for the destroyers on weather stations to retire at high speeds in order to clear predicted fallout areas prior to shot time. The desire of both CJTF-7 and CTG 7.3 to have 4 DD's available during HARDTACK was emphasized.

AFWL/HQ

[redacted]

Incl 5, p. 5

[redacted]

1	DE	To be used for the conduct of marine radiobiological surveys as required by the AEC. It is anticipated that a survey will be conducted approximately one month after the first shot and a second such survey approximately one month after the last shot. The normal duration of such surveys is from 10 days to 2 weeks, and an additional 4 or 5 days in the Eniwetok area is required for the installation of special equipment associated with the survey.
1	CVHA	To be used as a helicopter base. It was pointed out that although the helicopters normally operate from ashore, all maintenance, scheduling, administrative work, etc., is done on the carrier. Also the carrier is used for the evacuation of helicopters on each shot at Bikini and for early reentry into the lagoon. CDR Ellison stated that a CWHA is being requested in lieu of a CVE as it is understood that all CVE's are being placed in moth balls. CDR Keegan (OP-33) replied that this would be a very difficult requirement to fulfill and asked if a TCVU could be used. CDR Ellison replied that it appears such a ship would be suitable provided all equipment necessary for helicopter operations (gasoline systems, fire fighting systems, etc.) is in full operation. He emphasized that CJTF-7 had not provided funds in our budget for the activation of such systems. In the ensuing discussion it was emphasized that CJTF-7 recongnizes the difficulty of providing a helicopter landing platform capable of operating 15 or more helicopters, but that the fulfillment of this requirement is mandatory in order to provide an afloat capability at Bikini.
3	LST	To be used in logistic transport between atolls and to augment the emergency evacuation capability. Mr. Howell (TG 7.5) asked if this requirement envisaged the use of Taongi. Commander Ellison replied in the negative, and stated that completely new planning factors would be required if the use of that atoll as a test site is approved.
1	AV	To be used as TG 7.1 flagship. It is the understanding of this headquarters that the CURTISS will soon be mothballed. Therefore, JTF-7 will not insist on the assignment of that particular ship. However, it was pointed out that the TG 7.1 people are familiar with the CURTISS and would prefer its assignment over any other AV. CDR Keegan asked if the ship had to be an AV, to which a negative reply was given. It was pointed out that any equivalent type ship which could fulfill the requirements would be satisfactory. In this respect, Dr. Felt stated that approximately 150 to 200 spaces would be required half of which should be cabin class accommodations. The ship should also be suitable for installation of a firing circuit, have adequate communication facilities, and considerable office space. CDR Gustafson pointed out that one advantage to assigning the CURTISS would be that plans already exist for the rewiring of

AFWL/HO

[redacted]

Incl 5, p 6

[redacted] this ship, whereas this would not be the case in any other ship.

1	AR	To be used primarily in support of the underwater shots and the Navy task groups.
1	TAP	To be used as a headquarters and hotel ship for TG 7.5. It is assumed that the AINSWORTH, which was used during Operation REDWING, will again be available for Operation HARDTACK. This ship is required for personnel evacuation at Bikini and to insure an afloat operational capability for the task force.
5	ATF	Commander Brown (TG 7.3) discussed briefly the proposed use of the ATF's. He pointed out that of the 5 being requested, only 3 would be required during the entire operation. The remaining 2 would be used primarily for one-time tows and positioning of the target array and could be released at the conclusion of this task.
1	AN	To be used in positioning the target array for the underwater shots. (Subsequent to the conference members of the JTF-7 and TG 7.3 staffs agreed that an ARS vice AN would be more suitable and would therefore be requested.)

In concluding the discussions on Naval ship requirements, it was emphasized that these requirements had been based upon such preliminary information as was available before the conference, and that some modification of our requirements would undoubtedly occur as the concept of the operation becomes firm. It was also stated that although we could not completely justify our practice of requesting specific ships by name, we had named such ships to indicate our preferences and desire their assignment if at all possible. It was pointed out that the ships listed did not include transit oilers and reefer ships which will be required for purely logistic purposes. Col Lucke and Commander Keegan then introduced the subject of the transport of devices to the EPG. CDR Brown stated that he felt any regular Navy ammunition ship was suitable for transport of such devices. Dr. Felt concurred. CDR Keegan then asked if an escort for the transporting ship would be required to which CDR Ellison replied that this decision was out of the purview of this headquarters, and that to the best of his knowledge, had not been made for Operation HARDTACK. CDR Ellison then stated that there was an additional major item which had not been covered, that of an additional ship whose primary purpose would be to provide an emergency evacuation capability at Eniwetok. This subject is still under study by personnel of the CJTF-7 and CTG 7.3 staffs, and while an AFA is under consideration, no specific type ship has been settled upon at this time. However, it was considered appropriate to alert the CNO representatives present to this requirement since it is mandatory that it be fulfilled if a two-atoll evacuation capability is provided. (Subsequent to this conference CJTF-7, as the result of the staff study, has decided the evacuation capability at Eniwetok requires an APA type ship.)

AFWL/HQ
Incl 5, p. 7

92

[redacted]

8. NAVY AIRCRAFT REQUIREMENTS: Commander Ellison then introduced the subject of aircraft requirements to be fulfilled from Navy sources. The following represents the type and number to be requested:

No.	Type	Discussion
15	HRS-3	To be used in support of the scientific and construction programs at Bikini Atoll. It was pointed out that the HRS-3 is being requested as it is believed that this is the only type suitable for this purpose which is currently avaialble. It is believed that they will be provided from Marine sources since the Navy has no helicopter transport squadrons as such. It may be necessary to rotate a number of these helicopters to the Eniwetok area for a certain period of time during preparation for the underwater shots. However, this is an operational decision which will be made at a later date.
16	P2V	To be used for security patrols of the danger area. Constant security patrols will be required throughout the operation, and concentrated searches of certain specific areas will be made from 24-48 hours before each shot. Col Wignall stated that he assumed that these aircraft would be based at Kwajalein, to which CDR Ellison replied that while there are still some problems to be solved at Kwajalein, primarily that of billeting, it appears as though there is no other suitable place to base these aircraft.
8	UF	To be used for search and rescue, augmentation of the off-atoll resupply capability, and for flight proficiency of Naval aviators. The geographic distribution of these aircraft would be as follows: Four at Kwajalein, two at Bikini, one at Eniwetok and one at Wake. These planes would be under the operational control of CTG 7.3 and would be rotated in accordance with the decision of the commander.

9. The conference then adjourned for lunch and reconvened at 1340 hours.

10. TIME TABLE: Following a few brief administrative announcements, Colonel Massey brought up the subject as to a time table for deploying the various ships and aircraft to the Eniwetok Proving Ground. Dr. Felt and Mr. Joe Sanders (TG 7.5) were asked to present to the group their current thinking as to when various type aircraft and ships would be required in the forward area in order to support the scientific and construction programs. The following is a brief resume of the ensuing discussions:

AFWL/HQ
Incls, p. 8

AFWL/HQ

253

[redacted]

a. LSD's. Mr. Sanders stated that there would be a need for one LSD during June of 1957 to move equipment from Eniwetok to Bikini. It is estimated that this ship can be released after completion of approximately 4 round trips. It was his opinion that the first full-time LSD would be needed in October, and that another would be required in February of 1958. Admiral Wellings (CTG 7.3) stated that he had just returned from CINCPAC Headquarters and noted that the supplying of 2 LSD's for the entire operation would place a considerable strain on CINCPACFLT. CDR Ellison voiced an opinion that one of the LSD's could probably be released after completion of the underwater shots. Dr. Felt stated that the LSD to be used for transport of shot barges should be made available for this purpose about mid-April 1958 in order to have the first barge shot ready on 1 May.

b. HELICOPTERS: Mr. Howell stated that there would be a need for at least one helicopter at Bikini commencing in August 1957. Col Massey said he thought it would be possible for the 4950th Test Group to provide this support and Col Wignall agreed. After review of the procedure followed in providing Marine helicopters at Bikini prior to Operation REDWING, it was decided that approximately half of the helicopter squadron should be deployed to arrive at Bikini on 15 February 1958 and that the remainder should arrive aboard the carrier by 15 March 1958. It would be planned that the first half of the squadron would be able to maintain sustained operations ashore for thirty days pending arrival of the carrier.

c. AV. Colonel Lucke stated that it was desired to have the AV (or equivalent ship) in the Bikini area three or four weeks prior to shot time. Dr. Felt emphasized that a considerable amount of work would be required in connection with the AV, such as installing radios, checking out communication circuits, rehearsals, etc. One major consideration is that repeated dry runs of the firing circuit will be required.

d. L-20's. Dr. Felt stated that it was the desire of TG 7.1 to use the L-20 extensively at Bikini during Operation HARDTACK in view of the fact that a large part of the construction is expected to take place in the TARE complex. It was noted that the L-20 is better suited for support of this complex than the helicopter. Task Group 7.1 may require L-20's at Bikini as early as 1 March 1958. Dr. Felt added that he thought Holmes and Narver would also desire the L-20's at Bikini at as early date.

11. TRANSPORTATION REQUIREMENTS: Major Johnston (JTF-7) reviewed in brief the transportation requirements of the task force and outlined the methods by which it is expected these requirements will be fulfilled.

12. COMMUNICATION REQUIREMENTS: Colonel Vest (JTF-7) presented a brief outline of the communication facilities to be provided during Operation HARDTACK and outlined the progress of procurement to date. He also stated that a three day communication conference to finalize requirements would be held in this headquarters on 5,6 and 7 March 1957.

Incl 5, p. 7

AFWL/[illegible]Q

[redacted]

13. ADJOURNMENT: In concluding the conference, Colonel Massey reviewed the different planning directives and operation orders which this headquarters will prepare and distribute in connection with Operation HARDTACK. The group was also informed that a proposed JCS paper for the conduct of Operation HARDTACK will soon be submitted to the Joint Chiefs of Staff. This paper will contain the support requirements essentially as listed in the preceding paragraphs. The conference adjourned at 1500 hours and was followed by a showing of the Commander's Report Film for those who desired to see it.

DONNELL MASSEY
Colonel, USAF
AC of S, J-3

AFWL/HQ

ROSTER OF CONFEREES

Headquarters JTF-7

Major General William W. Dick, Jr., USA
Captain Marshall H. Cox, USN
Colonel Herman R. Fleming, USA
Colonel Donnell Massey, USAF
Colonel Hugh A. Vest, USA
Commander Thomas B. Ellison, USN
Lieutenant Colonel Walter A. Gray, USA
Commander Karl W. Gustafson, USN
Commander Earl J. Schmitt, USN
Lieutenant Colonel Elton W. Duren, USA
Major John J. Policastro, USA

CTG 7.1

Dr. Gaelen Felt, Civilian
Colonel Emil A. Lucke, USA
Colonel Robert H. Gattis, USAF
Mr. Duncan Curry, Jr., Civilian
Lieutenant Colonel John W. Lipp, USA
Mr. Robert J. Van Sewert, Civilian
Mr. H. S. Allen, Civilian

CTG 7.2

Lieutenant Colonel Ben I. LaFlare, USA
Captain J. L. Guthrie, USA

CTG 7.3

Rear Admiral J. H. Wellings, USN
Captain Harold T. Utter, USN
Commander W. G. Brown, USN
Commander C. A. Dancy, USN

CTG 7.4

Colonel Paul R. Wignall, USAF
Lieutenant Colonel Richard J. Hynes, USAF
Lieutenant Colonel Carl W. Robbins, Jr., USAF

CTG 7.5

Mr. Joe P. Sanders, Civilian
Mr. Sam P. Howell, Civilian
Mr. Fred W. Hohner, Civilian

AFWL/HQ

Incl 5, p 11

AFWL/HO

HQ USAF

Colonel Carlos D. Bonnot, USAF
Lieutenant Colonel W. H. Edwards, USAF
Lieutenant Colonel David R. Jones, USAF
Major W. J. Wagner, USAF

CNO

Commander T. D. Keegan, USN
Commander Russel H. Buckley, USN
Commander J. L. Bettinger, USN
Commander D. K. DeJarnatt, USN

HQ USA

Lieutenant Colonel George A. Murray, USA
Lieutenant Colonel John G. Johnson, USA
Major R. J. Truex, USA
Mr. Murray Miller, Civilian

DMA/AEC

Lieutenant Colonel Raymond I. Schnittke, USA

AFSWP

Lieutenant Colonel A. B. White, USA
Lieutenant Colonel Judson D. Wilcox, USA

FC AFSWP

Colonel Kenneth D. Coleman, USAF

AFSWC

Colonel W. B. Kieffer, USAF
Colonel William A. Hunter, USAF

ARDC

Major Richard H. McLeroy, USAF
Captain Jay S. Josephs, USAF

MSTS

Commander Glen Jacobsen, USN

AFWL/HQ

MATS

Lieutenant Colonel Gerard F. Wientjes, USAF

Incl 5, p. 12

239

6TH WEARON

Lieutenant Colonel Bernard Pusin, USAF

JTF-7 LNO Oakland

Lieutenant Colonel John G. Standley, USAF

Stenographer

Staff Sergeant James E. Tallmadge, USAF

AFWL/ HQ

Incl 5, p. 13

AFWL/NL

MEMORANDUM FOR RECORD [redacted] 27 February 1957

SUBJECT: Navy Service Craft Requirements for HARDTACK

1. The following officers met this date to consolidate the service craft requirements for HARDTACK:

Commander Karl W. Gustafson (J-3)
Commander C. A. Dancy (TG 7.3)
Major John J. Policastro (J-4)

2. Consolidated Service Craft Requirements:

Quantity	Type Craft	Justification
6	LCPL	Two are already in use by CTG 7.2 in Eniwetok for boarding parties and morale of military personnel. Two others are personal barges already assigned to CJTF-7 and CTG 7.3. Two are required by CTG 7.3 Boat Pool for port operations at Bikini and Eniwetok.
Note: Four of above already assigned; two additional required.		
64	LCM-3	17 required for U. S. Navy ship shore transportation at Bikini including two fitted out as pushers and one as a salvage craft fitted with "A" Frame. Four required for U. S. Navy transportation at Eniwetok. 12 additional required at Eniwetok (LSD-Based) for underwater shot transportation requirements including two fitted as pushers. 31 required by CTG 7.5 for joint operations at Eniwetok and Bikini.
Note: Of above total - 5 already assigned to TG 7.3 Boat Pool in Coronado; 28 already assigned to CTG 7.5 in EPG. 31 additional requested of which 28 are for CTG 7.3 and 3 for CTG 7.5.		
2	LCPR	Administrative functions of TG 7.3 Boat Pool.
Note: Already assigned - no additional craft required.		
23	LCU	19 are for use by CTG 7.3, 10 of which will be used as houseboats. 4 are for use by CTG 7.3 at Eniwetok.
Note: 5 craft already assigned to AEC for use by CTG 7.5; 18 additional craft requested.		

AFWL/HQ

[redacted] Incl 5, p. 14

239

Quantity	Type Craft [redacted]	Justification
1	AFDL	Already in EPG and used in support of Marine Operations by CTG 7.5.

Note: No additional craft required.

2	YCV	To be used as helicopter landing platforms in vicinity of houseboats and shot barges at both atolls.
20	YC or BC	One is for use as RadSafe Barge. Another is for collection of Radioactive Samples. Six are for fallout platforms. 2 are for Squaw handling. 4 to 10 are for mooring target array in deep water.

Note: YC is the Navy and BC the Army designator of the similar type barges (Approx. 500 ton). The Office of CNO has informally informed CTG 7.3 that YC's are not available from Navy sources. BC barges may be available from the Army in quantities sufficient to satisfy HARDTACK requirements.

3	YFNB	Two are for use in handling and submerging Squaws. One is for use by CTG 7.3 Boat Pool, Coronado for stowage of spare parts and equipage, workshop space, emergency berthing and messing in EPG.

Note: There is a possibility of an Army sponsored program materializing and requiring an additional YFNB.

1	YON	Required for refueling smaller units at Eniwetok.

Note: YON 182 now at Kwajalein should be suitable.

2	YTB	Required for target array positioning and mooring. Needed only during underwater shots By CTG 7.3.
2	YTL	Used for Port operations at Eniwetok by CTG 7.5.

Note: Already assigned to CTG 7.5 in EPG.

1	APL	Personnel and Decontamination Barge and Office Spaces.

Note: This item under consideration, but may not develop into a firm requirement.

AFWL/HQ

K. W. GUSTAFSON
Commander, U. S. Navy
Navy Operations Officer

[redacted]

AFWL/HO

Incl 5, p. 15

240

[redacted]

SWOTR DEC 3 1958

Dr. Hal Plank
J-Division
Los Alamos Scientific Laboratory
P. O. Box 1663
Los Alamos, New Mexico

Dear Dr. Plank:

DCS/Operations, AFSWC, recently asked Field Command, AFSWP, to furnish us guidance on future test plans. In particular, we were concerned about the dual shot capability proposal for HARDTACK and the possibility of simultaneous testing in both the Pacific Proving Ground and Nevada Test Site. They, in turn, made inquiry to the Commander, JTF SEVEN.

A part of the reply from JTF SEVEN signed by General Perry B. Griffith is quoted for your information:

> "The current concept being envisaged for Operation HARDTACK contemplates the probable firing of two shots on the same day on some occasions, and perhaps in a few instances, at the same time. However, while some additional aircraft will be required, it is realized that a complete dual sampling capability probably cannot be supported, nor is it justified. Therefore, in order to have an adequate number of sampling aircraft available on dual shot days, attempts will be made to have one of the scheduled shots a low yield detonation requiring relatively limited participation so far as sampling aircraft is concerned."

I still have not received the required information on the RB-57D from Major O'Carroll, but should have it very soon and will let you know.

Very truly yours,

WILLIAM A. CUNNINGHAM
Major USAF

[redacted]

AFWL/HQ

Incl 6, p. 1

[redacted]

Headquarters
4950TH TEST GROUP (NUCLEAR)
Air Force Special Weapons Center
United States Air Force
Kirtland Air Force Base, New Mexico

SWS 24 July 1957

SUBJECT: Comments to Final Report of the Commander, Task Group 7.4, Operation REDWING

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

1. References:

a. Final Report of the Commander, Task Group 7.4, Operation REDWING, undated.

b. Letter, JTF SEVEN, dated 16 January 1957, files J-4/300.4 subject: Operational REDWING Preliminary Report of the Commander, Task Group 7.4, with 1 inclosure.

2. At the JTF SEVEN Conference held in Los Angeles, California, 19-20 June 1957, Lt. Colonel Raymond I. Schnittke, DMA, informed me that he had been requested to prepare a report to Admiral Strauss, Chairman of the USAEC. This report was for the purpose of informing the Chairman on the actions which had been taken to correct the deficiencies which had been pointed out in the Final Report of the Commander, Task Group 7.4, Operation REDWING. He requested the assistance of this Headquarters in providing the material which the Admiral required. The information contained in paragraph 3, below, lists the actions which we have taken on the problem areas enumerated in our Final Report and the comments on that report which you made in reference b. We are forwarding this information through you for any additional review or comments you feel appropriate. After your review, it is requested that this correspondence be forwarded to DMA.

3. Wherein appropriate, following are this Group's comments on actions that have been taken, are being taken, or will be taken with respect to your comments/recommendations listed in Incl. #1, reference b above, and as listed in the Final Report, Chapter III, Problem Areas.

AFWL/HQ

ITEM	REFERENCE NO.	COMMENTS
1.	I P IV 0.11, Para 0.12	Action is being taken to continue emphasis on the flying training requirements which proved to be of such benefit during REDWING. The arresting devices appropriate to the type of aircraft participating in HARDTACK will be installed.

[redacted]

AFWL/HQ

Incl 7,2.1

[redacted]

Ltr, SWS, 4950th TESTGU(N), dtd 24 Jul 57, "Comments to Final Report of the Commander, TG 7.4, Operation REDWING"

ITEM	REFERENCE NO.	COMMENTS
2.	I P IV 0.15 para 0.15	A storage point for communications equipment, earmarked for use on future tests, has been established at Maywood Air Force Station. This project is known as "HOTBOX" and includes the rehabilitation of this equipment. This property is under the monitorship control of the 4950th Logistics Liaison Office. It is believed that this system will do much toward eliminating the delays in the installation of communications equipment which were common during REDWING.
3.	I P IV 0.16 paras 0.16 & 0.17	We understand that some rehabilitation of the existing telephone cabling has been completed and that additional work is programmed. JTF SEVEN comment is invited on this item.
4.	I P V 0.4, para 0.5	A secret letter, dated 10 July 1957, from this Headquarters, describing the Task Group Logistic Support Concept, has been distributed to all known elements and major USAF commands for use as an advance planning document. It is planned to distribute a TG 7.4 Logistic Support Plan on or about 1 August 1957.
5.	I P V 0.4, paras	Plans for modification of known participating aircraft are progressing satisfactorily. The progress of these programs is being monitored by both this Headquarters and Headquarters AFSWC. For additional information see Item #4 above. In addition, the present schedule of events calls for submission of requirements for prepositioned supplies and equipment not later than September 1957. Our only problem in this area is the designation of elements of TG 7.4 in time to meet this date. Vigorous action is being taken to have these elements designated as soon as possible.
6.	I P VI 0.5 para 0.5	Local Purchase funds for HARDTACK are included in the JTF SEVEN FY 58 approved Budget for TG 7.4, to be expended by the TG 7.4 Logistics Liaison Section.
7.	III P II A, para 1.3f	This Headquarters is more than cognizant of the requirement for a Maintenance Control Officer. The present UMD authorizes this Group such a slot and we have assurance from Headquarters AFSWC that this vacancy will be filled by 1 October 1957.

AFWL/HQ

[redacted]

Incl 7, p 2

243

[redacted]

Ltr, SWS, 4950th TESTGU(N), dtd 24 Jul 57, "Comments to Final Report of the Commander, TG 7.4, Operation REDWING"

ITEM	REFERENCE NO.	COMMENTS
8.	III P II A, paras 1.3 - 1.8	The difficulty of obtaining timely manning of the Task Group was generated by an apparent failure to provide adequate lead-time in requisitioning of personnel. We avoided recurrence of such a problem by: (1) requisitioning officer personnel from 9 to 12 months in advance of desired reporting dates (which provided a 45-day period of residing at Kirtland AFB prior to departure for the EPG), and (2) allowing 120 days lead-time in requisitions for airmen personnel. All recommendations made in the Final Report on this subject were carried out and will be subject to periodic screening and follow-up action by this Headquarters and AFSWC.
9.	III P II A, paras 2.3 - 2.9	Despite our efforts to the contrary and the experience gained during REDWING, we anticipate continued difficulty in securing the assignment of personnel who are necessary to carry out the Task Group mission in an optimum manner. We have already encountered this problem in planning for HARDTACK in that there have been arbitrary reductions in all UMD's resulting in arrival or projected arrival of individuals against non-existent positions. Despite the cancellation of certain UMD spaces, a mission requirement still exists for the individuals concerned. DCS/Personnel, AFSWC, recongnizes such requirements as valid; therefore, no cancellation of original requisitions is planned.
10.	III P II A, paras 3.3-3.10	This Headquarters is giving continued attention to the problem of securing the proper number of adequately qualified personnel for all of the units for whom we have manning responsibility. We believe that the situation will be materially improved for HARDTACK. Thus far, the question of rank in relation to UMD authorizations has not developed into a problem, at least at the higher levels as mentioned in paragraph 3.9. However, in the austerely manned 4951st Support Squadron there are certain career areas in which only one or two authorizations exist. In such cases, it is highly desirable that incumbents be of NCO grade, so as to provide a supervisory capability in all functional areas of the unit. In those functional areas where only one or two airmen are

[redacted]

Ind 7, p 3 AFWL/HQ

[redacted]

Ltr, SWS, 4950th TESTGU(N), dtd 24 Jul 57, "Comments to Final Report of the Commander, TG 7.4, Operation REDWING"

ITEM	REFERENCE NO.	COMMENTS
		authorized, it is still extremely desirable that the incumbent be of the rank authorized in order to provide as much experience, in addition to authorized skill, as possible. We have recently received assurance from ARDC that those positions which we identify as requiring a specific rank will be, wherever possible, filled by individuals holding the desired rank and qualification. This concession is a reversal of previous policy.
11.	III P II A, paras 4.3 - 4.7	The task of informing newly assigned personnel on the nature of their duties with the Task Group is a difficult one. Requisitions to ARDC have identified the nature of the assignment involved. To date it is apparent that some individuals have not received this information. AFSWC is aware of this as a potential morale problem, and is once again attempting to assure that all intermediate agencies do not fail to inform incoming personnel of the fact that considerable TDY will be required in their new assignment. To compensate for the probably inevitable failure of this attempt, the 4950th Test Group has established a reporting date at Kirtland AFB sufficiently in advance of actual requirements that personnel should be able to make all necessary arrangements for their families before having to depart for Eniwetok.
12.	III P II A, paras 5.2 - 5.7	We have restudied the previous recommendation for the establishment and the manning of a central personnel office. We do not now concur in the recommendation previously submitted since this would appear to be a greatly excessive number of people for this function. The 4950th Test Group came into existence as a Group after the Final Report was written; and as a Group, can provide supervision of a centralized personnel shop peopled by the existing personnel sections of the 4926th, 4951st, and 4952nd Squadrons. This centralized shop would administer TG 7.4, and the present squadrons of the 4950th at Eniwetok. If other units are directed to participate in this centralized shop, they could be directed to provide an appropriate number of augmenting personnel.

[redacted]

Incl 7 pp 4 AFWL / HQ

45

[redacted]

Ltr, SWS, 4950th TESTGU(N), dtd 24 Jul 57, "Comments to Final Report of the Commander, TG 7.4, Operation REDWING"

ITEM	REFERENCE NO.	COMMENTS
13.	III P II A, paras 6.5 - 6.9	Our effort to streamline the processing of personnel for overseas movement have not been successful. Air Force was asked to waive the requirement for AF Form 502, with negative results. Procedure will be the same as before, except that with our Group Personnel set-up, we can prepare the forms far in advance of movement without undue stress. All other participating agencies, of course, will be responsible for insuring that procedures set forth in the Planning Directive and Operations Plan are carried out as regards preparation of individuals for overseas movement.
14.	III P II A, paras 7.5 - 7.9	It appears that our requirement for a Legal Officer for duty with Task Group 7.4 will be met. A Legal Officer has been requisitioned to report to Kirtland AFB in January 1958. He will go to the forward area in March (as now planned) and will perform the sole duty of legal advisor to personnel of TG 7.4.
15.	III P II A, paras	Under our new organizational concept we believe that there will no longer be a difficult problem to provide the additional personnel required to perform roll-up operations. The 4952nd will remain in place at the EPG until individual skills are no longer required. A "personnel coordinator" position had been placed in the 4952nd to provide coordination between the 4952nd, 4951st Squadrons and TG 7.4, which should result in resolving of problems with a minimum of correspondence.
16.	III P II B, paras 1.5 - 1.12	Noted. Since no new barracks are programmed for FY 58, recommendation cannot be acted upon.
17.	III P II B, paras 1.13	This Headquarters strongly indorses the recommendation that aircrews be billeted in those areas farthest from traffic and noise, and at the appropriate time will forward such a request for such space to DTG 7.2 insofar as housing is concerned.
18.	III P II B, para 1.14	Noted.
19.	III P II B, para 1.15	To be resolved at a conference which will be held in August 1957.

AFWL/HQ

[redacted]

Incl 7 p. 5

[redacted]

Ltr, SWS, 4950th TESTGU(N), dtd 24 Jul 57, "Comments of Final Report of the Commander, TG 7.4, Operation REDWING"

ITEM	REFERENCE NO.	COMMENTS
20.	III P II B, paras 2.6 & 2.7	TG 7.2 has been advised to survey their requirements and let us know as soon as possible whether or not TDY augmentation will be needed. Upon receipt of such information, we will levy upon other participating agencies for personnel.
21.	III P II B, paras 3.3 - 3.7	The Task Group and 4926th (Sampling and Decon Element) Test Squadron have sufficient equipment on hand. The 4952nd Support Squadron is awaiting a Non-Appropriated Fund grant which will be utilized for purchase of needed special services gear. Other commands will be advised to bring sufficient equipment to fill their recreational needs.
22.	III P II B, paras 4.3 - 4.10	During the planning phase of HARDTACK, CTG 7.4 will initiate action by letter to CTG 7.2 stating our requirements for in-flight lunches and high altitude mess. During the operational phase TG 7.4 will coordinate with TG 7.2 to insure mess does not fall below standard.
23.	III P IV A, paras 1.6 - 1.11	Drop aircrew training is not now considered to be a problem inasmuch as no air drops are scheduled for HARDTACK.
24.	III P IV A, paras 4.4 - 4.13	We hope to cope with the dual shot problem by the following means. When definite aircraft participation is determined, a turn-around study will be made for all aircraft and results will be given to TG 7.1. TG 7.1 will be requested to consider the turn-around capability and timings when scheduling dual shots. Sixteen (16) B-57's will be available for sampling operations and this should be sufficient to give us a dual shot capability.
25.	III P IV A, paras 5.3 - 5.7	Present TG 7.4 planning with respect to rehearsals includes the actions recommended in the Final Report. Overseas rehearsals will be scheduled on a scope similar to that of REDWING but dependent on the number of participating aircraft. Present plans call for fewer critically-placed aircraft, which most likely will lessen the number of rehearsals. A definite rehearsal program will be determined when information on the number of participating aircraft is received.

AFWL/HQ

AFWL/HO

[redacted]

Incl 7, p. 6

40

[redacted]

Ltr, SWS, 4950th TESTGU(N), dtd 24 Jul 57, "Comments to Final Report of the Commander, TG 7.4, Operation REDWING"

ITEM	REFERENCE NO.	COMMENTS
26.	III P IV B, paras 1.3 - 1.10	During Operation REDWING accurate records were kept of all flights to include flying time, passengers and cargo carried. These figures were used as a basis for planning support requirements for HARDTACK and a similar set will be kept on HARDTACK. Airlift support requirements for both inter-island and inter-atoll airlift have been submitted on a basis of a 25% increase over REDWING. This increase was given by JTF SEVEN. A total of six (6) C-54's and/or C-123's have been requested for inter-atoll and weather island resupply airlift. A total of 15 H-19's or H-21's have been requested for inter-island airlift. Three (3) SA-16's have again been requested for resupply of weather islands with no airstrip. These three are included in the total of seven (7) SA-16's requested at the Operations Conference held at JTF SEVEN in February 1957.
27.	III P IV B, paras 2.4 & 2.7	See Item 26 above.
28.	III P IV B, paras 3.4 - 3.6	See Item 26 above.
29.	III P IV B, paras 5.1 - 5.5	As recommended in the Final Report, during the planning phase of HARDTACK TG 7.4 will coordinate with TG 7.1 on a joint plan for sample recovery and return. This coordinated plan should be similar to the one that worked so successfully on REDWING and will be submitted to JTF SEVEN for their publication.
30.	III P IV B, paras 6.1 - 6.8	Our plans for the accomplishment of radiological safety training will be initiated as soon as the Air Force participating agencies are known. As soon as definite units are designated to participate in HARDTACK, the requirement for rad-safe monitor training will be ascertained and, if necessary, Air Training Command will be requested to establish a course to train these monitors. TG 7.4 will be prepared to give an on-site course similar to the one given during REDWING.
31.	III P IV C, para 4.4	Although we have been already notified unofficially that JTF SEVEN will have no documentary photo requirements - therefore the problem would be resolved with no action required - all of our planning will be based on a documentary photo requirement.

AFWL/HQ

Encl 3, p. 7

9-48

[redacted]

Ltr, SWS, 4950th TESTGU(N), dtd 24 Jul 57, "Comments to Final Report of the Commander, TG 7.4, Operation REDWING"

ITEM	REFERENCE NO.	COMMENTS
32.	III P IV C, paras 1.8-1.13, 2.3-2.13, 3.1-3.6, 4.4-4.8, 5.6-5.8, 6.7-6.10, 7.3-7.8 & 8.4-8.9	In December 1956 TG 7.4 published a Preliminary Communications Plan which was coordinated with AFSWC, ARDC, USAF, & JTF SEVEN. During the Spring of 1957 several communications conferences were held with ARDC, USAF & JTF SEVEN to determine communications requirements and procedures. From these conferences and comments received on the Preliminary Plan, TG 7.4 published and distributed on 20 June 1957 its Communications Plan for Operation HARDTACK. This Plan set an operational ready date for all communications facilities of 1 January 1958. If this plan is properly implemented by all organizations, the communications problems encountered during REDWING should be eliminated. The necessary major components for all communications schemes are being refurbished and set aside under Project HOTBOX at Maywood AFS. AACS has been directed to engineer, install and operate all schemes for HARDTACK. The 1st Mobile Communications Squadron will supply the mobile types of equipment. A letter on power requirements has been sent to H&N. Base Supply of the 4951st was instructed in the Roll-up Plan to ship all surplus equipment to the ZI. AACS has been instructed to send only necessary equipment to Eniwetok for HARDTACK. This will be monitored during the operation and excess equipment will be shipped to the ZI as it becomes surplus. JTF SEVEN and TG 7.3 have promised back-up equipment for SSB circuit between the AOC and CIC. When definite aircraft are assigned, multiple channelization will be checked. TG 7.3 has notified this Headquarters that the CIC will be modified; however, UHF and IFF ranges requested will not be realized. Under the HOTBOX program, the equipment required is well programmed. Additional equipment as presently required has been requested from AREC. TG 7.4 Communications Officer will monitor throughout. Mobile TACAN has presently been planned for Sand Island and AACS will supply. Power requirements have been submitted to H&N.
33.	III P IV D, para 2.6	Types and locations of various arresting devices are presently being studied by Operations personnel of TG 7.4 and AFSWC versus present aircraft inventory to ascertain which types will be needed and where they should be located.

AFWL/HQ
Incl 7 p. 8

[redacted]

249

[redacted]

Ltr, SWS, 4950th TESTGU(N), dtd 24 Jul 57, "Comments to Final Report of the Commander, TG 7.4, Operation REDWING"

ITEM	REFERENCE NO.	COMMENTS
34.	III P IV, paras 3.3 & 3.5-3.9	TG 7.4 will check on survival gear and training as soon as definite units and aircraft are assigned. As soon as these units and aircraft are assigned, USAF will be requested to direct aircraft accident accountability and reporting responsibility be similar to that used in REDWING.
35.	III P V A, paras 1.6 - 1.15	AMC has reestablished Project 28 (now designated Project F-28) as a permanent project. The Logistics Liaison Section has been manned by one (1) officer and three (3) airmen during the interim period, and is permanently located at SMAMA. Requisitions for the 4951st Support Squadron (formerly the 4930th Support Group) are being processed thru the Logistics Liaison Section of this Headquarters. The personnel assigned to this Section are particularly resourceful and highly qualified, all having gained valuable experience on REDWING. Personnel presently scheduled for assignment to the Logistic Liaison Section have been interviewed, and appear to be very well qualified for their duty assignments. For additional information see Item #2, page 2.
36.	III P V A, paras 2.5 - 2.9	The present schedule of events calls for submission of requirements for prepositioned supplies and equipment not later than September 1957. Our only problem in this area is the designation of elements of TG 7.4 in time to meet this date. Vigorous action is being taken to have these elements designated as soon as possible. Our Logistics Support Concept, distributed 10 July 1957 satisfies this recommendation. The format for submission of project kit requirements, now being prepared, will include these recommendations. An assembly type AFSD will be used by the Logistic Liaison Section in processing requirements lists for prepositioned supplies and equipment.
37.	III P V A, paras	See Item #36 above. Procedures have been set up to permit maintenance of complete records on local purchase and stock fund items. The processing of LP requests will be closely monitored by the Logistics Liaison Section and this Section is set up to closely monitor the commitment of funds by SMAMA.

Inc AFWL/HQ

[redacted]

25

[redacted]

Ltr, SWS, 4950th TESTGU(N), dtd 24 Jul 57, "Comments to Final Report of the Commander, TG 7.4, Operation REDWING"

ITEM	REFERENCE NO.	COMMENTS
38.	III P V A, paras 4.5 - 4.10	See Item #4, page 2. An SOP has been set up to permit early and forceful follow-up of all delinquent reports. If the present time scale can be adhered to all requirements will be carefully scrutinized for accuracy and elimination of excesses.
39.	III P V A, paras 5.3 - 5.9	The establishment and maintenance of stock record cards have been prescribed in the TG 7.4 Logistic Support Concept which has been distributed. This procedure will be further described in the TG 7.4 Logistics Support Plan scheduled for publication 1 August 1957. The present time scale for processing of requirements lists will permit the establishment of a timely and workable arrangement for servicing of the using elements. Detailed procedures will be published by the Test Base Unit (the 4951st). The experience level of personnel assigned to AFB 2872 is excellent. The Director of Personnel, 4950th Test Group is closely monitoring the assignment of personnel. The requirement for augmentation of AFB 2872 has been spelled out in the TG 7.4 Logistics Support Concept and will be specified in detail in the TG 7.4 Logistic Support Plan.
40.	III P V A, paras 6.3 - 6.12	Drawings have been received, and approved by this Headquarters, for expansion of the POL storage facilities on FRED. This expansion, which will increase our aviation fuel storage capacity by 840,000 gallons will eliminate our storage problems as recognized at this time.
41.	III P V B, paras	It is planned to establish a Maintenance Control Unit for HARDTACK. Preliminary drafts of SOP's are being prepared.
42.	III P V B, paras 1.6 & 2.4 - 2.6	See Item #41 above. Detailed experience levels will be prescribed for field maintenance augmentation personnel to be furnished by elements of TG 7.4.
43.	III P V B, paras 3.3-3.6 & 4.3-4.5	Detailed requirements for MCU communications have been established. It is planned that MCU personnel will deploy to the EPG in sufficient time to permit a complete check out of MCU communications facilities. Also see Item #5, page 2.

[redacted]

Incl 7, p. 10

AFWL/HQ

[redacted]

Ltr, SWS, 4950th TESTGU(N), dtd 24 Jul 57, "Comments to Final Report of Commander, TG 7.4, Operation REDWING"

ITEM	REFERENCE NO.	COMMENTS
44.	III P V C, paras 1.4-1.8 & 2.3-2.13	The TG 7.4 Staff Transportation Officer has visited his counterparts in JTF SEVEN and has discussed mutual problems and requirements. Preliminary instructions are contained in the TG 7.4 Logistic Support Concept letter. Detailed instructions will be included in the TG 7.4 Logistic Support Plan. The only anticipated problem is the late designation of elements of TG 7.4. Present time scale for processing of support requirements will permit maximum use of sea lift. It is planned that only that portion of support requirements transported by the TG element concerned will be moved by air. All prepositioned items, time permitting, will be moved by water. It is further planned to station the TG 7.4 Transportation NCO in Hawaii to act as a "trouble shooter" during the shipping period, as required. By maximum use of sea lift, it is not expected that a bottleneck will exist in Hawaii. Further, this Headquarters intends by personnel representation at Travis and Hickam AFB's, and close monitoring of TG 7.4 movements, to furnish assistance to the Task Force LNO's in determining the movement priority of all TG 7.4 personnel and material. The major governing factor of authorizing transfer officers at enroute terminals to divert shipments from air to surface lift will be the establishment of realistic in-place dates. The prorating of sea lift and the actual sea shipments will be closely monitored by both this Headquarters and our representatives at the Oakland POE.
45.	III P V C, paras 3.3-3.9&4.4-4.9	Planning for the movement of short-range aircraft is in progress. It does not now appear that this problem will approach the magnitude of that on REDWING. A letter is being sent to Hq USAF requesting that each major AF Command furnishing elements to participate in HARDTACK, be required to provide special airlift for its elements. If this request is approved, this responsibility will be so stated in the Hq USAF Movement Directive. This will be included in the TG 7.4 Logistic Support Plan. Detailed procedures for Special Airlift & Enroute Support Aircraft will be dependent upon the reply from Hq USAF wherein we request that major commands be required to provide special airlift for its elements.

Incl 7 p. 11

[redacted] AFWL/HQ

[redacted]

Ltr, SWS, 4950th TESTGU(N), dtd 24 Jul 57, "Comments to Final Report of the Commander, TG 7.4, Operation REDWING"

ITEM	REFERENCE NO.	COMMENTS
46.	III P V C, paras	A listing of general purpose vehicle requirements for HARDTACK has been prepared and forwarded to JTF SEVEN where it had received tentative approval. As indicated by his tentative allocation of general purpose vehicles, CJTF SEVEN is effecting maximum utilization of commercial type vehicles.
47.	III P V D, paras 1.10 - 1.13	The preparation of the TG 7.4 Long Range Construction Program during REDWING has resulted in an excellent basic document. The permanent establishment of this Headquarters has permitted the continued monitoring of this program. With the excellent cooperation of JTF SEVEN and TG 7.5, this program is progressing in a most satisfactory manner. A realistic cut-off date of 23 June 1956 was established by CJTF SEVEN. Any changes or additions to the existing program are being closely monitored by this Headquarters. This Headquarters is studying the requirement for portable type buildings. Hq USAF has advised that CAS buildings will not be avaialbe, but that a Butler-type building, 40' x 100', can be made available. This substitute item appears to be satisfactory.
48.	III P V D, paras 2.5 - 2.11	We believe that the establishment of the 4950th Test Group (Nuclear) as a permanent organization with the mission of planning USAF participation in nuclear tests will prevent the neglect of the Construction Program which occurred previously. The 4950th has worked closely with JTF SEVEN to reorient the construction program from time to time to adapt it to changing requirements and to obtain as much of the necessary construction as possible in the off-year periods.
49.	III P VI, paras 1.3 - 1.7	See Item #6, page 2.
50.	III P VI, paras 3.3 - 3.5	The Budget for TG 7.4 has been submitted and approved by JTF SEVEN in June 1957.

PAUL R. WIGNALL
Colonel, USAF
Commander

AFWL/HQ

 [redacted]

Incl 7, p. 12

[redacted]

MEMORANDUM FOR RECORD: JAN 18 1957

SUBJECT: Visit of Colonel E. A. Lucke, USA, and Colonel Robert Gattis, USAF, to Joint Task Force SEVEN Headquarters.

1. Colonel Lucke and Colonel Gattis of Task Group 7.1 visited this headquarters on 8 and 9 January 1957 for the purpose of discussing operational and logistic problems associated with Operation HARDTACK. Set forth below is a report of topics discussed and commands visited during their stay in Washington, so far as is known to the J-3 Division. A separate Memorandum for Record has been prepared by the J-5 Division concerning communication matters discussed.

2. At 0900 on 8 January 1957, a meeting was conducted in the JTF-7 War Room. The following personnel attended: Colonel Massey, Colonel Lucke, Colonel Gattis, Commander Ellison, Lt Col Gray, Lt Col Epley, Lt Col Johnston, Major Policastro, Major Dean, Major Richie, and Captain Blumenson. The purpose of this meeting was to dicuss certain specific problems pertaining to HARDTACK and to provide an opportunity for members of all staff divisions to discuss itmes of mutual interest to JTF-7 and TG 7.1 with Colonels Lucke and Gattis. The following specific topics were discussed during this meeting.

a. Concept of the Operation. Colonel Massey informed Colonel Lucke that this headquarters desired at least a preliminary concept of Operation HARDTACK at the earliest possible date. It was pointed out that this concept is needed not only for planning purposes, but also to help this command in defending its extra military budget for Operation HARDTACK. It was emphasized that while we realize that there is little firm planning data available at this time, any information whatever presented officially to this headquarters would be of assistance in orderly planning. Colonel Lucke replied that he would relay our request to Dr. Felt, and that he believed that Dr. Felt would be able to provide us with some information by 1 February 1957. It was his understanding that a letter containing such information is now being prepared for Dr. Ogle's signature. He also stated that as a result of discussing the concept of the operation with Dr. Graves, Dr. Ogle, and Dr. Felt, it appears that HARDTACK would be very similar in scope to REDWING. The following is a very tentative list of anticipated detonations:

Number	Yield
DELETED	DELETED

The scope of participation of the two laboratories will be about equally divided. It also appears that more megaton shots will be fired at Eniwetok than was the case during REDWING. The shots listed above do not reflect any possible carry over from Operation PILGRIM, nor do they include those which are being requested by the DOD.

[redacted]

AFWL/HQ

AFWL/HQ
Incl 8, p. 1

[redacted]

b. Use of Taongi. Colonel Lucke stated that his division was very anxious that an immediate resolution be arrived at relative to the possible use of Taongi as an additional firing site in the Eniwetok Proving Ground. He stated that many operational problems would have to be solved if such use is approved, and that the time element for the development of this site was growing short. Colonel Massey replied that it was his understanding that it is the position of this command that the possible use of Taongi requires a policy decision which must be made by the Atomic Energy Commission and the State Departement, and that this headquarters would take no action which could be interpreted as attempting to establish such policy. Consequently, this headquarters will not provide appropriated funds for the survey or development of Taongi unless so directed by proper authority. It was emphasized that the resolution of this problem was an AEC matter which the scientific laboratories should take up with that agency rather than with this command.

c. Sampler Aircraft Requirements. Colonel Massey stated that this headquarters was in receipt of a letter originated by the UCRL and transmitted by Dr. Felt stating that several more B-57B's and a few B-57D's will be requested for sampling in HARDTACK. Colonel Massey also stated that Dr. Graves intends to pursue this requirement through Air Force channels. Dr. Graves feels that since the sampler requirement is a continuing one, this line of attempted procurement is proper. It was strongly recommended that justification through AEC channels also be procured. It was pointed out that due to the high priority projects in which the B-57B's are now engaged, it is extremely doubtful that they will be required in order to procure their assignment on a permanent basis. Colonel Lucke was requested to keep this headquarters informed as to what progress the laboratories were making in procuring the subject aircraft.

d. Helicopter Landing Platforms. CTG 7.1, in the REDWING Final Report, recommended that consideration be given to installing helicopter landing platforms on all shot barges. This recommendation was discussed with Colonel Lucke and Colonel Gattis and for several reasons it was the consensus of opinion that such a proposal should not be adopted. In the first place it was considered that the cost, probably in excess of $10,000 per barge, would be prohibitive. In the second place it was generally agreed that the use of such platforms would be precarious at best with H-19 helicopters and that the likely substitution of H-21's in Operation HARDTACK would increase the jeopardy of such proposed operations. It was further noted that such installations, even if operationally feasible, would generate other operational problems such as loading the barges in the LSD. A related recommendation for fast boat service to and from the shot barges was discussed. It was generally agreed that nothing in the military inventory would meet the operational requirements. It was concluded that Task Group 7.1 should investigate the possibility of having TG 7.5 acquire an additional "African Queen" type boat through AEC channels; otherwise, operational support in HARDTACK would be essentially the same as it was in REDWING.

e. Airstrips. Colonel Gattis stated that it might be desirable to reactivate the old airstrip at Bikini (HOW Island) since considerable increase in the use of that island as an instrumentation site during HARDTACK is anticipated. He stated that he planned to visit TG 7.4 Headquarters in the near future to discuss airstrip requirements, and that when he did so that

[redacted]

he would keep this command advised of the results of his meeting. During this meeting he will also discuss the scheduling of inter-island and inter-atoll aircraft and helicopter flights.

f. Schedule of Events. Colonel Lucke was asked if the schedule of Events distributed by this headquarters last December was in consonance with his planning requirements. He replied that it was and that he would like to be kept fully informed of progress and of any changes which we might make to the schedule.

3. At 1330, on 8 January, Colonel Lucke, Colonel Gattis, CDR Ellison and CDR Gustafson met with members of TG 7.3 at TG 7.3 headquarters to discuss ship requirements, ship modifications and operational items of Navy interest. The following specific topics were discussed.

a. Use of Taongi. CDR Brown pointed out that it would require a major effort to clear a suitable channel into Taongi Lagoon. Currents through the present passage are as high as 10 knots which would prohibit the work of an underwater demolition team except for brief periods during slack water each day. At best the operation would be a hazardous one. An ATR or ATF would be required to support the UDT team. It was also pointed out that, due to their limited power, an LCU or LST could enter the lagoon through the channel only during certain periods of the day. CDR Sterrett stated that a LCU under current BUSHIPS regulations is prohibited from operating in the open sea and that even if an exception to this regulation were obtained, the LSD could dispatch the LCU in the open sea only under the most favorable conditions. CDR Ellison and CDR Kelly emphasized that, due to the numerous coral heads existing in the lagoons, seaplanes could be landed only by taking a calculated risk of the coral heads had been removed and adequate seaplane landing areas marked with buoys. Captain Utter pointed out that an additional boat pool would probably be required and if so, that it would be desirable to obtain an additional LSD to support the boat pool, as well as to move the shot barges to Taongi. A general discussion concerning possible operations at Taongi followed.

b. Support Ships. CDR Gustafson stated that the Navy plans to mothball the USS CURTISS, and that this vessel will not be available for HARDTACK. TG 7.1 representatives were also informed that the BADOENG STRAIT is now being inactivated and that no CVE type vessel will be in commission by the summer of 1958. A general discussion then followed concerning what type of vessel would be suitable to replace the CURTISS and BADOENG STRAIT. A CVHA was mentioned but eliminated as a result of the limited sea keeping abilities of this type vessel. Capt. Utter mentioned that the USS PINE ISLAND might be suitable. After all aspects had been considered, however, it was determined that a CVS would provide the most suitable replacement and could be used to replace both the AV and CVE.

[redacted]

AFWL/HQ
Incl 8, p 3

[redacted]

c. LSD Operations. Colonel Lucke asked if it were feasible to place a helicopter landing platform on the LSD. It was pointed out that LSD's normally have a sectional platform for helicopter landing. Prior to REDWING, this platform was removed from the LSD 17 so that it could accomodate the shot barges. Colonel Lucke was of the opinion that the barges could be modified to pass under the platform. It was also suggested that perhaps two LSD's would be required for HARDTACK, and that if this developed one could be with and the other without its helicopter platform.

d. Raydist. Captain Utter asked if it was planned to utilize Raydist during the operation. He was informed that a Cubic Corporation device would be used in lieu of Raydist. This information was later found to be in error, however. The Cubic system will not be used and Raydist will be used as a last resort. MSQ positioning with manned stations at Bikini and Eniwetok is preferred. The meeting adjourned at 1600 hours and the TG 7.1 and JTF-7 representatives returned to this headquarters.

4. At 1300 on 9 January, Colonel Massey, Colonel Gattis, CDR Ellison and LCDR Johnson visited AFSWP headquarters. The following points were discussed with Lt Col Eddy, Lt Col Henry and Lt Col Wilcox of the Weapons Test Division.

a. Support Requirements for Operation HARDTACK. Colonel Massey stated that 7.1 desired clarification as to which command would submit the listing of items and units necessary to support the DOD phases of Operation HARDTACK. Lt Col Wilcox stated he was preparing a letter to AFSWP Field Command, information to other agencies, stating that the AFSWP headquarters staff would be responsible for determining the items of military support required for the DOD effects and scientific programs of Operation HARDTACK and would present these requirement at the 20 February conference to be held at this headquarters. He emphasized that since all project proposals of the various services had not been received by AFSWP, this list would be preliminary only and that numerous changes and additions would probably be necessary. AFSWP had originally established 1 January as a deadline for all services to submit their project proposals to AFSWP but this deadline had to be extended to 31 January. Lt Col Wilcox feels that an additional estension will probably be necessary.

b. Weapons Effects Program. Colonel Massey stated that this headquarters had received rumors that Air Force aircraft effects participation would probably be greater than was originally believed and asked Colonel Eddy to give us what information he could on the effects program currently being planned. Colonel Eddy replied that so far as his division knows the B-52 is the only Air Force aircraft scheduled to undergo effects tests during HARDTACK. The Navy intends to conduct certain effects tests with the FJ4, A4D and possibly the Seamaster. However, it appears certain that the aircraft effects program will be considerably less than that conducted during Operation REDWING. Lt Col Eddy also felt

AFWL/HQ
Inc/8, p. 4

[redacted]

[redacted] that the fallout program, if any, would be greatly reduced and that while some collection stations would probably be required, the program would not be of such a nature as to warrant use of the YAGS and LST 611. Whether or not the flash blindness studies conducted during REDWING will be continued during HARDTACK is not known at this time, but it appears fairly certain the Program 6.1 will be continued.

c. Raydist. Colonel Henry stated that use of the cubic system of aircraft positioning had been disapproved by AFSWP and that MSQ probably would be used. It was then pointed out that if this system is used it will not be possible to totally evacuate Bikini when test aircraft were participating. Colonel Massey stated that he felt a command decision on this matter would have to be reached before settling on the MSQ system. Colonel Eddy and Colonel Henry concurred and stated that even through Raydist was unsatisfactory in some respects, it might have to be used as a last resort. If the MSQ system is used, it is planned to place the control vans in revetments rather than to build a completely new control station.

d. Helicopters. Colonel Henry was asked if AFSWP had any information as to the maximum PSI which could be sustained by helicopters without damage. It was pointed out that we had used .5 PSI as a criteria during REDWING. Colonel Henry stated that he felt this was the uppermost limit which could be used, especially for the H-21's but that more knowledge would be available at a later date as a result of certain tests scheduled to be conducted during Operation PILGRIM.

e. DOD Programs. Colonel Eddy stated that the only currently approved DOD shot was the very high altitude shot (90,000 ft.). The revised Navy program consisting of two shots, a deep water shot and a medium depth water shot, will be presented to the JCS for approval on 25 January. It was the feeling of the AFSWP representatives present that there was little chance of getting the ultra high altitude shot into the HARDTACK program. Cost as well as limited time remaining were considered as governing factors.

5. Following the visit with the AFSWP representatives, the group made a brief call on Colonel Kesling in AFOAT. Colonel Kesling was asked if he had any definite knowledge as to the type of helicopter the Air Force would probably provide for Operation HARDTACK. Colonel Kesling replied that the H-19 helicopter is being phased out of the Air Force inventory and replaced with the H-21 type. He stated that a FEAF unit would probably be directed to provide helicopter support for Operation HARDTACK, and since this command is now being supplied with H-21's, we would undoubtedly have this type assigned during HARDTACK. Colonel Massey then pointed out that the H-21 was a much larger aircraft than is required to carry the average number of passengers normally transported per trip, and that this seemed to be unwise from an aircraft utilization point of view. Colonel Kesling agreed, but stated that since the H-21 would probably be the only type available, the Air Force has no alternative in the assignment. A

[redacted]

general discussion then followed concerning increased demands for parking space and additional maintenance personnel which would be generated by the assignment of the H-21. Colonel Lucke asked if there was any possibility of replacing the C-47 aircraft at Eniwetok with C-131's. Colonel Kelsing stated that so far as he knew the Air Force had no cargo version of the C-131 as such and that it required several hours to remove or replace the passenger seats, thereby reducing the versatility of this type aircraft if it were required to serve a dual purpose. He stated that C-54 type aircraft would probably be more suitable, but that even they were in short supply. Colonel Gattis will discuss the type of aircraft to be requested for HARDTACK with Colonel Wignall of TG 7.4 prior to the 20 February requirements conference. Colonel Massey then discussed the UCRL letter requesting the assignment of B-57 sampler aircraft. It was Colonel Kesling's opinion that B-57D aircraft would not be available for this operation, and that the B-57B would be assigned only if complete justification was provided.

6. Colonel Lucke and Colonel Gattis departed Washington on the morning of 10 January for return to Los Alamos.

DONNELL MASSEY
Colonel, USAF
AC of S, J-3

Copy furnished:
AEC/DMA
Chief, AFSWP
UCRL (Dr. Johnson)
AFOAT (Col Kesling)
TG 7.1
TG 7.2
TG 7.4
TG 7.5
Command Division
J-1 Division
J-2 Division
J-4 Division
J-5 Division
Comptroller
Historian

AFWL/HQ

[redacted]

AFWL/HO

Incl 8, p. 6

Headquarters
4950TH TEST GROUP (NUCLEAR)
Air Force Special Weapons Center
United States Air Force
Kirtland Air Force Base, New Mexico

SWS 11 April 1957

SUBJECT: Staff Visit to Eniwetok, 24 March - 5 April 1957

TO: Commander
Air Force Special Weapons Center
Kirtland Air Force Base, New Mexico

1. The following are principle items which were discussed with the Commander, 4951st Support Squadron (Test), and his staff during the visit conducted at Eniwetok 24 March to 5 April 1957.

2. GENERAL:

a. The 4951st Support Squadron (Test) is performing its primary mission with an admirable degree of success. All requests for support have been fulfilled by the organization. The relationships between the Squadron, Task Group 7.2, AEC, and Holmes and Narver personnel are excellent. On several occasions unsolicited compliments were expressed by such persons concerning the efficiency of the Unit.

b. There are some areas of secondary importance where a need for improvement was noticed and brought to the attention of the Commander. In most instances the shortage of personnel and technical skills was primarily responsible for the Unit's difficulty. Examples of areas where the Commander was requested to take certain corrective actions include certain special items in flying and ground safety, corrosion control, and operational procedures. Generally speaking the majority of these items were of such a detailed nature that they do not require further elaboration in this report.

AFWL/HQ

3. PERSONNEL:

a. The 4951st conducted a briefing for visiting personnel on the impact on their operations of the existing personnel shortages. To understand and appreciate this situation it is necessary to recall that the interim strength of this Unit prior to REDWING was approximately 240 officers and airmen. At the present time the Unit is authorized 18 officers and 184 airmen. Because of difficulties in the requisitioning system, the available for duty strength in recent months has dropped to slightly over 100. Obviously the Unit cannot function satisfactorily at this level. The interim period manning requirements were established on the basis that the Unit would be 100% manned at all times. It is a great tribute to all personnel assigned the Squadron that they have been effective as they have under such difficult circumstances. Subsequent to the

Incl 9, p. 1

visit it has been determined that late March and early April arrivals will bring the 4951st to something in excess of 80% manning and the situation will continue to improve rapidly. Action has been taken to send certain critically required personnel to the 4951st on a TDY basis from Kirtland.

b. The impact of proposed manpower cuts was discussed. The 4951st was required to surrender 18 spaces as their proper share of the strength reductions levied on AFSWC by Headquarters ARDC. At the time the cut was levied it was agreed that a Manpower Survey would be conducted during this staff visit to determine if the cuts were feasible. Although time did not permit a complete survey, representatives of the Manpower Branch, DCS/O, AFSWC, did agree that a cut of this magnitude did not seem feasible. Instead they propose that we should discontinue operation of the Utility (crash boat) Boat Section and that the ten (10) spaces now filled by marine type personnel should be converted to other critically needed skills. Additionally, the Center would absorb a 4-space cut elsewhere. This means that the 4951st would lose its POL officer and two (2) airmen spaces but would gain ten (10) airmen spaces through the conversion to other AFSC's of the boat personnel. This action, of course, is contingent upon the approval of the Commander, AFSWC. Action will be taken in the immediate future to present the problem for his consideration.

c. The Unit's Rest and Relaxation policy was discussed with the Commander, 4951st and the Commander, TG 7.2. Based upon their mutual agreement that several (7 to be exact) days R&R in Japan often meant that the individual was often absent for as many as 45 days, and that the venereal disease rate among such personnel is inordinately high, the Commander, 4951st was directed to terminate R&R in Japan for his personnel. A letter will be prepared on this subject to JTF SEVEN, through AFSWC.

d. Rotation dates were discussed for the Commander, 4951st. It was agreed that Lt. Colonel Cox's tour should terminate 1 July 1957, and that Lt. Colonel Hedrick should report for duty 31 August 1957. During the intervening time Major Lane will act as Commander. The objective here is to assure the rotation of the Commander during a non-test period.

e. The need to provide an executive-type individual to assist the Commander was discussed. It was agreed that the "front office" work load of the commander is such that he needs more assistance than is provided by a non-rated adjutant. It seems extremely desirable that the replacement for the present adjutant should be a rated officer who is next senior to the commander so that this individual could assume command during temporary absences of the commander. AFWL/HQ

f. A requirement for four (4) basic (010) airmen was established for the 4951st. These personnel are required for general duty work for which the Unit is responsible; i.e., barracks orderly, general detail work, sandblast machine operators, etc.

Encl 9, p. 2

4. CONSTRUCTION:

a. The Unit was furnished a copy of the revised Construction Program as established by JTF SEVEN. The changes in the program and the reason for these changes was explained. Based upon those discussions it appears that the present program is entirely adequate to support our future needs.

b. Construction work under progress was examined. Structual members of the existing hangar have been cleaned and are being repainted and work will begin soon on reskinning this structure. Completion of this project will make the hangar much more usable. The ramp and runway repair work is proceding in a satisfactory manner. The only difficulty we may face is that the new surfaces are less well sealed than the old and may tend to spaul under jet blast. It appears that the only solution is to wait and see how the surfaces hold up under conventional aircraft operation and then determine whether additional sealing is required.

5. OPERATIONS:

a. The requirement for establishing a unit on Bikini was discussed. Contractor personnel at Eniwetok have stated that it is their intention to establish a camp at NAN during June 1957. As a result, it was agreed that AFSWC would provide a Bikini Detachment Commander from its own resources with a reporting date of 15 May 1957. Requisition action has been taken on the airmen personnel required for this detachment. Action has also been taken to provide the fire equipment required. Because the contractor has stated that a camp will be established on PETER-OBOE and that C-47 air support will be required, an additional piece of fire fighting equipment must be procurred for that location. It appears certain that this equipment will not be in place in June but we hope to have it there shortly thereafter. To provide local airlift, present plans call for two (2) H-19's and one (1) L-20 to be moved to Bikini. This Headquarters will inform FEAF of the requirement to detach their aircraft and the 4951st will arrange for the movement to Bikini.

AFWL/HQ

b. Helicoptor operations now being conducted at Eniwetok by FEAF personnel was discussed. The Unit is carrying out its mission in a thoroughly satisfactory manner although it is evident that there is not a mutual understanding of all facets of the operation. This results in part because the ARDC-FEAF Agreement has not been consummated. One of the principle points of contention appears to be on how requirements are transmitted. Our position is that all local airlift requirements should come through the Commander, 4951st so that he can utilize the flexibility that comes from having dispatch control over both helicopters and L-20's. FEAF apparently feels that their Detachment Commander would be handicapped if he did not receive his flight requirements through the airlift consummer. Lt. Colonel Cox will attempt to resolve this problem locally and

the Deputy Commander, AFSWC, has written a letter to General Waldron of FEAF on this subject. In addition, it appears that the Helicopter Detachment anticipates an increase in personnel so that it can establish supply personnel and supply actions. They feel that as many as 55 persons may be required where we use only 18. Some of this expansion may be based upon the assignment of H-21 helicopters but we attempted to impress on the Detachment Commander the need to make use of any service functions that the 4951st or the Army could provide with the objective of keeping his Detachment to a minimum strength. This subject was also discussed in the letter to General Waldron. It was also learned that present plans call for the replacement of the H-19's with two (2) H-21's in June and two in July 1957.

c. The qualification of pilot personnel being assigned to the Unit was discussed. It was determined that in some cases these personnel were not coming through Kirtland for screening prior to movement to Eniwetok. Further, that one individual who had reported through Kirtland had not received a complete check-out. Later it was determined that the partial check-out was necessary because AFSWC had been required to send their L-20 on TDY. Action has been taken following this staff visit to assure that all pilots are carefully screened here to see that they qualify as first pilots, are current in the aircraft, and have a up-to-date instrument card.

d. On the basis of the most recent trip by Air Force and contractor personnel to Nauru, it was agreed that the relocation of the weather station site there should be requested. The previous site is at the upwind and of the airstrip and this location would constitute a considerable hazard to both weather station and flying personnel. Additionally, the alternative site selected appears far more advantageous from a construction point of view. It is understood that the contractor is undertaking necessary action to request JTF SEVEN approval on its relocation.

6. MATERIEL:

a. Methods by which the present supply inventory might be reduced to the minimum required for the interim period was discussed. One of the principle difficulties in the past was the lack of adequately skilled personnel to conduct the wall-to-wall inventory, to identify excesses, and to take the necessary paperwork to move those excesses out. This situation will be somewhat rectified by the late March and early April arrivals. Additionally, Major Brush from this organization will soon move to Eniwetok on TDY to assist the Unit. He has been instructed to advise us if Depot supervisory assistance is required or if there is a need for working level assistance from Kirtland. By this means it is hoped that the Unit can reach its desired supply goal by mid-year. AFWL/HQ

b. The situation with regard to the replacement for the Pase Accountable Supply Officer was discussed. Despite repeated follow-up no replacement had been identified for Major Dyer, who should leave on or

about 15 April 1957. Subsequent to the trip every Supply Officer at Kirtland was considered for possible assignment to Eniwetok. Of those officers qualified none are available primarily because of past service at Eniwetok or other remote area locations, or because they are already on orders for assignment elsewhere. ARDC advises that the earliest we can expect a replacement is late May. In the interim Lt. Col Cox will have to use his best qualified officer despite the fact that he has no one who is completely qualified under the provisions of AFR 65-10 or AFM 35-11. Major Brush will assist as best he can the officer who succeeds Major Dyer as the Base Supply Officer. This, obviously, is not the best solution in the world but it appears to be the best we can do under the circumstances.

PAUL R. WIGNALL
Colonel, USAF
Commander.

cc furn:
1-SWO
1-SWM
1-SWP
1-SWSP
1-SWSO
1-SWS (file)

AFWL/HQ

Incl 9, p. 5

HEADQUARTERS
AIR FORCE SPECIAL WEAPONS CENTER (ARDC)
United States Air Force
Kirtland Air Force Base, New Mexico

15 July 1957

GENERAL ORDERS)
NUMBER 12)

STAFF ASSIGNMENTS--------1. COLONEL IRVING L. BRANCH, 1557A, this headquarters is assigned as Deputy Commander of Air Force Special Weapons Center, effective this date, vice COLONEL WILLIAM B. KIEFFER, 1409A, relieved.

2. COLONEL WILLIAM B. KIEFFER, 1409A, this headquarters, is assigned as Deputy Commander for Overseas Tests, effective this date.

FOR THE COMMANDER:

EDWARD J. WALKER
Colonel, USAF
Chief of Staff

OFFICIAL:

JAMES R. WEBB, JR
Lt Colonel, USAF
Adjutant

DISTRIBUTION: "A"

AFWL/HQ

AFWL/HQ

25

[redacted]

HEADQUARTERS
JOINT TASK FORCE SEVEN
Washington 25, D. C.

J-3/300,4HT

27 November 1956

SUBJECT: Tentative Planning Schedule for Operation HARDTACK

TO: See Distribution

1. For your information, attached as inclosure 1 is a tentative planning schedule prepared by and for the use of this headquarters in planning for Operation HARDTACK. Because of the lack of firm information at this time, this schedule of events is based on the following two assumptions:

a. That the scope of HARDTACK will be similar to but greater than that of Operation REDWING.

b. That the first detonation of Operation HARDTACK will occur on 1 May 1958.

FOR THE COMMANDER:

1 Incl:
Tentative Planning Schedule
for Operation HARDTACK

PERRY B. GRIFFITH
Brigadier General, USAF
Chief of Staff

DISTRIBUTION:
CNO (OP 36)
Cofs, USA
Cofs, USAF (AFOAT)
Chief, AFSWP
DMA/AEC
TG 7.1
TG 7.2
TG 7.3
TG 7.4
TG 7.5

AFWL/HQ

[redacted]

Incl 11, p. 1

[redacted]

TENTATIVE PLANNING SCHEDULE FOR OPERATION HARDTACK

27 November 1956

	EVENT	Action Div	Commence Action	Anticipated Completion
1.	Construction of Base Facilities	J-4	27 Jun 56	
2.	Rongelapese repatriation	J-4	1 Nov 56	1 May 57
3.	Decision on Weather Island locations (Nauru) and use of contractor for support	J-3		1 Dec 56
4.	Plan for use of RadSafe islands as weather reporting sites	J-3		1 Dec 56
5.	Request to CNO for weather ships	J-3		1 Dec 56
6.	Selection of RadSafe monitoring stations - notification of interested agencies	J-3		1 Dec 56
7.	JCS paper for conduct of operation. (Anticipate approval by ? Aug 57)	J-3	1 Jan 57	1 Aug 57
8.	Initial estimates of communication channel requirements and Communication - Electronics equipment to be prepared.	J-5		1 Jan 57
9.	Reinstitute Cost Report	Compt		1 Jan 57
10.	Assembly of off-atoll requirements	J-3	As becomes available	
11.	Planning information to task groups	J-3	As becomes available	
12.	Decision to use constant level balloons	J-3		1 Jan 57
13.	The operational Table of Distribution for Hq, JTF-7 should be submitted to J-1	J-1		15 Feb 57
14.	Supply and Construction Conference in Washington re Policies & Priorities	J-4	19 Feb 57	
15.	RadSafe and Weather Station construction requirements	J-4	19 Feb 57	
16.	Support requirements meeting	J-3	20 Feb 57	21 Feb 57

AFWL/HQ

[redacted]

Incl 11, p 2

[redacted]

	EVENT	Action Div	Commence Action	Anticipated Completion
17.	Determination of requirement and ETA EPG of LST to support construction effort	J-4	1 Feb 57	15 Mar 57
18.	Publish directives, SOP's other data for Transportation procedures, securing of requirements, etc.	J-4	1 Mar 57	
19.	Request to various services for TDY personnel (RadSafe)	J-3		1 Mar 57
20.	Procurement of special instruments for airborne and island monitoring program	J-3		1 Mar 57
21.	Purchase of fallout computers	J-3		1 Mar 57
22.	Procurement and lease of spherical instrument for dosimeter program.	J-3		1 Mar 57
23.	Weather station communications requirements to be submitted to TG 7.4	J-5		1 Jan 57
24.	Final Communication-Electronic equipment requirements to be completed	J-5		1 Apr 57
25.	Initial vehicle requirements to be submitted to CJTF-7 by task groups	J-4	1 Apr 57	
26.	Weather portion of Operation Order for build-up phase	J-3		1 Apr 57
27.	Initial requirements of Communication equipment and other major items	J-4	15 Apr 57	
28.	First TOO requisitions re vehicles to be submitted to DOD	J-4	1 May 57	
29.	Initial harbor craft requirements	J-4	1 May 57	
30.	Submit requirements for TDY and supplemental duty personnel to J-1	J-1	1 May 57	
31.	Letter to AEC, AFSWP and 3 services requesting they submit DocPhoto requirements. (Prior to 1 Nov conduct DocPhoto meeting with all concerned: AEC, AFSWP, IM, HQ USAF, and APCS)	J-3	1 May 57	1 Jun 57
32.	Meeting of comptroller or financial representatives of task groups	Compt	3 Jun 57	

AFWL/HQ

Incl 11, p. 3

[redacted]

[redacted]

	EVENT	Action Div	Commence Action	Anticipated Completion
33.	Request for 260 MP's to D/A	J-2	1 May 57	
34.	Billet requirements of each task group (Conference - all task groups)	J-4	1 Jun 57	
35.	Conference re FY 59 construction	J-4	1 Jun 57	
36.	First and second quarter fund requirements for FY 58 from task groups	Compt		15 Jun 57
37.	Determination of requirement for TAP	J-4	1 Jul 57	
38.	Determination and establishment of "Off-Atoll" locations requiring surface support.	J-4	1 Jul 57	
39.	Determination of requirements and capability for evacuation support	J-4	1 Jul 57	
40.	Establishment of MSTS shipping frequency during build-up	J-4	1 Jul 57	
41.	Follow-up by CJTF SEVEN with each task group re final determination of requirements for major end items	J-4	1 Jul 57	
42.	Establishment of requirement for special type cargo lift	J-4	1 Jul 57	1 Sep 57
43.	Forward requirements for necessary hydrographs surveys to CTG 7.3	J-3		1 Jul 57
44.	Planning directive (Draft) prepared and disseminated for comments and return	J-3	1 Jan 57	10 Jul 57
45.	Final requirements of all task groups and units re TO&E equipment, stationary supplies, etc., to be furnished by CTG 7.2	J-4	1 Aug 57	
46.	Screen all requirements for special lift by surface	J-4	1 Aug 57	
47.	Notification of CINCPAC, HICOMTERPACIS, and CINCPACELT of radsafe plans	J-3		1 Aug 57
48.	Submit preliminary estimate of support units required to Chief of Staff, USA, Chief of Staff, USAF and CNO	J-3		1 Mar 57

AFWL/HQ

Incl 11, p 4

[redacted]

[redacted]

	EVENT	Action Div	Commence Action	Anticipated Completion
49.	Request for CIC Team (12 agents)	J-2	1 Aug 57	
50.	Clearance requirements	J-2	1 Aug 57	
51.	Classification guide	J-2	No specific date	
52.	Planning directive prepared and disseminated	J-3		14 Aug 57
53.	Action to be initiated to develop a VIP program	J-1	1 Sep 57	
54.	Establishment of device components lift by surface transportation	J-4	1 Sep 57	
55.	Sample return requirements, info from 7.1, AFOAT-1, etc.	J-4	1 Sep 57	
56.	Final requirements for harbor craft	J-4	1 Sep 57	
57.	Final determination of vehicle requirement	J-4	1 Sep 57	
58.	Final determination of ordnance spare parts for vehicles by CTG 7.2	J-4	1 Sep 57	
59.	Badge requirements	J-2		1 Sep 57
60.	Allocation of Vehicles	J-4	15 Sep 57	
61.	Arrange contacts with weather bureau, public health service and other agencies for operation (1) radsafe monitoring stations, (2) fallout prediction unit, (3) fallout plotting center	J-3		Sep 57
62.	Establishment of surface lift schedule for off-atoll construction support and initial schedule for emplacement of personnel and equipment for operating period	J-4	1 Sep 57	
63.	First draft of movement directive for surface lift of devices	J-4	1 Oct 57	
64.	Establishment of Air Force movement directive - OPS DIV HQ USAF and Air Planning Division Air Task Group 7.4	J-4	1 Oct 57 AFWL/HQ	

Incl 11 p. 5

[redacted]

[redacted]

	EVENT	Action Div	Commence Action	Anticipated Completion
65.	Establishment of weapons lift requirements via 7.1	J-4	1 Oct 57	
66.	First draft of pre-shot and post-shot evacuation plan and emergency evacuation plan	J-4	1 Oct 57	
67.	Conduct familiarization tour of EPG for new staff members as required			Oct 57
68.	Final determination of all major supply requirements	J-4	1 Oct 57	
69.	First shipment of vehicles to arrive EPG	J-4	1 Nov 57	
70.	Final determination of office space requirements	J-4		1 Sep 57
71.	Final determination of billets in EPG	J-4		1 Nov 57
72.	Documentary photography plan firm. Submit requirements to appropriate USAF Agency	J-3	1 May 57	1 Nov 57
73.	Operation Order (draft) prepared and disseminated for comments and return	J-3	1 Sep 57	1 Dec 57
74.	Administrative Order (draft)	J-4	1 Sep 57	1 Dec 57
75.	Third and fourth quarter fund requirements for FY 58 from the task groups	Compt		15 Dec 57
76.	Publication of Standing Communications Instructions	J-5		1 Jan 58
77.	Communications check by 7.3 and 7.4	J-3		Jan 58
78.	Request information from DMA/AEC relative to plans for a marine radiobiological survey	J-3	1 Oct 57	1 Jan 58
79.	Publication of communications operations instructions	J-5		1 Feb 58
80.	Last shipment of vehicles to arrive EPG	J-4		1 Feb 58
81.	Complete installation of navigational aids at off-atoll weather and radsafe islands	J-3		1 Feb 58

AFWL/HQ

AFWL/HQ

[redacted]

	EVENT	Action Div	Commence Action	Anticipated Completion
82.	Publish Movement Directive for transport of S&SN material from the ZI to the EPG	J-4		1 Feb 58
83.	Operation Order and Administrative Order prepared and disseminated	J-3	1 Jan 58	1 Feb 58
84.	Letters to Exec Agent, AEC and CINCPAC on schedule of advisories during operational phase	J-3	1 Jan 58	1 Feb 58
85.	Rehearsal directive prepared and disseminated	J-3		1 Mar 58
86.	Letter from Chmn, AEC authorizing CJTF-7 to assume control of the civilian task groups	J-3		1 Mar 58
87.	Opening of Hq in forward area	Comd		
88.	Publish movement directive for transport of special weapons and devices within the EPG	J-3	1 Feb 58	1 Mar 58
89.	Establishment of Danger Area	J-3	1 Jan 58	1 Apr 58
90.	Letter to CINCPAC outlining dangers involved during test, and safety measures to be taken	J-3		1 Apr 58
91.	Report of readiness to the JCS	J-3		15 Mar 58
92.	Commence security sweeps of the Danger Area	J-3	20 Apr 58	
93.	Conduct full-scale rehearsal	JTF-7	(Prior to last shot)	
94.	Start preparation of final report	J-3	1 May 58	30 days after last shot
95.	Awards and decorations program initiated	J-1	1 May 58	
96.	Prepare Interim Operation Order	J-3	1 May 58	

AFWL/HQ

Incl 11, p.7

[redacted]

[redacted]

TENATIVE PLANNING SCHEDULE
OPERATION HARDTACK

EVENT	ACTION	COMMENCE ACTION	EST COMPLETION
Supply & Const. Conf in Washington	JTF-7	19 Feb 57	Completed
Support Rqmts Meeting	JTF-7	20 Feb 57	Completed
Decision on Wx Islands & Extent of Manning by 7.4	JTF-7		Completed
Initial need for support aircraft submitted to JTF-7	D/O		Completed
Wx Station Communication Rqmts submitted to TG 7.4	JTF-7		Completed
Communications Conference JTF-7	COMM	5-6 Mar 57	Completed
Proposed USAF Book Msg alerting Comds	PLANS	29 Mar 57	Completed
Initial Vehicle Rqmts submitted to JTF-7	D/M	15 Mar 57	Completed
Installation of Bikini Control Tower equipment	AACS	1 May 57	
Wx portion of Operation Order for build-up phase	JTF-7		1 Apr 57
Communication Electronic equipment requirements completed	COMM		1 Apr 57
Begin studying problem of flying F-84's to EPG using IFR	D/O 4926th	1 May 57	1 Jul 57

AFWL/HQ

[redacted]

Incl 12, p. 1

[redacted]

Publish Directive, SOP's other data for Trans Procedures, Rqmts, etc.	ALL	1 May 57	1 Jun 57
Meeting of Comtroller or financial representative of TG at JTF-7	Compt		1 May 57
Assembly of Comm Equipment	AMC-AACS	1 Jun 57	
Initial Billet Rqmts of each TG (JTF-7) Conf.	JTF-7 D/P D/O D/M	1 Jun 57	
7.4 personnel requirements established to include phased requisitions	D/P	1 Jun 57	
Conf reqmts FY 59 construction	JTF-7 D/M	1 Jun 57	
Ltr to JTF-7 requesting call signs and nicknames	COMM	1 Jun 57	
First & second quarter fund rqmts for FY 58	Compt		15 Jun 57
VHA launching site chosen & approved	D/O		Jun 57
Logistice Plan published	PLANS	Jun	1 Jul 57
USAF Book Message published	D/O	Jul 57	
Decision on ACC at Bikini - Rqmt for EGTES	JTF-7 D/O		1 Jul 57
Decision on Resupply of some Wx islands by LST	JTF-7 D/O		1 Jul 57

AFWL/HQ

[redacted]

Incl 12, p. 2

[redacted]

TSU Hqs established; all units & Comdrs designated; Initial call for Support Requirements	D/M		Jun 57
Coordinate Supply Support Directive with AMC	D/M		Jun 57
Prepare Comm Equipment for shipment	AMC-AACS	1 Jul 57	
Follow-up by CJTF-7 re final determination of reqmts for major end items	JTF-7	1 Jul 57	
Review JTF-7 planning directive	All	When received	
Decision on whether or not to fly F-84's to EPG using IFR	Comdr		1 Jul 57
Initial rqmts for special cargo lift submitted to JTF-7 to include a/c	D/O D/M	1 Jul 57	1 Sep 57
TG Planning Directive published	Plans(All)	Jul 57	15 Aug 57
UHA project status	D/O	1 Aug 57	
All support rqmts received by TG	D/M		Aug 57
Aircraft Control Procedures Conf in Hawaii	D/O ARTC Kwaj ARTC Hawaii		1 Sep 57
Initiate action for tanker support if F-84's are to be flown to EPG	D/O D/M	1 Jul 57	
Materiel office completely staffed	Pers	AFWL/HQ	Aug 57
EC-DOD classification guide and classification criteria	Scty	1 Sep 57	15 Nov 57

[redacted]

AFWL/HO

Incl 11, p. 3

[redacted]

Action to be initiated to establish a VIP program	JTF-7	1 Sep 57	
ARDC VIP Program, if any	Adj	1 Sep 57	
Shipment of Comm Equipment	AMC	1 Sep 57	1 Dec 57
Initial Logistics & Operations Conf.	D/M D/O	20 Sep 57	22 Sep 57
Final determination of vehicle rqmts	D/M		1 Sep 57
Scty indoctrination of personnel Scty			1 Sep 57
Badging & Security rqmts Scty clearances initiated	Scty	1 Sep 57	1 Mar 58
EPG entry requirements CINPAC SER 020	Scty	1 Sep 57	1 Mar 58
Allocation of vehicles	JTF-7	15 Sep 57	
AOC equipment returns from ISAFB to KAFB	D/O	15 Sep 57	
Support rqmts screened & fwd to LNO for action	D/M	Sep 57	
Schedule of events received from unit Comdrs (4951st & 4926th)	D/O	1 Sep 57	2o Sep 57
Establishment of AF Movement Direvtive	JTF-7 Hq USAF D/O D/M	15 Sep 57	
Scty of Aircraft staging thru Hickam	Scty	1 Oct 57	30 Nov 57
Comdr TG 7.4 & Staff visit Eniwetok		1 Oct 57	15 Oct 57

AFWL/HQ

Inc/ 12, p. 4

[redacted]

[redacted]

Task Units begin practice flights and submission of status reports	D/O	15 Oct 57	
Rqmts for OSI Agent Eniwetok	Scty	1 Nov 57	31 Dec 57
Logistics Annex to Ops Plan	D/M	Nov 57	
AEC Badging	Scty	1 Nov 57	8 Mar 58
Final determination of billets in EPG	JTF-7		1 Nov 57
Establish & Publish Flying Safety Regs and SOP's	D/O	1 Nov 57	Jan 58
Space allocation completed	D/M	15 Nov 57	5 Dec 57
Crash Badge system established	D/O	1 Nov 57	Dec 57
H-21's Operational EPG	D/O D/M		1 Dec 57
Final planning conference	D/O D/M	3 Dec 57	5 Dec 57
3rd & 4th qtr fund rqmts for FY 58 to TG	JTF-7		15 Dec 57
Aircraft modifications complete	D/M		15 Dec 57
Total aircraft participation firm	D/O		15 Dec 57
SOP or Ops order on IFR of F-84's enroute to EPG published	D/O		15 Dec 57
Movement directive completed, approved	D/O D/M		15 Nov 57

AFWL/HQ

[redacted]

Incl 12, p. 5

[redacted]

OIC Check with 7.3	JTF-7 D/O	Jan 58	Jan 58
AOC Equip ready for ZI functional check	D/O	15 Jan 58	Jan 58
Daily shuttle flights begin to Bikini		Jan 58	Continuing
4926th begin hook up training (IFR)		15 Jan 58	1 Feb 58
Survival Training of Aircrews completed			1 Feb 58
TG 7.4 Ops Plan/Order	Plans	15 Jan 58	15 Feb 58
TG 7.4 COI Published	D/O		15 Feb 58
Aircraft loaded on carrier for shipment to Fwd area	D/M	Continuing	28 Feb 58
Installation of Nav Aids on Off-Atoll Wx & RadSafe Islands completed	JTF-7 D/O		1 Feb 58
TDY Controllers (AOC) inplace KAFB	D/O,D/P		15 Feb 58
POM Inspections completed	D/P		15 Feb 58
Com Van for AOC Depart ZI	Comm D/M	1 Feb 58	20 Feb 58
Subordinate elements announce readiness	D/O	15 Feb 58	1 May 58
TDY controllers (CIC) inplace KAFB	D/O	AFWL/ HQ	15 Feb 58
Materiel pre positioned in fwd area	D/M	Continuing	1 Mar 58
AOC inplace Eniwetok	D/O D/M	15 Feb 58	1 Mar 58

AFWL/INC

225

[redacted]

ADVON of Hq TG 7.4 TAU & TSU dept for fwd area		1 Feb 58	15 Feb 58
Bldg 90 ready for occupancy by TG Hqs			10 Mar 58
Flying Safety Conference EPG	D/O	25 Mar 58	
Runway Barriers in place Eniwetok & Bikini	D/M		15 Mar 58
Test Aircraft begin arriving Eniwetok			20 Mar 58
4926th Departs KAFB (F-84's IFR) with tanker and enroute support aircraft		20 Mar 58	1 Apr 58
TSU, TAU & TBU Hqs activated in fwd area			20 Mar 58
Hq 7.4 Official Files and Records packed for shipment	Adj	12 Mar 58	
Hq 7.4 transfers to EPG by Air		15 Mar 58	20 Mar 58
Begin Air rehearsals	D/O	25 Mar 58	
First scheduled Shot		1 May 58	
Start preparation of final report; Format distributed to all staff sections	D/O? Adj? Historian?	1 May 58	Last Shot +
Roll-up plan completed	D/M	AFWL/HQ	1 Jun 58
Roll-up completed			Last Shot +

Incl 12, p. 7

[redacted]

219

[redacted]

29 April 1957

ROUTINE DTG 291724Z [redacted]

FROM COFS USAF WASH DC

TO CINCSAC OFFUTT AFBNEBR
COMDR ARDC PALTO MD
COMDR MATS ANDREWS AFB VA
COMDR ADC ENT AFB COLO
COMDR TAC LANGLEY AFB VA
COMDR FEAF FUCHU AB JAPAN
COMDR FEAF HICKAM AFB TH
COMDR AMC WPAFB OHIO

INFO COMDR AFSWC KIRTLAND AFB NMEX
CH AFSWP WASH DC
COMDR JTF-7 WASH DC
DMA/AEC WASH DC

CITE 55434

FROM AFOOP-OS-S. THE ATOMIC ENERGY COMMISSION AND THE DEPARTMENT OF DEFENSE ARE PLANNING FOR OPERATION HARDTACK, 1958 OVERSEAS WEAPONS TEST, SCHEDULED FOR THE ENIWETOK PROVING GROUND. THE TENATIVE STARTING DATE IS 1 MAY 1958. APPROXIMATELY 30 DEVICES WILL BE TESTED DURING OPERATION HARDTACK. THE UNITED STATES AIR FORCE WILL BE THE EXECUTIVE AGENT FOR THE TEST SERIES AND AIR FORCE PARTICIPATION WILL FOLLOW THE GENERAL PATTERN ESTABLISHED DURING PREVIOUS OVERSEAS NUCLEAR TESTS. ARDC WILL MAN, TRAIN, AND ORGANIZE AIR TASK GROUP 7.4. THE AIR TASK GROUP WILL CONSIST OF THREE UNITS, /1/ A TEST BASE UNIT PROVIDED BY ARDC, /2/ A TEST AIRCRAFT UNIT ORGANIZED BY ARDC BUT COMPOSED OF ELEMENTS PROVIDED BY MAJOR USAF COMMANDS AND DEPARTMENT OF DEFENSE AGENCIES OPERATING AIRCRAFT, AND /3/ A TEST SUPPORT UNIT PROVIDED BY MATS. THE MISSION AND FUNCTION OF TASK GROUP 7.4 AND SUBORDINATE UNITS WILL PARALLEL THOSE ASSIGNED FOR OPERATION REDWING. REFERENCE SHOULD BE MADE TO TASK GROUP 7.4 REDWING PLANNING DIRECTIVE, TASK GROUP 7.4 OPERATIONS ORDER 1-56, AND THE FINAL REPORT OF THE COMMANDER, TASK GROUP 7.4 FOR OPERATION REDWING. THIS MESSAGE CONSTITUTES AUTHORITY FOR INITIAL PLANNING FOR OPERATION HARDTACK BY CONCERNED USAF COMMANDS AND UNITS. DETAILED INSTRUCTIONS COVERING THIS OPERATION WILL BE FURNISHED ON OR ABOUT 1 JULY 1957.

AFWL/ HQ

[redacted] C-04-938

[redacted]

[redacted]

[redacted]

AFWL/HQ

250

[redacted]

Headquarters
4950TH TEST GROUP (NUCLEAR)
Air Force Special Weapons Center
United States Air Force
Kirtland Air Force Base, New Mexico

SWSO 26 June 1957

SUBJECT: Support Aircraft Required for HARDTACK Inter-Atoll (Eniwetok-Bikini) and Project Island Airlift

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

1. The requirement for HARDTACK support aircraft as outlined herein is based on the following assumptions:

a. That the frequency of flights required by JTF SEVEN and the Task Groups, between Eniwetok and Bikini, must be of primary consideration in determining aircraft support required.

b. That two (2) C-54 aircraft will be assigned to the 4951st Support Squadron (Test) and that all C-47's presently assigned to this Squadron will be withdrawn prior to or at the beginning of the operational period. (o/a 1 March 1958.)

c. That there will be no Documentary Photography Element participating in HARDTACK from which some airlift support would be available. If it develops that there will be a Documentary Photography Element of three (3) C-54's and the same support is received from them as during REDWING the number of aircraft shown in paragraph 2 below can be reduced by one (1) in each of the months shown. It must be pointed out that the Doc Photo aircraft provided all the airlift to Tarawa during REDWING. During HARDTACK there will be an additional site requiring support at Naru which is approximately 800 miles from Eniwetok.

d. That there will be an increase of all traffic of at least 25% over REDWING, based on a JTF SEVEN statement that the scope of HARDTACK would be greater than REDWING, and the addition of one weather island site (Naru).

e. That the operational period of HARDTACK will correspond to that of REDWING.

f. That support aircraft will be able to maintain an average flying hour rate of 65 flying hours per month per aircraft throughout the operational period. (S)

AFWL/HQ

[redacted]

Incl 14, p. 1

[redacted]

SWSO, 4950th TESTGUP(N), dtd 26 Jun 57, subj: SARFHI-A(E-B)&PIA(S)

2. Based on the above assumptions, the following number of aircraft, in addition to the two (2) C-54's, will be required during the operational phase of HARDTACK. (It must be pointed out that no allowance has been made for flights to support any VIP observer program. These flights would have to be provided from the excess Bikini-Eniwetok round trips available during the operational period. See attached detailed breakdown, Incl. #1, Note 3.) (S)

	March	April	May	June	July
Flying Hours	130	195	260	195	195
Aircraft (65 hrs/no/acft)	2	3	4	3	3

3. Since there will be two (2) C-54's assigned to the 4951st, it would be preferable from a supply and maintenance standpoint for the additional support aircraft to be C-54's. These aircraft would be manned and maintained by personnel of the Command furnishing the aircraft and attached to the 4951st. Aircraft should be operational ready in the Eniwetok Proving Ground as follows: two (2) aircraft on 1 March 1958; one (1) additional aircraft on 1 April 1958; one (1) additional aircraft on 15 April 1958; to be operational ready on above dates, aircraft should arrive at the Eniwetok Proving Ground 15 days prior to operational ready dates. Aircraft would be released by Commander, Task Group 7.4 as support aircraft requirements are decreased. (C)

4. If C-54's cannot be made available, it is preferred that the aircraft be furnished by a tactical unit as a complete support package on the same order that the helicopter support was furnished during REDWING, since this was so successful. C-123 aircraft are preferred. (U)

5. Request your Headquarters take necessary action to insure that the above airlift support is provided during Operation HARDTACK. (C)

4 Incls.
1-4 Charts

PAUL R. WIGNALL
Colonel, USAF
Commander

Cys Furnished
HEDARDC, ATTN: Maj McLeroy
HEDAFSWC, ATTN: SWOTZ

AFWL/HQ

[redacted]

Incl 14, p. 2

AFWL/HQ

[redacted]

HARDTACK Forecast
Airlift and Aircraft

		Feb	Mar	Apr	May	Jun	Jul
a. Forecast Traffic 25% increase over REDWING	Pax	1,093	1,900	2,693	3,147	2,162	1,340
	Cargo	62	107	190	190	105	82
b. Number Flights Required, at REDWING Rate, to Handle Increased Traffic		105	228	234	288	207	150
c. Number Flights Available, 4 C-54's at 65 hr/month/aircraft - 1:20 min per Flight. *2 C-54's in Feb.		97*	19[illegible]	195	195	195	195
d. Capability of 4 C-54's in Split-load configuration (20 seats on left side) 20 pax - 2.5 tons cargo per flight. **2 C-54's in Feb.	Pax	1,940**	3,900	3,900	3,900	3,900	3,900
	Cargo	242**	487	487	487	487	487
e. With Optimum Scheduling and Capability Above (d), Number of Flights Required is		54	95	134	157	108	67
f. Aircraft Required to Support This Number of Flights (e).		2	2	3	4	3	2
g. Number of aircraft required to accomplish Eniwetok-Bikini lift PLUS weather island support in event there are no Doc Photo C-54's. (See Note #4.)			4	5	6	5	4

AFWL/HQ

NOTES:

1. During February and March two (2) C-54's should provide a daily round trip schedule to Bikini plus additional round trips on Monday, Wednesday, and Friday and have eleven (11) round trips in reserve for emergency flights.

2. Three (3) aircraft during April should enable us to meet a scheduale of two (2) round trips daily and have thirteen (13) round trips in reserve for emergency.

3. Four (4) aircraft would make available three (3) round trips per day - plus.

4. The average monthly flying time devoted to Weather Island support by Doc Photo C-54's during REDWING was 76 hours. The minimum time required to support these plus NANU during HARDTACK will be 126 flying hours or equivalent to two (2) aircraft.

[redacted]

Incl 14, p 3

[redacted]

REDWING
COMBINED
C-47 and C-54 Airlift

	Feb	Mar	Apr	May	Jun	Jul
Hours Flown	125	275	280	347	247	178
Passengers Carried	875	1,520	2,155	2,518	1,730	1,072
Cargo (Tons)	48	86	147	149	83	67
Number Flights	84	184	188	232	166	120
Average Number Pax Per Flight	10.4	8.3	11.5	10.9	10.4	8.9
Average Pax Tons Per Flight	.9	.65	1.0	.95	.90	.75
Average Cargo Tons Per Flight	.57	.47	.78	.65	.50	.56
Average Tons Per Flight (Cargo & Pax)	1.47	1.12	1.78	1.60	1.40	1.31

AFWL/HQ

[redacted]

Incl 14, p. 4

[redacted]

REDWING

C-47 Airlift - Four Aircraft

	Feb	Mar	Apr	May	Jun	Jul
Hours Flown	125	260	264	320	236	173
Passengers Carried	875	1,500	2,050	2,310	1,690	1,050
Cargo (Tons)	48	78	126	141	79	66
Number Flights - 1:30 per flight	84	174	176	214	158	116
Average Pax per Flight	10.4	8.6	11.6	10.8	10.7	9.0
Pax Tons per Flight - 170 pounds per pax	.9	.7	1.0	.9	.9	.8
Cargo Tons Per Flight	.57	.45	.71	.65	.50	.57
Pax & Cargo Tons Per Flight	1.47	1.15	1.71	1.95	1.4	1.37
Potential Per Flight	2.5	2.5	2.5	2.5	2.5	2.5

[redacted]

Incl 14, p. 5

AFWL/HO

[redacted]

REDWING

C-54 Airlift (Doc Photo Aircraft)
(Eniwetok - Bikini)

	Feb	Mar	Apr	May	Jun	Jul
Hours Flown		15	16	27	11	5
Passengers Carried		20	105	208	40	22
Cargo (Tons)		8	21	8	4	1
Number Flights - 1:20 Per Flight		10	12	18	8	4
Average Pax Per Flight		2	9	11.6	5	5.5
Pax Tons Per Flight - 170 pounds per pax		.15	.75	1.0	.42	.44
Cargo Tons Per Flight		.8	1.8	.44	.5	.25
Pax & Cargo Tons Per Flight		.95	2.55	1.44	.92	.69
Potential Per Flight		5.00	5.00	5.00	5.00	5.00

Incl 14, 1, 2. 6

[redacted]

AFWL/HO

THIS DOCUMENT IS DIVIDED AMONG 2 FOLDERS,

LIKE THE ORIGINAL FILE COPY

[redacted]

J-3/
SUBJECT: Air Operations Center (AOC) on BIKINI Atoll

d. It is expected that sampling aircraft control can again be effected with airborne assistance from dual-control B-57-B's. While this does not eliminate all flying safety hazards of B-57-D'sampling operations, it is not considered that their critical operating characteristics are sufficient to justify a BIKINI land based AOC.

e. Evacuation of BIKINI will be required on at least 4 and perhaps 5 of the high yield BIKINI shots. Therefore afloat AOC operations would frequently be necessary even if an AOC were constructed on BIKINI.

3. The foregoing considerations are applicable only to Operation HARDTACK. Air task group planning should continue to include the study of air control requirements for subsequent overseas atomic test operations. It may be anticipated that the task force will again convene a construction conference in the Eniwetok Proving Ground during Operation HARDTACK, as was done during Operation REDWING. This conference will develop facility requirements for the period FY 59-62. If the shipboard AOC is then deemed substandard, your proposal should be reintroduced by CTG 7.4.

FOR THE COMMANDER:

PERRY R. GRIFFITH
Brigadier General, USAF
Chief of Staff

Copy furnished:
Commander, AFSWC

RG [redacted]

Location Technical Library / A-4
Collection AFWL
Folder Final History, Task Group 7.4 Operation Hardtack 1957 - 1958
NOTE: This is Folder 2 of 7 containing pages 288 thru 463

CLASSIFICATION CANCELLED **
BY AUTHORITY OF DOE/DOD *
Roy B. Woggel 5/6/85
REVIEWED BY DATE
* Flash (DNA) DOE ltr 4/17/85
** Pages 288 - 463 of the Final History, Task Group 7.4 Operation Hardtack

[redacted]

Incl 15, p. 2

288

[redacted]
HEADQUARTERS
JOINT TASK FORCE SEVEN
WASHINGTON 25, D. C.

J-3/ 30 July 1957

SUBJECT: Air Operations Center (AOC) on BIKINI Atoll

TO: Commander
4950th Test Group (Nuclear)
Kirtland Air Force Base, New Mexico

1. Reference is made to your letter of 14 June 1957, subject as above, with inclosed staff study.

2. Your proposal for a BIKINI shore based AOC cannot be supported by this headquarters for Operation HARDTACK. While recognizing that many advantages would accrue to the task force in having a shore based AOC, the following considerations have been made in reaching this conclusion:

a. Projected communication improvements in the ship CIC will:

(1) Insure UHF air-ground communications to the distance desired by TG 7.4.

(2) Provide the channel selection, equipment operation flexibility, and inter-position communications within the CIC desired by TG 7.4.

(3) Provide broad-band receivers to pick up aircraft which are not precisely on frequency.

AFWL/HQ

b. TAONGI will not be a firing site on Operation HARDTACK. Therefore, the air control area in the Eniwetok Proving Ground will not be increased over that of Operation REDWING.

c. Only three effects test aircraft are programmed for Operation HARDTACK. These are a B-52, an A4D and an FJ4. The B-52 will have an airborne positioning capability. It is doubtful that the two heavy aircraft will participate in BIKINI shots, though this requirement is now under study by the Bureau of Aeronautics. In any event the control of high performance aircraft at Bikini shot times will be far less complex than was our experience during REDWING.

[redacted]

Incl 15 p 1

288

[redacted]
Headquarters
4950TH TEST GROUP (NUCLEAR)
Air Force Special Weapons Center
United States Air Force
Kirtland Air Force Base, New Mexico

SWSM 10 July 1957

SUBJECT: Concept of Air Task Group Logistics Support, Operation HARDTACK (C)

TO: See Distribution

1. Reference is made to secret message, Headquarters, United States Air Force, cite 55434, dated 29 April 1957, announcing the beginning of the planning phase of Operation HARDTACK to be held in the Eniwetok Proving Grounds in 1958. (S)

2. For your information the staff of the 4950th Test Group (Nuclear) is performing like duties on the staff of Task Group 7.4. (U)

3. The attached document, Logistics Support for HARDTACK, is forwarded as aid in such preliminary planning as can be accomplished at this time. It is anticipated that the Task Group Logistics Plan will be published on/or about 1 August 1957. (C)

1 Incl:
a/s

PAUL R. WIGNALL
Colonel, USAF
Commander

DISTRIBUTION:
Comdr, JTF-7, Wash, D.C. (3)
Comdr, ARDC, Balto, Md. (2)
Comdr, MATS, Andrews AFB, Md. (4)
Comdr, AMC, MCSDCP, Mr. Douglass (3)
Wright-Patterson AFB, Ohio
Comdr, SAC, Offutt AFB, Nebraska (4)
Comdr, TAC, Langley AFB, Virginia (4)
Comdr, ADC, Ent AFB, Colorado (4)
Comdr, 4951st Spt Sq (T), APO 187, (3)
San Francisco, California
Comdr, 4925th Test Gp (A), ATTN: (3)
Maj F. N. Pool, Kirtland AFB, NMex
Comdr, FC, AFSWP, ATTN: WET, (2)
Mercury, Nevada
Comdr, Task Group 7.1, Los Alamos, (2)
New Mexico
Comdr, USA, Task Group 7.2, APO 187, (3)
San Francisco, California
Comdr, Task Group 7.5, P.O. Box 5400, (3)
Albuquerque, New Mexico
Comdr, 4926th Test Sq (S), Kirtland AFB, (4)
New Mexico

AFWL/HQ

[redacted] Incl 16, p. 1

AFWL/HQ

[redacted]

SWSM Hq 4950th TG (N), 10 Jul 57, Subj: Concept of Air Task Group Logistics Support, Operation HARDTACK (C)

Comdr, AFSWC, ATTN: SWM, Kirtland AFB, New Mexico (3)
Comdr, NASWF, Kirtland AFB, NMex (2)
Comdr, SMAMA, ATTN: SMSIL, Maj Brush (3)
McClellan AFB, California
Chief, AFSWP, Washington, D.C. (3)
Comdr, FEAF, APO 925, San Francisco, (3)
California
Comdr, WADC, ATTN: WCO, Lt Col R.W. Yundt, (3)
Wright-Patterson AFB, Ohio
Comdr, AFCRC, L.G. Hanscom Field, Mass. (3)
Comdr, 4900th Air Base Group, Kirtland AFB, (2)
New Mexico

AFWL/HQ

[redacted]

Incl 16, p. 2

[redacted]

LOGISTICS SUPPORT FOR HARDTACK (C)

The following is based on the present HARDTACK concept and experience gained on REDWING, and is intended for use as a preliminary planning document. (C)

1. GENERAL RESPONSIBILITIES: (C)

a. Prior to arrival in the overseas operating area (Eniwetok Proving Grounds), all units assigned or scheduled for assignment to Task Group 7.4 will receive logistical support from those ZI and overseas agencies normally responsible therefor. This support will include requirements that are incident to the organization, manning, equipping, and training of all units concerned. (U)

b. Upon arrival in the overseas operating area, all units of Task Group 7.4 based on Eniwetok and Bikini Atolls will receive general logistical support from Task Group 7.4 and the Test Base Unit (4951st Support Squadron (Test). (C)

c. The Commander, Army Task Group 7.2 will furnish housekeeping supply support to all units of Task Group 7.4 housed and operating on Eniwetok Island. This support will include billeting, messing, commissary, laundry, salvage, general purpose vehicles, bus transportation, clothing and equipment repair, billeting supplies, PX and sales stores. (C)

2. SUPPLY: (C)

a. Units of Task Group 7.4 will receive supplies in accordance with procedures outlined in Air Force Manual 67-1, pertinent USAF directives, and directives issued by Headquarters, Task Force-SEVEN and Task Group 7.4. Detailed information concerning the methods of supply, and accounting procedures will be published by Headquarters, Task Group 7.4 at a later date. (C)

b. Each unit will furnish to the maximum extent possible supplies and equipment needed in the overseas operating area. (U)

c. Each unit, with the exception of the Test Base Unit, will prepare lists of supplies and equipment needed in the overseas operating area, and submit same, on call, to the Director of Materiel, Headquarters, 4950th Test Group (Nuclear) (Task Group 7.4). These lists of supplies and equipment will be divided into two (2) categories: Kit "A", those items which will be transported to the overseas operating area in unit aircraft and/or shipped as TAT (to accompany troops); and Kit "B", those items to be prepositioned in the overseas operating area. (C)

(1) Kit "A" will include those items which are peculiar to the unit aircraft, and must include those items which are required for enroute support. Maximum use must be made of those items which are on hand at the unit's home station. (C)

AFWL/HQ

[redacted]

Incl 16, p. 3

AFWL/HQ

(2) Kit "B" will include those items to be prepositioned in the overseas operating area, such as aircraft spares, aircraft engines, wheels and tires, and special ground-handling and maintenance equipment. (C)

(3) Supply Levels:

(a) It is anticipated that equipment and spare parts for at least 120 days will be required to support HARDTACK. (S)

(b) The initial preparation of project kits will be based on a 120 day level of supplies and equipment. (S)

d. The Director of Materiel, 4950th Test Group (N)(TG 7.4) will review and screen requirements lists against reported stocks in the hands of the Test Base Unit, and earmark such items as are on hand by notifying AFB 2872 (Base Supply-Test Base Unit). Project "A" Kits will be returned to the submitting unit for requisitioning action and preparation for shipment. Project Kit "B" will be forwarded to the Task Group 7.4 Logistics Liaison Officer, Headquarters, Sacramento Air Materiel Area (SMAMA), McClellan Air Force Base, California, who will initiate supply action for direct shipment to the overseas operating area. (C)

e. Resupply within the overseas operating area will be through the Test Base Unit, AFB 2872 at Eniwetok. (U)

f. The Test Base Unit will requisition its requirements through normal supply channels. (U)

g. The Test Base Unit will submit to the Director of Materiel, 4950th Test Group (N)(T.G. 7.4), upon call, a stock status report indicating quantities of material on hand and available for issue to other units of Task Group 7.4. (U)

h. The Test Base Unit will receive and process through AFB 2872, Project Kit "B" items, and issue items to the appropriate unit of Task Group 7.4 as required. (U)

i. The Task Group 7.4 Logistics Liaision Office at SMAMA will be responsible for the control, expediting, and follow-up of supply requisitions, and the flow of Task Group supplies and equipment to the overseas operating area. (C)

3. MAINTENANCE:

AFWL/HQ

a. All units and elements of Task Group 7.4 will be capable of performing organizational and field maintenance of assigned aircraft in accordance with pertinent regulations and technical orders. (C)

b. The Test Base Unit will establish a field maintenance capability utilizing assigned personnel and base shops and equipment. The field maintenance activities will be augmented with personnel from all participating units, on a basis of the number hours of field maintenance support required. (C)

c. The Director of Materiel, 4950th Test Group (N) (T.G. 7.4) will establish a Maintenance Control Unit to exercise management control over the maintenance effort and to expedite the delivery of supplies and equipment. The Maintenance Control Unit will be organized and operate in accordance with procedures outlined in AFM 66-1. (C)

4. TRANSPORTATION:

a. Shipments to water and aerial ports of embarkation will be in accordance with existing directives and other directives to be published at a later date by Commander, Joint Task Force-SEVEN and 4950th Test Group (N) (T.G. 7.4). (C)

b. It is anticipated that the availability of airlift will be extremely limited. It is therefor mandatory that computation and submission of requirements lists be on a time scale that will permit the maximum use of surface lift. (C)

5. CONSTRUCTION: Commander, Joint Task Force-SEVEN is responsible for construction in the EPG. Recommendations for additional construction willbe submitted to the Commander, 4950th Test Group (N)(T.G. 7.4) for further submission to the Commander, Joint Task Force-SEVEN. (C)

6. LOGISTICAL REPORTS: Reports will be submitted as required by the Commander, 4950th Test Group (N)(T.G. 7.4). (U)

7. MISCELLANEOUS: AFWL/HQ

a. Aviation and ground POL will be available in the overseas operating area based on requirements submitted. (C)

b. Class "X" clothing; shorts, cotton, khaki and short sleeved shirts, has been requisitioned through Commander, Joint Task Force-SEVEN on a basis of four (4) sets per individual. Commander, Joint Task Force-SEVEN has advised that service shoes will not be available for issue. (C)

c. Upon receipt of instructions from Headquarters, Joint Task Force-SEVEN, and Headquarters, Air Materiel Command, Commander, Task Group 7.4 will issue roll-up plans and instructions to all units of Task Group 7.4. Each unit of Task Group 7.4 will furnish a pro-rata share of personnel to permit the timely and efficient disposal of all excesses on hand at the close of test operations. (C)

[redacted]
HEADQUARTERS
JOINT TASK FORCE SEVEN
Washington 25, D. C.

J-4/ 3 JUN 1957

SUBJECT: Tentative Vehicle Allocation for HARDTACK

TO: Commander, Task Group 7.1, P. O. Box 1663, Los Alamos, New Mexico
Commander, U.S. Army Task Group 7.2, APO 187, San Francisco, Calif.
Commander, Task Group 7.3, Naval Gun Factory, Washington 25, D. C.
Commander, 4950th Test Group (Nuclear), Kirtland AFB, New Mexico
Commander, Task Group 7.5, P. O. Box 5400, Albuquerque, New Mexico
Commander, AFOAT, Temporary Building "T", Washington 25, D. C.

1. Attached, as inclosure 1, is tentative vehicle allocation for HARDTACK.

2. Requisitions have been submitted to Department of Army by CJTF SEVEN to fulfill requirements.

3. It is planned that all vehicles will be shipped to arrive in the Eniwetok Proving Ground no earlier than 180 days and no later than 90 days prior to the start of HARDTACK.

FOR THE COMMANDER:

1 Incl:
Vehicle List

W. T. WILSON
Capt AGC
Asst Adj Gen

AFWL/HQ

[redacted]

Incl 17, p. 1

294

[redacted]

ARMY OWNED
TENTATIVE VEHICLE ALLOCATION

TYPE VEHICLE	HQ	TG 7.1	TG 7.2	TG 7.3	TG 7.4	TG 7.5	AFOAT-1	TOTAL
AMBULANCE			2				1	2
APPARATUS, DECONTAMINATION		4	2					6
BUGGYS			6					6
DUKCS			2			46		48
TRAILERS, ¼ TON, M-100		3						3
TRAILERS, WATER, 1½ TON		6						6
TRAILERS, LOW BED			2					2
TRUCKS, ¼ TON, (JEEPS)	11	145	50	3	49		1	259
TRUCKS, 3/4 TON (WEAPON CARRIERS)		70	2	2				74
TRUCKS, ½ TON, COMMERCIAL	1	53	19	2	54			129
TRUCKS, 1½ TON COMMERCIAL	1	4	7	1	8			21
TRUCKS, 2½ TON, CARGO		17	6	1	5			29
TRUCKS, 2½ TON, GAS			2					2
TRUCKS, 2½ TON, WATER			1					1
TRUCKS, DUMP			5					5
TRUCKS, TRACTOR, 5 TON		3	3					6
TRUCKS, WRECKER, 5 TON			1					1
TOTAL	13	305	110	9	116	46	1	600

AFWL/HO

[redacted]

Incl 17, p. 2

[redacted]
Headquarters
AIR FORCE SPECIAL WEAPONS CENTER
Air Research and Development Command
Kirtland Air Force Base, New Mexico

SWP 14 March 1957

SUBJECT: (S) Officer Personnel Requisitions for Operation "HARDTACK"

TO: Commander
Air Research and Development Command
Attention: RDSPMO
Post Office Box 1395
Baltimore 3, Maryland

1. Attached are AF Forms 390 listing total known officer personnel requirements for Operation "HARDTACK". At this time, it appears all these 28 UMD positions for the 4950th Test Group (Nuclear) and 4952nd Support Squadron must be filled from other than this Center's resources. Additionally, these requisitions should remain valid until filled, and will be added to the mechanized roster in accordance with current requisitioning procedures. Note that the AF Forms 390, broken out in Groups I, II, and III, are comprised of lines number 396 through 423, and we have added a suffix "HT", to denote "Hardtack Manning" and thus hope to preclude necessity of security classification of the mechanized requisitions. (S)

2. All officers selected to fill these requisitions must possess a minimum security clearance of Final Secret. Officers selected will be assigned duty station at Kirtland Air Force Base for a minimum period of 45 days prior to proceeding on TDY to test location. Period of TDY will probably extend to a maximum of 6 months. (U)

3. Note further that, at this time, unit manning precedence rating is unknown. Air Force Special Weapons Center precedence is VI; however, message your Headquarters, cite RDSTTW-7-35-E, AIRAD 848/56, dated 18 July 1956, established precedence rating of 1-B, II-3 for "Plumbbob" manning. It is requested that 100% manning be effected, and manning precedence added when known. (S)

4. For our planning purposes, and maximum effectiveness of mission accomplishment, it is deemed mandatory that officers be in place not later than reporting dates specified. (U)

AFWL/HQ

[redacted]

Incl 18, p 1

AFWL/HQ

[redacted]

SWP Subj: (S) Officer Personnel Requisitions for Operation "HARDTACK"

5. Informational copies of ARDC Form 6, M&L Roster, will be furnished your Headquarters, beginning 1 July 1957, reflecting status of manning for this operation. (U)

FOR THE COMMANDER:

Incl (5 cys)
a/s

O. J. MOSMAN
Colonel, USAF
DCS/Personnel

AFWL/HQ

[redacted]

Incl 18, p 2

[redacted]

OMITTED

OFFICER PERSONNEL REQUISITION

REPORTS CONTROL SYM.: RCS: 4-AF-P24

DATE: 14 March 1957

MONTH OF REQUIREMENTS: July 1957

TO: Commander
Air Research and Development Command
P.O. Box 1395, Baltimore 3, Md.

FROM: Commander
Air Force Special Weapons Center
Kirtland Air Force Base, New Mexico

ADDITIONAL DESIRABLE QUALIFICATIONS 16-19	GRADE 39	AFSC 40-44	OFFICER GROUP 45	ORGANIZATION NUMBER 46-49	ORGANIZATION KIND 50-52	ORGANIZATION TYPE 53-54	STATION NAME	STATION CODE 55-58	CONTROL NUMBER COMMAND 59-61	CONTROL NUMBER NO. 62	CONTROL NUMBER LINE NUMBER 63-66	DESIRABLE QUAL. 67-68	MANDATORY QUAL. 69-70	COMMAND USE 71
				4950th Test Group (Nuclear)				Rptg NLT						
	4	1435	I				Opns Off (repl for Capt Self)	1 May 57			396HT		C-2	
	4	1435	I				Opns Off (vacant)	1 Jun 57			397HT		C-2	
	4	1444	I				Flying Safety Off (vacant)	Sep 57			398HT		C-2	
	4	1525A	I				Acft Obsvr, Nv-Bmbdr (W/Opns O exper)	1 Jan 57			399HT		C-2	
	2	7024	II				Historical Off (vacant)	Aug 57			400HT		C-2	
	5	7316	II				Pers Staff Off (vacant) (AFSC 7016 acceptable)	ASAP			401HT		C-2	
	4	7716	II				Provost Marshal (vacant)	Oct 57			402HT		C-2	
	2	1644	III				Interceptor-Controller (vacant)	15 Feb 58			403HT		C-2	
	5	3016	III				Comm Elect Off (repl for Lt Col Fackenthall)	1 Jul 57			404HT		C-2	
	4	3016	III				Comm Elect Off (repl for Cpt Cunningham)	ASAP			405HT		C-2	

REMARKS:

AFWL/HQ

TYPED NAME AND GRADE OF AUTHORIZING OFFICIAL

SIGNATURE

Encl 15, p. 3

GPO 903586

OMITTED

OFFICER PERSONNEL REQUISITION

REPORTS CONTROL SYM: RCS: 4-AF-P24

TO: Commander
Air Research and Development Command
P.O. Box 1395, Baltimore 3, Md.

FROM: Commander
Air Force Special Weapons Center
Kirtland Air Force Base, New Mexico

DATE SUBMITTED: 14 March 1957

MONTH OF REQUIREMENTS: July 1957

ADDITIONAL DESIRABLE QUALIFICATIONS 16-19	GRADE 39	AFSC 40-44	OFFICER GROUP 45	ORGANIZATION NUMBER 46-49	ORGANIZATION KIND 50-52	ORGANIZATION TYPE 53-54	STATION NAME	STATION CODE 55-58	CONTROL NUMBER COMMAND 59-61	CONTROL NUMBER MO. 62	CONTROL NUMBER LINE NUMBER 63-66	DESIRABLE QUAL. 67-68	MANDATORY QUAL. 69-70	COMMAND USE 71
	5	6416	III				Supply Staff Off (vacant)	1 Jul 57			406HT		C-2	
	4	6416	III				Supply Staff Off (vacant)	1 Jul 57			407HT		C-2	
							4952nd Support Squadron							
	4	1044C	I				Pilot, transport (vacant)	1 Sep 57			408HT		C-2	
	3	1124P	I				Pilot, fighter (vacant)	1 Sep 57			409HT		C-2	
	2	1124P	I				Pilot, fighter (vacant)	1 Sep 57			410HT		C-2	
	2	1124P	I				Pilot, fighter (vacant)	1 Sep 57			411HT		C-2	
	2	1124P	I				Pilot, fighter (vacant)	1 Sep 57			412HT		C-2	
	2	1124p	I				Pilot, fighter (vacant)	1 Sep 57			413HT		C-2	
	2	1534P	I				Acft Obsvr, Navigator (vacant)	1 Sep 57			414HT		C-2	

REMARKS:

AFWL/HQ

TYPED NAME AND GRADE OF AUTHORIZING OFFICIAL

SIGNATURE

AF FORM 390 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

Encl 18, p. 4

GPO 903588

ORIGINAL

OFFICER PERSONNEL REQUISITION

REPORTS CONTROL SYM: RCSS 4-AF-P24

TO: Commander
Air Research and Development Command
P.O. Box 1395, Baltimore 3, Md.

FROM: Commander
Air Force Special Weapons Center
Kirtland Air Force Base, New Mexico

DATE SUBMITTED: 14 March 1957

MONTH OF REQUIREMENTS: July 1957

ADDITIONAL DESIRABLE QUALIFICATIONS 16-19	GRADE 39	AFSC 40-44	OFFICER GROUP 45	ORGANIZATION NUMBER 46-49	ORGANIZATION KIND 50-52	ORGANIZATION TYPE 53-54	STATION NAME	STATION CODE 55-58	CONTROL NUMBER COMMAND 59-61	CONTROL NUMBER MO. 62	CONTROL NUMBER LINE NUMBER 63-66	DESIRABLE QUAL. 67-68	MANDATORY QUAL. 69-70	COMMAND USE 71
	3	6884	II	Accountant			(vacant)	1 Sep 57			415HT		O-2	
	2	7724	II	Air Police Off			(vacant)	1 Jan 58			416HT		O-2	
	4	9356	II	Med Service Avn Med			(vacant)	1 Jan 58			417HT		O-2	
	3	3054	III	Air Electronics Off			(vacant)	1 Oct 57			418HT		O-2	
	4	4316	III	Acft Maint Staff Off			(Ch, MCU(vacant)	1 Oct 57			419HT		O-2	
	3	6424	III	Supply Off			(MCU) (vacant)	1 Oct 57			420HT		O-2	
	3	6424	III	Supply Off			(vacant)	1 Oct 57			421HT		O-2	
	2	6424	III	Supply Off			(vacant)	1 Oct 57			422HT		O-2	
	2	6424	III	Supply Off			(vacant)	1 Oct 57			423HT		O-2	

REMARKS:

AFWL/HO

TYPED NAME AND GRADE OF AUTHORIZING OFFICIAL

THOMAS W. WILLIAMSON, Major, USAF, Chief Pers Div, DCS/Pers

SIGNATURE

GPO 903588

AF FORM 390 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

Encl. 18, p. 4.

Headquarters
4950TH TEST GROUP (NUCLEAR)
Air Force Special Weapons Center
United States Air Force
Kirtland Air Force Base, New Mexico

SWSP 5 December 1956

SUBJECT: Personnel Requisitions

TO: Commander
Air Force Special Weapons Center
Kirtland Air Force Base
New Mexico

1. The 4951st Support Squadron (Test) at Eniwetok is currently encountering considerable difficulty in regards to projected gains of personnel as compared to projected losses.

2. The following numbers and types of personnel were requisitioned for assignment to 4951st in accordance with current directives; however, to date no orders assigning replacement personnel have been received nor has confirmation of requisition been made in any manner:

a. Reference letter Headquarters 4930th Support Group (Test), Subject: Warrant Officer and Airmen Requisition for Month of November 1956, dated 1 May 1956.

NUMBER	GRADE	AFSC
1	SSGT	30150C
1	A1C	55250
1	SSGT	56751
1	MSGT	59170*
1	MSGT	64174
1	TSGT	64175
1	MSGT	73170*

*Information was previously received from Headquarters ARDC to the effect that people possessing these AFSC's would report to Parks Air Force Base on or about 15 November 1956. As of 1 December they have yet to arrive at their destination. AFWL/HQ

b. Reference letter Headquarters 4930th Support Group (Test), Subject: Airman's Requisition for Month of December 1956, dated 2 June 1956.

NUMBER	GRADE	AFSC
1	SSGT	70250
5	A1C	70250

Incl 1 19 pp 1

c. Reference letter Headquarters 4930th Support Group (Test), Subject: Airmen Requisition for Month of January 1957, dated 2 July 1956.

NUMBER	GRADE	AFSC
1	SSGT	70250
1	A1C	70250

d. Reference letter Headquarters 4930th Support Group (Test), Subject: Airmen Requisition for Month of February 1957, dated 4 August 1956.

NUMBER	GRADE	AFSC
2	A2C	70230

3. The present difficulty appears to have been generated primarily by a failure to provide adequate information to the 4951st Support Squadron (Test) regarding replacement personnel. A great aid toward alleviation of this problem would be the establishement of a system whereby the gaining organization (4951st) has assurance that it receives copies of Special Orders assigning airmen against their requirements as stated in personnel requisitions. Such orders should be issued and forwarded far enough in advance of reporting date so as to insure that the 4951st this Headquarters can have a more accurate projection of their manning status at any time.

FOR THE COMMANDER:

LOUIS B CHRESTENSEN
Captain USAF
Director of Personnel

AFWL/HQ

Incl 19, p. 2

302

SWG 12 April 1957

SUBJECT: Personnel Manning of the 4951st Support Squadron (Test), Eniwetok, Marshall Islands

TO: Commander
Air Research and Development Command
ATTN: Director of Personnel
Post Office Box 1395
Baltimore 3, Maryland

1. The purpose of this letter is to explain the opinion that the present personnel manning system is inadequate to the peculiar needs of the 4951st Support Squadron (Test) at Eniwetok, and to request that you establish modifications to the system which will permit manning this unit more efficiently.

2. It is vitally important that carefully selected and well qualified replacement personnel for the 4951st are provided to the 4951st on schedule. It is a small unit many thousands of miles from its Headquarters. The manning has been cut to the bone. In function and, therefore, there is an absence of flexibility. There is no outside support available to take care of emergencies. The unit is at an extremely isolated location, and the most vital concern of each man there is the date of his return to the ZI. Any uncertainties which may exist with respect to availability of replacements on schedule so that men can leave on schedule are a source of low morale.

3. As of 1 April 1955 the 4951st (then the 4930th Test Group) was authorized 62 officers and 533 airmen. In April 1956 the authorizations were 55 officers and 498 airmen. The 4951st is now authorized 17 officers and 186 airmen as a permanent UMD. It is true that some reductions in functions took place along with these drastic cuts in manpower. It can readily be understood, however, that the manpower authorizations have steadily been reduced to the point where there is only one airman authorized for many of the key jobs that must be done. If the key airman is not in place for duty, then the job is not accomplished. As an example there is only one parachute rigger in the UMD. It he's not present, the parachutes don't get repacked.

AFWL/HQ

Incl 29, p. 1

3-3

SWG, Hq AFSWC, 12 April 1957, Subj: Personnel Manning of the 4951st Support Squadron (Test), Eniwetok, Marshall Islands

4. The present system of providing personnel replacements for the 4951st does not provide that unit with positive assurance that replacements will arrive on schedule. Requisitions are submitted five months in advance of when the replacements are required. These requisitions are processed through the Headquarters of the 4950th Test Group (Nuclear) and this Headquarters, both at Kirtland Air Force Base, then to your Headquarters where they are either acted upon by directive to one of the Centers of the ARDC, or they are passed on to Headquarters USAF. In either case the Headquarters which actually writes personnel movement orders on an individual who is to go to Eniwetok is supposed to send a copy of these orders to the 4951st. This is the only indication the 4951st gets with respect to action on their requisitions. It happens very frequently that these copies of orders are never sent to Eniwetok, and the arrival of an individual is the first notification the 4951st gets of his coming.

5. During a recent visit to Eniwetok by staff members of this headquarters, the following conditions were found to exist:

a. A shortage of 49 airmen. Of 183 authorized, 134 were assigned. Some of these shortages have existed since November 1956. Personnel requisitions were submitted on schedule for each airman position that is not now filled.

b. A shortage of one officer, the Base Accountable Supply Officer, who should be rotated 15 April 1957, with adequate replacement overlap. Personnel requisition was submitted on schedule for this officer position, however, at this writing there is no officer on orders as a replacement.

c. Losing organizations have not forwarded copies of assignment orders (AFM 30-3) far enough in advance for effective planning by the 4951st Support Squadron. Because of this, follow-up or tracer actions have always had to be after the fact, resulting in long periods of time during which personnel requirements are not met.

AFWL/HQ

d. As of 28 March 1957 the 4951st had assignment orders for 16 firefighters, all of whom would be overages to the UMD upon arrival. In an attempt to alleviate the situation, an electrical message was sent from the 4951st, cantaining 10 firefighters for the Bikini Detachment, the requisition for which was submitted 4 March 1957. At this writing, there are six firefighter overages because all of these individuals reported to the port 8 April 1957. It is believed that these overages were caused by a double requisition, resulting from a status request being treated as another requisition.

Incl 20, p. 2

204

SWG, Hq AFSWC, 12 April 1957, Subj: Personnel Manning of the 4951st Support Squadron (Test), Eniwetok, Marshall Islands

6. The Army unit at Eniwetok (Task Group 7.2) in manned directly out of Headquarters USA. The Commander of Task Group 7.2 receives a report from Headquarters USA that shows every officer that is scheduled for assignment to his organization for six months in the future. Whether they do this with enlisted men or not, we do not know. The fact that they do it with officers does provide the Commander, Task Group 7.2, and all of his officers with a great feeling of confidence and satisfaction that is lacking in our unit.

7. We believe that the main feature lacking in the present system for manning the 4951st is the absence of a means to check actions on personnel requisitions on a regular basis. We believe that this means should be engineered into the system and that there should be published at regular intervals (minimum 90 days - desirable 30 days) a report listing all of the individuals of the 4951st together with the return date of each. The report should include in the case of each individual who is to return to the ZI within the next 90 days from the date of the report plus the report interval, the name, serial number, AFSC, marital status, present duty assignment, address, and date of reporting to the port for transport to Eniwetok of the individual who is to replace him.

8. We have given consideration to the question of how the requirement described in paragraph 7 above could best be accomplished. Our first thought was that this is something that the AFSWC could do provided that our personnel resources here would permit us to man the unit directly from AFSWC resources. We have concluded that our resources will not permit this. We believe, however, that with perhaps a few exceptions, Headquarters ARDC does have the resources with which to man the 4951st.

9. It is immediately apparent that the presently specified six months lead time in the submission of requisitions is inadequate, especially if these requisitions must funnel through two Headquarters here at Kirtland before going forward to you or to Headquarters USAF for implementation. Either we must increase the lead time or cut out some of the channels.

10. One way in which the desired results might be achieved is for your Headquarters to take direct responsibility for manning the 4951st. Requisitions and Overseas Returnee Reports could be sent direct from Eniwetok to your Headquarters with only information copies to Kirtland. Your Headquarters could require reports of completed actions of assignments to and from 4951st and use these reports to prepare the consolidated report referred to in paragraph 7 above.

AFWL/HQ

SWG, Hq AFSWC, 12 April 1957, Subj: Personnel Manning of the 4951st Support Squadron (Test), Eniwetok, Marshall Islands.

It is realized that this system would place an additional burden on your Headquarters, but so far we have been unable to think of any other way to do the job efficiently. Incidentally, it appears to us that this proposal would be in line with USAF plans eventually to control all overseas manning on a centralized basis.

11. We would appreciate an opportunity to disucss this subject at staff level as soon as possible and hope that we can devise some arrangement which will permit more efficient manning of the 4951st. We are convinced that the present system must be modified to meet the unique situation at Eniwetok.

FOR THE COMMANDER:

WM. B. KIEFFER
Colonel, USAF
Deputy Commander

AFWL/HQ

4

Incl 20, p. 4

AFWL/HQ

30

BLtr fr SWG AFSWC, Kirtland AFB, N.M., 12 Apr 57, Subj: Personnel Manning of the 4951st Support Squadron (Test)

RDSP 1st Ind 16 May 1957

Hq, Air Research and Development Command, Post Office Box 1395 Baltimore 3, Maryland

TO: Commander, Air Force Special Weapons Center, Kirtland Air Force Base, New Mexico

1. A thorough review of the personnel situation at Eniwetok and of past procedures used for manning the 4951st indicates that most of the previous difficulty encountered was caused by inadequate control of personnel manning actions. The need for immediate action to establish rigid manning controls for this unit is apparent. All manning actions related to this unit consequently are now being monitored by this headquarters to insure that procedures are effective and that manning is timely and adequate. However, it is not intended that the direct responsibility for manning the 4951st be changed. This is, and should continue to be, the responsibility of Air Force Special Weapons Center.

2. It is recommended that immediate action be taken to designate one AFSWC activity as responsible for manning the 4951st. This activity should be responsible for insuring that the records relating to the manning of the 4951st are maintained on a current and up-to-date basis at all times and should be the only one authorized to submit officer and airman requisitions to this headquarters.

3. To relieve the morale problem stemming from uncertainty with respect to the availability of replacements, this headquarters will insure that the unit designated receives 90 days advance notification of arrival of replacements, identifying each with the specific position for which intended. In addition, major Zone of Interior commands will be advised by Headquarters USAF to comply with so much of AFM 30-3 as requires distribution of orders from losing organizations in advance of arrival of replacements.

4. This headquarters has established a Kardex system which reflects the 4951st UMD authorized positions, the names of individuals assigned to these positions, DEROS, names and dates of arrival of scheduled replacements, and other information necessary to insure that overages and shortages do not develop. This system will remain in effect at this headquarters until such time as manning controls at all echelons have proven effective.

AFWL/HQ

5 Incl 2, pp 1

3[illegible]

BLtr fr SWG AFSWC, Kirtland AFB, N.M., Subj: Personnel Manning of the 4951st Support Squadron (Test), 12 Apr 57.

5. Through effective manning controls and improved personnel operating procedures, it is believed that the difficulty previously encountered in manning this unit can be overcome.

6. Request this headquarters be advised of the AFSWC activity delegated the responsibility for manning the 4951st. It is suggested the responsible unit be authorized direct communication with this headquarters on all matters relative to the manning of the 4951st.

BY ORDER OF THE COMMANDER:

ARNOLD L. SMITH
Colonel, USAF
Director of Personnel

AFWL/HQ

6

Incl 2, p. 2

AFWL/HQ

309

[redacted]

SWB, Hq 4950th Test Group (N), 21 May 1957 Subj: Use of Military Police in Lieu of Air Police on Eniwetok During Operational Periods

SWO — 1st Ind

Headquarters, Air Force Special Weapons Center, Kirtland Air Force Base, New Mexico JUN 3 1957

TO: Commander, 4950th Test Group (Nuclear), Kirtland Air Force Base, New Mexico

This headquarters agrees that the use of Air Police on Eniwetok during operational periods is desirable.

BY ORDER OF THE COMMANDER

1 Incl:
As stated, dtd
15 May 57

A. W. CARNEY
Colonel, USAF
DCS/Operations

AFWL/HQ

[redacted]

Incl 22, p.1

309

[redacted]

Headquarters
4950TH TEST GROUP (NUCLEAR)
Air Force Special Weapons Center
United States Air Force
Kirtland Air Force Base, New Mexico

SWS 21 May 1957

SUBJECT: Use of Military Police in Lieu of Air Police on Eniwetok During Operational Periods

TO: Commander
Air Force Special Weapons Center
ATTN: SWGC
Kirtland Air Force Base, New Mexico

1. A study has been made on the above subject (copy attached) and decision has been reached to maintain presently authorized Air Police manning during operational periods at Eniwetok. (C)

2. To help with the extremely important morale problem, (reference paragraph 4b, inclosure #1) this Headquarters will request of Joint Task Force Seven authorization to direct participating Air Force commands to provide approximately eight (8) Air Police to conduct joint patrol of the various recreational areas. (C)

1 Incl:
As stated, dtd
15 May 57

A. G. THOMPSON
Colonel, USAF
Deputy Commander

AFWL/HQ

[redacted] Incl 22, p. 2

310

[redacted]

Headquarters
4950TH TEST GROUP (NUCLEAR)
Air Force Special Weapons Center
United States Air Force
Kirtland Air Force Base, New Mexico

SWSV 15 May 1957

Memorandum for Commander, 4950th Test Group (N)

SUBJECT: Use of Military Police in Lieu of Air Police on Eniwetok During Operational Periods (U)

1. PROBLEM: To determine the feasibility of using Military Police in Lieu of Air Police at Eniwetok during operational periods. (C)

2. FACTS BEARING ON THE PROBLEM:

a. Basic functions of the Air Police are similar to those of the Army Military Police, however some Air Police functions at Eniwetok would be peculiar to normal police functions and would require some special training of Military Police. (See Appendix "A")

b. The Test Base Unit security section, with support of the Air Police, is responsible for functions which could not feasibly be accomplished by the Army Military Police. (See Appendix "B")

c. Morale can be a big problem on Eniwetok, especially during an operational test period. (See Appendix "C") (C)

3. CONCLUSIONS:

a. Complete or partial absorption of Air Police functions by Army Military Police could be realized, however:

AFWL/HQ

(1) Complete absorption would require extensive special training which would be of only a one-time value to the Military Police personnel. In addition, it is not felt that the Army will readily accept the concept of assuming the difficult functions peculiar to the Air Police,

AFWL/HQ

[redacted] Incl 22, p 3

31

SWSV, Hq 4950th Test Group (N), subj: Use of Military Police in Lieu of Air Police on Eniwetok During Operational Periods (U)

nor is it felt that the Test Base Unit Commander would want these functions performed by another service.

(2) Partial absorption would require a minimum of special training.

(3) In either case, the over-all police manning requirements would not be reduced. As a matter of fact, the additional training required could increase the over-all police manning.

(4) The Test Base Unit Commander must have close, tight operational control of sufficient police to perform the complete Air Force Security Mission. This control would require the smoothest of coordination and liaison between services at command level.

(5) A morale problem could development between services as is discussed in appendix "C". (C)

4. RECOMMENDATIONS:

a. That the Air Police unit be retained under the Test Base Unit Security Section to support the Air Force mission during the build-up, operational and roll-up phases of the overseas operational test periods.

b. That, whenever feasible, Military Police and Air Police conduct joint patrols in the vicinity of the NCO Club, Duffy's Tavern, Swimmers Tavern and such other recreational areas where numerous personnel from both services frequent.

AFWL/HQ

c. That other normal island police functions remain as they were during the previous overseas tests, Operation REDWING. (C)

RICHARD S. KILLINGSWORTH
S/Sgt., USAF
MCOIC, Security

Incl 22, p. 4

312

[redacted]

Appendix "A" to Memo, subj: Use of Military Police in Lieu of Air Police on Eniwetok During Operational Periods (U)

1. Reference paragraph 2a, basic memorandum. (U)

2. Listed below are those police functions which could be accomplished by the Military Police. However, some of those functions are peculiar to normal police functions and would require special training for the Military Police.

a. Provide 24 hour guard for the Drop Aircraft. (Four men required from 1 to 5 days, 24 hours daily, depending on circumstances.)

b. Provide guards for the Decontamination Pad for each shot. (Three to four guards required from H-hour to H plus 40 hours or until relieved by proper authority.)

c. Provide guards for the Sample Recovery area for each sampling mission. (Two to three guards required from H-1 to H plus 7 hours, or until relieved by proper authority.)

d. Provide guards for crashed test and support aircraft. (Four men for 2 to 6 hours for test aircraft. Twenty-four hour guard is required for support aircraft until classified equipment is removed or guard is relieved by proper authority.) (24 hour guard for an eleven day period was required for crashed C-124 during previous overseas test)

e. Provide guards for sensitive test material being off-loaded at Eniwetok until it is accepted and signed for by the Atomic Energy Commission. (Two men required, usually 1 to not more than 3 hours)

f. Provide necessary patrols to assure adequate security of the airfield perimeter. (Due to large number of personnel, vehicles and aircraft involved, very close control must be maintained over speeders, reckless drivers, etc. One to two men performing periodic checks, 24 hours daily is required.)

g. Provide guards for sample return aircraft until the aircraft departs from Eniwetok. (One to two men for 1 to 4 hours)

h. Provide for control and storage of weapons and camera equipment as is required. (Some visitors and transit personnel who have such items on board the aircraft are required to check these items of contraband with the security agency concerned.)

AFWL/HQ

i. Provide stand-by guards for all emergency (MAYDAY) landings on Eniwetok. (Two men required for 45 minutes to 1 hour. There were a total of 58 MAYDAY landings in May and June 1956)

j. Maintain close coordination with the Task Group 7.4 Security Officer on all matters affecting security of Task Group 7.4 units. (Ie. Air Force provides spotter aircraft for unidentified surface vessels, submarines, aircraft in support of Task Group 7.2, who has the island security responsibility. Task Group 7.2 makes Task Group 7.4 personnel cognizant of normal island police procedures such as: The number of personnel who can ride in a jeep, swimming areas, reef dangers, etc.

These functions are normally controlled by both Military and Air Police. (C)

[redacted]

Incl 22, p.5

[redacted]

Appendix "B" to Memo subj: Use of Military Police in Lieu of Air Police on Eniwetok During Operational Periods (U)

1. Reference is made to paragraph 2b, basic memorandum. (U)

2. The following Air Police and Test Base Unit Security activities are those which could not be feasibly accomplished by the Military Police. These are combined Air Police and TBU Security functions which are peculiar to Air Force operations on Eniwetok.

a. Provide for security of the Drop Aircraft. Although Military Police could be utilized as Drop Aircraft guards, (ref par 2a, App "A"), Air Police would be more desirous. Very tight access control and strict compliance with checklists and time schedules which are established by the Headquarters Task Group 7.4 staff and Atomic Energy Commission are required. It is felt that Air Police, being familiar with aircraft guard duty, would result in correcting a dangerous situation before it got out of hand.

b. Establish and operate a badge office for all Task Group 7.4 units. This job requires very close liaison with the AEC badge office located on Parry Island and all Task Group 7.4 units concerned. Throughout Operation REDWING there were approximately 1800 permanent badges issued by the TBU and AP section for access to AEC Restricted and Exclusion areas. In addition, over 1000 temporary permits were issued for such access to visitors, observers and those personnel who did not require a permanent badge. This project required the use of one man continuously. Also, one man from Headquarters Task Group 7.4 Security worked with the Air Police on badging when the workload was heavy.

c. Provide an Air Police investigator to investigate all incidents in which Air Force personnel are involved. This covers mostly minor thefts, preliminary security violations, vehicle accidents, etc. The OSI in conjunction with the Security Officer, Task Group 7.4 and JTF SEVEN Counter-Intelligence Corps conducts the majority of other investigations.

d. Provide investigative assistance for the OSI Agent working out of Headquarters Task Group 7.4 Security Office. This takes in major thefts, UCMJ Article 125 cases, racial problems, alleged sabotage, security violations which may involve compromise and other type investigations which warrant OSI investigation.

AFWL/HQ

e. Process and maintain follow-up action on all reports of offense and incidents committed by Air Force personnel.

f. Process security clearances on all Task Group 7.4 personnel who arrive on Eniwetok without the prescribed clearance. (There were 53 processed in March and April 1956)

g. Establish and maintain a record of security clearance on all personnel of Task Group 7.4 and its units. (Approximately 2300)

[redacted] Incl 22, p. 6

[redacted]

Appendix "B" to Memo, subj: Use of Military Police in Lieu of Air Police on Eniwetok During Operational Periods (U)

h. Certify, through JTF SEVEN, to the Atomic Energy Commission, all Task Group 7.4 personnel who require access to AEC Restricted Data information. Maintain these records and terminate these certifications upon completion of the operation.

i. Conduct indoctrination lectures and testing in accordance with JTF SEVEN Security Regulations. Conduct termination lectures and require all Air Force personnel to accomplish security departure statements prior to leaving Eniwetok.

j. Establish, maintain and operate a Photographic Laboratory for all Task Group 7.4 units which have a photographic mission with the operation.

k. Maintain liaison and coordination with the Atoll Provost Marshal on all physical security problems affecting the Air Force. (C)

3. It should be noted that the Air Police maintain a dual capability of both Air Police and administrative functions while on Eniwetok. Between investigations, the AP Investigator may perform routine administrative duties as well as Air Police guard duty. Between patrols, an Air Policeman may be utilized for clerk duties. The NCOIC (Desk Sergeant) performs administrative duties which would normally be handled by an Administrative Supervisor. In summary, the Air Police provide the majority of their own administrative support through full utilization of their own resources. (C)

AFWL/HQ

[redacted]

[redacted]

Appendix "C" to Memo, Subj: Use of Military Police in Lieu of Air Police on Eniwetok During Operational Periods (U)

1. Reference paragraph 2c, basic memorandum. (U)

2. Morale, especially during an operational period, is a major problem on Eniwetok. History of the previous operation shows that there were a total of 4,180 personnel on Eniwetok at one time. Of these personnel, 2300 were Air Force, 1500 were Army, 320 were Holmes and Narver and 60 were Navy. In addition there were as many as 200 Navy personnel on Liberty at Eniwetok for recreational purposes. (C)

3. Although there is no reasonable explanation the fact remains that men of one service seem to resent being detained, arrested or in any way disciplined by other than their own police force. (U)

4. It is probable that dissension will arise between service members of the Army and Air Force if the Army is required to provide police functions for the Air Force. Several such cases during previous operations at Eniwetok and personal interview with two former Commanders of the 4951st Support Squadron (Test) fully substantiate this viewpoint. (C)

5. By retaining Air Police in support of Air Force and the present method of the Military Police supporting Army Police requirements and the Navy who are on liberty at Eniwetok providing their own shore patrol, it is felt that men of all services alike would rest assured of a fair shake. This policy of using the police of the service concerned to control their own men worked out very satisfactorily during the previous 1956 Test Series, Operation REDWING. (C)

AFWL/HQ

[redacted]

Headquarters
AIR RESEARCH AND DEVELOPMENT COMMAND
United States Air Force
Post Office Box 1 95
Baltimore 3, Maryland

GENERAL ORDERS)
NUMBER 51)

25 September 1957

SECTION

AMENDMENTS I
ANNOUNCEMENT OF DISCONTINUANCE OF PROVISIONAL UNIT II
DESIGNATION, ORGANIZATION AND ASSIGNMENT OF PROVISIONAL UNITS. . . III
ATTACHMENT OF PROVISIONAL UNITS. IV
GENERAL. V

I. AMENDMENTS.

1. So much of paragraph 1, General Orders Number 48, this Headquarters, this station, current series, pertaining to the award of the Commendation Ribbon to FIRST LIEUTENANT MORTIMER A. SULLIVAN, JR., A03075753, as reads, "FIRST LIEUTENANT MORTIMER A. SULLIVAN, A03075753," is amended to read, "FIRST LIEUTENANT MORTIMER A. SULLIVAN, JR., A03075753."

2. So much of Section I, paragraph 1, General Orders Number 49, this Headquarters, this station, current series, pertaining to the "Announcement of Redesignation of the Air Defense Engineering Services Office," as reads, "an element of the 6590th Special Activities Squadron, to the Continental Aircraft Control and Warning Project," is amended to read, "an element of the 6590th Special Activities Squadron, to the Continental Aircraft Control and Warning Project Office." So much of Section I, paragraph 2, as reads, "Deputy Command/Weapons Systems," is amended to read, "Deputy Commander/Weapon System."

II. ANNOUNCEMENT OF DISCONTINUANCE OF PROVISIONAL UNIT.

1. Headquarters, Task Group 7.4 (Provisional (Castle) is discontinued at Kirtland Air Force Base, New Mexico, effective 30 September 1957.

III. DESIGNATION, ORGANIZATION AND ASSIGNMENT OF PROVISIONAL UNITS.

1. Effective 1 October 1957, the following units are designated and organized at the stations indicated:

AFWL/HQ

DESIGNATION	ASSIGNMENT	LOCATION
Headquarters, Task Group 7.4, Provisional	Joint Task Force Seven	Kirtland Air Force Base, New Mexico
Test Aircraft Unit, Provisional	Test Group 7.4, Provisional	Kirtland Air Force Base, New Mexico
Test Base Unit, Provisional	Test Group 7.4, Provisional	Eniwetok, Marshall Islands
Cloud Sampling Element, Provisional	Test Aircraft Unit, Provisional	Kirtland Air Force Base, New Mexico

INCLOSURE 23 PAGE 1
31

DESIGNATION	ASSIGNMENT	LOCATION
UHA, VHA Aircraft Element, Provisional	Test Aircraft Unit, Provisional	Kirtland Air Force Base, New Mexico
Air Force Effects Element, Provisional	Test Aircraft Unit, Provisional	Wright-Patterson Air Force Base, Ohio
Ionosphere Element, Provisional	Test Aircraft Unit,	Laurence G. Hanscom Field, Bedford, Massachusetts
Support Element, Provisional	Test Base Unit, Provisional	Eniwetok, Marshall Islands

2. The mission of Task Group 7.4, Provisional is to provide, operate, control and support all necessary Air Force participation for Joint Task Force Seven engaged in testing at the Eniwetok Proving Ground.

3. The mission of the Test Aircraft Unit, Provisional and its elements is to provide, maintain and operate aircraft for Task Group 7.4, Provisional in connection with activities of Joint Task Force Seven.

4. The mission of the Test Base Unit, Provisional and its elements is to provide necessary support to Air Force elements of Task Group 7.4, Provisional engaged in testing at the Eniwetok Proving Ground.

IV. ATTACHMENT OF PROVISIONAL UNITS.

1. Effective 1 October 1957, Headquarters, Task Group 7.4, Provisional is attached to Air Force Special Weapons Center for administration, logistic support and operational control while on location at Kirtland Air Force Base, New Mexico. Operational planning for Task Group 7.4, Provisional will be accomplished by Joint Task Force Seven.

2. Effective 1 October 1957, the Air Force Effects Element, Provisional is attached to Wright Air Development Center for administration and logistic support.

3. Effective 1 October 1957, the Ionosphere Element, Provisional is attached to Air Force Cambridge Research Center for administration and logistic support.

4. Upon arrival at Eniwetok, Marshall Islands in accordance with competent movement orders, each of the units indicated in this section are relieved from their attachment.

AFWL/HQ

V. GENERAL.

1. Authority: Air Force Regulation 20-27, 15 September 1955.

FOR THE COMMANDER:

AFWL-TAR

INCLOSURE 23, PAGE 2

319

J. W. SESSUMS, JR.
Major General, USAF
Vice Commander

W. J. ATKINS
Colonel, USAF
Adjutant

DISTRIBUTION:

RDSPMP (12)
Comdr, 6590th Sp Act Sq, P) Box 1395 (25)
Comdr, Continental Aircraft Control and Warning Project Office, NY,NY (5)
Dir of Systems Management, Deputy Commander/Weapon Systems (RDZ) (25)

RDGP	(1)	RDC	(4)	RDTDD	(1)	WADC	(47)	AFAC	(15)
RDGE	(1)	RDD	(1)	RDT	(3)	AFMTC	(8)	AFOSR	(1)
RDGN	(2)	RDB	(24)	RDTA	(1)	AFPTRC	(5)	AFBMD	(1)
RDAPP	(1)	RDS	(2)	RDTH	(1)	AFFTC	(20)	RDZ-1	(25)
RDAC	(3)	RDSI	(1)	RDTE	(4)	RADC	(23)		
RDAR	(1)	RDSK	(1)	RDTR	(2)	AFCRC	(20)		
RDASO	(2)	RDSM	(3)	RDZ	(3)	HADC	(15)		
RDASP	(2)	RDSO	(10)	RDW	(1)	AFSWC	(35)		
RDE	(1)	RDSP	(5)	RDBPC	(1)	AEDC	(6)		
RDEH	(1)	RDSTB	(2)	RDCSPP	(1)				
RDIEL	(2)	RDST	(1)						
RDJA	(1)	RDCSP	(4)						

Attn: Mrs. Sullivan
Adj, Cooke AFB, Lompoc, Calif - Attn: Maj Sleeper (1)
Air Adj Gen, Hq USAF (1)
6570th Test Sq (Chem & Ord), Aberdeen, Md (5)

AFWL/HQ

INCLOSURE 23, PAGE 3

Headquarters
AIR RESEARCH AND DEVELOPMENT COMMAND
United States Air Force
Post Office Box 1395
Baltimore 3, Maryland

GENERAL ORDERS)
NUMBER 52)

2 October 1957

SECTION

AMENDMENTS. I

I. AMENDMENTS.

1. So much of paragraph 1, General Orders Number 48, this Headquarters, this station, current series, pertaining to the award of the Commendation Ribbon to MAJOR ERNEST C. MILLER, A0649681, as reads, "the Commendation Ribbon, First Oak Leaf Cluster (as indicated), for meritorious service rendered during the periods stated," is amended to read, "the Commendation Ribbon, First Oak Leaf Cluster (as indicated), for meritorious achievement rendered during the periods stated."

2. So much of paragraph 1, General Orders Number 12, this Headquarters, this station, current series, pertaining to the award of the Commendation Ribbon to MASTER SERGEANT LESLIE G. KNOX, AF16038540, as reads, "the Commendation Ribbon for meritorious service rendered during the periods indicated," is amended to read, "the Commendation Ribbon, First Oak Leaf Cluster, for meritorious service rendered during the periods indicated."

3. So much of paragraph 1, Section II, General Orders Number 51, this Headquarters, this station, current series, pertaining to the Announcement of Discontinuance of Provisional Unit, as reads, "Headquarters, Task Group 7.4 (Provisional (Castle)," is amended to read, "Headquarters, Task Group 7.4 Provisional (Castle)." Further, so much of paragraph 1, Section III, pertaining to the Designation, Organization and Assignment of Provisional Units, as reads, "Test Aircraft Unit, Provisional - Test Group 7.4, Provisional - Kirtland Air Force Base, New Mexico and Test Base Unit, Provisional - Test Group 7.4, Provisional - Eniwetok, Marshall Islands," is amended to read, "Test Aircraft Unit, Provisional - Task Group 7.4, Provisional - Kirtland Air Force Base, New Mexico and Test Base Unit, Provisional - Task Group 7.4, Provisional - Eniwetok, Marshall Islands.

FOR THE COMMANDER

J. W. SESSUMS, JR.
Major General, USAF
Vice Commander

AFWL/HQ

W. J. ATKINS
Colonel, USAF
Adjutant

INCLOSURE 23, PAGE 4

DISTRIBUTION:

RDASO	(2)	AFMTC	(8)	AFCRC	(20)	AFAC	(15)	RDGP	(1)	RDAC	(3)
RDASP	(2)	AFPTRC	(5)	HADC	(15)	AFOSR	(1)	RDGE	(1)	RDAR	(1)
RDSPMP	(24)	AFFTC	(20)	AFSWC	(37)	AFBMD	(1)	RDGN	(2)	RDE	(1)

DISTRIBUTION:

WADC (47)
RADC (23)
AEDC (6)
RDZ-1 (25)
RDAPP (1)
RDEH (1)
RDIEL (2)
RDJA (1)
RDC (4)
RDD (1)
RDB (24)
RDS (2)
RDSI (1)
RDSK (1)
RDSM (3)
RDSO (10)
RDSP (5)
RDSTB (2)
RDST (1)
RDCSP (4)
RDT (3)
RDTDD (1)
RDTA (1)
RDTH (1)
RDTE (4)
RDTR (2)
RDZ (3)
RDW (1)
RDBPC (1)
RDCSPP (1)
Adj, Cooke AFB, Lompoc, Calif Attn: Maj Sleeper (1)
AAG (1)
6570th Test Sq (Chem & Ord), Aberdeen, Md (8)

AFWL/HQ

HEADQUARTERS
MILITARY AIR TRANSPORT SERVICE
UNITED STATES AIR FORCE
WASHINGTON 25, D. C.

GENERAL ORDERS)
NUMBER 103)

3 October 1957

DESIGNATION AND ORGANIZATION OF HEADQUARTERS, TEST SERVICE UNIT, PROVISIONAL

1. The Headquarters, Test Service Unit, Provisional, Military Air Transport Service is designated and organized at Andrews Air Force Base, Maryland, at an authorized strength of six (6) officers and eleven (11) airmen, effective 7 October 1957.

2. Personnel will be attached for duty to this unit from organizations within Military Air Transport Service to which they are permanently assigned.

3. Equipment and supplies required for this unit in addition to that available within this command will be requisitioned through Headquarters, Task Group 7.4.

4. This unit is attached to Task Group 7.4 for operational control planning, and coordination during period prior to movement to forward area.

5. Direct communication with Headquarters, Task Group 7.4 is authorized.

6. Action directed herein will be reported by means of the Air Force Organization Status Change Report (RCS-AF-01).

7. AUTHORITY: AFR 20-27, 15 September 1955.

FOR THE COMMANDER:

FREDERIC E GLANTZBERG
Major General, USAF
Chief of Staff

H. P. BONNEWITZ
Colonel, USAF
Command Adjutant

AFWL/HQ

AFWL/HO

INCLOSURE 24, PAGE

322

DISTRIBUTION:
X Plus
Hq USAF AAG ATTN: Pub Div (30)
Hq USAF, DCS/O, M&O (3)
Hq USAF, DCS/C (5)
COMCNTLD, M&O (2)
Comdr JTF-7 (2)
Hq, TG 7.4, Kirtland AFB (3)
COMPACD (2)
COMAACS (2)
COMAPCS (2)
COMAWS (2)
Comdr Test Service Unit, Prov, Andrews AFB (5)
Comdr 1001 AB Wg, Andrews AFB (2)
AUL (2)
Hq MATS, Historical Div (2)

AFWL/HQ

INCLOSURE 24 PA

HEADQUARTERS
MILITARY AIR TRANSPORT SERVICE
UNITED STATES AIR FORCE
WASHINGTON 25, D. C.

GENERAL ORDERS)
NUMBER 110)

21 October 1957

DESIGNATION AND ORGANIZATION OF PROVISIONAL ELEMENTS, TEST SERVICE UNIT

1. The following provisional elements are designated and organized at locations and authorized strengths indicated, and assigned to Test Service Unit, Provisional, effective 21 October 1957, except the Weather Central Element which is activated effective 6 January 1958.

UNIT	AUTH STRENGTH OFF	AUTH STRENGTH AMN	LOCATION
Communications Element	13	263	Atoll Air Field, M. I.
Air Terminal Element	3	26	Atoll Air Field, M. I.
Search and Rescue Element	31	131	Norton AFB, Calif
Weather Central Element	9	12	U.S. Naval Base, Pearl Harbor, T.H.
Weather Reconnaissance Element	62	320	Hickam AFB, T.H.
Weather Reporting and Forecasting Element	8	121	Tinker AFB, Okla.
Photo Element (Technical	4	5	Lookout Mountain Lab, Hollywood, Calif
Photo Element (Air Support)	16	48	Palm Beach AFB, Fla

2. Personnel will be attached for duty to the above elements from organizations within Airways and Air Communications Service, Pacific Division, Air Rescue Service, Air Weather Service and Air Photographic and Charting Service, respectively. Personnel spaces that cannot be filled from within division and service resources will be reported to this headquarters.

3. Equipment and supplies required in addition to that furnished from within the resources of Military Air Transport Service will be requisitioned through Headquarters, Task Group 7.4.

4. All elements except Weather Central Element, are attached to Task Group 7.4 for operational control. Planning and coordination during period prior to movement to the forward area will be effected with Task Group 7.4, through Headquarters, Test Service Unit. The Weather Central Element is attached to Headquarters, Joint Task Force Seven for operational control.

5. Action directed herein will be reported by means of the Air Force Organization Status Change Report (RCS-AF-01).

AFWL/HQ

AFWLM

INCLOSURE 25 PAGE 1

324

6. AUTHORITY: Air Force Regulation 20-27, 15 September 1955, and Headquarters, USAF message 51415 dated 11 October 1957.

FOR THE COMMANDER:

H. P. BONNEWITZ
Colonel, USAF
Command Adjutant

DISTRIBUTION:
X Plus
Hq USAF AAG ATTN: Pub Div (30)
Hq USAF, DCS/O, M&O (3)
Hq USAF, DCS/C (5)
COMCNTLD, M&O (2)
Comdr JTF-7 (2)
Hq TG 7.4, Kirtland AFB (3)
COMPACD, (5)
COMAACS (5)
COMAPCS (8)
COMAWS (10)
COMARS (5)
AUL (2)
Hq MATS, Historical Div (2)
Comdr, 4951st Support Sq (Test) APO 187, SFRAN (2)
Comdr, Norton AFB, Calif (2)
Comdr, 6486th AFWg, APO 953, SFRAN (2)
Comdr, Tinker AFB, Okla (2)
Comdr, Lookout Mountain Lab, Hollywood, Calif (2)
Comdr, Palm Beach AFB, Fla (2)
Comdr, U.S. Naval Base, Navy #128, FPO, SFRAN (2)
Hq MATS, ADVON (3)

AFWL/HQ

AEC-DOD Announcement of Forthcoming Tests

See Distribution SWSV 30 Sep 57

1. Official information from JTF-7 has been received confirming the AEC-DOD announcement that Nuclear Tests will be conducted in the Eniwetok Proving Grounds beginning April 1958.

2. The meaning of the codeword for this operation "HARDTACK", is unclassified effective 15 September 1957.

3. All correspondence classified due to the codeword and the fact that future nuclear tests were planned may now be downgraded to unclassified.

/s/ Max B. Ganyard Maj. USAF
for/t/ JACK E WORTINGTON
Lt Colonel, USAF
Security Officer

DISTRIBUTION:
SWS
SWSP
SWSO
SWSH
SWSM
SWSV
SWSZ
SWSS
SWSI
SWSY
SWSE

AFWL/HQ

AFWL/HQ

INCLOSURE 26, PAGE 1

324

HUSH

GO #1, dated 3 October 1957, is the last in the series for 1957.

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
United States Air Force
Kirtland Air Force Base, New Mexico

GENERAL ORDERS)
NUMBER 1)

13 February 1958

MOVEMENT OF HEADQUARTERS TASK GROUP 7.4, PROVISIONAL (HEADQUARTERS 4950TH TEST GROUP (NUCLEAR) AND ELEMENTS I
DESIGNATION, ORGANIZATION AND ASSIGNMENT OF REAR ECHELON II
GENERAL III

I. MOVEMENT OF HEADQUARTERS TASK GROUP 7.4, PROVISIONAL (HEADQUARTERS 4950TH TEST GROUP (NUCLEAR) AND ELEMENTS.

1. Headquarters Task Group 7.4, Provisional (Headquarters 4950th Test Group (Nuclear), will close at Kirtland Air Force Base, New Mexico at 2400Z hours, 10 March 1958 and open at Eniwetok, Marshall Islands effective 0001Z hours, 11 March 1958.

2. Cloud Sampling Element, Provisional (4926th Test Squadron (Sampling) will close at Kirtland Air Force Base, New Mexico at 2400Z hours, 3 April 1958, and open at Eniwetok, Marshall Islands effective 0001Z hours, 4 April 1958.

3. Support Element, Provisional (4952nd Support Squadron) will close at Kirtland Air Force Base, New Mexico at 2400Z hours, 10 March 1958 and open at Eniwetok, Marshall Islands effective 0001 hours, 11 March 1958.

II. DESIGNATION, ORGANIZATION AND ASSIGNMENT OF REAR ECHELON.

1. Effective 11 March 1958, Headquarters Task Group 7.4 (REAR), is designated and organized at Kirtland Air Force Base, New Mexico.

III. GENERAL.

1. Authority: Paragraph 17, Headquarters ARDC Movement Order Number 1, dated 17 January 1958.

FOR THE COMMANDER:

AFWL/HQ

OFFICIAL:

MAX B. GANYARD
Major, USAF
Adjutant

Max B. Ganyard

MAX B. GANYARD
Major, USAF
Adjutant

DISTRIBUTION: "A"

INCLOSURE 27, PAGE 327

Headquarters
4950TH TEST GROUP (NUCLEAR) (ARDC)
Air Force Special Weapons Center
United States Air Force
Kirtland Air Force Base, New Mexico

PERSONNEL ACTIONS MEMORANDUMS)
NUMBER 83)

16 October 1957

1. COL WILLIAM B KIEFFER, 1409A, this Hq, this Sta, is Asg Add Dy as Comdr, TG 7.4, Prov (0026D).

2. COL PAUL R WIGNALL, 4935A, this Hq, this Sta, is Asg Add Dy as Dep Comdr, TG 7.4, Prov (0026D).

3. COL ALDEN G THOMPSON, 7126A, this Hq, this Sta, is Rel from Prim Dy Dep Comdr (0021B), functional Acct 0100000, Asg Prim Dy as Dir of Operations, (0036B), functional Acct 2700040, vice LTCOL RICHARD J HYNES, 9795A, this Hq, Rel.

4. COL ALDEN G THOMPSON, 7126A, this Hq, this Sta, is Asg Add Dy as Comdr, Test Acft Unit (0066C), TG 7.4, Prov.

5. LTCOL RICHARD J HYNES, 9795A, this Hq, this Sta, is Rel from Prim Dy as Dir of Operations (0036B), functional Acct 2700040, Asg Prim Dy as Dep Dir of Operations (0036B), functional Acct 2700040, with Add Dy as Dir of Operations (0036C), TG 7.4, Prov.

****

FOR THE COMMANDER:

OFFICIAL

JACK E WORMINGTON
Lt Colonel, USAF
Director of Personnel

/s/ Jack E. Wormington
/t/ JACK E WORMINGTON
Lt Colonel, USAF
Director of Personnel

DISTRIBUTION: E

AFWL/HQ

AFWLHQ

INCLOSURE 28, PAGE 1

325

TEST BASE UNIT PROVISIONAL
TASK GROUP 7.4 PROVISIONAL
Joint Task Force 7
APO 187, San Francisco, California

SPECIAL ORDERS)
NUMBER 1)

10 October 1957

1. Under the provisions of Air Force Regulation 35-54, the undersigned hereby assumes command of the Test Base Unit Provisional, effective 1 October 1957, ESPWO.

WALTER R HEDRICK, JR
Lt. Colonel, USAF
Commander

DISTRIBUTION "A" plus
10 COMDR TG 7.4 Provisional
10 COMDR, AFSWC, Kirtland AFB NMEX
10 COMDR, AFSWC, Kirtland AFB NMEX, ATTN: SWP
10 COMDR, 4950th Test GP (N) Kirtland AFB NMEX
10 Off concerned

AFWL/HQ

INCLOSURE 29, PAGE 1

327

HEADQUARTERS
TEST SERVICES UNIT PROVISIONAL
UNITED STATES AIR FORCE
ANDREWS AIR FORCE BASE
Washington 25, D. C.

7 October 1957

GENERAL ORDERS)
NUMBER 1)

Under the provisions of Air Force Regulation 35-54, as amended, the undersigned assumes command of the Test Services Unit, Provisional, effective this date.

/s/ W. H. Neal
/t/ W. H. NEAL
Colonel, USAF
Commander

DISTRIBUTION:
EA INDIVIDUAL CONCERNED (1)
PERS RECORDS(1)
FILE (1)
Hq USAF AAG ATTN: Pub Div (30)
Hq USAF, DCS/O, M&O (3)
Hq USAF, DCS/C, (5)
COMCNTLD, M&O (2)
Comdr JTF-7 (2)
Hq, TG 7.4, Kirtland AFB (3)
COMPACD (2)
COMAACS (2)
COMAPCS (2)
COMAWS (2)
Hq MATS, Historical Div (2)
Comdr 1001 AB Wg Andrews AFB (2)
AUL (2)

AFWL/HQ

INCLOSURE 30, PAGE 1

330

[redacted]

Deferred Book Message
DTG: 11/2116Z Oct 1957

From: Chief of Staff, United States Air Force

To: Commander, Task Group 7.4
Commander, Air Force Special Weapons Center

Cite: 51415

From: AFOOP

1. On 24 September 1957, the Joint Chiefs of Staff approved Department of Defense participation in Operation HARDTACK, a series of atomic tests at the Eniwetok Proving Grounds beginning about 1 April 1958 and ending approximately 15 July 1958. The Chief of Staff, as Executive Agent has issued the necessary directive to Commander, Joint Task Force SEVEN for conducting the operation. To support this operation, Headquarters USAF hereby directs organization of Task Group 7.4, at earliest practicable date. Task Group 7.4 will be composed generally of units and elements as listed below. The Commander, Task Group 7.4 is authorized to organize these units and elements as may be required by operational necessity.

2. List of units and elements:

a. Headquarters Task Group 7.4 (Provisional).

b. Test Base Unit with the following elements:

(1) A support squadron.

(2) Helicopter element.

c. Test Aircraft Unit with the following elements:

(1) Cloud Sampling Element (augmented by 6 SAC B-57D aircraft).

(2) Air Force Effects Elements (includes IBDA, VHA/UHA, Ionosphere elements).

(3) Navy Effects Element (to be provided by NASWF, Kirtland AFB, New Mexico, and attached to the Test Aircraft Unit for Operational control).

d. Test Services Unit with the following elements:

(1) Search and Rescue Element (to include weather island resupply).

(2) Weather Reporting and Forecasting Element.

(3) Weather Reconnaissance Element.

AFWL/HQ

[redacted]

INCLOSURE 31, PAGE 1

331

[redacted]

(4) Communications Element (AACS).

(5) Weather Central Element.

(6) MATS Terminal Element.

(7) Aerial Photo Element.

3. The missions and responsibilities of Task Group 7.4 will be assigned by Commander, Joint Task Force SEVEN.

4. The Commander, Air Research and Development Command will organize, man, train, and equip Task Group 7.4. Commander-in-Chief, Pacific Air Force, and Commander, Military Air Transport Service are directed to support the Commander, Air Research and Development Command by providing at his call, units, elements, material, personnel and services as specified herein, from their own resources. Additional requirements may be placed upon major commands by this Headquarters. Requisitions for additional personnel, identified as requirements for Joint Task Force SEVEN. Task Group 7.1 and Task Group 7.4 will be submitted to Director of Military Personnel, Headquarters USAF. Attention is directed to Comptroller General decision B-131145, dated 3 May 1957, regarding TDY in excess of 6 months.

5. Commander, Air Research and Development Command will:

a. Immediately organize and begin manning, training, and equipping Headquarters Task Group 7.4 at Kirtland Air Force Base.

b. Organize the Test Base Unit at Eniwetok, Marshall Islands. The following aircraft will be authorized this unit (aircraft to be provided from sources indicated):

(1) Five (5) C-54 (2-ARDC; 3-PACAF).

(2) Eight (8) L-20 aircraft (ARDC).

(3) Three (3) L-19 aircraft (army loan to ARDC, see paragraph 23).

(4) Fifteen (15) H-19 aircraft or combination of H-19 and H-21 aircraft (PACAF).

c. Organize, man, train, and equip the Headquarters of Test Aircraft Unit at Kirtland Air Force Base, New Mexico.

d. Organize the following elements at locations indicated and attach them to the Test Aircraft Unit for operational control:

(1) Cloud Sampling Element, Kirtland AFB, New Mexico, with ten (10) B-57B aircraft. (To be augmented in the Eniwetok Proving Grounds by six (6) SAC B-57D aircraft.)

[redacted]

AFWL/HQ

INCLOSURE 31 PAGE 2

332

[redacted]

(2) Air Force Effects Element composed of:

(a) One (1) B-52 with MSQ-A positioning equipment and supporting personnel (WADC, WPAFB, Ohio).

(b) Two (2) B-36 aircraft and supporting personnel, VHA/UHA aircraft element (AFSWC, KAFB, New Mexico).

(c) One (1) C-97 aircraft and supporting personnel, Ionesphere Element (AFCRC, L. G. Hanscom Field, Mass).

6. Commander, Military Air Transport Service will:

a. Organize, man, train, and equip the Test Services Unit to consist of a Headquarters Test Services Unit with the following elements:

(1) Weather Reconnaissance Element with planned inventory of ten (10) WB-50 aircraft capable of performing its own administration and augmented field maintenance determined by Commander MATS and Commander, Task Group 7.4.

(2) Weather Reporting and Forecasting Element as required to include:

(a) Establishment of weather reporting (Rawindsonde) stations at Kusaie, Kapingamarangi, Tarawa, Utirik, and Nauru.

(b) Surface and pibal observations at rad-safe stations of Wyelang, Wothe, and Rongelap.

(c) Communications Element as required to augment existing communications services at Eniwetok and Kwajalein and establish communications facilities at Bikini and Weather Islands as required by JTF SEVEN Operations Plans.

(4) Search and Rescue Element composed of seven (7) SA-16 aircraft and supporting personnel.

(5) MATS Terminal Element.

(6) Aerial Photo Element composed of three (3) C-54 aircraft and supporting personnel.

7. Commander-in-Chief, Pacific Air Force will:

a. Provide a Helicopter Support Element with 15 helicopters and supporting personnel and will attach it to the Test Base Unit for operational control.

AFWL/HQ

b. Be prepared to provide emergency or enroute support to the Commander, Task Group 7.4 as required.

c. Provide three (3) C-54 aircraft and supporting personnel for augmentation of the Test Base Unit airlift effort. These aircraft and crews will be attached to and under the operational control of the Test Base Unit.

AFWL/HQ

[redacted]

[redacted]

8. Commander-in-Chief, Strategic Air Command will:

a. Provide an element consisting of three (3) B-57 aircraft and supporting personnel in accordance with SAC O&T Project, Subject: SAC IBDA. Aircraft will operate from Anderson AFB, Guam, with Liaison Officer stationed at Eniwetok and attached to the Test Aircraft Unit. Aircraft will be under operational control of Commander, Task Group 7.4.

b. Provide six (6) B-57D aircraft to augment the Test Aircraft Unit Cloud Sampling Element. Aircraft and Supporting personnel to be attached to the Test Aircraft Unit for operational control.

9. Commander, Air Materiel Command will provide logistical support and insure timely procurement of material and modification of aircraft within priorities outlined in paragraph 13.

10. Critical housing shortage will exist in the Eniwetok Proving Grounds. Personnel strength for all units and elements will be determined through coordination between Task Group 7.4 and each organization.

11. All units and elements will be capable of performing organizational maintenance on assigned aircraft in the forward area. Augmentation of field maintenance will be as directed in future Task Group 7.4 plans.

12. Equipment required for training and enroute support (flyaway kits) will be furnished to the maximum extent possible by commands furnishing the units and elements. Lists of equipment needed by units and elements to perform their mission in the forward area will be submitted to Headquarters Task Group 7.4 for screening prior to submission for requisitioning action. Commander, Task Group 7.4 will be responsible for coordination of all material procurements and expediting.

13. Research and Development project priority 1A with precedence rating ROMAN 2-3 and mission category 2 is assigned this project (Operation HARDTACK). OPU 58-3 will reflect a precedence rating of VI-6A which is assigned Task Group 7.4 (Provisional).

14. All personnel participating in this operation in the Eniwetok Proving Grounds will possess either Final or Interim SECRET clearance. TOP SECRET clearances will be required for personnel requiring access to AEC exclusion areas or when requiring TOP SECRET information in performance of regular duties. The above clearances will be effective prior to participation in Operation HARDTACK. Compliance with CINCPAC Serial Letter 020, Subject: Eniwetok Atoll; Security Instructions, 1 April 1952, is required.

not required

15. Organizational status change reports, RCS: AF-01, will be made to this Headquarters in accordance with current instructions.

AFWL/HQ

16. Participating activities will furnish periodic status reports as required by Headquarters Task Group 7.4.

17. Headquarters Task Group 7.4 is authorized to issue training directives applicable to Operation HARDTACK to all participating units prior to their actual attachment to Task Group 7.4.

WL/HO

[redacted]

[redacted]

18. Funding procedures in connection with this Operation will be in accordance with Headquarters USAF AIMAJCOM UNCL Message, Cite AFABF/3-1372/56, dated 14 September 1956. NOTAL.

19. Direct communication between all addressees of this message is authorized for the purpose of implementing this directive.

20. Task Group 7.4 will controlthe movement of all Air Force units and elements to the forward area on the authority of Movement Directive issued by Headquarters USAF.

21. Joint Task Force SEVEN is authorized operational control for planning and coordination of Task Group 7.4 and its units during the period prior to movement to forward areas. Commander, Task Group 7.4 will exercise operational control for planning and coordination of all units and elements assigned or attached during period prior to movement to forward area. After movement to forward area, Commander, Task Group 7.4 will assume full operational control of all units and elements assigned or attached and Joint Task Force SEVEN will assume full operational control of Task Group 7.4.

22. Major and/or (Commands will furnish Commander, Task Group 7.4) info Headquarters Joint Task Force SEVEN with unit designated from which above elements will be furnished and name of project officer at earliest practicable date.

23. The Department of the Army has agreed to place on loan to ARDC (without crews and maintenance personnel) three (3) each L-19 aircraft with necessary parts and specialized maintenance equipment for duration of this operation.

24. Portions this message pertaining to Department of the Army and Department of the Navy participation have been coordinated at DCS/Log and OPNAV level respectively.

25. For planning purposes tentative operational in place dates in the Proving Ground area for aircraft are: 15 each H-19 (or combination H-19 and H-21), PACAF, 11 are in place, 2 additional 15 Dec 57, 2 additional 1 Jan 58. Eight (8) each L-20, ARDC, 6 in place, 2 additional 1 Jan 58. Three (3) each L-19, 1 Feb 58, ARDC. Ten (10) each WB-50, 1 Mar 58, MATS. Ten (10) each B-57B, 15 Mar 58, ARDC. Six (6) each B-57D, 15 Mar 58, SAC. Five (5) each C-54, 2 in place, ARDC: 2 additional 15 Dec 57, PACAF: 1 additional 15 Jan 58, PACAF. Three (3) each C-54 serial photo 1 Mar 58, MATS. Seven (7) each SA-16, 1 Mar 58, MATS. One (1) each B-52 with MSQ-A, 1 Mar 58, ARDC. Two (2) each B-36, 1 Mar 58, ARDC. One (1) each C-97, 1 Mar 58, ARDC. Three (3) each B-47, 1 Mar 58, SAC.

26. Consideration will be given to reemployment, where practicable, of materiel designed, modified, and instrumented for previous tests.

AFWL/HQ

[redacted]

Headquarters
TASK GROUP 7.4, PROVISIONAL
United States Air Force
Kirtland Air Force Base, New Mexico

SWSO 29 October 1957

SUBJECT: Monitor Training

TO: See Distribution

1. There will be a requirement for each multiplace aircraft participating in D-Day and D+1 missions in the test area during Operation HARDTACK to have a qualified rad-safe monitor on board. In addition, many elements may require monitors for other purposes.

2. Each element will be required to furnish two (2) monitors for each 50 personnel assigned for emergency fallout survey teams. These monitors will normally be called to duty from a roster maintained by the Test Base Unit.

3. Monitors, other than personnel normally assigned as primary duty monitors, must have completed an approved monitor training program within six (6) months prior to the operation to be considered qualified. Qualifications of monitors trained prior to the operation will be reviewed by this headquarters to determine acceptability. Names and qualifications of such personnel should be forwarded to us for review prior to 1 January 1958. All designated monitors who have not completed an approved program will be trained in a 40 hour Rad-Safe course to be given by Task Unit 6, Task Group 7.1, at Eniwetok tentatively during the month of March 1958.

4. We request you forward your monitor training requirements, by total number only, to this headquarters by 1 December 1957.

FOR THE COMMANDER:

/s/ Walter B. Walker Jr.
/t/ WALTER B. WALKER JR.
Lt Colonel, USAF
Deputy Director of Operations

DISTRIBUTION:

2

Comdr, 4925th Test Group (UHA-VHA Element), ATTN: Maj Pool
Comdr, TAU, ATTN: Col Thompson
Comdr, TBU, ATTN: Lt Col Hedrick
Comdr, 4952nd Support Squadron (T), ATTN: Maj B. H. Cochrane
Comdr, WADC (Effects Element), ATTN: Lt Col R. W. Yundt

AFWL/HQ

AFWL/HQ

INC

336

SWSO, Hq Task Group 7.4, Subj: Monitor Training

Comdr, AFCRC (Ionosphere Element)
Comdr, TSU, ATTN: Col W. H. Neal
Comdr, 64th Air Rescue Sq, (SAR Element), ATTN: Lt Col Frazee
Comdr, Sixth Weather Squadron (Mobile), ATTN: Lt Col Pusin
Comdr, 57th Weather Reconnaissance Squadron, ATTN: Lt Col Conrad
Comdr, Communications Element
Comdr, MATS Terminal Element
Comdr, 1371st Mapping & Charting Sq, (Photo Element), ATTN: Maj Brantley
Comdr, 4080th Strat Reconnaissance Wing, ATTN: Col Adams
Comdr, 4025th Strat Reconnaissance Squadron, ATTN: Lt Col Cody
Comdr, SAC IBDA Element
Comdr, PACAF Helicopter Element, ATTN: Capt S. W. Hebert
Comdr, NASWF, KAFB, N Mex., ATTN: Cmdr Bushner

AFWL/HQ

WL/HQ

INCLOS

35

Headquarters
TASK GROUP 7.4 (PROVISIONAL)
Air Force Special Weapons Center
United States Air Force
Kirtland Air Force Base, New Mexico

SWSO 10 October 1957

MEMORANDUM FOR THE COMMANDER

SUBJECT: Trip Report

1. On 2, 3 and 4 October 1957 I visited in the Washington, D. C. area, contacting personnel in JTF-7 and Hq, MATS. Items discussed were of a wide variety and are listed below.

2. Personnel Visited:

JTF-7

Brigadier General Perry Griffith	
Colonel Jeffrey	J-3 Office
Commander Snyder	J-3 Office
Lt Colonel Loveless	J-3 Office
Major Dean	J-4 Office
Major Policastro	J-4 Office

Hq MATS

Lt Colonel Wientjes, Project Officer, MATS
Major Cummings, Assistant Project Officer, MATS
Major Dursten - AWS
Major Cikas - AACS

3. I made a courtesy call on General Griffith. He expressed keen interest in our B-57B modification program; he reported that General Luedeke was willing to go to bat for us if we ran into delays that hurt the 4926th. I said that we had had no official indication that there would be any delay in the program but that I would pass to you General Luedeke's offer.

4. Aircraft Inventory: There are no apparent problems in this area although USAF had not yet determined which type aircraft to assign for the vertical photography. Commander Snyder felt that the RB-50 would be the choice and that they would come from APCS, Orlando, Florida. MATS (Lt Colonel Wientjes) had not received direction to provide these aircraft nor the two additional SA-16's. He was, however, aware that the levy would probably be soon forthcoming. Colonel Wientjes informed me that the WB-50's would come from the 57th Weather

AFWL/HQ

INCLOSURE 3 PAGE 1

335

Reconnaissance Squadron at Hickam, augmented by some of the 54th Squadron (Guam) aircraft. The Commander of our element will probably be Lt Colonel Conrad, currently Commanding the 57th Squadron.

5. Airfields in the EPG:

a. Conversation with Lt Colonel Loveless revealed a rumor that the Nauru airstrip was unsuitable for C-54 operations due to lack of rehabilitation. The question was raised that we might have to retain a C-47 at Eniwetok for re-supply purposes. I told Colonel Loveless that we had had no information on this subject from Colonel Hedrick. I promised to check this on my return to Kirtland. I found out by phone call to Mr. Merl Smith, AIOO, that the information regarding the airstrip was true. The circumstances are that H&N has had difficulty in getting diplomatic clearance into the Nauru Atoll and has been unable to rehabilitate the strip as of this date. Mr. Smith has a wire which indicates that this problem has been resolved. The airstrip will be put in shape and he foresees no requirement for retaining a C-47 for Nauru re-supply.

b. Commander Snyder requests that we send JTF-7 a photo of our aircraft parking plan when available. The parking plan will become part of JTF-7's briefing material. Colonel Robbins has been made aware of this requirement.

6. Air Traffic Control: Major Gikas (AACS) suggested that Task Group 7.4 call a conference in Hawaii to firm Air Traffic Control procedures in the Air Control Area. Items such as Letters of Agreement between our headquarters and Air Route Traffic Control and establishment of corridors in the Air Control Area were suggested as priority actions necessary. I asked that Major Gikas send us an informal agenda covering all items he thinks appropriate. I also stated that in view of the months left before operations begin, I felt we should coordinate the items by mail and conserve TDY funds. Major Anderson of our Operations Section is assembling all of the agreements we feel are pertinent and we will forward them to interested agencies for comment and/or concurrence.

7. Communications: Major Gikas said that AACS can give us a classified teletype circuit to Guam by patching through Kwajalein. This would cost us nothing. He also suggested that it might be possible to give us an unclassified telephone hook-up with Guam by using the Task Group 7.2 line to Honolulu, patching to AACS at Hickam, then AACS line to Guam. The cost of this hook-up would approximate $200 a month. Major Gikas thought that AACS would probably finance this. These items will be brought to Lt Colonel Fackenthall's attention on his return from Mercury

AFWL/HQ

AFWL/HW

INCLOSURE 2 PAGE

339

8. Airborne Photography: The term "Doc Photo" is not used in JTF-7 headquarters. They call all airborne photography "Tech Photo." This may be confusing to some of us who think in the old terminology. I discussed all photo requirements. The technical photography requirements on the Navy shots are known to us and need not be repeated here. Commander Snyder said that, informally, (1) AFSWP has funded for a 3 reel, 30 minute film and (2) AEC will require some film, running time unknown at present. These last two requirements will be of a "documentary" nature.

9. Airlift in the EPG: Various methods of controlling airlift in the EPG have been discussed by 7.1, 7.5, and JTF-7. At first the Army (7.2) was to be the agency. Mer Smith (7.5) and Colonel Lucke (7.1) violently objected to this setup so J-3 of JTF-7 agreed to let 7.5 do the dispatching, as they did during REDWING. General Luedeke, however, would not buy this. He is firm that there should be no doubt that the Air Force is running the airlift at Eniwetok and Bikini, with 7.3 having control over HRS-3 dispatch at Bikini. The approved transportation setup is found in JTF-7's Administrative Plan 1-57, now in Colonel Robbins' possession. The details of airlift control should be worked out with the 4951st during our staff visit this fall.

10. Miscellaneous Items:

a. USAF is still working on its Book Message. JTF-7 expected it out not later than 9 October 1957.

b. JTF-7's Operations Plan 1-57 was due to go to press on 7 October and mailed on 9 October 1957. Draft copy of the Operations Plan is in the Plans Office of D/O.

c. Air Force will call its control facility aboard the Boxer AOC, not CIC. The Navy will maintain a CIC aboard throughout operations.

d. A letter is coming from General Luedeke in reply to your letter of 5 September 57, Subject, "Minimum Construction Requirements."

e. Lt Colonel Wientjes requests that correspondence for the MATS Project Officer be marked for his attention, office symbol MAXPL.

f. Reference par 5 above as pertains to possible retention of a C-47 beyond 1 January 1958. Colonel Jeffrey informed me that General Griffith was embarrassed by learning of this information from AFOAT rather than JTF-7 channels. I explained that AFOAT had probably received its information through AEC channels and definitely not through 4950th

AFWL/ HQ

AFWL/HQ

INCLOSURE 3, PAGE

channels. Colonel Jeffrey's only comment on this was that General Griffith would burn any JTF-7 subordinate element that went to Air Force without clearing through JTF-7.

WALTER B. WALKER JR.
Lt Colonel, USAF
Deputy Director of Operations

copy to:

D/P
D/M
D/O
Historian

AFWL/HQ

AFWL/HQ

INCLOSURE 1 PAGE 7

PHOTO

Test Array Board

CACTUS EVENT, 6 May 1958

AFWL/HQ

[INCLOSURE 34, PAGE 1]

AFWL-EM

342

AFWL/HQ

AFWL/HQ

PHOTO

Mission Execution Board

CACTUS EVENT, 6 May 1958

AFWL/HQ

[illegible] 35 PAGES]

AFWL/HO

			1		2		3		4		5		6	
V	TYPE	ALT	ETD	ATD	ETA	ATA	ETA	ATA	ETD	ATD	ETA	ATA	ETA	ATA
[illegible] 7	SA-16	7	0450	0450	0520	0450	0535	0520	0855	0855	-		0900	0915
SIVE - 4	WB-50	12 1	0500	0500	0510	0500	0557	0520	0700		-		1101	1308
CLARK - 1	A4D	3	0526	0526	-		0530	0530	0616	0616	-		0623	0622
CLARK - 2	A4D	10	0527	0527	-		0531	0531	0616	0616	-		0625	0636
KIMONO - 2	FJ4	4	0528	0528			0532	0532	0616	0616	-		0627	0626
KIMONO - 1	FJ4	8	0529	0529			0533	0533	0616	0616	-		0629	0630
OPIUM	B-57	15	0555	LATE 0608	0600	0608	0605	0615	0826	0830	0831	0835	0836	0842
OPIUM BRAVO	B-57	15	0556	LATE 0632	0601	0632	0605	0640	0826	0730	0831	0819	0837	0824
HOTSHOT - 10	B-57	20 25	0710	0710	0715	0710	0730	0715	0740	0740	0745	0740	0750	0746
HOTSHOT - 4	B-57	25 30	0725	0725	0730	0725	0745	0735	0755	0755	0800	0800	0805	0802
HOTSHOT - 5	B-57	30 35	0740	0740	0745	0740	0800	0755	0810	0817	0815	0822	0820	0826
HOTSHOT - 8	B-57	25 30	0755	0755	0800	0755	0815	0819	0825	0830	0830	0831	0835	0834
WILDROOT	P2V	-1	0745	0745	-		0755			1104			1200	1110
CARTER - 2	RB-50	1.5	1300	LATE 1635	1330	1635	1400			1712	-		1430	1717
HOTSHOT - 7	B-57	7		0930										1015

AFWL/HO

345

PHOTO

Test Array Board

FIR EVENT, 12 May 1958

AFWL/HO

INCLOSURE 36 PAGE 1

AFWL/HO

AFWL/HQ

3d7

PHOTO

Mission Execution Board

FIR EVENT, 12 May 1958

AFWL/HQ

INCLOSURE 37, PAGE 1

348

FIR 12 MAY 58

CALL SIGN	TYPE	ALT	1 ETD	1 ATD	2 ETA	2 ATA	3 ETA	3 ATA	4 ETD	4 ATD	5 ETA	5 ATA	6 ETA	6 ATA
STABLE BRAVO	SA-16	9	0240	0235	0310	0335	0325	0338	0820	0840	0830	0851	0900	0943
WATCHDOG	B-52	30	0243	0243	0303	0303	0328	0343	0540	0612		0835	0826	0758
OPIUM - 1	B-57B	35	0505	0505	0520	0524	0535	0540	0740	0825	0750	0836	0805	0849
HOTSHOT BRAVO-1	B-57B		0550	0550	0605	0607	0625	0630	0645	0725	0655	0735	0710	0749
HOTSHOT BRAVO-2	B-57B		0600	0600	0615	0620	0635	0630	0655	0825	0705	0740	0721	0856
HOTSHOT BRAVO-3	B-57B		0605	0605	0620	0650	0645	0630	0705	0770	0715	0717	0730	0733
HOTSHOT BRAVO-4	B-57D		0622	0622	0640	0650	0655	—	0715	—	0725	0803	0741	0828
HOTSHOT BRAVO-15	B-57D		0635	0638	0650	0650	0705	0711	0725	—	0735	0835	0751	0900
HOTSHOT BRAVO-16	B-57D		0645	0700	0705	0727	0715	—	0740	—	0750	0843	0806	0909

AFWL/HQ

AFWL/HQ

3 of 19

PHOTO

Test Array Board

BUTTERNUT EVENT, 12 May 1958

AFWL/HQ

ENCLOSURE 38 PAGE 1

AFWL/HC

350

AFWL/HQ

AFWL/HQ

35

PHOTO

Mission Execution Board

BUTTERNUT EVENT, 12 May 1958

AFWL/HQ

AFWL/HQ

ENCLOSURE 39 PAGE 1

35

			1		2		3		4		5		6	
CALL SIGN	TYPE	ALT	ETD	ATD	ETA	ATA	ETA	ATA	ETD	ATD	ETA	ATA	ETA	ATA
STUDENT	P2V	4.5	0400	0400	-	-	0430	0429	0623	0623	-	-	0630	0640
STABLE ECHO	SA-16	7	0450	0450	-	-	0520	0505	1005	1022	-	-	1030	1032
KIMONO	FJ4	14	0525	LATE 0544	-	-	0529	0546	0616	0616	-	-	0625	0636
BARLEY	A4D	11	0527	0527	-	-	0531	0531	0616	0616	-	-	0625	0631
COBALT	FJ4	9	0529	0529	-	-	0533	0535	0616	0616	-	-	0627	0627
CLARK	A4D	8	0531	0531	-	-	0535	0535	0616	0616	-	-	0629	0628
OPIUM -3	B-57B	35	0545	0546	0550	0558	0610	06[illegible]	0950	0942	0955	0942	1002	0953
HOTSHOT -1	B-57B		0621	0621	0626	062[illegible]	0645	064[illegible]	0700	0706	0705	0708	0711	0710
HOTSHOT -2	B-57B		0720	0720	0730	0721	0745	0731	0755	0757	0800	0757	0807	0807
HOTSHOT -3	B-57B		0740	0740	0745	0742	0800	0802	0815	0813	0820	0835	0829	0841
HOTSHOT -4	B-57B		0740	0741	0745	0743	0800	0802	0815	0815	0820	0836	0830	0842
HOTSHOT -15	B-57D		0750	0750	0800	0800	0815	0823	0840	0859	0845	0859	0850	0911
HOTSHOT -16	B-57D		0805	0805	0815	0815	0830	0838	0905	0940	0910	0940	0915	0950
HOTSHOT -17	B-57D		0824	0824	0830	0825	0845	0857	0930	1002	0935	1002	0945	1020
HOTSHOT 8	B-57B		0840	0840	0845	0841	0900	0908	0945	1020	0950	1020	1000	1024
STABLE BRAVO	SA-16	9	0240	0235	0310	0335	0325	0338	0820	0840	0830	0851	0900	0943
WATCHDOG	B-52	30	0243	0243	0303	0303	0328	0343	0540	0612	-	0635	0826	0758
OPIUM -1	B-57B		0505	0505	0520	0524	0535	LATE 0540	0740	0825	0750	0830	0805	0844
HOTSHOT BRAVO-1	B-57B		0550	0550	0605	0607	0625	0630	0645	0725	0655	0735	0710	0749
HOTSHOT BRAVO-2	B-57B		0600	0600	0615	0620	0635	0630	0655	0825	0705	0740	0721	0856
HOTSHOT BRAVO-3	B-57B		0605	0605	0620	0650	0645	0630	0705	0710	0715	0717	0730	0733
HOTSHOT BRAVO-14	B-57D		0622	0622	0640	0650	0655		0715	-	0725	0803	0741	0828
HOTSHOT BRAVO-15	B-57D		0635	0638	0650	0650	0705	0711	0725	-	0735	0835	0751	0900
HOTSHOT BRAVO-16	B-57D		0645	0700	0705	0727	0715		0740		0750	0843	0806	0909
WILSON -080	B50		1040	1053	—		—		—		—		—	

AFWL/HQ

AFWL/HQ

PHOTO

Test Array Board

KOA EVENT, 13 May 1958

AFWL/HQ

AFWL/HO

INCLOSURE 40, PAGE 1

AFWL/HQ

AFWL/HQ

355

PHOTO

Mission Execution Board

KOA, 13 May 1958

AFWL/HQ

AFWL/HQ

41

35

HQ			1		2		3		4		5		6	
CALL SIGN	TYPE	ALT	ETD	ATD	ETA	ATA	ETA	ATA	ETD	ATD	ETA	ATA	ETA	ATA
STABLE ECHO	SA-16	7	0330	0330	-	-	0400	0405	-		-	-	1102	1201
WATCHDOG	B-52	30	0338	0338	-	-	0428	0500	0631	0632	-	-	0715	0825
STUDENT	P2V	9	0500	0500	-	-	0530	0555	0632	0635	-	-	0045	0710
PEWTER-3	C-54	8	0520	0520	-	-	-	0550	-	0635	-	-	-	0754
PEWTER-2	C-54	6	0530	0530	-	-	-	0550	-	0635	-	-	-	0745
BARLEY	A4D	12	0537	0537	-	-	0541	0602	0631	0631	-	-	0642	0654
CLARK	A4D	3	0539	LATE 0548	-	-	0545	0543	0631	0635	-	-	0658	0651
KIMONO	FJ4	16	0541	0541	-	-	0545	0545	0631	0631	-	-	0644	0655
COBALT	FJ4	4	0542	0542	-	-	0546	0546	0631	0635	-	-	0640	0649
OPIUM	B-57B	33	0550	0551	0555	0551	0605	0604	1021	1021	-	-	1056	1037
HOTSHOT-1	B-57B		0810	0810	0815	0810	0830	0825	0835	0835	0840	0840	0845	0900
HOTSHOT-2	B-57B		0825	0820	0830	0820	0845	0840	0855	0855	0900	0900	0905	0917
MASSIVE	WB-50	14	0830	0905	-	-			-			-	2030	1918
WILDROOT-21	P2V		0835	1006	-	-	-	-	-	-	-	-	-	1140
HOTSHOT-3	B-57B		0840	0840	0845	0840	0900	0905	0910	1011	0915	1011	0920	1023
HOTSHOT-4	B-57B		0855	0855	0900	0855	0915	0923	0935	1010	0940	1010	0945	1016
HOTSHOT-15	B-57D		0910	0910	0915	0910	0930	0931	1000	1145	1005	1145	1015	1204
HOTSHOT-16	B-57D		0925	0925	0930	0925	0945	0951	1040	1110	1045	1110	1055	1125
WILDROOT-22	P2V		0940		-	-						-		
WILSON SPECIAL	WB-50		1000	1120	-	-						-	-	1643
HOTSHOT-17	B-57D		1205	1145	1210	1145	1230	1230				-	1605	1510
HOTSHOT-18	B-57D		1805	1549	1810	1549	1830					-	2205	1946
HOTSHOT-19	B-57D		D-1 0755	D-1 0812	D-1 0800		D-1 0830					-	[illegible] 1155	1226

AFWL/HC

AFWL/HQ

357

PHOTO

Test Array Board

WAHOO, 16 May 1958

AFWL/HQ

AFWL/HQ

AFWL/H

AFWL/HQ

357

PHOTO

Mission Execution Board

WAHOO, 16 May 1958

AFWL/HQ

AFWL/HQ

			1		2		3		4		5		6	
CALL SIGN	TYPE	ALT	ETD	ATD	ETA	ATA	ETA	ATA	ETD	ATD	ETA	ATA	ETA	ATA
STABLE ECHO	SA-16	7	0900	0900	-	-	1130	0923	1340		-		1415	1434
CARTER-1	RB-50	23	1115	1115	-	-	1230	1130	1310	1340	-	-	1412	1441
CARTER-2	RB-50	2.5	1130	1120	-	-	1230	1142	1310	1340	-	-	1500	1511
PEWTER-2	C-54	10	1140	1140	-	-	1230	1228	1310	1332	-	-	1415	1414
PEWTER-3	C-54	9	1153	1153	-	-	1230	1243	1310	1400	-	-	1400	1418
PEWTER-1	C-54	1.5	1215	1215			1230	1230	1310	1340	-	-	1355	1354
OPIUM	B-57B	20	1210	1205	1213	1213	1232	1233	1400	1400	-	-	1410	1440
HOTSHOT-1	B-57B		1300	1302	1305	1305	1313	1315	1423	1423	1430	1430	1435	1439
HOTSHOT-2	B-57B		1300	1302	1305	1305	1313	1315	1423	1423	1430	1430	1435	1357
STABLE-3	SA-16		1350	1421							-	-	2050	1802
WILSON-3	WB-50	1	0700	0700							-	-	1320	1345

AFWL/HO

PHOTC

Test Array Board

HOLLY, 21 May 1958

AFWL/HQ

AFWL/HC

INCLOSURE 44 PAGE 11

AFWL/HQ

AFWL/HQ

363

PHOTC

Mission Execution Board

HOLLY, 21 May 1958

AFWL/HQ

INCLOSURE 45 PAGE 1

[illegible] 21 MAY 58			1		2		3		4		5		6	
CALL SIGN	TYPE	ALT	ETD	ATD	ETA	ATA	ETA	ATA	ETD	ATD	ETA	ATA	ETA	ATA
[illegible] ECHO	S4-16	7	[illegible]	0540	-	-	0600	0600	0525		-	-	0940	0926
[illegible] BAKER	S4-16	4	[illegible]	0605	0635	0647	0700	0726	1010	0807	-	0510	1100	0847
OPIUM-1	S57B	15	[illegible]	[illegible]	-	-	[illegible]	0625	0525	0825	-	-	0835	0917
PEWTER-2	S4	10	0615	LATE CNX	0645	CNX	[illegible]	/	/	/	/	/	1045	CNX
PEWTER-3	S-54	7	0620	0620	0650	0710	0710	0735	-	0807	-	0826	1050	0902
HOTSHOT-1	S-57B		0710	0710	-	-	0750	0730	0735	0740	-	-	0745	0747
HOTSHOT-2	B-57B		0725	0725	-	-	0745	0746	0750	0752	-	-	0800	0759
HOTSHOT-3	B-57D		0740	0750	-	-	0800	0800	0805	0820	-	-	0815	0828
OPIUM-3	B-57B	20	0759	/	0809	/	0820	/	1039	/	1024	/	1040	/
HOTSHOT BRAVO-1	B-57B		0755	/	0810	/	0820	/	0939	/	0954	/	1009	/
HOTSHOT-4	B-57D		0756	0808	-	-	0815	0830	0828	0845	-	-	0830	0915
HOTSHOT BRAVO-2	B-57B		0854	/	0909	/	0929	/	0939	/	0954	/	1010	/
HOTSHOT BRAVO-3	B-57B		0909	/	0924	/	0944	/	0952	/	1009	/	1024	/
HOTSHOT BRAVO-4	B-57B		0909	/	0924	/	0944	/	0954	/	1009	/	1025	/
HOTSHOT BRAVO-5	B-57B		0924	/	0939	/	0959	/	1009	/	1024	/	1039	/
HOTSHOT BRAVO-6	B-57B		0924	/	0939	/	0959	/	1009	/	1024	/	1040	COK
CARTER-2	B-50	-	500	/	-	/	-	/	-	/	-	/	1600	/
5 WILDROOT	P2V	10	0800	0803	0830		0830		-	-	-	-		0923

AFWL/HQ

AFWL/ HQ

364

PHOTO

Test Array Board

NUTMEG, 22 May 1958

AFWL/HQ

4/6

365

22 MAY 58
NUTMEG
H-HOUR - 0920
R-HOUR - 1130
OPIUM-7 (20 NM NORTH OF 62)
20 NM
SURFACE TO 35M
H TO H+7 HOURS
SURFACE TO 35M
H TO H+2 HOURS
PEWTER-3
10 NM NW
ON HEADING OF 210 AT T0
12 NM
080° 100 NM
SURFACE TO 15M
H TO H+2 HOURS
(RADIUS 2 NM)
OF GZ
HORSHOT-1
23 M
(45 NM WEST)
STABLE
BRAVO
9 NM
WEST)
15 NM
250° 50NM
PEWTER-2
10 KT
(10 NM WEST)
40
39000
38000
37000
36000
35000
34000
33000
32000
31000
30000
29000
28000
27000
26000
25000
24000
23000
22000
21000
20000
19000
18000
17000
16000
15000
14000
13000
12000
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
-1000
TEST
295

AFWL/HQ

364

PHOTO

Mission Execution Board

NUTMEG, 22 May 1958

AFWL/HQ

AFWL/HQ

ENCLOSURE 41 PAGE 1

CALL SIGN	TYPE	ALT	1 ETD	1 ATD	2 ETA	2 ATA	3 ETA	3 ATA	4 ETD	4 ATD	5 ETA	5 ATA	6 ETA	6 ATA
WILSON-050	WB-50	10	0420	0431	-	-	-	-	-	-	-	-	1430	154
STABLE BRAVO	SA-16	9	0625	0625	0710	0707	0735	0720	1045	1122	-	1120	1135	1159
PEWTER-2	C-54	10	0650	0650	0720	0729	0740	0758	-	0930	-	0945	1120	1030
PEWTER 3	C-54	12	0655	0655	0725	0740	0745	0805	-	0926	-	0945	1125	1022
OPIUM 1	B-57B	20	0830	0830	0845	0850	0855	0900	1045	1117	1100	1120	1115	1141
HOTSHOT-1	B-57B	25	0831	0831	0845	0850	0855	0900	1015	1036	1030	1043	1045	1057
HOTSHOT-2	B-57B		0945	0945	1000	1003	1020	1011	1030	1024	1045	1035	1101	1045
HOTSHOT-3	B-57B		1000	1000	1015	1017	1035	1036	1045	1055	1100	1106	1115	1117
HOTSHOT-4	B-57B		1001	1001	1015	1017	1035	1036	1045	1050	1100	1100	1120	1115
HOTSHOT-5	B-57B		1025	1025	1040	1044	1100	1100	1110	1116	1125	1120	1145	1142
HOTSHOT-6	B-57B		1026	1027	1040	1044	1100	1100	1110	1112	1125	1120	1150	1134
CARTER 2	RB-50		1255	1256	-	-	-	-	-	-	-	-	1555	1637

AFWL/HQ

b9E

PHOTO

Test Array Board

YELLOWWOOD, 26 May 1958

AFWL/HQ

AFWL/HO

ENCLOSURE 45 PAGE 11

369

AFWL/HQ

AFWL/HQ 370

16C

PHOTO

Mission Execution Board

YELLOWWOOD, 26 May 1958

AFWL/ HQ

INCLOSURE 49 PAGE 1

AFWL/HQ

371

AFWL/HO

292

YELLOWWOOD 26 MAY 58

CALL SIGN	TYPE	ALT	1 ETD	1 ATD	2 ETA	2 ATA	3 ETA	3 ATA	4 ETD	4 ATD	5 ETA	5 ATA	6 ETA	6 ATA
STABLE ECHO	SR-71	17	1100	1059	-	-	1130	1120	1700	1700	-	-	1130	1122
WATCHDOG	B-52	30	1109	1108	-	-	1159	1225	1402	1402			1608	1548
BARLEY	A4D	10	1310	1310	-	-	1314	1314	1402	1402	-	-	1412	1419
CLARK	A4D	3	1312	1313	-	-	1316	1316	1402	1402	-	-	1408	1415
KIMONO	FJ4	13	1313	1314	-	-	1317	1317	1402	1402	-	-	1414	1420
COBALT	FJ4	4	1314	1315	-	-	1318	1319	1402	1402	-	-	1410	1418
OPIUM-1	B57B	35	1340	1340	-	-	1355	1354	1700	1700	-	-	1721	1710
HOTSHOT-1	B57B		1425	1445	-	-	1445	1445	1455	1455	-	-	1510	1523
HOTSHOT-2	B57B		1440	1506	-	-	1500	1526	1515	1511	-	-	1530	1542
HOTSHOT-3	B57B		1455	1511	-	-	1515	1531	1540	1556	-	-	1555	1615
HOTSHOT-4	B57B		1510	1525			1530	1545	1604	1619	-	-	1629	1607
HOTSHOT-15	B57D		1525	1545		-	1545	1605	1634	1649	-	-	1655	1634
HOTSHOT-16	B57D		1541	1601	-	-	1600	1620	1700	1720	-	-	1720	1733

AFWL/HO

PHOTO

Test Array Board

MAGNOLIA, 27 May 1958

AFWL/HQ

AFWL/HQ

AFWL/HO

AFWL/HO

375

PHOTO

Mission Execution Board

MAGNOLIA, 27 May 1958

AFWL/HQ

AFWL/HQ

375

AFWL/HO

MAGNOLIA 27 MAY 58

CALL SIGN	TYPE	ALT	1 ETD	1 ATD	2 ETA	2 ATA	3 ETA	3 ATA	4 ETD	4 ATD	5 ETA	5 ATA	6 ETA	6 ATA
STABLE ECHO	SA-16	7	0455	0455	-	-	0525	0523	0830	0830	-	-	0830	0844
3-WILDROOT	C2V	5	0500	0448	-	-	0516	0516	0606	0606	-	-		0803
BARLEY	A4D	14	0514	0511	-	-	0515	0515	0602	0602	-	-	0612	0623
CLARK	A4D	8	0512	0512	-	-	0517	0517	0602	0602	-	-	0608	0613
COBALT	FJ4	12	0513	0515	-	-	0517	0520	0602	0602	-	-	0614	0615
KIMONO	FJ4	10	0514	0514	-	-	0518	0518	0602	0602	-	-	0610	0619
OPIUM	B57B	35	0540	0540	-	-	0555	0548	0835	0825	-	-	0845	0833
HOTSHOT-1	B57B		0700	0700	-	-	0730	0723	0740	0740	-	-	0750	0751
HOTSHOT-2	B57B		0725	0724	-	-	0745	0740	0755	0758	-	-	0805	0809
HOTSHOT-3	B57B		0740	0740	-	-	0800	0758	0810	0811	-	-	0810	0818
HOTSHOT-4	B57B		0755	0755	-	-	0815	0806	0825	0823	-	-	0840	0830

AFWL/HO

377

PHOTO

Test Array Board

TOBACCO, 30 May 1958

AFWL/HQ

INCLOSURE 2, PAGE 1

AFWL/HQ

30 MAY 50
TOBACCO
H-HOUR
OPIUM
35 M
WATCH DOG
26 M
SURFACE UP
HOT HR 1 HOUR
RADIUS. 2 MI
AROUND GZ
GZ
STABLE ECHO
RIMOND
9 M
CLARK
5M
COBALT
12 M
BARLEY
11 M
5 MILE RINGS
12 WILDROOT
2M
WIND

379

PHOTO

Mission Execution Board

TOBACCO, 30 May 1958

AFWL/HQ

53

AFWL/HQ

379

TOBACCO 30 MAY 58			1		2		3		4		5		6	
CALL SIGN	TYPE	ALT	ETD	ATD	ETA	ATA	ETA	ATA	ETD	ATD	ETA	ATA	ETA	ATA
STABLE ECHO	SA 16	7	1200	1200	–	–	1230	1220	1645	1635	–	–	1715	1646
WATCH DOG	B 52	26	1230	1230	–	–	1305	1308	1400	1415	1424		1825	1500
BARLEY	A-4D	11	1311	1311	–	–	1315	1313	1402	1417	–	–	1410	1433
CLARK	A4D	5	1312	1335	–	–	1316	1337	1402	1417	–	–	1406	1429
COBALT	FJ4	12	1313	1313	–	–	1317	1317	1402	1417	–	–	1412	1435
KIMONO	FJ4	9	1314	1314	–	–	1318	1318	1402	1417	–	–	1408	1431
OPIUM	B-57	35	1335	1348	–	–	1355	1400	1645	1630	–	–	1710	1638
HOT SHOT 1	B-57	–	1510	1520	–	–	1545	1526	1600	1615	–	–	1610	1623
HOT SHOT 2	B57	–	1525	1529	–	–	1600	1541	1615	1607	–	–	1625	1616
HOT SHOT 3	B57	–	1540	1540	–	–	1615	1556	1645	1615	–	–	1705	1622
HOT SHOT 4	B57	–	1555	1555	–	–	1630	1607	1645	1630	–	–	1655	1635

AFWL/HO 380

18E

PICTC

Test Array Board

SYCAMORE, 31 May 1958

AFWL/HQ

AFWL/HQ

[illegible]

382

AFWL/HO

SYCAMORE
31 MAY 58
H-HOUR-1800M
SURFACE UP TO 36 HRS
OPIUM-1
OPIUM-3
PEWTER-3
6M
PEWTER-2
8M
STABLE BRAVO
WATCH DOG
30M
GZ
10 MILE RINGS
40000
39000
38000
37000
36000
35000
34000
33000
32000
31000
30000
29000
28000
27000
26000
25000
24000
23000
22000
21000
20000
19000
18000
17000
16000
15000
14000
13000
12000
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000

482

PHOTO

Mission Execution Board

SYCAMORE, 31 May 1958

AFWL/HQ

INCLOSURE 55 PAGE 1

383

SYCAMORE 31 MAY 58			1		2		3		4		5		6	
CALL SIGN	TYPE	ALT	ETD	ATD	ETA	ATA	ETA	ATA	ETD	ATD	ETA	ATA	ETA	ATA
STABLE BRAVO	SA-16	9	1245	1245	1315	1321	1400	1334	-	1710	-	1720		1751
WATCH DOG	B-52	30	1300	1300	1315	1318	1335	1345	1504	1520	1511	1530	1600	1717
PEWTER-3	C-54	6	1254	1254	1334	1337	1349	1349	1530	1503	1545	1518	1615	1624
PEWTER-2	C-54	8	1314	1314	1354	1357	1400	1400	1515	1505	1530	1518	1600	1626
OPIUM 1	B-57B	36	1425	1425	1440	1440	1450	1450	1740	1710	1750	1720	1805	1734
OPIUM-3	B-57B	34	1425	1425	1440	1440	1450	1450	1740	1642	1750	1645	[illegible]	1700
HOTSHOT-1	B-57B	32	1425	1426	1440	1440	1450	1450	1615	1631	1625	1641	1639	1656
HOTSHOT-12	B-57D		1501	1515	1515	1540	1555	1555	-	1612	-	1630	1645	1646
HOTSHOT-3	B-57B		1530	1530	1545	1545	1605	1605	1615	1636	1625	1647	1640	1659
HOTSHOT-4	B-57B		1540	1554	1600	1605	1615	1620	1645	1645	1635	1655	1720	1711
HOTSHOT-5	B-57B		1555	1609	1616	1622	1630	1640	1720	1655	1730	1700	1755	1715
HOTSHOT-6	B-57B		1605	1617	1635	1634	1640	1650	1740	1709	1750	1716	1815	1727
WILSON SPECIAL	WB-50		2100	CANCELLED										

AFWL/HO

PHOTO

Test Array Board

ROSE, 3 June 1958

AFWL/HQ

AFWL/HQ

INCLOSURE 56 PAGE 1

ROSE
3 JUNE 58
H-HOUR 0645
K-HOUR 0745
WATCH-DOG
25M
HOT SHOT 4
35M
OPIUM-1
35M
STABLE ECHO
7M
KIMONO
13M
COBALT
4M
CLARK
3M
BARLEY
11M
S MILL
KINGS
WHIPCORD
5M

AFWL/HQ

PHOTO

Mission Execution Board

ROSE, 3 June 1958

AFWL/HQ

AFWL/HQ

INCLOSURE 1 PAGE 1

ROSE 3 JUNE 58			1		2		3		4		5		6	
CALL SIGN	TYPE	ALT	ETD	ATD	ETA	ATA	ETA	ATA	ETD	ATD	ETA	ATA	ETA	ATA
STABLE ECHO	SA-16	7	0335	0335	-	-	0420	0420	0900	0916	-		0120	0132
WATCHDOG	B-52	23	0355	0355	-	-	0445	0445	0635	0650	-		0811	0813
7=WILDROOT	P2V	5	0530	0530	-	-	0615	0549	-	-			KWAJ 1530	
BARLEY	A4D	11	0541	0541	-	-	0545	0545	0632	0647	-		0642	0702
CLARK	A4D	3	0542	0542	-	-	0546	0546	0632	0647	-		0638	0658
RIMONO	FJ4	13	0543	0543	-	-	0541	0547	0632	0647	-		0644	0704
COBALT	FJ4	4	0544	0544	-	-	0548	0549	0632	0647	-		0640	0700
OPIUM-1	B-57B	35	0610	0612	-	-	0627	0631	0900	0909	-		0913	0914
HOTSHOT-4	B-57B	35	0610	0614	-	-	0629	0631	0900	0909	-	-	0910	0911
HOTSHOT-1	B-57B		0740	0740	-	-	0800	0746	0815	0815	-	-	0835	0820
HOTSHOT-2	B-57B		0755	0755	-	-	0815	0817	0830	0848	-	-	0840	0852
HOTSHOT-3	B-57B		0810	0810	-	-	0830	0825	0845	0852	-	-	0855	0854

AFWL/HO

3825

PHOTO

Test Array Board

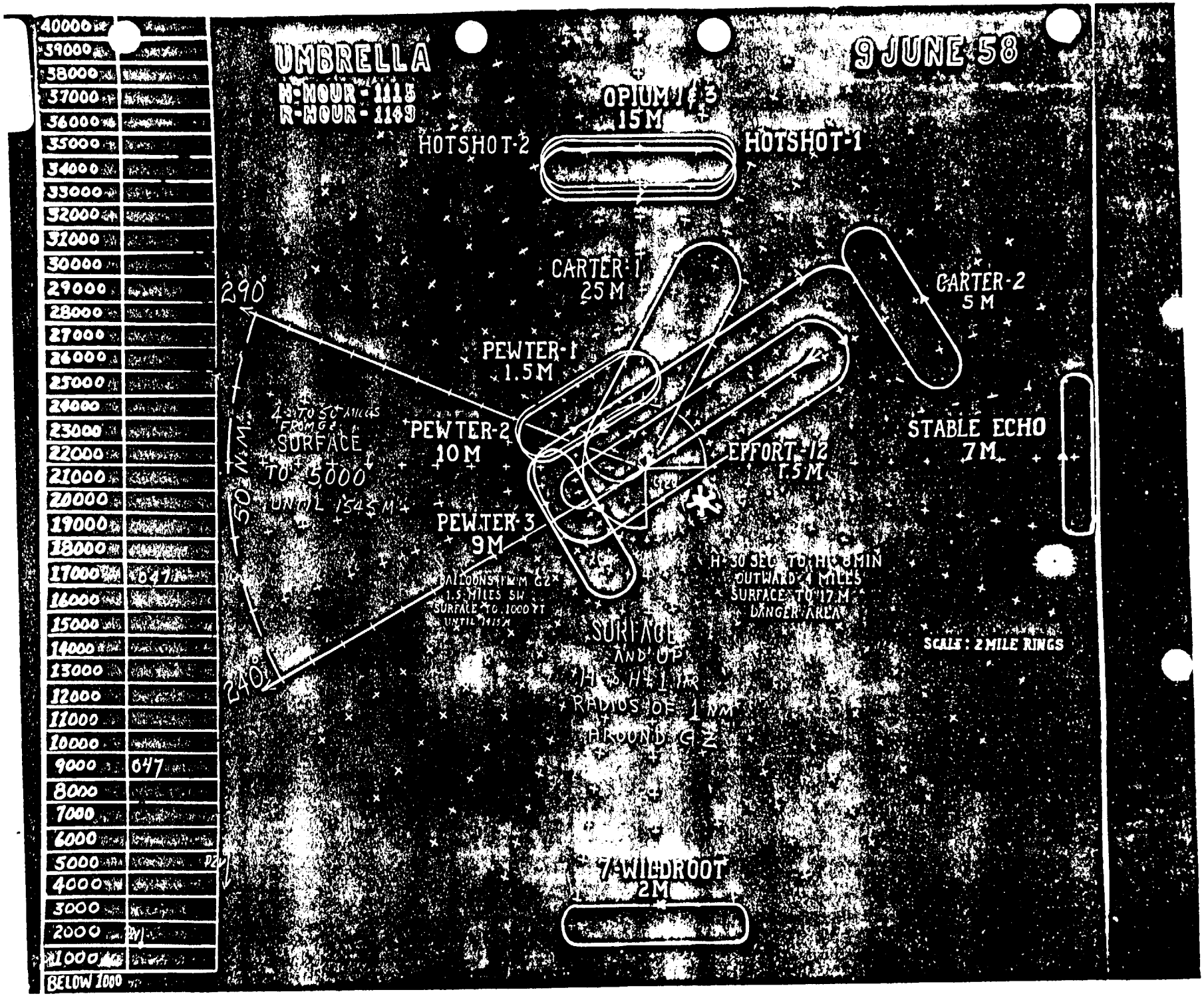
UMBRELLA, 9 June 1958

AFWL/HQ

AFWL/HC

58

389


UMBRELLA
H-HOUR - 1115
R-HOUR - 1149
9 JUNE 58
OPIUM 1/3
15M
HOTSHOT-2
HOTSHOT-1
CARTER-1
25M
CARTER-2
5M
290°
PEWTER-1
1.5M
4 TO 50 MILES FROM GZ
SURFACE TO 5,000 UNDL 15435M
50 N.M.
PEWTER-2
10M
STABLE ECHO
7M
EFFORT-12
1.5M
PEWTER-3
9M
H-30 SEC TO H+8MIN
OUTWARD 4 MILES
SURFACE TO 17M
DANGER AREA
BALLOONS 1 NM GZ
1.5 MILES SW
SURFACE TO 1000 FT
UNTIL 1915A
SURFACE AND UP
H TO H+1 HR
RADIUS OF 1 NM
AROUND GZ
SCALE: 2 MILE RINGS
240°
7-WILDROOT
2M
40000
39000
38000
37000
36000
35000
34000
33000
32000
31000
30000
29000
28000
27000
26000
25000
24000
23000
22000
21000
20000
19000
18000
17000
16000
15000
14000
13000
12000
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
BELOW 1000
647

PHOTO

Mission Execution Board

UMBRELLA, 9 June 1958

AFWL/HQ

AFWLHO

391

UMBRELLA 9 JUNE 58			1		2		3		4		5		6	
CALL SIGN	TYPE	ALT	ETD	ATD	ETA	ATA	ETA	ATA	ETD	ATD	ETA	ATA	ETA	
STABLE ECHO	SA16	7	0100	0100							1107	1107		07
CARTER 1	KB50	25	0915	0915			1042	0915					1210	1217
CARTER 2	KB50	25	0920	0920			1045	1045					1330	1328
7 WILDROOT	P2L	25	0958	0958			1045	1045						KWA
PEWTER 2	C54	10	0945	0945			1045	1045					1205	1205
PEWTER 3	C54	7	0950	0950			1045	1045					1200	1156
OPIUM 1	B57	25	0944	0940			1045	1040					1210	1207
OPIUM 3	B57	25	0944	0944			1045	1040					1212	1208
HOT SHOT 1	B52		1102	1058			1045	1040					1140	1132
HOT SHOT 2	B57		1038	1038			1045	1045					1205	1200
PEWTER 1	C54	15	1000	1000			1040	1040					1155	1154
EFFORT 12	H-19	15	1110	1110			1145	1140					1150	1139
STABLE ECHO	SA16	7		1034	ISC	ME	D						TABLE ECHO	1316
					POST H-HOUR									
STABLE ECHO 2	SA16		1145	1151	10	FFP	DROP-HOT		WATER SURVEY					1341
EFFORT 9	H-21		1145	1225	4	WATER SAMPLE			SURVEY					1330
MOSQUITO 1	L-20		1145	1205	GRC 254.6	CANNISTER			RECOVERY					
EFFORT 1	H-21		1145	1306	GRC 254.6	CANNISTER			RECOVERY					
EFFORT 14	H-19		1200	1210	4	PHOTO	OF		SINKING SHIPS					1313
EFFORT 16	H-21		1215	1200	4	FILM		RECOVERY						1330
EFFORT 10	H-19		1245	1224	4	FILM	RECOVERY		& INUNDATION		SURVEY			1345
EFFORT 15	H-19		1110	1115	4	SAR								

AFWL/HQ

AFWL/HQ

AFWL/HQ

DSURE60 PAGE 19

393

AFWL/HQ

AFWL/HQ

54

NOTC

Mission Execution Board

MAPLE, 11 June 1958

AFWL/HQ

AFWL/HQ

61

MAPIL 11 JUNE 58

CALL SIGN	TYPE	NUM	ETD	ATD	ETA	ATA	ETA	ATA	ETD	ATD	ETA	
STABLE DRIVE	SR-71	2	0215	0215	0245	0316	0506	0517				
WATCHDOG	B-52	2	0245	0245	0300	0316						
TO-WILDROOT	P2V	2	0430	KWH 0535		0416		0430				
OPIUM	B-57B	35	0500	0500	0515	0514		0528				0508
HOTSHOT-6	B-57B	35	0500	0548	0515	0605						0603
HOTSHOT-11	B-57D		0625	0625	0645	0644						0753
HOTSHOT-12	B-57D		0635	0634	0655	0654						0816
HOTSHOT-3	B-57B		0700	0640	0720	0713						0818
HOTSHOT-4	B-57B		0710	0700	0732	0722						0819
HOTSHOT-5	B-57B		0720	0710	0742	0732						0836
HOTSHOT SPARE (11)	B-57			0718								0719

AFWL/HQ

AFWL/ HQ

39

PHOTO

Test Array Board

ASPEN, 15 June 1958

AFWL/HQ

AFWL/HQ

397

AFWL/HQ

AFWL/HQ

PTCTC

Mission Execution Board

[illegible], 15 June 1958

AFWL/HQ

AFWL/HC

INCLOSURE 63 PAGE 1

399

ASPEN 15 JUNE 58

CALL SIGN	TYPE	ALT	1 ETD	1 ATD	2 ETA	2 ATA	3 ETA	3 ATA	4 ETD	4 ATD	5 ETA	5 ATA	6 ETA	6 ATA
STABLE BRAVO	SD-16	9	0400	0400	0757	0750	0830	0807		0926		0957		0942
II WILDRUST	P2V	8	KWH	0400	0415									
OPIUM -1	B-57B	55	0500	0500	0517	0529	0545	0529		0911		0959	0945	0945
HOTSHOT BRAVO -11	B-57D		0511	0457			0700	0711				0937	0745	0859
HOTSHOT BRAVO -2	B-57B		0540	0510			0710	0710				0955	0800	0749
HOTSHOT BRAVO -3	B-57C		0600	0535			0720	0720				0907	0811	0822
HOTSHOT BRAVO -4	B-57B		0545	0510	0722		0750	0750				0915	0820	0828
HOTSHOT BRAVO -5	B-57B		0710	0720			0810	0810				0922	0835	0839

AFWL/HQ

AFWL/HQ

A-00

PHOTO

Test Array Board

WALNUT, 15 June 1958

AFWL/ HQ

AFWL/HQ

AFWL/HQ

402

PHOTO

Mission Execution Board

WALNUT, 15 June 1958

AFWL/HQ

WALNUT 15 JUNE 58			1		2		3		4		5		6	
A/C SIGN	TYPE	ALT	ETD	ATD	ETA	ATA	ETA	ATA	ETD	ATD	ETA	ATA	ETA	
STABLE ECHO	SAC	7	0300	0300			0334	0330						1051
WATCH DOG	B52	31	0335	0338			[illegible]25	042E					0[illegible]3	0500
DARKEN	KC-135	10	0540	0549			0544	0544					0642	0657
CLARK	KC-135	5	0542	0542			0541	0541					0643	0647
KIMONO	KC-135	11	0543	0543			0547	0547					0649	0654
COBALT	KC-135	4	0544	0544			0545	0545					0647	0650
OPIUM-3	B-57B	35	0611	0610			0654	0650					1105	1034
HOTSHOT-11	B-57B		0613	0612			0500	0500	0503	0503			0835	0840
2-WILDROOT	P2V	2		KWA 0945			0600	0543		1145		KWA 1238	KWA 1324	KWA 1331
15 WILDROOT	P2V	2	0715	0720										1603
11-WILDROOT	P2V	2		0742										1433
HOTSHOT-2	B-57B		0510	0510			0530	0535					0856	0927
HOTSHOT-3	B-57B		0840	0842			0900						0950	1020
MASSIVE-1	UB-50		0830	0857									2000	2057
HOTSHOT-4	B-57B		0855	0855			0915						0945	1009
HOTSHOT-5	B-57B		0910	0910			0950						1005	1046
HOTSHOT-6	B-57B		0910	0909			0950						1020	1029
HOTSHOT-17	B-57B		1130	1130			1200						1530	1626
HOTSHOT-15	B-57B		1530	1530			1600						1930	1935
HOTSHOT-16	B-57B		D+1 0730	D+1 0814			D+1 0930						D+1 1030	D+1 1149
MASSIVE-2	UB-50		1300	1305									2000	2027

AFWL/HO

AFWL/HQ

404

PHOTO

Test Array Board

LINDEN, 18 June 1958

AFWL/HQ

AFWL/HQ

INCLOSURE 66, PAGE 1

405

18 JUNE 58
LINDEN
6-HOUR 1530
8-HOUR 1830
OPUNA-1
25M
OPUNA-2
25M
STABLE HEAD
7M
WILDROOT
45M
SURFACE TUG
11 TO 11 8 HOURS
120 MILES
SCALE: STATUTE MILES
AIR
35000
34000
33000
32000
31000
30000
29000
28000
27000
26000
25000
24000
23000
22000
21000
20000
19000
18000
17000
16000
15000
14000
13000
12000
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
BELOW 1000
290
290

AFWL/HQ

406

PHOTO

Mission Execution Board

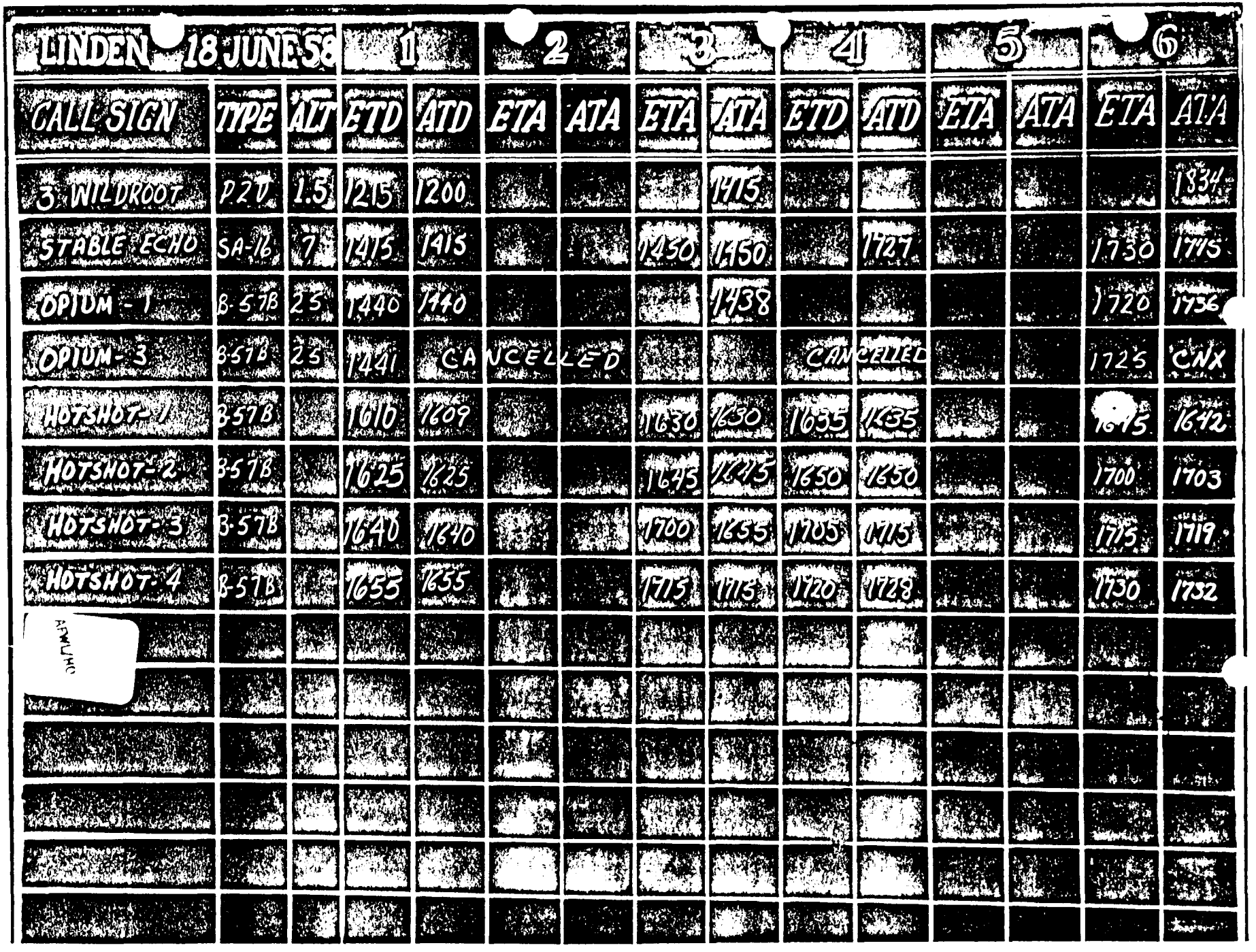
LINDEN, 18 June 1958

AFWL/HQ

AFWL/HQ

61

407



LINDEN 18 JUNE 58			1		2		3		4		5		6	
CALL SIGN	TYPE	ALT	ETD	ATD	ETA	ATA	ETA	ATA	ETD	ATD	ETA	ATA	ETA	ATA
3 WILDROOT	P2V	1.5	1215	1200				1715						1834
STABLE ECHO	SA-16	7	1415	1415			1450	1450		1727			1730	1745
OPIUM - 1	B-57B	25	1440	1440				1438					1720	1736
OPIUM - 3	B-57B	25	1441	CANCELLED					CANCELLED				1725	CNX
HOTSHOT - 1	B-57B		1610	1609			1630	1630	1635	1635			1675	1642
HOTSHOT - 2	B-57B		1625	1625			1645	1645	1650	1650			1700	1703
HOTSHOT - 3	B-57B		1640	1640			1700	1655	1705	1715			1715	1719
HOTSHOT - 4	B-57B		1655	1655			1715	1715	1720	1728			1730	1732

AFWL/HO

PHOTO

Test Array Board

REDWOOD, 28 June 1958

AFWL/HQ

AFWL/HQ

INCLOSURE 68 PAGE 1

AFWL/HQ

AFWL/HQ

PHOTO

Mission Execution Board

ELDER and REDWOOD, 28 June 1958

AFWL/HQ

AFWL/HO

INCLOSURE 69, PAGE 1

OPS: REDWOOD	28JUN58	1		2		3		4		5		6	
CALL SIGN	TYPE	ALT	ETD	ATD	ETA	ATA	ETA	ATA	ETD	ATD	ETA	ATA	ETA	ATA
R STABLE BRAVO	SA16	9	0215	0215	-	0318	-	0318	-	0816	-	0850	-	0915
R WATCH DOG	B52	25	0245	0245	-	0310	-	0325	-	0533	-	0542	-	0741
WATCH DOG	B52	25	0245	0245				0346	-	0830				0741
R 13 WILDROOT	P2V	12	KWA 0345	KWA 0340	0445	0434	0515	0517	-		-			
R JAGGED	B57B	35	0500	0501	-	0520	0525	0529	-	0825	-	0850	0835	0907
STABLE ECHO	SA16	9	0	315										0604
14 WILDROOT	P2V	2	KWA 03	03			0615	06	-		-			
PEWTER 2	C54	6	0535	0537							-		0700	0803
PEWTER 3	C54	6	0611	0614							-		0706	0800
OPIUM	B-57E	35	0610	0610				0650			-		1140	0952
R HARDTIME 1	B57D		0615	0615	-	0637	0700	0650	0705	0725	-	0750	0735	0753
R HARDTIME 2	B57B		0615	0625	-	0704	0715	0715	0720	0731	-	0740	0715	0754
HARDTIME 3	B52B		0655	0655	-	0713	0725	0728	0730	0740	-	0830	0755	0835
HARDTIME 4	B57B		0705	0705	-	0724	YES	73%	0740	0750	-	0912	0905	0830
R HARDTIME 5	B57D		0715	/	RADIO TROUBLE - ABORT						/	/	/	/
HOTSHOT 2	B57B		0510										0950	0934
HOTSHOT 3	B57												0911	0929
HOTSHOT 4	B57		0530										0932	0952
HOTSHOT 5	B57		0545										0915	1015
STABLE ECHO 2														0925
R HARDTIME SPRI	B57B			0738	-	0750	-	1510	-	1515	-	0835	-	0852

AFWL/HO

AFWL/HO

412

413

ORIGINAL

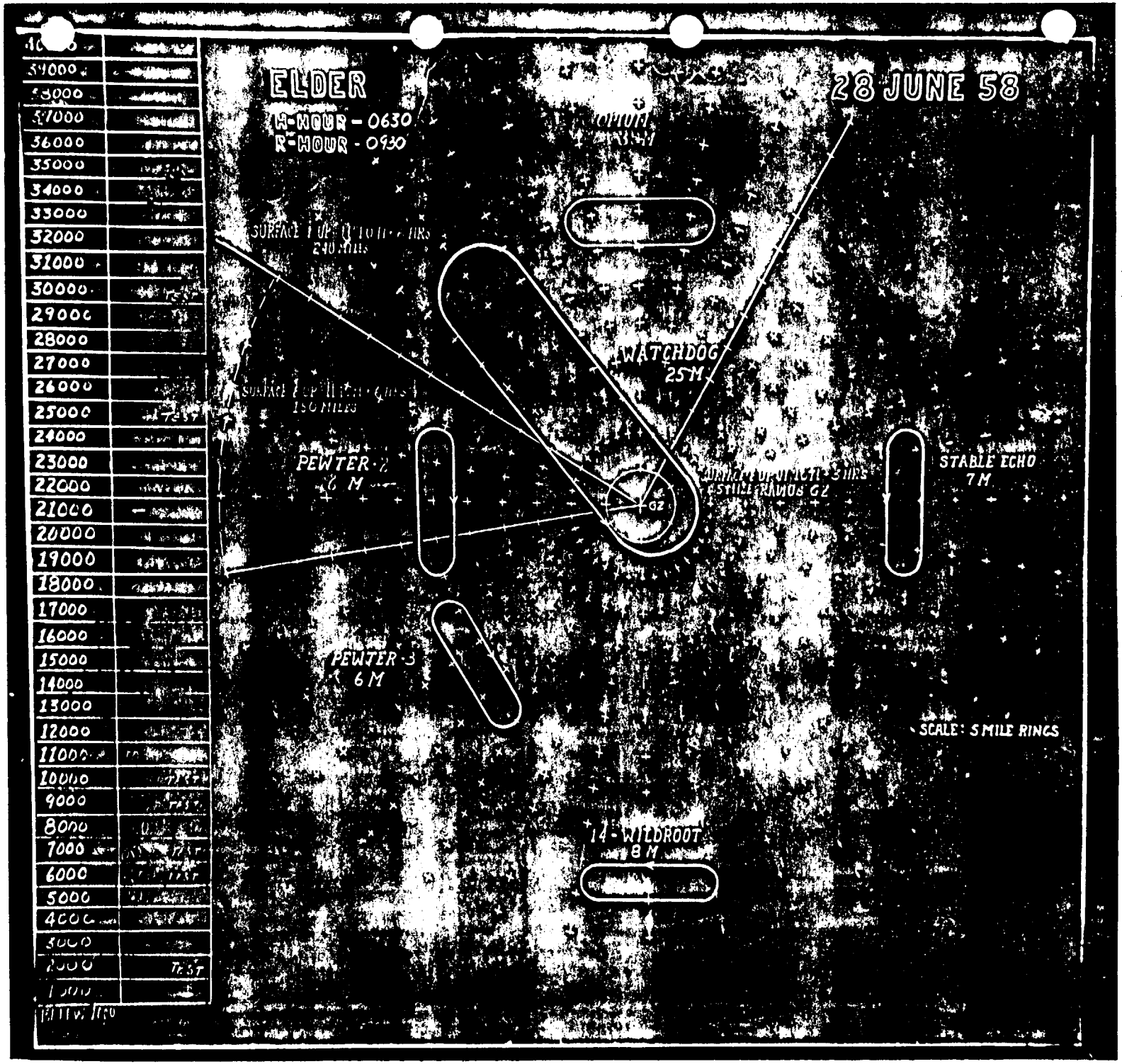
PHOTO

Test Array Board

ELDER, 28 June 1958

AFWL/HQ

INCLOSURE 7a PAGE 1


ELDER
H-HOUR - 0630
R-HOUR - 0930
28 JUNE 58
WATCHDOG
25M
PEWTER-2
6 M
PEWTER-3
6M
STABLE ECHO
7M
14-WILDROOT
8M
SCALE: 5 MILE RINGS
54000
53000
52000
51000
36000
35000
34000
33000
32000
31000
30000
29000
28000
27000
26000
25000
24000
23000
22000
21000
20000
19000
18000
17000
16000
15000
14000
13000
12000
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000

AFWL/HQ

PHOTO

Test Array Board

OAK, 29 June 1958

AFWL/HQ

INCLOSURE 1, PAGE 1

AFWL/HO

AFWL/HQ

AFWL/HQ

4/6

PHOTO

Mission Execution Board

OAK, 29 June 1958

AFWL/HQ

INCLOSURE 12, PAGE 1

AFWL/HO

OAK - 29 JUN 58			1		2		3		4		5		6	
CALL SIGN	TYPE	ALT	ETD	ATD	ETA	ATA	ETA	ATA	ETD	ATD	ETA	ATA	ETA	ATA
STABLE ECHO-1	SA-16	7	0431	0437	-	-	0506	0506	1115	1133				
WATCHDOG	B62	25	0443	0445	0510	0500	0515	0555	-	-				0953
STABLE ECHO-2	SA-16	5	0610	0610	-	-	0630	0650	1115					0516
MOSQUITO-1	L-20	5	0650	0650	-	-	0715	0717		0734				0808
MOSQUITO-2	L-20	5	0650	0650	-	-	0715	0717						0808
MOSQUITO-3	L-20	5	0650	0650	-	-	0715	0717						0808
MOSQUITO-4	L-20	5	0650	0650	-	-	0715	0717						0808
MOSQUITO-5	L-20	5	0650	0650	-	-	0715	0717	-					0808
B-WILDROOT	P2V	5	0655	0655	-	-	-	0705						RWH 1646
PACEMAKER-0	L-19	5	0656	0656	-	-	0715	0715	-					0815
PACEMAKER-2	L-19	5	0657	0657	-	-	0715	0715	-					0815
PACEMAKER-3	L-19	5	0658	0658	-	-	0715	0715						0815
OPIUM	B-57B	35	0705	0710	-	-	0725	0734	1055					1128
HOTSHOT-11	B-57B		0835	0831	ABORT - NO HEATERS									0903
HOTSHOT-12	B-57B		0900	0900	-	0915	0930	0930	1000	1000				1009
HOTSHOT-13	B-57B		0915	0920	-	-	0945	0945	1015	1020				1049
MASSIVE	U6-30		0930	0929	-	-	-	-	-	-	-			2022
HOTSHOT-14	B-57B		0940	0955	-	-	1000	1023	1030	1112				1125
HOTSHOT-15	B-57B		0955	0957	-	-	1015	1035	1045	1155				1143
HOTSHOT-16	B-57B		1000	GROUND ABORT - HEATER LIGHT										
HOTSHOT-17	B-57B		1230	1235	-	-	1300	-	1500	-	-	-		1412
HOTSHOT-18	B-57B		1530	1545	-	-	1600	-	1830	-	-	-		2055
HOTSHOT-19	B-57B		D+2 0820	D+1 0820	-	-	-	-	-	-	-	-		
HOTSHOT-11	B-57B		-	0948	-	-	-	1018	1030	1112	-	-		
HOTSHOT-SPARE	B-57		-	1026	-	-	-	1058	-	1152	-	-		

AFWL/HQ

PHOTO

Test Array Board

HICKORY, 29 June 1956

AFWL/HQ

INCLOSURE 73, PAGE 1

29 JUNE 58
HICKORY
H-HOUR - 1200
D-HOUR -
SURFACE TO 10,000 FEET
150 MILES
SURFACE TO 10,000 FEET
180 MILES
SURFACE TO 10,000 FEET
150 MILES
USAF
SEYMOUR JOHNSON AFB
SEYMOUR JOHNSON AFB
SEYMOUR JOHNSON AFB

PHOTO

Mission Execution Board

HICKORY, 29 June 1958

AFWL/HQ

INCLOSURE 74 PAGE 1

HICKORY	29 JUN 58		1		2		3		4		5		6	
CALL SIGN	TYPE	ALT	ETD	ATD	ETA	ATA	ETA	ATA	ETD	ATD	ETA	ATA	ETA	
STABLE BRAVO	A16	9	1005	1005	1050	1040	1105	1104		1546		1552		1624
5 WILDROOT	P2V	8	1020	KWA 0853	1050	1043	1105	1043		1604		1617		1640
JAGGED	B 57	30	1105	1105	1120	1125	1130	1130	1440	1435	1455	1455	1511	1509
HARDTIME 1	B 57		1300	1300	1315	1315	1330	1328	1400	1430	1015	1015	1430	1506
HARDTIME 2	B57		1310	1310	1325	1325	1340	1342	1410	1450	1425	1500	1440	1512
HARDTIME 3	B57		1320	1320	1335	1336	1350	1400	1420	1442	1435	1450	1450	1504
HARDTIME 4	B57		1330	1330	1345	1348	1400	1405	1430	1546	1445	1552	1500	1611
HARDTIME 5	B57		1340	1340	1355	1356	1410	—	1440	1440	1455	1435	1510	1451

PHOTO

Test Array Board

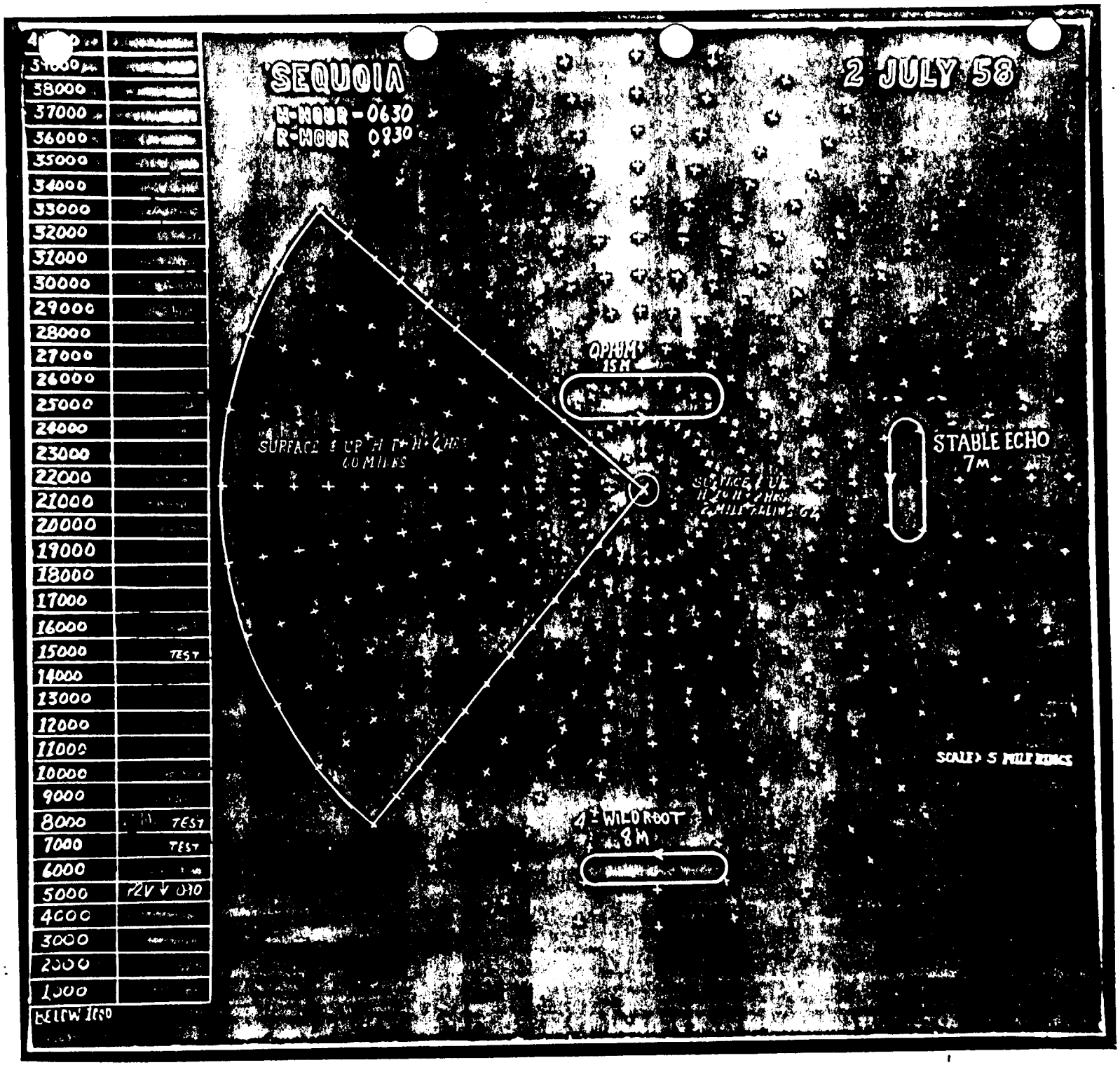
SEQUOIA, 2 July 1958

AFWL/HQ

INCLOSURE 15, PAGE 1

NCRL-010

143


SEQUOIA
H-HOUR - 0630
R-HOUR 0830
2 JULY 58
QPHUM
15M
STABLE ECHO
7M
SURFACE TO 40,000 FT
40 MILES
SURFACE TO 40,000 FT
40 MILES
4 WILD ROOT
8M
SCALE: 5 MILE RINGS
40000
39000
38000
37000
36000
35000
34000
33000
32000
31000
30000
29000
28000
27000
26000
25000
24000
23000
22000
21000
20000
19000
18000
17000
16000
15000 TEST
14000
13000
12000
11000
10000
9000
8000 TEST
7000 TEST
6000
5000 PZV V 310
4000
3000
2000
1000
BELOW 1000

AFWL/HQ

PHOTO

Mission Execution Board

SEQUOIA, 2 July 1958

AFWL/HQ

AFWL/HQ

INCLOSURE 76. PAGE 11

5

SEQUOIA 2 JULY 58			1		2		3		4		5		6	
CALL SIGN	TYPE	ALT	ETD	ATD	ETA	ATA	ETA	ATA	ETD	ATD	ETA	ATA	ETA	ATA
STABLE ECHO	SA-16	7	0530	0510	-	-	0540	0540	-	0540	-			
OPIUM	G-57B	15	0532	0533	-	-	0625	0608	0820	0835	-	-	0820	0842
4-WILDROOT	P2V	8	0545	KWA 0542	-	-	-	0600	-		-	-	KWA 1212	
HOTSHOT-1	B-57B	-	0710	0710	-	-	0730	0730	0735	0735	-	-	0800	0739
HOTSHOT-2	B-57B	-	0725	0725	-	-	0745	0748	0750	0745	-	-	0820	0742
HOTSHOT-3	B-57B	-	0740	0741	-	-	0800	0745	0805	0805	-	-	0820	0810
HOTSHOT-4	B-57B	-	0755	0755	-	-	0815	0805	0820	0835	-	-	0835	0843

AFWL/HQ

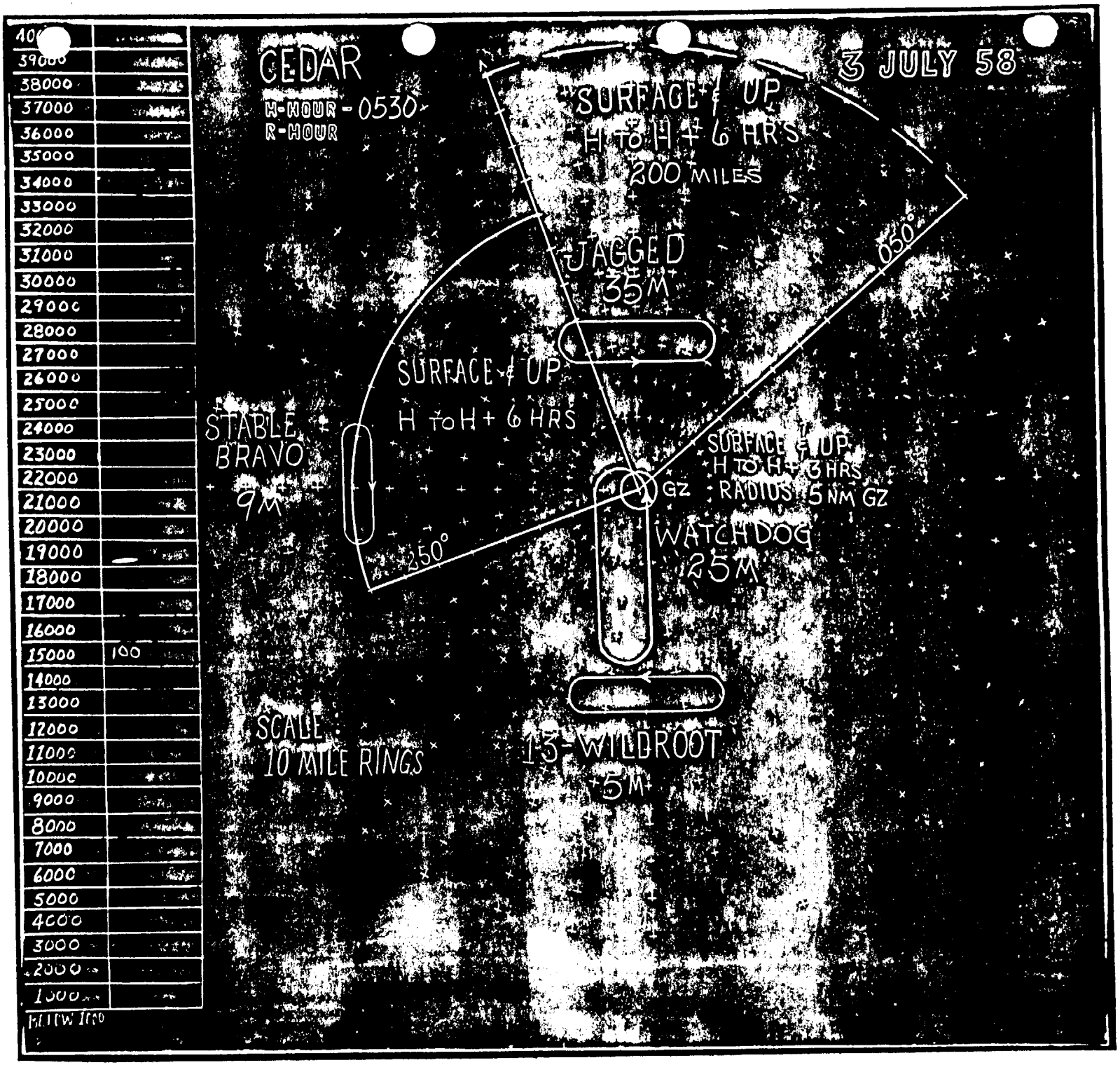
AFWL/ HQ

PHOTO

Test Array Board

CEDAR, 3 July 1958

AFWL/HQ


CEDAR
H-HOUR - 0530
R-HOUR
3 JULY 58
SURFACE & UP
H TO H + 6 HRS
200 MILES
050°
JAGGED
35M
SURFACE & UP
H TO H + 6 HRS
STABLE
BRAVO
9M
SURFACE & UP
H TO H + 3 HRS
RADIUS 5 NM GZ
GZ
250°
WATCH DOG
25M
SCALE:
10 MILE RINGS
13 - WILDROOT
5M
39000
38000
37000
36000
35000
34000
33000
32000
31000
30000
29000
28000
27000
26000
25000
24000
23000
22000
21000
20000
19000
18000
17000
16000
15000
14000
13000
12000
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
100

AFWL/HQ

PHOTO

Mission Execution Board

CEDAR, 3 July 1958

AFWL/HQ

INCLOSURE 78, PAGE 1

AFWL/HQ

429

CEDAR 3 JULY 58			1		2		3		4		5		6	
CALL SIGN	TYPE	ALT	ETD	ATD	ETA	ATA	ETA	ATA	ETD	ATD	ETA	ATA	ETA	ATA
STABLE BRAVO	SA 16	9	0200	0200	0245	0245	0300	0300	—		—		—	NAN 0841
WATCH DOG	B52	25	0230	0230	—	0248	0430	0345	0534	0534	—	0545	0730	0728
13 WILDROOT	P2V	5	0415	KWA 0345	0440	0436	0515	0438	—	1200	—		1315	KWA 1307
JAGGED	B57	35	0430	0431	0445	0447	0525	0515	0740	0750	0755	0810	0810	0823
HARDTIME-1	B57		0605	0605	0615	0620	0630	0630	0635	0651	0650	0700	0700	0722
HARDTIME-2	B57		0610	0610	0625	0626	0640	0644	0645	0705	0700	0715	0710	0732
HARDTIME-3	B57		0620	0621	0635	0641	0650	0649	0700	0726	0715	0742	0725	0807
HARDTIME-14	B57		0630	0630	0645	0650	0700	0706	0710	0732	0725	0755	0735	0828
HARDTIME-15	B57		0640	0640	0655	0700	0710	0716	0730	0815	0745	0835	0755	0909
HARDTIME-16	B57		0650	0650	0705	0712	0720	0724	0740	0820	0755	0835	0805	0919
STABLE-4	SA-16			0822	SCRAMBLE FOR HARDTIME-15 EMERGENCY									0927

OH/AW

AFWLHQ

430

PHOTO

Test Array Board

DOGWOOD, 6 July 1958

INCLOSURE 79 - PAGE 1

AFWL/HQ

AFWL/HO

AFWL/HQ

432

PHOTO

Mission Execution Board

DOGWOOD, 6 July 1958

INCLOSURE 80 PAGE 11

AFWL/HQ

AFWL/HQ

453

DOGWOOD 6 JUL 58			1		2		3		4		5		6	
CALL SIGN	TYPE	ALT	ETD	ATD	ETA	ATA	ETA	ATA	ETD	ATD	ETA	ATA	ETA	ATA
STABLE ECHO	SA16	7	0323	0323	—	—	0353	0415	—		—			
WATCHDOG	B-52	30	0338	0338	—	—	0430	0440	0634	0637	—		0838	
OPIUM	B57	35	0545	0549	—	—	0620	0615	0900	0911	—		0910	0911
HOTSHOT PHOTO	B-57	35	0530	GROUND ABORT			(SIMULATED START)							
HOTSHOT 11	B57B	35	0552	0552	—	—	0605	0606						0912
4-WILDROOT	P2V	8	0555	0556	—	—	0620	0615						1004
HOTSHOT - 2	B57B		0725	0725	—	—	0745	0820	0755	0810	—	—	0505	0836
HOTSHOT - 3	B57B		0735	0739	—	—	0755	0751	0805		—	—	0915	0844
HOTSHOT - 4	B57B		0745	0750	—	—	0805	0811	0815				0925	0902
HOTSHOT - 15	B57B		0746	0744	—	—	0815	0823	0915				0945	0920
HOTSHOT-16	B-57B		0755	0[illegible]			0825	0[illegible]	0[illegible]				0955	0935
HOTSHOT 17	B57B		0[illegible]	0[illegible]			0[illegible]							1016

AFWL/HQ

AFWL/HQ

434

PHOTO

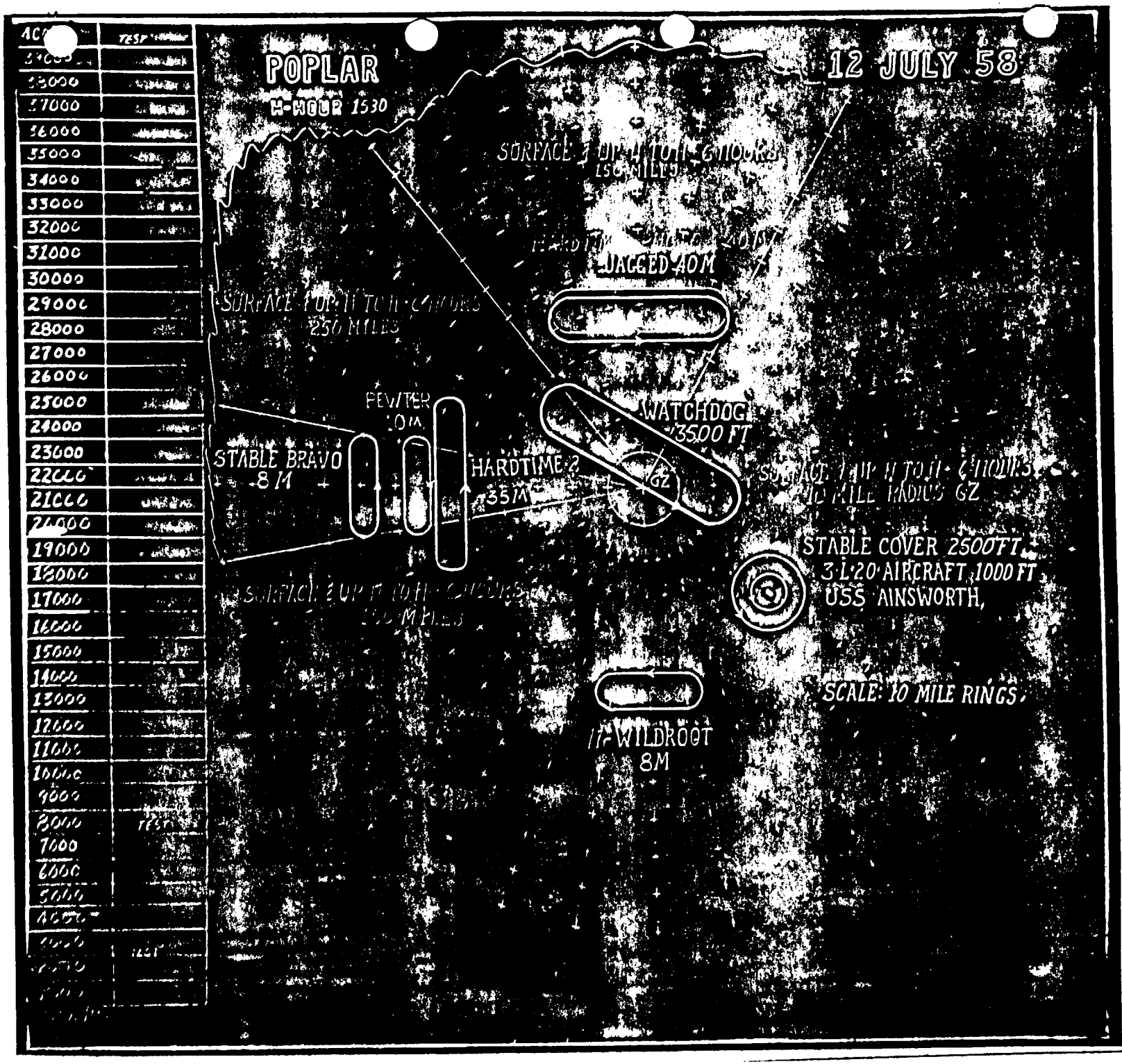
Test Array Board

POPLAR, 12 July 1958

AFWL/HQ

INCLOSURE 8 PAGE 1

435


POPLAR
H-HOUR 1530
12 JULY 58
JAGGED 40M
WATCHDOG
3500 FT
GZ
PEVITER
10M
STABLE BRAVO
8M
HARDTIME 2
35M
WILDROOT
8M
STABLE COVER 2500FT
3 L 20 AIRCRAFT 1000 FT
USS AINSWORTH,
SCALE: 10 MILE RINGS

PHOTO

Mission Execution Board

POPLAR, 12 July 1958

AFWL/ HQ

POPLAR 12 JULY 58			1		2		3		4		5		6	
CALL SIGN	TYPE	ALT	ETD	ATD	ETA	ATA	ETA	ATA	ETD	ATD	ETA	ATA	ETA	ATA
STABLE BRAVO	SA-16	8	1315	1344	1400	1435	1420	1437		1736		1745		1825
STABLE COVER	SA16	2.5	1340	1350	1415	1440	1445	1518		1640		1650		1747
WATCHDOG	B-52	3.5	1345	1347	1400	1419	1430	1438	1534	1534	1549	1550	1721	1633
PEWTER-3	C-54	10	1400	1400	1425	1440	1450	1458	1340	1538	1600	1540	1625	1620
11 : WILDROOT	P2V	8	1415	[illegible] 1353	1440	1453	1505	1455						1753
JAGGED	B-57B	10	1430	1430	1445	1451	1500	1508	1800	1735	1815	1745	1825	1816
HARDTIME PHOTO	B-57B	10	1431	1431	1445	1451	1500	1459		1553		1605		1618
HARDTIME-2	B-57B	35	1500	1500	1515	1522	1525	1525	1635	1630	1650	1617	1705	1657
HARDTIME-11	B-57D		1545	1545	1600	1600	1615	1615	1620	1712	1635	1730	1650	1754
HARDTIME-13	B-57D		1615	1615	1630	1630	1645	1650	1650	1704	1705	1705	1720	1732
HARDTIME-4	B-57B		1630	1630	1645	1645	1700	1718	1715	1737	1725	1715	1740	1802
HARDTIME-15	B-57D		1645	1645	1700	1700	1715	1707	1735	1727	1750	1730	1805	1800
HARDTIME-16	B-57D		1700	1700	1715	1715	1730	1730	1800	1755	1915	1755	1830	1808

AFWL/HQ

ATTACHED

PHOTO

Test Array Board

SCAEVOLA, 14 July 1958

AFWL/HQ

INCLOSURE 83 PAGE 11

AFWL/HQ

AFWL/HQ

AFWL/HQ

PHOTO

Mission Execution Board

&CAEVOLA, 14 July 1958

AFWL/HQ

INCLOSURE 84 PAGE 1

AFWL/HO

SCAEVOLA 14 JULY 58

CALL SIGN	TYPE	ALT	① ETD	① ATD	② ETA	② ATA	③ ETA	③ ATA	④ ETD	④ ATD	⑤ ETA	⑤ ATA	⑥ ETA	⑥ ATA
STABLE ECHO	SM-16	7	1450	1450			1505	1541	1615	1636			1651	1651
OPTOMIST	B-57B	10	1500	1500			1530	1550	1645	1650			1700	1651
HOTSHOT 21	B-57B	10	1516	1532			1545	1541	1700	1655			1715	1659

AFWL/HQ

AFWL/HQ

PHOTO

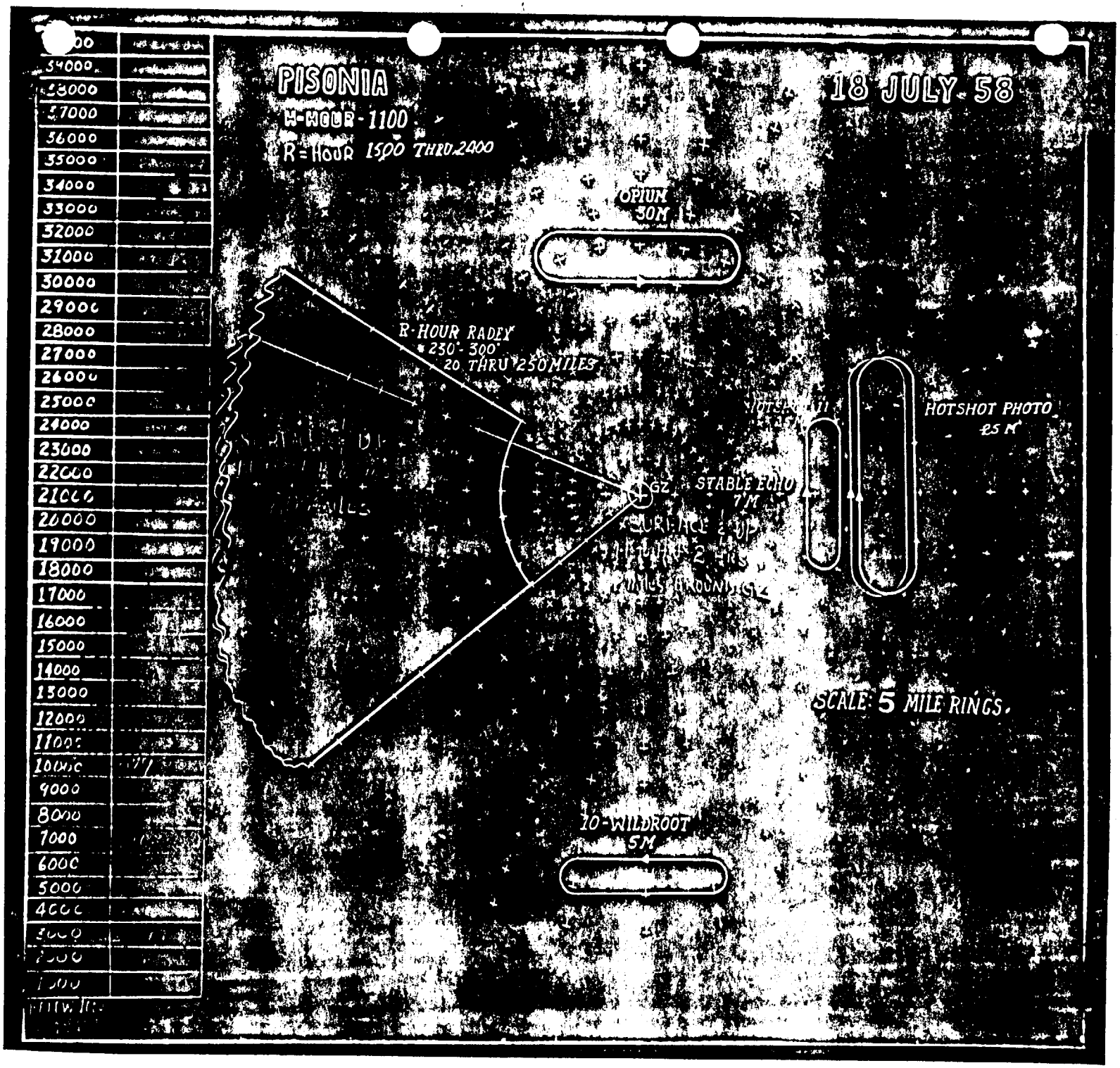
Test Array Board

PISONIA, 18 July 1958

INCLOSURE 85 PAGE 1

AFWL/HQ

AFWL/HQ


PISONIA
H-HOUR - 1100
R = HOUR 1500 THRU 2400
18 JULY 58
OPIUM
30M
R-HOUR RADEX
230 - 300
20 THRU 250 MILES
HOTSHOT PHOTO
25 M
GZ
STABLE ECHO
7M
SURFACE & UP
2 HRS
10-WILDROOT
5M
SCALE: 5 MILE RINGS.
54000
38000
37000
36000
35000
34000
33000
32000
31000
30000
29000
28000
27000
26000
25000
24000
23000
22000
21000
20000
19000
18000
17000
16000
15000
14000
13000
12000
11000
10000
9000
8000
7000
6000
5000

AFWL/HQ

PHOTO

Mission Execution Board

PISONIA, 18 July 1958

AFWL/HQ

INCLOSURE 86 PAGE 1.

AFWL/HQ

PISONIA 18 JULY 58			1		2		3		4		5		6	
CALL SIGN	TYPE	ALT	ETD	ATD	ETA	ATA	ETA	ATA	ETD	ATD	ETA	ATA	ETA	ATA
STABLE ECHO	SA-16	7	0945	0945	-	-	1015	1010	AIR ABORT		NO UHF RNG		1050	
10-WILDROOT	P2V	5	1000	1000	-	-	1020	1020					1700	
OPIUM	B-57B	30	1005	1005	-	-	1045	1052		1417			1410	1438
HOTSHOT-11	B-57D	25	1015	1015	-	-	1045	1028	AIR	ABORT - FUNNEL OUT SINGLE ENGINE			1310	1318
HOTSHOT PHOTO	B-57B		1020	-	GROUND ABORT - COMPRESSOR STALL								-	-
HOTSHOT-2	B-57B		1240	1240	-	-	-	1305	1300	1410			1325	1428
HOTSHOT-3	B-57B		1255	1301	-	-	-	1327	1315	1455			1345	1516
HOTSHOT-14	B-57D		1310	1310	-	-	-	1333	1330	1405			1415	1441
STABLE ECHO 2	SA-16	7	-	1035	REPLACE STABLE ECHO		1052						-	1526
HOTSHOT PHOTO	B-57B		SPARE	-	GROUND ABORT		NO PARROT						-	-
HOTSHOT SPARE	B-57D		1325	1325						1457				1511

AFWL/HQ

AFWL/HQ

PHOTO

Test Array Board

JUNIPER, 22 July 1958

AFWL/HQ

INCLOSURE 97 PAGE 1

AFWL/HQ

22 JULY 58
JUNIPER
C-MODE 1220
H HOUR 1430
SURFACE TO
11 700ft - 6 HOURS
220 MILES
STABLE BOARD
4M
TEST
27500
12th 150 KTS
DAGGETT
USAF
HARDING FIELD
11 700ft - 6 HOURS
220 MILES RADIUS
4 WILDROOT
8M
PEWTER
CM
25M
SCALE: 10 MILE RINGS.
40
39000
38000
37000
36000
35000
34000
33000
32000
31000
30000
29000
28000
27000
26000
25000
24000
23000
22000
21000
20000
19000
18000
17000
16000
15000
14000
13000
12000
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
MEAN SEA
TEST
TEST
TEST

444

DATTMEN

PHONE

Mission Execution Board

DATED: 22 July 1995

AFWL/HQ

INCLOSURE(S) PAGE(S)

JUNIPER 22 JULY 58			1		2		3		4		5		6	
CALL SIGN	TYPE	ALT	ETD	ATD	ETA	ATA	ETA	ATA	ETD	ATD	ETA	ATA	ETA	ATA
STABLE BRAVO	SA-16	9	1410	1418	1455	-	1510	AIR ABORT 72		ENG CUTTING OUT	-		-	1551
PEWTER - 3	C-54	6	1450	1453	-	1536	1548	1600	1630	1624	-	1653	1725	1724
4 - WILDROOT	P2V	8	1505	KWA 7036	1530	1510	1545	1540	-		-		KWA 2136	
JAGGED	B57B	35	1520	1537	1539	1544	1605	1605	1830		1840	1811	1855	1841
HARDTIME - 11	B57D	25	1525	1521	1545	1554	1605	1614	1655	11352	1650	1748	1705	1811
HARDTIME PHOTO	B57B	25	1530	1538	1545	1544	1605	1614	-	1644	-	1703	-	1713
HARDTIME - 2	B-57B	-	1610	1612	1625	1630	1640	1645	1645	1655	1700	1735	1715	1748
HARDTIME - 3	B57B	-	1625	1625	1640	1642	1655	1721	1700	1747	1715	1756	1730	1836
HARDTIME - 4	B57B	-	1720	1705	1735	1725	1730	1735	1800	1153	1815	1814	1835	1837
HARDTIME - 5	B57B	-	1730	1706	1715	1725	1800	1736	1815	1754	1830	1814	1845	1840
STABLE BRAVO - 2	SA-16	9	/	BIKINI 1528	-	1540	-	1603	-		-		-	1850

PHOTO

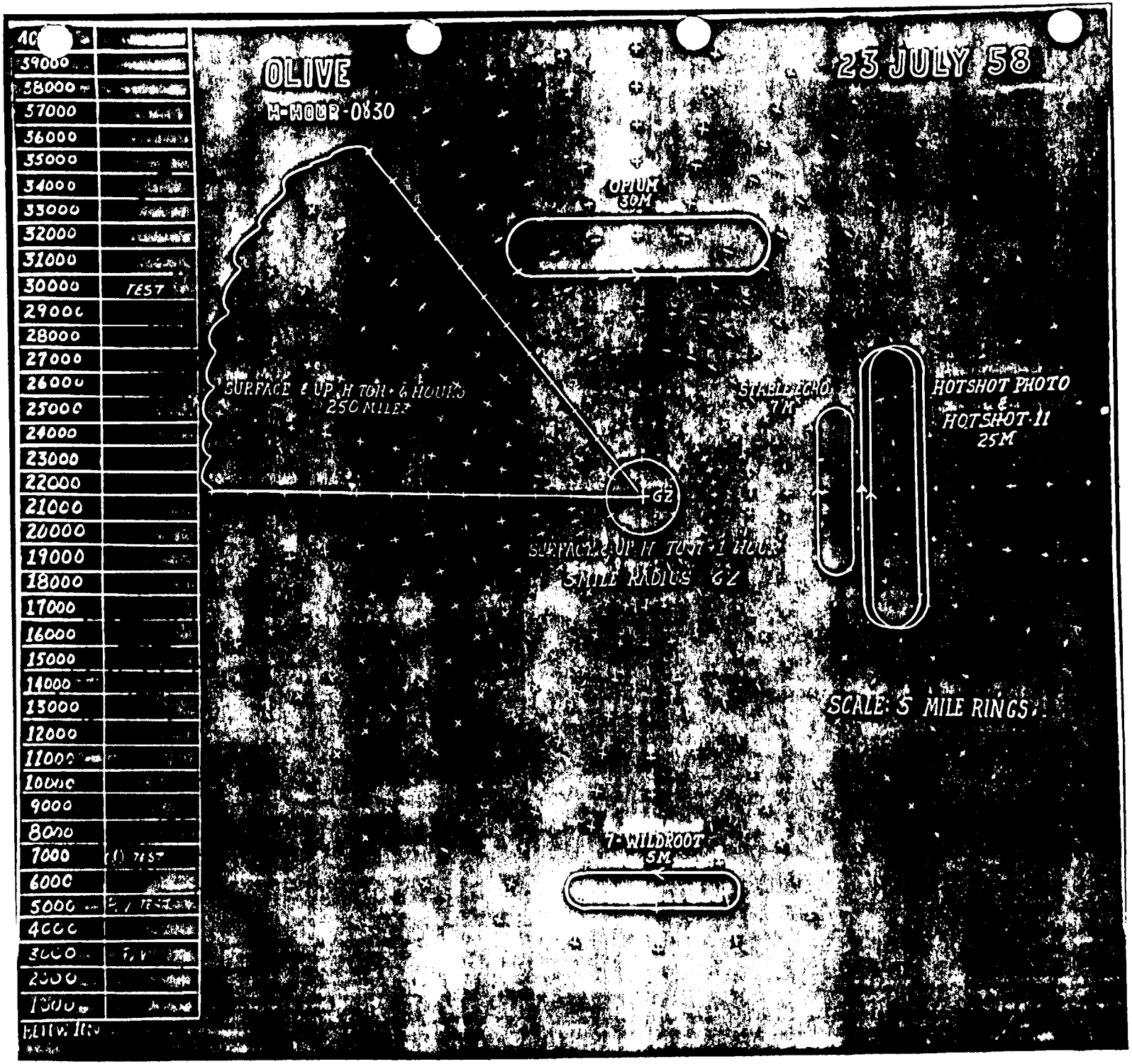
Test Array Board

OLIVE, 23 July 1958

AFWL/HQ

AFWL/HQ

INCLOSURE 89, PAGE 11


OLIVE
H-HOUR-0830
23 JULY 58
OPIUM
30M
SURFACE & UP TO H TOH + 6 HOURS
250 MILES
GZ
SURFACE UP TO H TOH + 1 HOUR
5 MILE RADIUS GZ
STRELLICHO
7M
HOTSHOT PHOTO
&
HOTSHOT II
25M
SCALE: 5 MILE RINGS
7 WILDROOT
5M
39000
38000
37000
36000
35000
34000
33000
32000
31000
30000
TEST
29000
28000
27000
26000
25000
24000
23000
22000
21000
20000
19000
18000
17000
16000
15000
14000
13000
12000
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000

PHOTO

Mission Execution Board

OLIVE, 23 July 1958

AFWL/HQ

INCLOSURE 96, PAGE 4

AFWL/HQ

OLIVE 23 JULY 58			1		2		3		4		5		6	
CALL SIGN	TYPE	ALT	ETD	ATD	ETA	ATA	ETA	ATA	ETD	ATD	ETA	ATA	ETA	ATA
STABLE ECHO	SA-16	7	0730	0730	-	-	0800	0745	-	1040	-	-		1103
7-WILDROOT	P2V	5	0740	KWA 0507	-	-	0800	0800	-	0900	-	-	1112	
OPIUM	B-57B	30	0745	0745	-	-	-	0819	-	1048	-	-		1047
HOTSHOT-11	B-57D	25	0750	0751	-	-	0930	0818	0935	0931	-	-	0955	0958
HOTSHOT PHOTO	B-57B	25	0755	0755	-	-	0815	0818	-	-	-	-	-	0903
HOTSHOT-2	B-57B	-	0920	0920	-	-	0940	0927	0945	0930	-	-	1005	0953
HOTSHOT-3	B-57B	-	0930	0930	-	-	0950	0950	0955	1000	-	-	1015	1014
HOTSHOT-4	B-57B	-	0940	0940	-	-	1000	0953	1010	1026	-	-	1030	1037
HOTSHOT-5	B-57B	-	0950	0950	-	-	1010	1006	1020	1031	-	-	1040	1041
HOTSHOT-16	B-57D	-	1000	1000	-	-	1020	1013	1030	1035	-	-	1050	1058

PHOTO

Test Array Board

PINE, 27 July 1958

AFWL/ HQ

INCLOSURE 11, PAGE 1

AFWL/HQ

455

AFWL/HO

AF WL/ HQ

PHOTO

Mission Execution Board

PINE, 27 July 1958

AFWL/HQ

AFWL/HO

ENCLOSURE 42 PAGE 1

PINE 27 JULY 58			1		2		3		4		5		6	
CALL SIGN	TYPE	ALT	ETD	ATD	ETA	ATA	ETA	ATA	ETD	ATD	ETA	ATA	ETA	ATA
STABLE ECHO	SA16	5	0630	0631	—	—								1155
9 WILDROOT	P2V	8	0715	0717	—	—	ATR	ABORT						1026
OPIUM	B57B	35	0725	0725	—	—	0820	0800	1050	1130			1105	1137
MOSQUITO FLT	L-20s		0745	0743	—	—								0851
HOTSHOT 11	B57D		0755	0755	—	—	1000	0958	1010	1026			1040	1040
HOTSHOT 2	B57B		0900	0902	—	—	0930	0926	0945	0955			1000	1009
HOTSHOT 3	B57B		0905	0907	—	—	0940	0935	0935	0948			1010	1003
HOTSHOT 4	B57B		0906	0913	—	—	0950	0941	1005	1008			1020	1022
HOTSHOT 15	B57D		0940	0919	—	—	1010	1015	1040	1040			1110	1102
HOTSHOT 16	B57D		0950	1030	—	—	1020	1048	1050	1110			1120	1145
5 WILDROOT	P2V		—	1106	—	—	ATR	ABORT					—	1352
HOTSHOT SPARE	B57B		—	1051	—	—	—	1102	—	1141			—	1157
7 WILDROOT	P2V			1359										1711

AFWL/HQ

ADWLHQ

PHOTO

Test Arrey Board

QUINCE, 6 August 1958

AFWL/HQ

AFWL/HO

INCLOSURE 33, PAGE 1

45

AFWL/HQ

AFWL/HQ

PHOTO

Mission Execution Board

QUINCE, 6 August 1958

AFWL/HQ

INCLOSURE 5 PAGE 4

QUINCE 8 AUGUST 58			1		2		3		4		5		6	
CALL SIGN	TYPE	ALT	ETD	ATD	ETA	ATA	ETA	ATA	ETD	ATD	ETA	ATA	ETA	ATA
STABLE ECHO	SA-16	7	1245	1245	-	-	-	1300	-	1458	-	-	-	1453
OPIUM	B-57B	10	1316	1320	-	-	1410	1405	-	1458	-	-	-	1454
HOTSHOT-1	B-57B	15	1340	1355	-	-	1410	1405	-	1437	-	-	-	1442
HOTSHOT-2	B-57B	13	1341	1356	-	-	1410	1405	-	1435	-	-	-	1456

OH/LM/HQ

AFWL/HQ

HEADQUARTERS
TASK GROUP 7.4, PROVISIONAL
United States Air Force
APO 187, San Francisco, California

GENERAL ORDERS)
NUMBER 3)

6 August 1958

MOVEMENT OF HEADQUARTERS TASK GROUP 7.4, PROVISIONAL (HEADQUARTERS 4950TH TEST GROUP (NUCLEAR) AND ELEMENTS I
DESIGNATION, ORGANIZATION AND ASSIGNMENT OF REAR ECHELON II
GENERAL III

I. MOVEMENT OF HEADQUARTERS TASK GROUP 7.4, PROVISIONAL (HEADQUARTERS 4950TH TEST GROUP (NUCLEAR) AND ELEMENTS.

1. Headquarters Task Group 7.4, Provisional (Headquarters 4950th Test Group (Nuclear), will close at Eniwetok, Marshall Islands, at 2400Z hours, 15 August 1958, and ll open at Kirtland Air Force Base, New Mexico, effective 0001Z hours, 16 August 1958.

2. Cloud Sampling Element, Provisional (4926th Test Squadron (Sampling) will close at Eniwetok, Marshall Islands, at 2400Z hours, 15 August 1958, and will open at Kirtland Air Force Base, New Mexico, effective 0001Z hours, 16 August 1958.

3. Support Element, Provisional (4952nd Support Squadron) will close at Eniwetok, Marshall Islands, at 2400Z hours, 15 August 1958, and will open at Kirtland Air Force Base, New Mexico, effective 0001Z hours, 16 August 1958.

II. DESIGNATION, ORGANIZATION AND ASSIGNMENT OF REAR ECHELON.

1. Effective 16 August 1958, Headquarters Task Group 7.4 (REAR) is designated and organized at Eniwetok, Marshall Islands. Morning Report attachment and administration of assignees will be a responsibility of the 4951st Support Squadron (Test).

III. GENERAL.

1. Authority: Headquarters ARDC Movement Order Number 1, dated 17 January 1958.

FOR THE COMMANDER:

MAX B. GANYARD
Major, USAF
Dep Dir of Pers & Admin

OFFICIAL:

for MAX B. GANYARD Capt USAF
Major, USAF
Dep Dir of Pers & Admin

DISTRIBUTION: "A"

AFWL/HQ

INCLOSURE 55, PAGE 1

AFWL/HQ