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HEADQUARTERS
TASK GROUP 7.1
JOINT TASK FORCE 7
Los Alamos, New Mexico

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TO: See Distribution

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by authority of the U.S. ERDA

FROM: Commander, Task Group 7.1

Per DORIS H. DUNNING

SUBJECT: GENERAL CONCEPT OF OPERATION CASTLE (U)

(Person authorizing change in classification and date)

By [Signature] 6/2/77
(Signature of person making the change and date)

This concept is intended only to furnish a first basis for planning by those groups who require an over-all estimate of the job to be done in order to make judgments of their own jobs.

A. Shot Schedule

Shot	Model	Yield (MT)*	Site	Date	Code Name	Code Ref.	Code North	Code East
1	DELETED		6900' bearing Bikini-1 3/4 Nautical miles 2 3/4 miles from Bokororyuru (Barge)	15 Feb	Bravo	B	120,267	5303
2	DELETED		Bikini. On reef 2500 yds SW Namu	25 Feb	Nectar	N	178,609.90	76,146
3	DELETED		Bikini-At the intersection of arcs with radii 6900' from Yurochi 3 nautical miles from Aomoen. (Barge)	8 Mar	Union	U	161,850	106,721
4	DELETED			17 Mar	Yankee	Y	162,758	109,202
5	DELETED		Bikini-Eninman	24 Mar	Koon	K	100,150	109,801
6	DELETED		Eniwetok-Eberiru	3 Apr	Echo	E	132,181.63	108,671

Coord. on Map
Map # 7203-15-16
and J-6 Scale E-D:
Part 1 -
North East

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 2. CLASSIFICATION CHANGED TO:
 3. CONTAINS NO DOK CLASSIFIED INFO
 4. COORDINATE WITH:
 5. CLASSIFICATION CANCELLED
 6. CLASSIFIED INFO BRACKETED
 7. OTHER (SPECIFY):
 1ST REVIEW DATE: 09-27-71
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 NAME: [REDACTED]
 2ND REVIEW DATE: 12/11/77
 AUTHORITY: [REDACTED]
 NAME: [REDACTED]

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* Yields given are estimated only as of this date. Experimenters must instrument to accept a rather wide range yieldwise on the respective shots.

Positions given are approximate. If exact site locations are required they should be obtained from J-6.

(In submitting requirements in monthly status reports, when appropriate and except as otherwise indicated, dates should be expressed in terms of shot days, such as B/3, Y-2 etc.)

B. Assumptions:

Eniwetok Atoll is the base of operations. The following obtains:

1. All cryogenic work will be done on Eniwetok (Parry).
2. All dewar repair and maintenance work will be done on Eniwetok (Parry).
3. Five of the six devices will be assembled on Eniwetok. (Parry and Eberiru).
4. Machine shop, laboratory, photographic, warehouse and stockroom facilities will remain on Eniwetok (Parry and Eniwetok).
5. Much preliminary assembly and testing of experimental equipment will be done on Eniwetok (Parry).
6. Port of entry for aircraft and most shipping will remain on Eniwetok.
7. Radio links with Los Alamos and Oahu will remain on Eniwetok.
8. Temporary working camps will be located on Rojoa (Eniwetok Atoll), and on Eninman and Namu (Bikini). Enyu, Aomoen and Bikini will have small temporary camps to support project personnel necessary at those sites.

C. Firing of the five shots at Bikini Atoll will probably be accomplished from the timing and firing station on Enyu Island (Nan), by a firing party of 6 or less. This station will also serve as the television and photo stations, and for intra-atoll communications. Six radio time signals in addition to the wired signals will be furnished at Eniwetok and Bikini. Certain time signals will be repeated back from Bikini to Parry (Elmer) to allow correlation of operations with the Bikini shots. Firing of the shot at Eniwetok Atoll will be accomplished from the control station on Parry (Elmer).

D. There will be no pre-shot personnel or material evacuation of

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Eniwetok Atoll. An emergency capability for post-shot evacuation of Eniwetok will be maintained. Such evacuation will be executed if post-shot radiological conditions indicate it is necessary. All personnel (except the firing party) will be evacuated for some of the shots at Bikini. Only those personnel required for the actual firing or for immediate re-entry or early preparatory activities will be on Enyu or Eninman or aboard ships in the Bikini area; the balance of the personnel and equipment will be phased to Eniwetok. Predictions as to the reestablishing of temporary camps in the Bikini area after the first shot cannot be made at this time; therefore project personnel must be prepared to live aboard ships subsequent to the first shot if necessary. Limited laboratory, shop and office space will be provided aboard Navy Task Group vessels. Temporary (tent) laboratory space may be furnished on Eninman Island (Tare) during the operational period prior to the Morgenstern shot, providing this space is essential to the project and that the project cannot use laboratory space at Eniwetok (Parry) or aboard ship. It is hoped that it will not be necessary to evacuate any material beyond the limits of Bikini Atoll for protective purposes, except for the last Bikini shot.

E. The construction phase must be completed by 1 January 1954. To meet this completion date the following lead times must be met in order of sequence:

- Design - 1 month
- Procurement - 2 months
- Shipping - 2 months
- Construction - 4 months

It is therefore imperative that the submission of the respective project's construction requirements be given the highest priority. As much material as possible will be evacuated to Eniwetok prior to the first shot. Equipment and material required for post shot re-entry will be evacuated by LST's and LCU's.

F. It is expected that the following communications facilities will be available for Task Group 7.1 use:

1. Communication Center, Parry Island (Elmer) with the following facilities:

(a) Direct teletype circuits to Bikini, Kwajalein, Honolulu, and Los Alamos.

(b) TWX and voice circuits to Bikini and Kwajalein. AMCS Eniwetok and AMCS Bikini will probably be linked by an air control voice circuit.

(c) Land line or AN/ARC teletype and telephone circuits to major vessels in the vicinity of Eniwetok and Bikini.

(d) Crypto facilities.

2. Army Radio Eniwetok, Ship-Shore Circuits. This facility operates an unclassified voice net with vessels within 50 miles of Eniwetok and CW circuits with vessels within a radius of 200 miles of Eniwetok.

3. AACS Eniwetok operates air control voice nets with Kwajalein, Bikini and aircraft in the area, and controls the Task Force Weather Net.

4. Telephone systems will furnish limited service to major installations in the Eniwetok area. Prior to Morgenstern at Bikini, telephone service will be available to major installations on islands of the Eninman (Tare) group, Namu (Charlie), Enyu (Nan) and to major vessels moored to telephone buoys in the lagoon.

5. TG 7.1 Motorola voice radio nets will be installed at Eniwetok, Bikini and on selected ships and possibly in aircraft to provide for scientific and operational needs.

6. Bikini Radio Station now on Eninman (Tare) but ultimately on Enyu (Nan) Island will provide:

- (a) Teletype and voice circuits to Eniwetok.
- (b) Voice and CW circuits to ships in the area.
- (c) Cryptographic facilities.
- (d) Aircraft control circuits.

G. Inter-Atoll Transportation.

Two LST's will provide regular surface transportation between Eniwetok and Bikini primarily for cargo lift. For planning purposes two round trips every week appear possible. The LSD will be used to transport shot barges and devices from Parry to shot locations at Bikini. Security patrol destroyers changing station may occasionally be available for fast personnel and light cargo transportation between atolls.

~~DELETED~~ Scheduled PEM's will augment the C-47 service, as necessary, taking off from the airstrip at Eniwetok Island (Fred) and landing at Eninman (Tare) airstrip and in Bikini lagoon after Morgenstern. The PEM cargo capacity is limited by the small size cargo hatch and the difficulty when making water landings, of transfer by boat in Bikini lagoon. ~~DELETED~~

~~DELETED~~ ~~DELETED~~ Radio cargo sample return from Bikini will be by PEM's operating from the CVE. See enclosure 3 for summary of Military Support Items.

H. Intra-Atoll Transportation.

Aircraft -

Bikini: There will be helicopter service between Eninman Island (Tare) chain and various other islands, as required. Helicopter service, for re-entry activities will be from the CVE to these islands. There will also be helicopter service to a floating helicopter platform located near the shot barges. The USS Estes has a helicopter platform which will be used for special flights only.

Eniwetok: There are operational airstrips on Eniwetok (Fred), Parry (Elmer), Runit (Yvonne), and Biijiri (Tilda). There will be liaison type aircraft and helicopter service for high priority traffic to these islands, and helicopter service to islands without airstrips.

Boats -

Bikini: The boat pool will consist of LCU's, LCM's, LCP(L)'s, water taxis, DUKW's, air sea rescue craft, barges, and tugs. The H&N boat pool will operate from Eninman Island (Tare) and will provide regularly scheduled trips, and special service to Enyu (Nan), Namu (Charlie), Aomoen George) complex, and to other islands as required. The Navy boat pool will support the H&N boat pool in providing inter-island surface transportation during the operational period at Bikini. Prior to each shot, the H&N boat pool will be evacuated from danger areas.

Eniwetok: The H&N and Navy boat pools will consist of LCU's, LCM's, LCP(L)'s, water taxis, DUKW's, air sea rescue craft, barges, and tugs in sufficient numbers to provide necessary surface transportation. There will be regularly scheduled boat service each day between Parry (Elmer), Runit (Yvonne), and Aomon (Sally) complex, and DUKW service at locations which cannot be approached by boat. Where scheduled boat service will not meet the needs of the users special service will be provided. See enclosure 3 for Summary of Military Support Items. See enclosure 4 for Naval vessel and Marine Craft characteristics. See enclosure 5 for Marine craft running times.

Vehicles -

The motor pools will consist of military type vehicles, jeeps, weapons carriers, carryalls, and 1½ ton and 2½ ton, 6x6 trucks, in sufficient numbers to meet the needs of the programs. At Eniwetok, vehicles will be dispatched from the motor pool on Parry (Elmer) and from a secondary motor pool on Eberiru (Ruby). At Bikini there will be a motor pool on Eninman (Tare), and vehicles available to use on Enyu, (Nan), Namu (Charlie), Aomoen (George), and Bikini (How) Islands. Vehicles will be evacuated from danger areas for each shot and reentered as necessary for use between shots. IVY experience demonstrated that maximum vehicle service can be given the projects by use of a modified motor pool control system as used on IVY.

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I. AEC "Q" clearances will be required about 1 January 1954 on Eniwetok and Bikini Atolls, except on Eniwetok Island and naval vessels which will require military clearance.

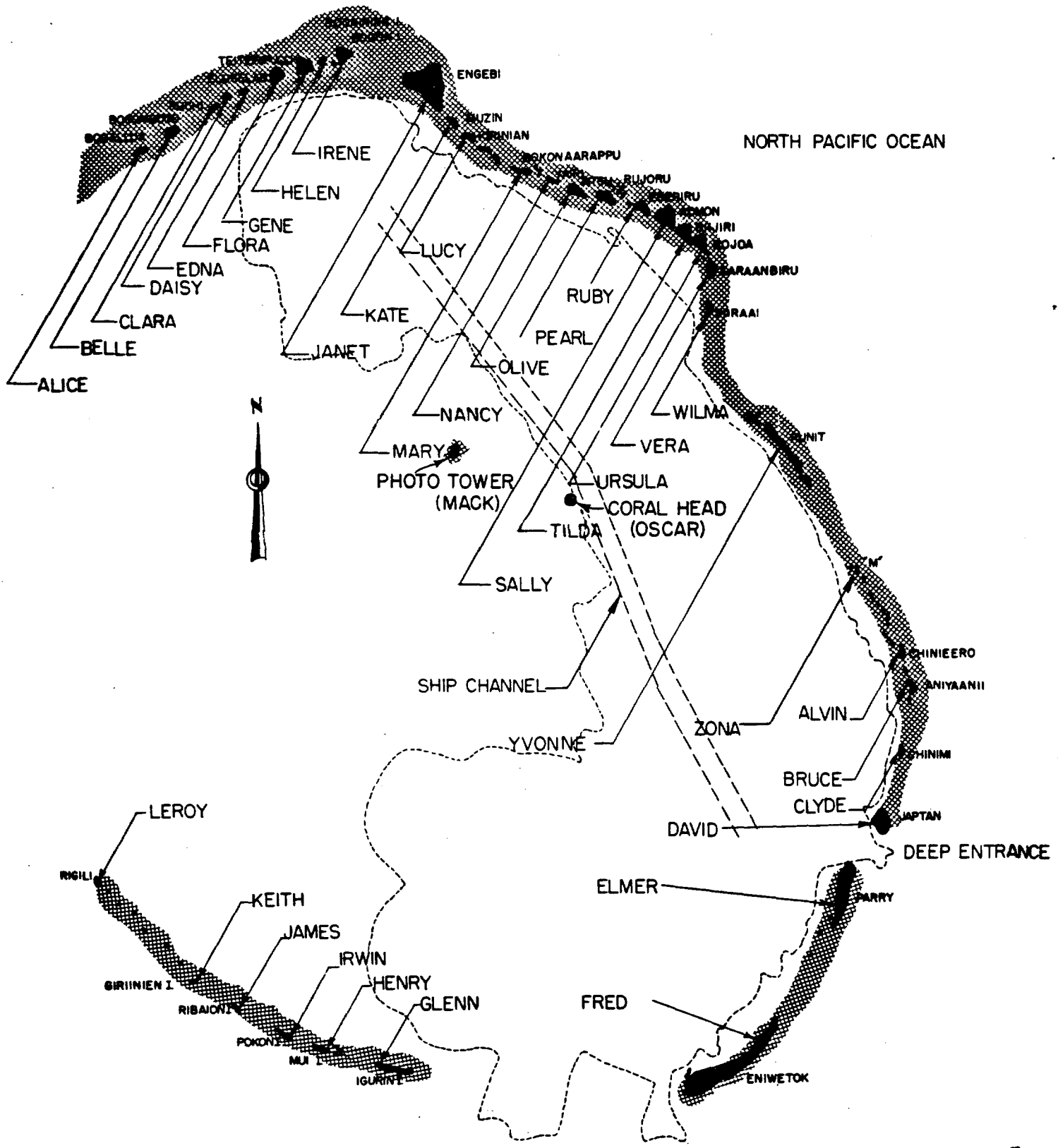
J. The requirement for personnel to take radiological safety physical examinations will be covered by separate correspondence.

Enclosures:

Eniwetok map with code identifications. Incl 1
Bikini map with code identifications. Incl 2
Summary of Military Support Items. Incl 3
Naval Vessel and Marine Craft Characteristics. Incl 4
Average Running times for Marine Craft. Incl 5

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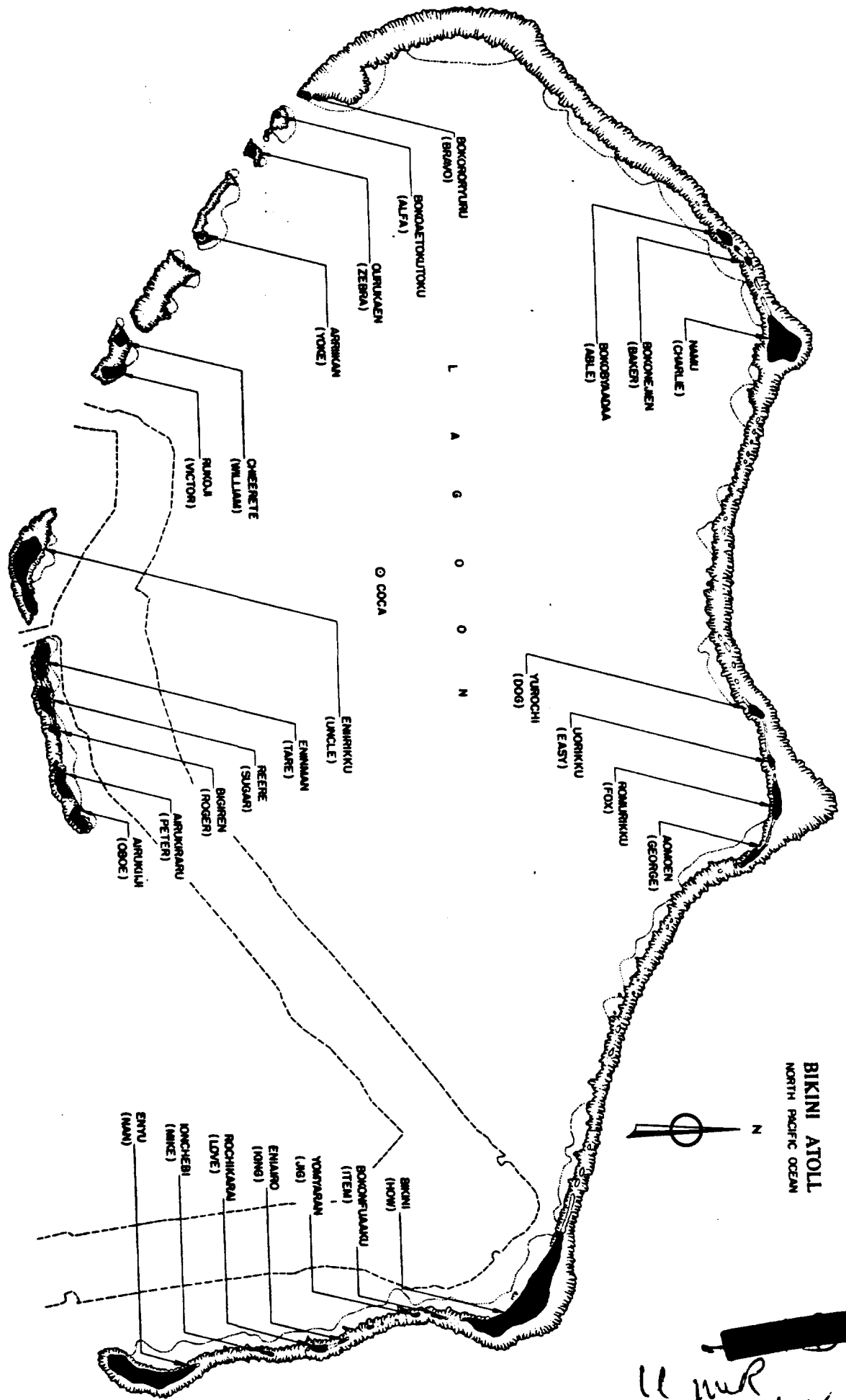
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SUMMARY OF MILITARY SUPPORT ITEMS

1. Aircraft Components:

- 10 L-13 Intra-atoll lift at Eniwetok using landing strips.
- 7 H-19A Intra-atoll airlift for instrumentation of islands at Eniwetok
3 H-13 which lack liaison type aircraft landing strips. Post
(Helicopters) radiological surveys and collection of test data
- | | | |
|--------|--------------------|--------------------|
| 4 C-47 | DELETED | DELETED |
|--------|--------------------|--------------------|
- 4 TEM Inter-atoll airlift between Eniwetok Island (Fred) and CVE underway in vicinity of Bikini for cargo and personnel during Bikini operational period. Sample ferrying from Bikini. Further lift by helicopter or boat from CVE.
- 2 FEM-5A Inter-atoll airlift between Eniwetok Island (Fred) and Bikini.
- 4 PEM Resupply of weather islands; fall-out instrumentation of weather island. Operate from Kwajalein Atoll.
- 15 F-84G Cloud Sampling.
- 2 B-36 Cloud sampling control aircraft; high altitude sampler.
- 2 B-57 High altitude cloud sampling for four shots.
- 1 B-36 Blast and thermal measurements.
- 1 B-47 Blast and thermal measurements.
- 10 WB-29 Weather reconnaissance; AFONT-1 cloud sampling.
- 2 SA-16 Search and rescue at Eniwetok.
- 3 C-54 Documentary photography.

Incl 3

2. Surface components:

- 1 AGC Command and control facilities and for remote control firing.
(USS Estes and telemetering. (Has helicopter platform)
AGC-12)
- 1 AV Transportation and assembly of devices.
(USS Curtiss
AV-4)
- 1 LSD Transportation of shot barges from Parry (Elmer), to Bikini;
Mother ship for boat pool.
- 1 LST Logistical support of weather islands; boat pool base at
Bikini when required; occasional lift between Eniwetok and
Bikini.
- 1 LST Regular lift between Eniwetok and Bikini.
- 3 ATF (sea- Scientific projects and towing missions.
going tugs)

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- 6 HRS heli- sample ferrying missions, inter-atoll airlift.
copters and
4 TEM)
- 1 AN Net tender for mooring shot barges and installing allied
instrumentation. (CJTF intends to request 1 AN)
- 2 AVR Air sea rescue craft at Eniwetok and Bikini. Evacuation of
firing party.
- 1 YOT (To be used as helicopter landing platform at Bikini.
(barge)

Security and other units as required.

Incl 3

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NAVAL VESSEL AND MARINE CRAFT CHARACTERISTICS

<u>Type</u>	<u>Use</u>	<u>Capacity</u>	<u>Description</u>
LSD (Landing Ship dock)	To transport loaded landing craft and barges. Hold is flooded and craft are moved out.	3 LCU or 14 LCM or 47 DUKW.	Two 35 ton cranes service the craft, handle vehicles and cargo. Hold dimensions 334' x 44'.
LST (Landing Ship, Tank)	To land vehicles from deck over a bow ramp on a beach. Carry cargo on main deck.	Fay load 1900 tons (400 ton on main deck)	Tank deck dimensions 288' x 30' x 11'3" (Limiting height) ramp width 14'
LCU (T boat)	To land vehicles over bow ramp on a beach	150 tons	Vehicle deck dimensions 96' x 13'11" (least width) 26' (greatest width) 7.5 knots. Ramp width 12'4"
LCM (M boat)	To land vehicles over bow ramp on a beach.	30 tons	Vehicle deck, 31'6" x 10'9". 9 knots. Ramp width 10'9"
DUKW	Army truck for amphibious transport on beaches inaccessible to landing craft.	2½ tons cargo 25 passengers.	2½ ton, 6x6 amphibious truck. 5.5 knots.
LCP (L)	Personnel craft. Can beach.	36 passengers	8 knots

Incl 4

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AVERAGE RUNNING TIMES FOR MARINE CRAFT

ENIWETOK

<u>From</u>		<u>To</u>	<u>Time</u>
Water Taxi:			
Parry Personnel Pier		Eniwetok Personnel Pier	19 Min
Parry	" "	Runit	45 Min
Parry	" "	Rojoa	60 Min
Parry	" "	Bijiri	1 hr, 10 Min
Parry	" "	Rigili	1 hr, 30 Min
Runit		Bijiri	25 Min

LCM:

Parry Freight Pier		Eniwetok Personnel Pier	25 Min
Parry	" "	Eniwetok Freight Pier	35 Min
Parry	" "	Runit	60 Min
Parry	" "	Rojoa	1 hr, 20 Min
Parry	" "	Bijiri	1 hr, 35 Min
Parry	" "	Rigili	2 hr.
Runit		Bijiri	30 Min

LCU:

Parry Freight Pier		Eniwetok Personnel Pier	30 Min
Parry	" "	Eniwetok Freight Pier	42 Min
Parry	" "	Runit	1 hr, 12 Min
Parry	" "	Rojoa	1 hr, 36 Min
Parry	" "	Bijiri	2 hr, 5 Min
Parry	" "	Rigili	2 hr, 24 Min
Runit		Bijiri	45 Min

Incl 5

AVERAGE RUNNING TIMES FOR MARINE CRAFT

BIKINI

<u>From</u>		<u>To</u>	<u>Time</u>
Water Taxi:			
Eninman	2	Enyu	60 Min
Eninman		Bikini	1 hr, 10 Min
Enyu		Bikini	25 Min
Eninman		Aomoen	1 hr, 10 Min
Enyu		Aomoen	1 hr, 20 Min
Eninman		Nanu	1 hr, 30 Min

LCM:

Eninman		Enyu	1 hr, 20 Min
Eninman		Bikini	1 hr, 35 Min
Enyu		Bikini	35 Min
Eninman		Aomoen	1 hr, 35 Min
Enyu		Aomoen	1 hr, 50 Min
Eninman		Nanu	2 hr

LCU:

Eninman		Enyu	1 hr, 36 Min
Eninman		Bikini	2 hr, 5 Min
Enyu		Bikini	42 Min
Eninman		Aomoen	2 hr, 5 Min
Enyu		Aomoen	2 hr, 20 Min
Eninman		Nanu	2 hr, 30 Min

These times are estimated from running times for proportional distances at Eniwotok. They may be somewhat longer than indicated due to rougher lagoon water at Bikini.

Incl 5