DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

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16562
Serial 10826
29 APR 1981

From: Commander, Fourteenth Coast Guard District
To : Commandant (G-CPE)

Subj: Relocation of LORSTA Yap to Guam, PP-14-03-81

1. Background: The Northwest Pacific (NWPAC) Loran-C Chain is composed of LORSTAs Iwo Jima, Marcus, Hokkaido, Gesashi, and Yap. LORSTA Yap is the ZULU secondary and was placed in an operational status in 1965. During the initial site survey the island of Guam was not considered as a possible location for the ZULU secondary because the original intent was for LORSTA Yap to be included as part of a Philippine Loran-C Chain. By the time the DOD-initiated plan for a Philippine Loran-C Chain was abandoned, construction of LORSTA Yap had already begun. The feasibility of including Yap into the NWPAC Loran-C Chain was evaluated and the decision approved. During the past 15 years LORSTA Yap has been both a very expensive and notoriously difficult LORSTA to operate and maintain. Although its present operation is well within Coast Guard standards, recent operational, political, military, and technical events have made the possibility of relocating LORSTA Yap to Guam not only feasible but administratively and economically attractive. These events include the:

a. Removal of the Polaris submarines from Guam (to be completed summer 1981).

b. Renegotiation of the Coast Guard Yap land agreement (presently in progress).

c. Development of the AN/FPN-64(V) Loran-C Solid-State Transmitter.

d. Successful implementation of unattended LORSTA operation.

e. Decision to replace LORSTA Yap's existing 1000-foot antenna.

2. Problem: As previously stated LORSTA Yap has been both a very expensive and notoriously difficult unit to operate and maintain. The roots of this problem are twofold: LORSTA Yap's unique island environment/setting and its extreme geographical separation from supply/support activities. Of

ENCLOSURE (1)

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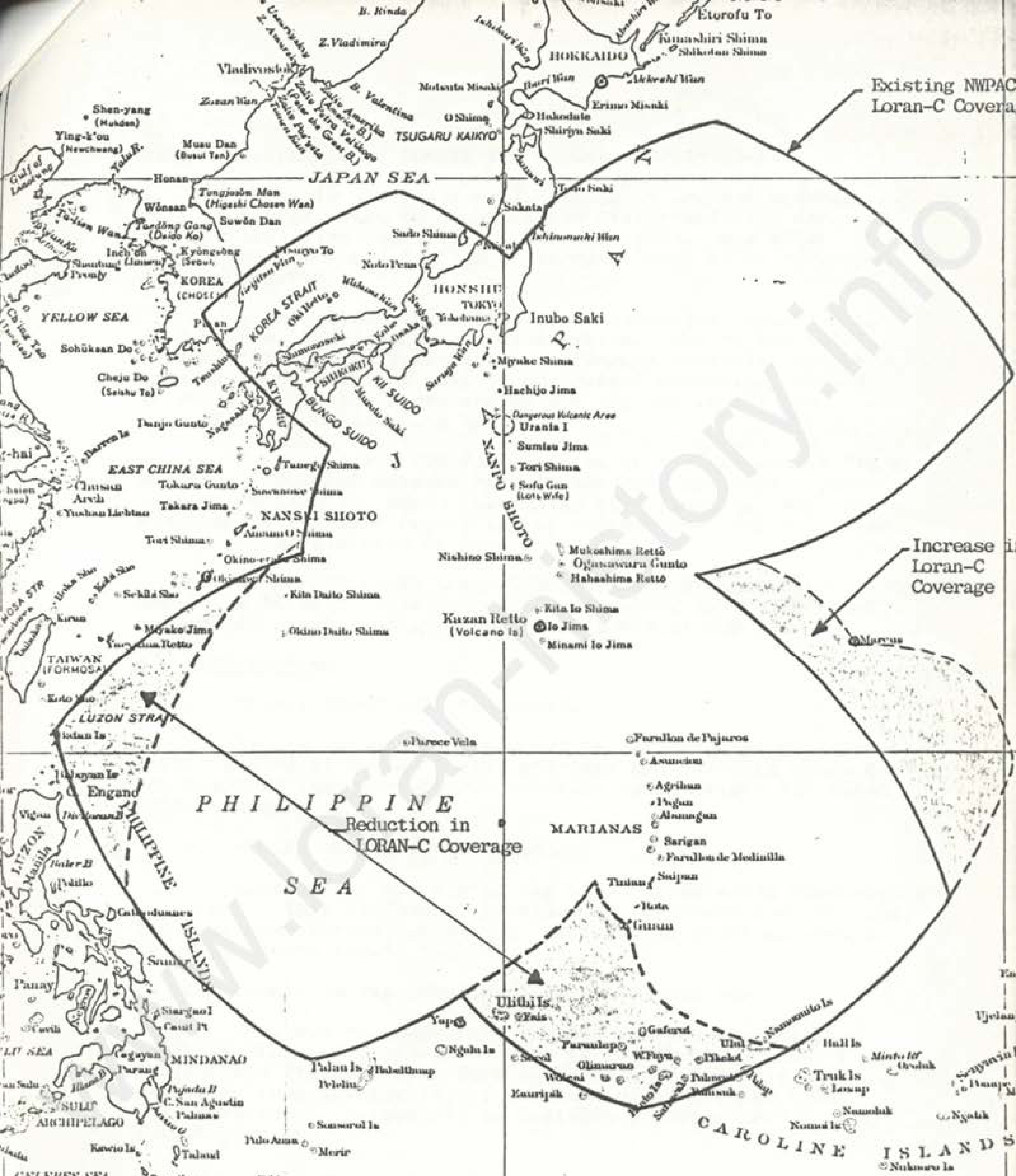
2. (Cont'd) all the Micronesian islands, Yap has clung strongest to its traditions (e.g., work ethic, culture, diet, beetle-nut, etc.). There is nothing wrong with this "way of life" per se, except for the effect it has on our Coast Guard operation and personnel. It is hard for the average, or even outstanding, Coast Guardsman not to develop a severe case of Polynesian Paralysis after a few months on Yap. This affliction manifests itself in a host of Coast Guard personnel problems (i.e., drugs, overuse of alcohol, lackadaisical attitude, procrastination, etc.) and usually degraded operational performance/ maintenance practices. Although all LORSTAs go through the normal good and bad cycles, Yap's good periods are short and infrequent whereas its bad periods are lengthy and require positive, overt District/Section interaction to rectify. LORSTA Yap's extreme geographical separation from its supply/support activities further amplifies and lengthens any problem whether it be personnel, equipment, or supply. Therefore our goal is to improve LORSTA Yap's operational performance while simultaneously reducing equipment, logistic, and personnel operating costs. An additional goal is to reduce the number of undesirable, restricted billets that Coast Guard personnel must fill.

3. Assumptions. The following assumptions are germane to the solution of the problem:

a. The requirement for the NWPAC Loran-C Chain, in particular the ZULU secondary (i.e., LORSTA Yap or replacement), will continue until at least 1992. This assumption is of primary importance in evaluating any proposal to relocate LORSTA Yap. If there is insufficient United States military and/or civilian user justification to continue to operate LORSTA Yap then, of course, the question of relocation becomes academic and the only remaining question is when should the LORSTA be disestablished. To assist in determining if this assumption is correct, enclosure (1) shows LORSTA Yap's contribution to the NWPAC Loran-C Chain's coverage for both the normal and reconfigured (i.e., LORSTA Marcus master) mode of operation.

b. The present NWPAC Loran-C navigational coverage is shown in Figure 1. In addition, the resulting coverage if LORSTA Yap is moved to Guam is illustrated. It is obvious from this diagram that there will be both an increase and a reduction to the present NWPAC Loran-C coverage if LORSTA Yap is moved to Guam. Informal discussions with CINPACFLT representatives indicate that this small change in NWPAC Loran-C coverage implemented in 1983 would be insignificant to the United States military surface user community. It is assumed



Contours based on 2drms geometric accuracy 1500'
signal to noise ratio 1:3 annual mean noise 48db/1 uv/m

RELOCATING LORSTA YAP TO GUAM
NWPAC LORAN-C CHAIN COVERAGE

FIGURE 1

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3. b. (Cont'd) that this small change in Loran-C coverage will be insignficant to other United States military users and the civilian user community. (But, of course, new NWPAC Loran-C charts would for the MZ baseline have to be developed and promulgated.)

c. Based on economics, energy conservation, operational performance, and personnel considerations, the AN/FPN-64(V) Loran-C Solid-State Transmitter and Remote Operating System, which permits complete unattended Loran-C operation, should, if possible, be the first choice for any new LORSTA (or relocation of an existing LORSTA).

d. Funding for a 700-foot antenna to replace LORSTA Yap's existing 1000-foot antenna has already been approved. (The antenna replacement costs, excluding site cleaning, will be essentially the same regardless of whether the LORSTA remains at Yap or is relocated to Guam.)

e. An AN/FPN-64(V) Loran-C Solid-State Transmitter employing 56 Half Cycle Generators operating into a 700-foot antenna is capable of an output peak power of 800 kW.

4. Alternatives:

a. Delete NWPAC ZULU Secondary.

If the assumption discussed in paragraph 3a is incorrect (i.e., number of United States military and civilian users does not warrant) then the obvious solution is to delete the NWPAC ZULU secondary.

b. Remain on Yap (Status Quo).

Continue to operate on Yap with the existing electronics equipment. This "solution" provides no long-term cost savings. The same operational, personnel, or logistic problems remain. Recurring costs remain high.

c. Remain on Yap (Replace Loran-C Transmitter).

Continue to operate on Yap but replace the existing AN/FPN-45 Loran-C Transmitter with an AN/FPN-64(V) Loran-C Solid-State Transmitter. This solution provides only minimal recurring cost savings (e.g., deletion of an ET1 and ET2). The operational, personnel, or logistic problems remain as in alternative 4b.

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4. d. Relocate to Guam and Employ a AN/FPN-64(V) Loran-C Solid-State Transmitter.

Relocating LORSTA Yap to Guam and operating LORSTA Guam in the unattended mode is very attractive based on operational, personnel, economic, and logistic considerations.

e. Relocating to Guam and Employ a AN/FPN-45 Loran-C Transmitter.

This alternative satisfies the operational and logistic considerations. Although personnel savings (11 billets) are realized they are not as significant as that gained by employing an AN/FPN-64(V) Loran-C Solid-State Transmitters which permits unattended operation (20 billets). The requirement for an on-site watchstander will probably preclude the most outstanding Guam site (i.e., Orote Point) as explained in enclosure (2). This will increase the relocation initial costs significantly. The large input power requirement of the AN/FPN-45 Loran-C Transmitter will significantly increase the recurring power costs and emergency generator requirement. Although this alternative is feasible it is certainly not optimal.

f. Relocate to Another Island in the Yap/Guam Vicinity.

The only other island in the vicinity (excluding Guam or Yap) that satisfies the operational, economic, and logistic considerations/criteria is Saipan. Based on the Coast Guard's desires to disestablish LORMONSTA Saipan (PP-14-02-80), due to economic, logistics, and personnel considerations, any thought of "force fitting" this solution to the problem should be rejected.

5. Recommended Solution: Our recommended solution to the problem is to relocated LORSTA Yap to Guam and to employ an AN/FPN-64(V) Loran-C Solid-State Transmitter and Remote Operating System to permit unattended operation of LORSTA Guam. Maximum cost savings would result, of course, if this relocation were implemented in conjunction with the unique opportunity provided by the already programmed antenna replacement (for LORSTA Yap) scheduled in 1983. This solution is very attractive based on the following considerations.

a. Cost Savings - The initial investment is recouped in approximately one year and after that the savings is at least $1,400,000 annually.

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5. b. Personnel - LORSTA Guam would require a personnel allowance of four non-restricted billets, therefore 20 billets could be released for other duties within the Coast Guard.

c. Operations - Improved since the Loran-C coverage is essentially the same and the present less-than-optimal Guam/Yap communications link is no longer required.

d. Logistics - Improved since Guam is the primary U. S. support center in the Southwest Pacific.

6. Analysis of Recommended Solution: The following discussion describes our recommended solution:

a. Basic Operational Consideration.

As stated in the assumptions, establishing a new LORSTA (or relocating an existing LORSTA) without employing, if possible, the unattended mode of operation successfully implemented at LORSTA Point Hardy is a step backward. Therefore our analysis for relocating LORSTA Yap to Guam is based on this premise. LORSTA Guam is proposed to operate in the unattended mode with the minimal "watchstanding" duties performed by MARSEC's RCC watchstander and a LORSTA Guam duty ET available on call. (Based on this proposed mode of operation two things are obvious; the closer LORSTA Guam is to the MARSEC office the better, due to reduced length of the dedicated-purpose communications link and the closer LORSTA Guam is to available DOD housing/barracks the better, due to the reduction of the duty ET's response time.) MARSEC staff, without an increase in personnel allowance, could easily accomplish the additional minimal "watchstanding" duties and the small increased administrative/supply workload resulting from relocating LORSTA Yap to Guam.

b. Basic Technical Consideration.

At first glance the primary technical consideration (probably more political than technical) is the possibility of mutual interference between the proposed LORSTA Guam and the Navy Communications Area Master Station, Western Pacific, Guam (NAVCAMS WESTPAC). Although it is doubtful that this mutual interference situation will be significant or could not be solved by "simple technical fix," whatever mutual interference exists or is imagined will be considerably

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6. b. (Cont'd) reduced by locating LORSTA Guam as far from NAVCAMS WESTPAC (Refer to Figure 2) as possible. Collocating LORSTA Guam in "close proximity" to LORMONSITE Guam will cause no problems with our NWPAC southern triad Loran-C monitor/control capability (precedent LORSTA and LORMONSITE Johnston Island).

c. Basic Economic Consideration.

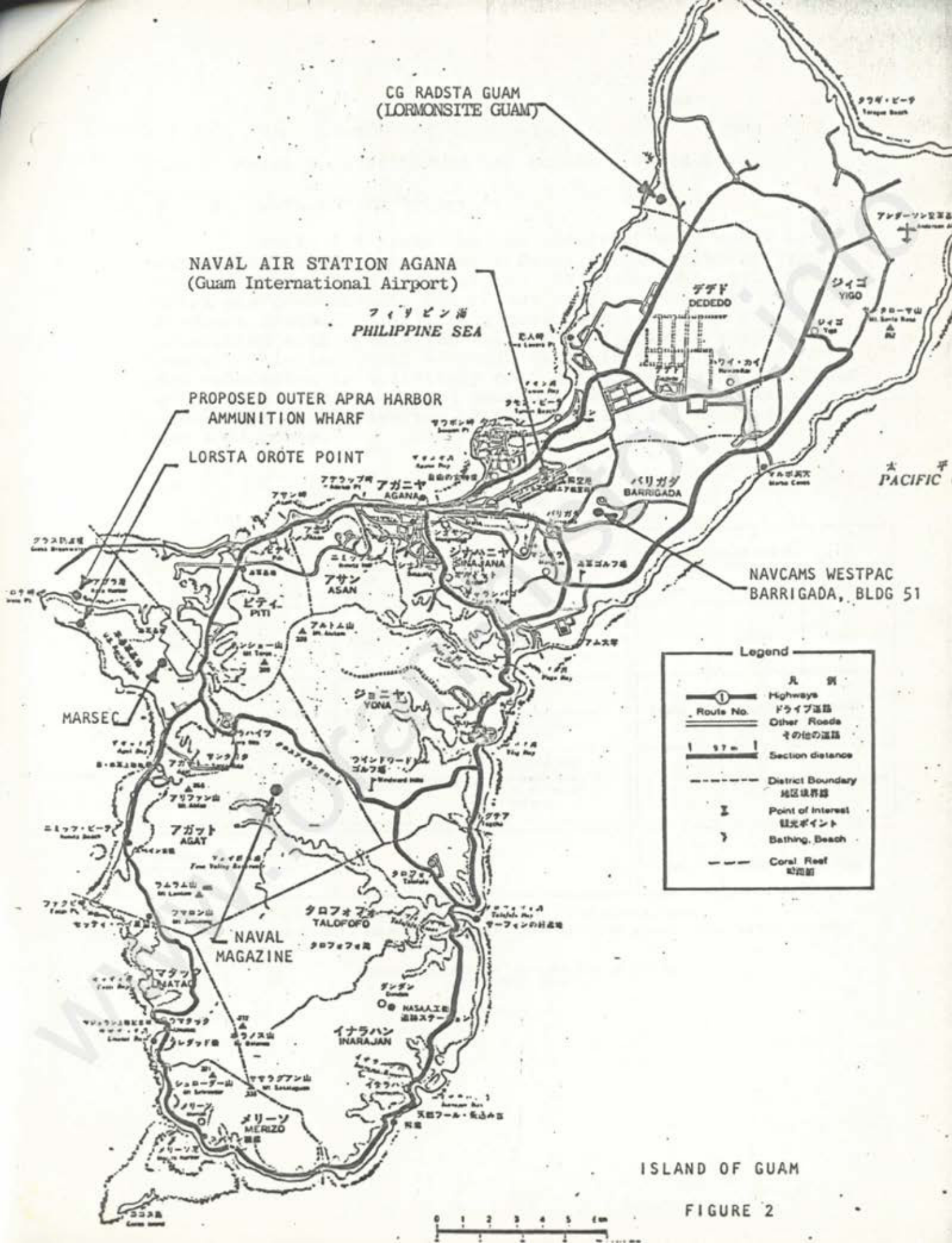
If the basic stipulation is made that only government land will be considered for LORSTA Guam (i.e., no land procurement costs), then the three major cost items involved in a Yap to Guam relocation are antenna procurement/erection, LORSTA building construction, and AN/FPN-64(V) Loran-C Solid-State Transmitter procurement. These major cost items are discussed in enclosure (2) but it is obvious that if an existing building could be used for LORSTA Guam then the proposed relocation becomes even more attractive economically. Based on this consideration the first sites on Guam which should be evaluated are those where an available building on government land exists which could house LORSTA Guam with only minor modifications.

d. Possible LORSTA Guam Site

There are several sites on Guam that satisfy the aforementioned basic operational, technical, and economic considerations. CDR GOODMAN (CCGD14(eee)) identified one excellent Guam site at Orote Point during a preliminary survey (February 1981). This site is the disestablished Orote Point Loran-A station on Naval Station, Guam (see Figure 2) and is described in detail in enclosure (2). The Orote Point site has been used as an example in the Yap to Guam relocation cost analysis estimates shown in enclosure (3).

e. Personnel Allowance Analysis.

Relocating LORSTA Yap to Guam and operating LORSTA Guam in an unattended mode by employing an FPN-64 transmitter and Remote Operating System will result in a net personnel allowance reduction of 20 military billets with a corresponding life cycle cost savings (estimated for 1983) of approximately $951.8K per year. The two indigenous workers (i.e., cook and handyman) presently employed at LORSTA Yap will not be retained if this proposal is implemented. A detailed personnel allowance analysis for the proposed LORSTA Yap/Guam relocation is shown in enclosure (4).



ISLAND OF GUAM

FIGURE 2

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6. f. Cost/Saving Analysis.

Table I depicts the one time/recurring costs of relocating LORSTA Yap to Orote Point or remaining at Yap over a mission life of 10 years. This economic analysis, which was conducted in accordance with the Economic Analysis Handbook (NAVFAC P-442), considers both the costs directly associated with LORSTA Yap and the MAC logistic support costs. This technical economic analysis shows that LORSTA Yap relocation is definitely cost effective, saving millions of dollars. Enclosure (5) provides detailed information concerning the derivation of the existing and expected OE and ISSA costs.

LIFE CYCLE COST OVER 10 YEARS

	COSTS ($ K)				PRESENT VALUE ($ K)		
	YAP	YAP W/FPN-64	OROTE POINT	PRESENT VALUE FACTOR	YAP	YAP W/FPN-64	OROTE PT
ONE TIME COSTS (SEE ENCL (3))	-	1200	1887	X1.0	-	1200	1887
OE/ISSA	1796.5	1603.5	424.5	X6.447 (10-year period, 10% discount factor)	11582	10339	2737
SALVAGE VALUE OF LORAN-C TRANSMITTER	-	$500/_{2074}$	$500/_{2074}$	X1.0/X0.405 (10-year period, 10% discount factor)	-	$(500)^{*}/_{(840)^{**}}$	$(500)^{*}/_{(840)^{**}}$
NET PRESENT VALUE (TOTAL)	-	-	-	-	11582	10199	3284

* Salvage value of YAP's FPN-45 XMTR set; assuming 70% of present value.

** Salvage value of Orote Point's FPN-64 XMTR; assuming 70% of present value for use on CONUS LORSTAs when Orote Point disestablished.

ECONOMIC ANALYSIS OF PROPOSED MOVE OF LORSTA YAP TO OROTE POINT

TABLE I

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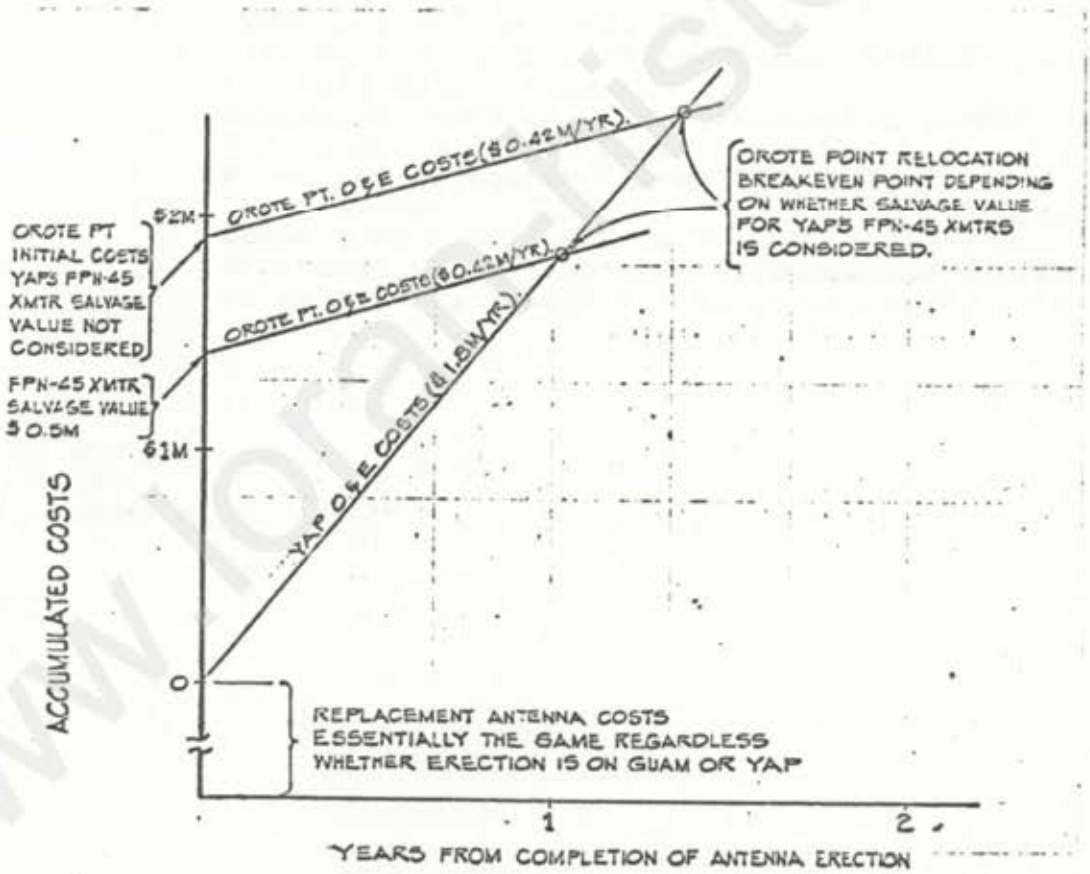
7. Environmental Assessment: A statement concerning the environmental considerations of relocating LORSTA Yap to Orote Point, Guam is included as enclosure (6).

8. Conclusion:

Besides the obvious advantages (i.e., signficant personnel allowance reduction, reduced requirement for isolated/ restricted duty, deletion of communications links, decreased supply lines, etc.), the cost effectiveness of relocating LORSTA Yap to Orote Point, Guam is so attractive that, if a NWPAC ZULU secondary is required at all, it becomes a one-time opportunity that we can hardly ignore.



COST EFFECTIVENESS OF RECOMMENDED SOLUTION
(I.E., RELOCATING LORSTA YAP TO OROTE POINT)
FIGURE 3

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8. (Cont'd) The above figure is a graphic presentation of the cost effectiveness of the recommended solution and shows that our initial investment is recouped within the first 16 months. From that moment on the Coast Guard saves at least $1,400,000 per year.

A. C. TINGLEY
Acting

Encl: (1) NWPAC Loran-C Coverage Diagrams
(2) Information Concerning Relocating LORSTA Yap to Orote Point, Guam
(3) Estimated Technical Costs Relocating LORSTA Yap to Orote Point, Guam
(4) Personnel Allowance Changes and Life Cycle Cost Savings
(5) Summary of Cost Analysis
(6) Statement Concerning the Environmental Considerations of Relocating LORSTA Yap to Orote Point, Guam

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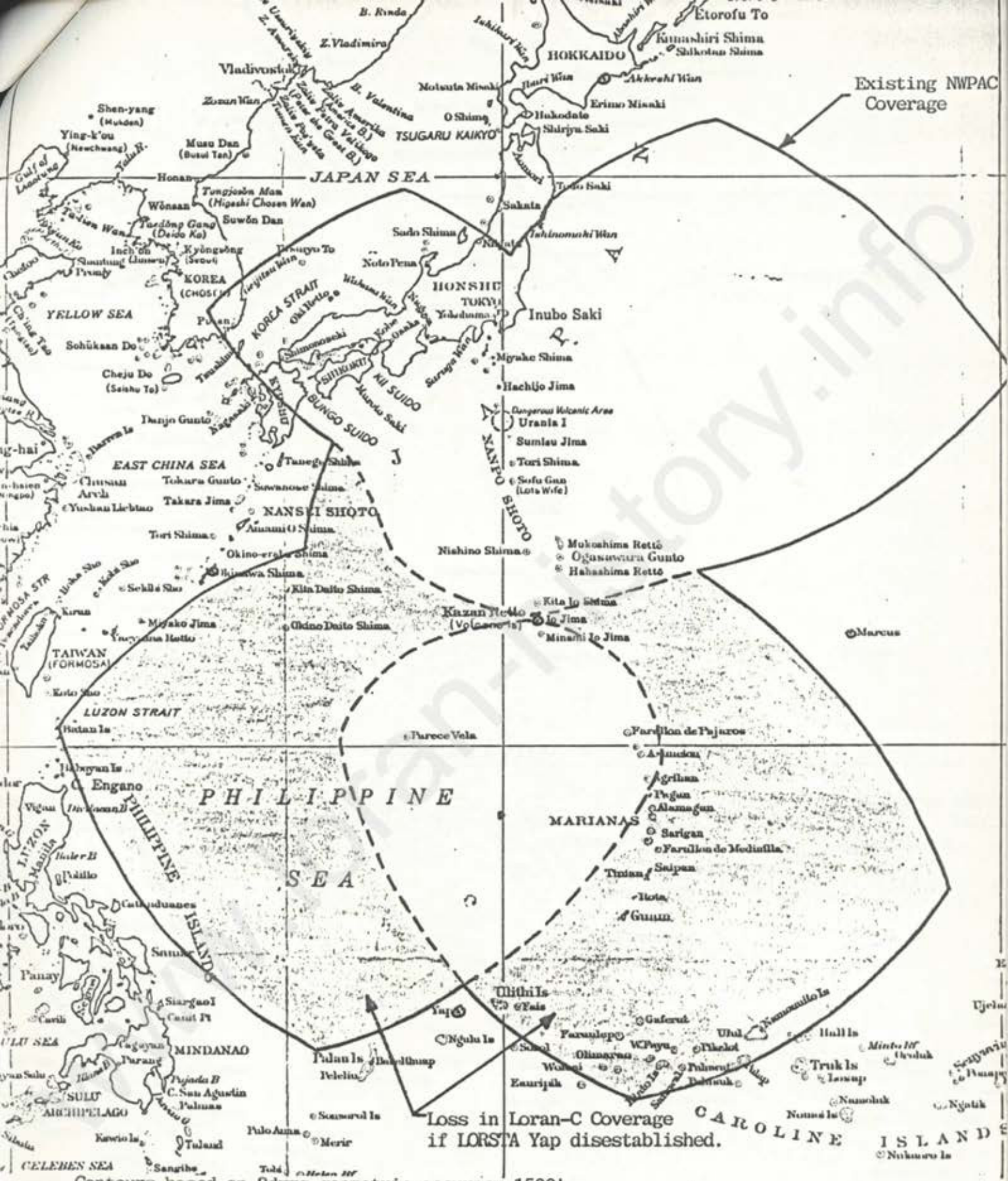
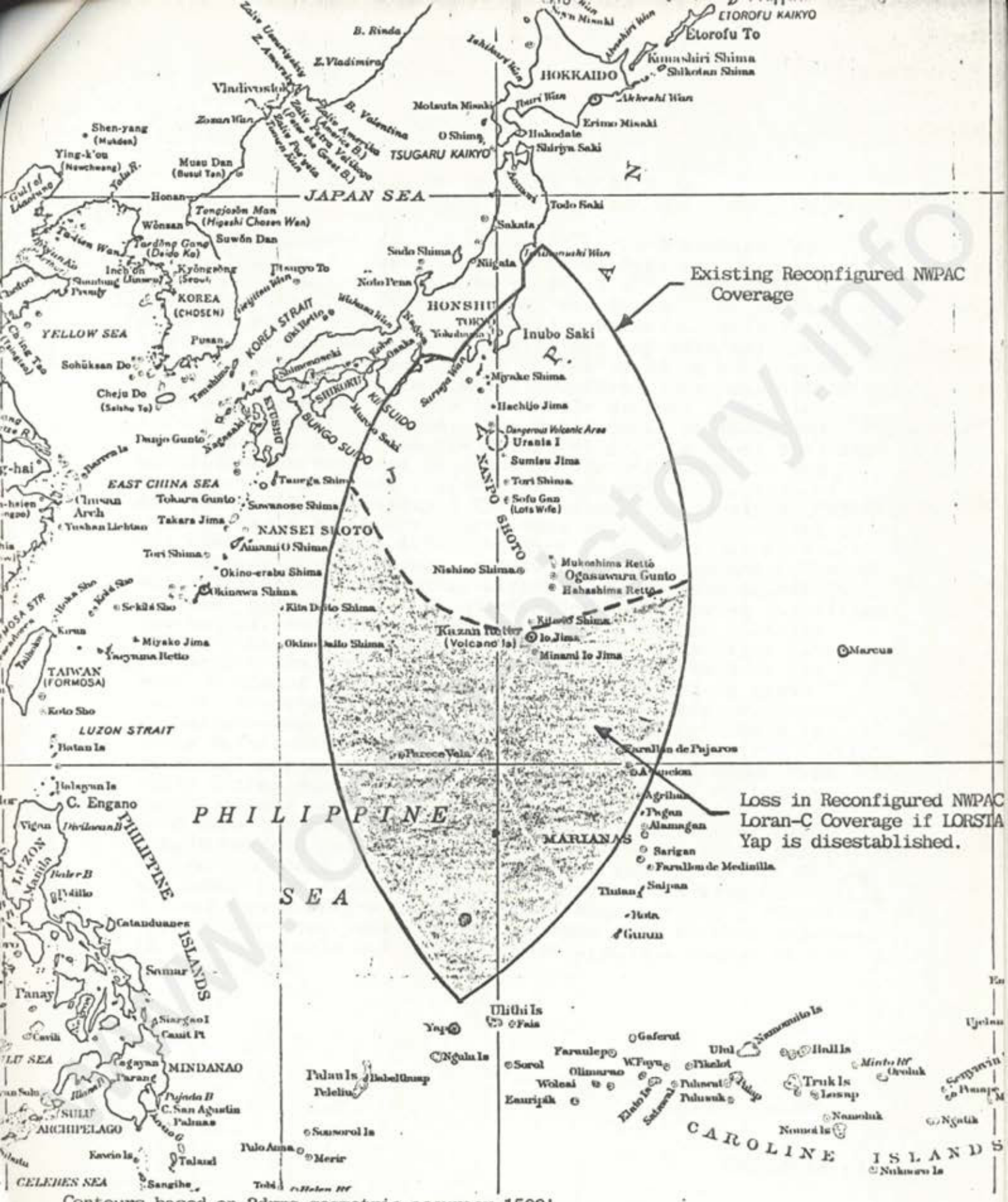


NWPAC LORAN-C CHAIN COVERAGE

ENCLOSURE (1)



RECONFIGURED (I.E., MARCUS MASTER LORSTA) NWPAC LORAN-C CHAIN COVERAGE .

ENCLOSURE (1)

DISCUSSION OF OROTE POINT SITE

The disestablished Orote Point Loran-A station (see Figure 2 of basic letter) on the Naval Station, Guam, with minor modifications, would be an ideal site for LORSTA Guam. Presently this building is being used by the U.S. Marines as a Jungle Warfare School. Informal discussions with Commanding Officer, Marine Barracks indicate that any official Coast Guard request for repossession of the building would meet with no opposition from the Marines since they would like (already planning) to move the Jungle Warfare School to a more appropriate location. The building is in excellent shape and all utilities are functioning. The minor building modifications required to house LORSTA Guam would be the construction of a new transmitter room and the upgrade of the input VAC capability. The advantages of locating LORSTA Guam at Orote Point are: available building well suited to our needs, secure location (on Navy base), sufficient space for antenna ground system, remote location (non-interference with military or commercial aircraft), closeness to MARSEC offices, closeness of DOD housing/barracks/messing facilities, and spacial separation from the NAVCAMS WESTPAC facility. The only major disadvantage of this site is the fact that the Navy intends to construct an ammunition wharf on the south shore of Outer Apra Harbor (see Figure 2 of basic letter) sometime during the next 3 years. This would pose two major questions with respect to relocating LORSTA Yap to Orote Point. The first question involves the minimum distance personnel may traverse within or work from the ammunition wharf during explosive handling periods (i.e., daytime except during wartime, and for this facility approximately 8-10 days a month). The second question is whether our output Loran-C pulse (based on average output power and frequency) would accidentally detonate any explosives during the ammunition handling periods. Discussions with Commanding Officer and Ordnance Officer, Naval Magazine and a review of appropriate Navy publications indicate that neither question is insurmountable but might require approval and/or waiver from the Navy.

INFORMATION CONCERNING TECHNICAL COSTS TO RELOCATE LORSTA YAP TO OROTE POINT

Antenna Procurement/Erection

Since funding for a replacement Yap antenna has already been programmed regardless of whether erection is at Yap or Guam, this cost should not be considered in the analysis. But the costs for antenna site clearing on Guam must be considered.

Loran-C Transmitter

Since Commandant has previously stated that no FPN-64 Transmitter is programmed for LORSTA Yap, FPN-64 transmitter procurement costs should be applied to LORSTA Guam only. Since it is assumed that NWPAC LORSTAs will be disestablished a considerable period before CONUS LORSTAs, an analysis should consider a residual (i.e., salvage) value for the FPN-64 transmitter procured for LORSTA Guam. In addition, a salvage value for Yap's present AN/FPN-45 Loran-C Transmitter Set is considered.

LORSTA Building

If a suitable existing building (i.e., size, bonding, (somewhat) remote location, space for an antenna ground system, environmental considerations with respect to antenna, etc.) could be found at an acceptable Guam location, the cost of moving the LORSTA will be significantly reduced.

Regardless of the site selected a single building LORSTA similar to LORSTA Baudette is envisioned. This building would provide space for the Loran-C timer room, transmitters, emergency generators, spare parts storage, offices, and lounge (but no bunk room) with a total area of approximately 4000 square feet. The LORSTA Orote Point with slight modification would suit the purpose perfectly as shown by attached plot plans.

Emergency Generator

An emergency power capability must be provided to insure a continuous Loran-C signal on-air condition in the event of a loss of Naval Station power. Based on the input power of an FPN-64(V) Transmitter (56HCG) at the NWPAC Loran-C Chain pulse repetition rate (99700us), the emergency generator required must be at least 200kW. Two emergency generators would be required for redundancy purposes.

Disestablishing LORSTA Yap

There would be numerous costs involved in the "close up" of the Yap site. The major costs would involve equipment removal/transportation and building mothballing. It is estimated that the total costs would be $100K. Costs for the removal of the 1000-foot antenna are not included since the antenna must be removed regardless whether the station is relocated to Guam or not.

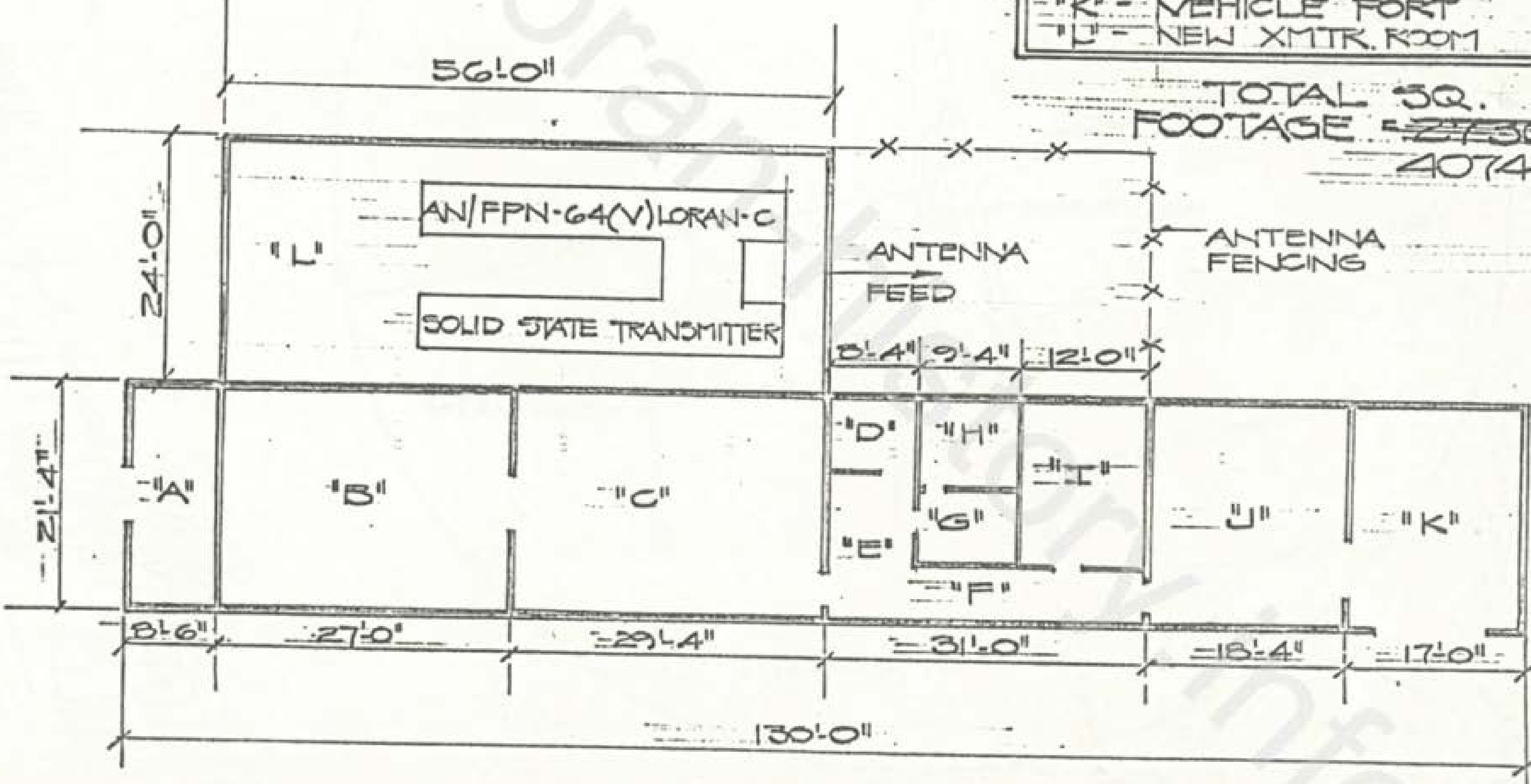
Technical Costs

The following enclosure shows the estimated technical costs for relocating LORSTA Yap to Orote Point. In addition detailed information concerning the derivation of these estimated engineering costs are provided.

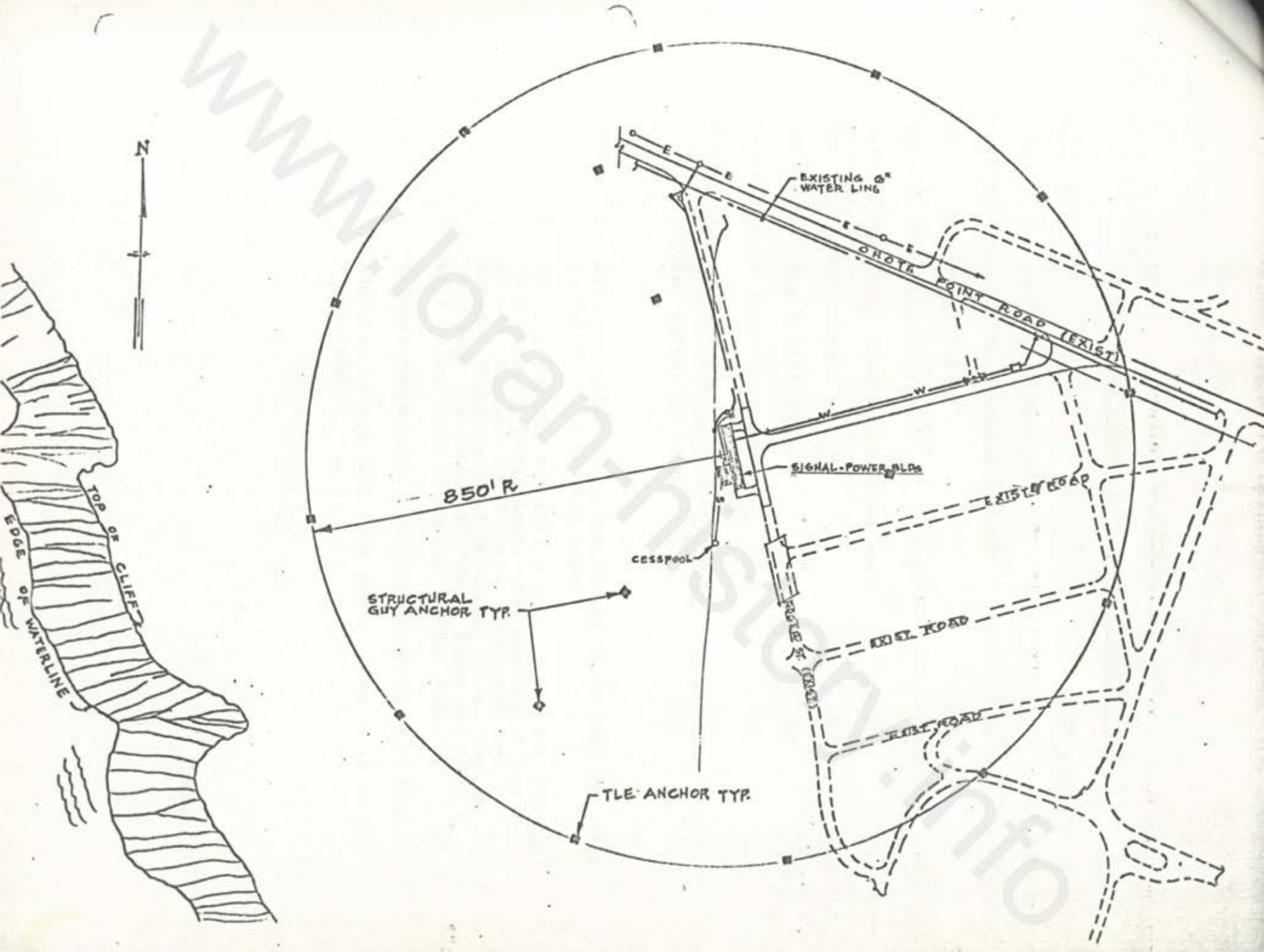
LEGEND

"A"	MECH.	179 S.
"B"	EXIST. XMTR RM.	567 S
"C"	TIMER ROOM	609 S
"D"	TOILET	54 SF
"E"	WORK AREA	120 SF
"F"	CORRIDOR	84 SF
"G"	KITCHEN	45 SF
"H"	LOUNGE AREA	63 SF
"I"	ELECT. STOR.	136 SF
"J"	GENERATOR ROOM	378 S
"K"	VEHICLE PORT	357 SF
"L"	NEW XMTR. ROOM	1344 SF

TOTAL SQ. FOOTAGE = ~~2730~~ L
4074 SF



PROPOSED OROTE PT. LORSTA MODIFICATIONS



ESTIMATED TECHNICAL COSTS

RELOCATING LORSTA YAP TO OROTE POINT (NOTE 1)

ITEM	COST ($K)	
Loran-C Timing/Control Equipment	0	Note 2
AN/FPN-64 Loran-C Transmitter (56HCG)	1200	
Remote Operating System	100	
Antenna Site Preparation	151	
Antenna 700 foot (Procurement/Erection)	0	Note 3
Emergency Generators	159	
LORSTA Building Modification	92	Note 4
Upgrade Power Input System	85	
Disestablish LORSTA Yap	100	
TOTAL TECHNICAL COSTS	1887	

NOTES:

1. Detailed information concerning these cost estimates contained in following pages.
2. Although LORSTA Yap will remain on-air until LORSTA Guam becomes operational, time sharing of Yap's or use of EELAB/EECEN-loaned vital and costly Loran-C timing/control equipment (i.e., cesium frequency standards, AN/FPN-54 Timer Set, etc.) will be employed to reduce initial costs.
3. Antenna procurement/erection costs not included.
4. Addition of new XMTR room and upgrade of input VAC capability.

ENCLOSURE (3)

ESTIMATED ENGINEERING COST FIGURES

FOR

NEW OROTE POINT LORSTA

1. Site Clearing (Antenna Field; using costs from Means (1980); Geographic cost factor IAW CG-251) (See Note 1)
   (50 Acres) ($1675/Acre)(1.8) = $151K

2. Generators (GFE: Contractor-Installed)

   a. Generator installation (cost for LORSTA Baudette, Minn.; Adjusted Geographic cost factor) (See Note 2)

   ($30K) $\frac{(1.8)}{1.15}$ = $47K

   b. Generator (based on Hokkaido GENSETS + adjustment factor; incl switchgear, panel, etc.) (See Note 3)

   (200KW) (2 ea) @ $280/KW = +$112K
   $159K

3. Tower (New 700') (Costs from YAP tower STRUCTALT).

4. LORSTA Building Modification

Building Addition	
Site Prep 1500 SF x $4/SF	$ 6K
Slab (24x56) SF x $15 SF	21K
Walls 12X160 SF x $5/SF	10K
Roof 1500 SF x $10/SF	15K
Misc. lighting, electrical, finishes, etc.	+40K
	$92K

5. UPGRADE Power input system, new transformers, panelboards, etc. = $30K

   Bury aerial feeder in ground plane
   1375 LF @ $40/LF = $55K
   $85K

6. Disestablish LORSTA YAP $100K
   (equipment removal/mothballing, close station)

NOTES

1. In accordance with CG-251, Geographic Cost Factor (GCF) for Guam = 1.8

   Geographic Cost Factor (GCF) for Baudette, Minn = 1.15

2. Adjusted Geographic Cost Factor $= \frac{\text{GCF Guam}}{\text{GCF Baudette, Minn}} = \frac{1.8}{1.15} = 1.57$

3. Generator Cost/KW $= \frac{\text{Hokkaido Cost}}{\text{Total KW}} \times \text{Adjustment Factor}$

   $= \frac{\$325K}{1400} \times 1.2 = \$280/KW$

LORSTA PERSONNEL ALLOWANCE

	LORSTA YAP		LORSTA GUAM		
	BILLETS	COST ($K)	BILLETS	COST ($K)	SAVINGS ($K)
	LT	92.0			92.0
	ELC4	94.6	ELC4	94.6	
	BMC	57.2			57.2
	3SN	112.2			112.2
	MKC	57.2			57.2
	MK1	50.2			50.2
	MK2	44.0			44.0
	MK3	40.4			40.4
	DC1	50.2			50.2
	ETC	57.2			57.2
	ET1	50.2	ET1	50.2	
	ET2	44.0	ET2	44.0	
	ET2	44.0			44.0
	ET3	40.4	ET3	40.4	
	ET3	40.4			40.4
	EM1	50.2			50.2
	3FN	112.2			112.2
	SK2	44.0			44.0
	SS1	50.2			50.2
	HM1	50.2			
TOTALS	1-1-22	1181.0	0-1-3	229.2	951.8

NOTE: Annual life cycle savings determined from estimated 1983 standard personnel costs multiplied by a factor of 2.0. (References: Commandant Instruction 7100 of March 1981 and Coast Guard Planning and Programming Manual (COMDTINST M16010.1), Appendix N).

ENCLOSURE (4)

OPERATING EXPENSE BREAKDOWN

OG-01 - MILITARY PAY AND ALLOWANCES (SEE ENCLOSURE (4))

OG-30 - OPERATING AND MAINTENANCE COSTS

	OBJECT ACCOUNT	LORSTA YAP FY-81 TARGET	YAP W/FPN-64	LORSTA OROTE PT
2303	UTILITY SERVICES			(SEE MIPR CALCULATION BELOW)
2542, 2642	ELECTRONIC MAINTENANCE DISTRICT CONTROLLED	1,500	1,000	1,000
2544, 2644, 3144	SHORE UNIT MAINTENANCE	32,600	32,600	1,000
2542, 2642	UNIT CONTROLLED ELECTRONICS MAINTENANCE	29,630	8,000	8,000 (REDUCED ELECTRONIC RQMTS OF FPN-64(V))
2559	DISTRICT CONTROLLED MISCELLANEOUS SERVICES			
2655	DISTRICT CONTROLLED RECREATION SUPPLIES	2,300	2,300	1,300
2668	FUEL	424,520	350,000	3,000 (REDUCED FUEL DUE TO PRIME POWER SUP)
2655, 3155, 3156	SUPPLIES/MATL/MAINT - RECREATION, TRAINING	2,100	2,100	1,000 (RECREATION COVERED BY NAVY)
2647, 3157	MEDICAL SERVICES/SUPPLIES	1,650	1,650	(COVERED BY NAVY)
2634	HOUSEKEEPING EXPENSE	2,100	2,100	1,000
	OG-30 SUBTOTAL	$496,400	$399,750	$16,300

OG-42 - ELECTRONICS PROGRAMS

	YAP	YAP W/FPN-64	OROTE PT
ELECTRONICS (TEST EQUIPMENT, ETC.)	4,000	2,000	2,000

OG-43 - SHORE UNIT PROGRAM

YAP	YAP W/FPN-64	OROTE PT
$97.1K (AVERAGE ANNUAL OG-43 OVER PAST FIVE YEARS)	97.1K	$10K (ESTIMATE) (IN ADDITION TO TOWER MAINTENANCE REQUIREMENTS ($17K))

MIPR (MOSTLY BASED ON LORSTA JOHNSTON ISSA)

HOUSING AND LODGING — BY NAVY
MESSING

UTILITIES, WATER, ETC. - USING FPN-64(V) (125KW) + AUXILIARY (50KW) AT $60.00/1000 KWH (EST FIG)

((175KW) (24 HOURS/DAY) (365 DAYS/YEAR)	($0.06KWH)=$91,980
TELETYPEWRITER	$3,000
NO CHARGE FOR SEWAGE TREATMENT (ON SITE DISPOSAL)	
WATER	$ 500
TELEPHONE	$ 12K
MEDICAL/DENTAL SERVICES	BY NAVY
SHORE MAINTENANCE (INCLUDING MINOR REPAIR, REFUSE COLLECTION, ETC.)	20,000
TRANSPORTATION SUPPORT	2,500
OTHER (RECREATION, PERSONNEL SERVICES, ETC.)	20,000
MIPR SUBTOTAL	$149,980

MAC TRANSPORTATION (FOR YAP)

(12 MONTHS) ($1500/MONTH) $18K

OE/MIPR

	YAP	YAP W/FPN-64	OROTE PT
OG-01	$1181.0	$1086.8K	$229.2K
OG-30	496.4K	399.8K	16.3K
OG-42	4.0K	2.0K	2.0K
OG-43	97.1K	97.1K	34.0K
MIPR	-	-	150.0K
MAC TRANS	18.0K	18.0K	-
	$1796.5K	$1603.7	$424.5K

STATEMENT CONCERNING THE
ENVIRONMENTAL CONSIDERATIONS OF
RELOCATING LORSTA YAP TO OROTE POINT GUAM

A comprehensive Environmental Impact Assessment concerning relocating LORSTA Yap to Orote Point, Guam is being prepared by COMPACDIV, Naval Facilities Engineering Command, Pearl Harbor, Hawaii. This assessment will be available in approximately 3 months. The following is a preliminary statement of the environmental considerations involved in relocating LORSTA Yap to Orote Point:

1. Establishing a LORSTA at Orote Point

a. Physical Facilities - The LORSTA would be located on Naval Station, Orote Point, Guam at the extreme western end of the island. The LORSTA's location would be in a very isolated portion of the Naval Station's reservation with no "neighbors" in close proximity. The modifications to the existing building and erection of a 700-foot antenna with 850-foot underground radials would cause insignificant impact to Orote Point's flora and fauna environment.

b. Collocation with the Proposed Outer Apra Harbor Ammunition Wharf - Although LORSTA Orote Point would be within the 7210-foot Explosive Safety Quantity Distance (ESQD) required for the proposed ammunition wharf, the fact that LORSTA would be operated in an unattended mode and that equipment preventive maintenance could be performed at night (so as not to conflict with daytime ammunition handling) make collocation feasible.

c. Mutual RF Interference - Due to primary frequencies involved, harmonic frequency suppression criteria, and geographical separation, no mutual RF interference should exist between the proposed LORSTA Orote Point and NAVCAMS WESTPAC transmitting or receiving facilities.

d. LORSTA Orote Point 700-foot Antenna - LORSTA Orote Point antenna would pose no problems for arriving or departing aircraft from Guam's two airfields (i.e., Anderson AB, Naval Air Station (Guam International Airport)) due to the geographical separation.

e. Quality of Life for LORSTA Orote Point's Personnel - The assignment at Orote Point would be an accompanied tour on Guam where extensive DOD quarters, hospital, schools, commissary, exchange, and recreation

1. e. (Cont'd) facilities are readily available. The addition of LORSTA Orote Point's four-man crew (and dependents) would have an insignificant impact on the aforementioned DOD facilities. Of course extensive civilian facilities are also readily available on Guam.

2. Disestablishing LORSTA Yap - Under the provisions of the Use and Occupancy Agreement LORSTA Yap's land would revert to the Federated States of Micronesia. In addition, it is the Coast Guard's intention to leave as is and turn over LORSTA Yap's buildings and power generating equipment to the Federated States of Micronesia. It is believed that the social economic consequences of removing the 24-man LORSTA crew from the island of Yap will be more than offset by economic advantage to the Yap Government from coming into possession of a self-sufficient building complex suitable for a school, community center, etc.