DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

COMMANDER (c)
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16564
Serial 10859
1 December 1981

From: Commander, Fourteenth Coast Guard District
To : Commandant (G-CPE)
Via : Commander, Pacific Area (Ptm)

Subj: Relocation of LORSTA Kure to Midway Island, PP-14-06-81

Ref : (a) COMDT (G-NRN-1) ltr 16575 of 16 March 1981

1. Background: The Central Pacific (CENPAC) Loran-C Chain is composed of LORSTAs Johnston Island, Upolu Point, Kure, and LORMONSTA Honolulu. LORSTA Kure is the YANKEE secondary and was placed in an operational status in March 1961. During the original site survey Midway Island was considered as a possible location for the YANKEE secondary but was rejected due to USN opposition to the collocation of the 625-foot Loran-C antenna and the heavily-used Midway Naval Air Station. Since its inception LORSTA Kure has been a difficult and expensive unit to operate and maintain. Recent political, military, and technical events have made the possibility of relocating LORSTA Kure to Midway not only feasible but operationally and economically attractive. These events include the:

a. Significant reduction in aircraft traffic on Midway's one remaining active runway (the other two runways are inactive and abandoned).

b. Removal of all dependents/associated support personnel from Midway (1978).

c. Reduction in the number of DOD tenant commands on Midway.

d. Successful development of the AN/FPN-64(V) Loran-C Solid-State Transmitter and the subsequent decision to replace LORSTA Kure's existing AN/FPN-42 Loran-C Transmitter.

e. Increased emphasis to reduce the number of isolated/ restricted billets and improve the quality of life for our Coast Guard personnel.

REF a

2. Problem: As previously stated LORSTA Kure has been a relatively difficult and expensive unit to operate and maintain. The primary cause of this situation is the inherent nature of siting the LORSTA on a remote, isolated island where access must be provided by the Coast Guard. The isolation of LORSTA Kure dictates personnel staffing aimed at self-sufficiency (i.e., berthing, messing, medical, power generation, etc.) and inherently results in support/logistic and real-time communications problems. These factors have significantly increased the cost of operating and maintaining this remote Pacific LORSTA. It is obvious that collocating a LORSTA at an existing DOD complex and sharing in the use of their facilities permits the Coast Guard to realize significant personnel and monetary savings. (Our experience over the past five years at Johnston Island has indeed verified this concept.) Therefore this approach should be seriously considered wherever applicable (e.g., LORSTA Yap to Guam and LORSTA Kure to Midway). The goal of this Planning Proposal is to improve LORSTA Kure's operational performance while simultaneously reducing equipment, logistic, and personnel operating costs. Additional goals are to reduce the number of undesirable, restricted billets that Coast Guard personnel must fill and to improve the quality of life for those personnel who must serve in restricted assignments.

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

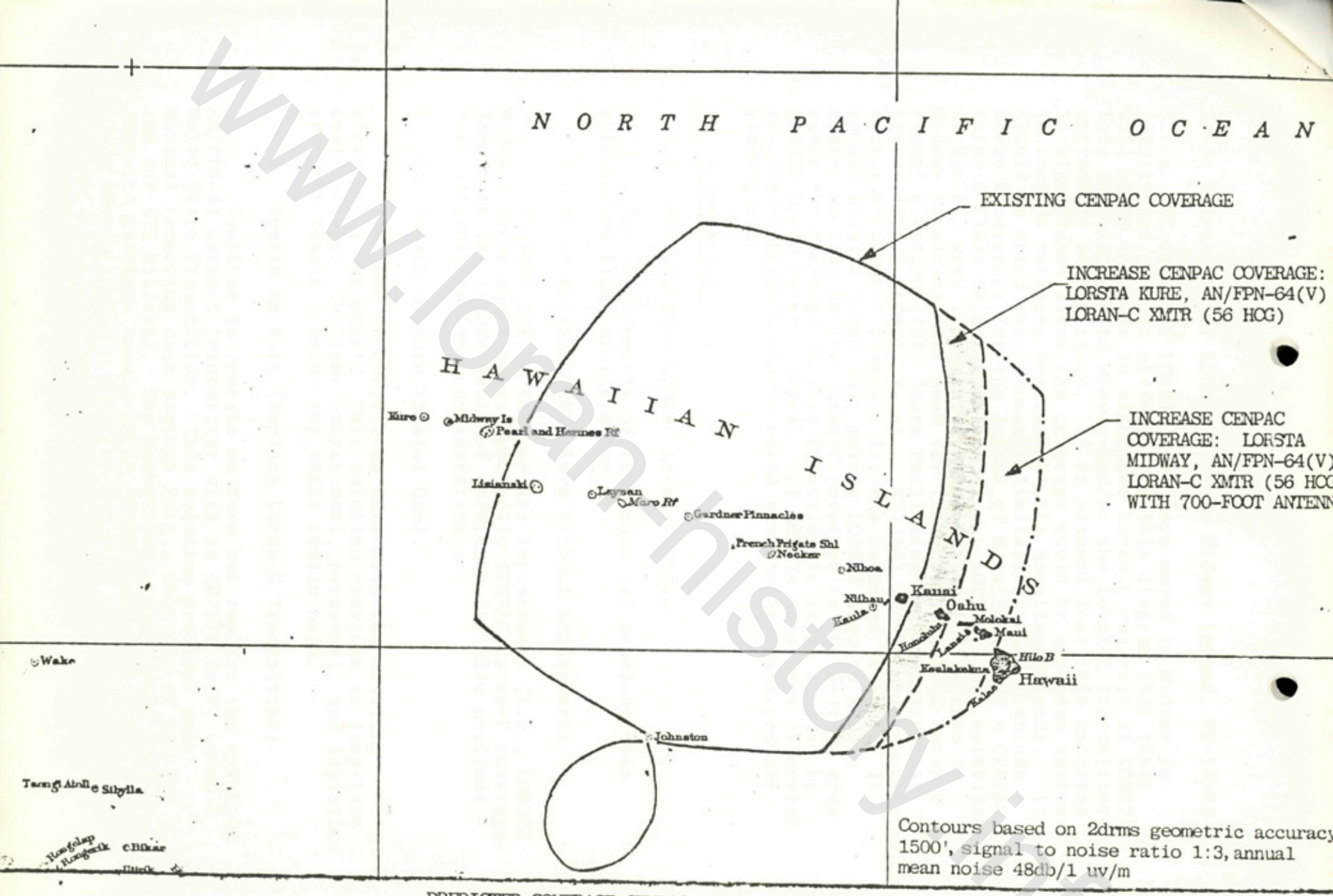
a. The requirement for the CENPAC Loran-C Chain will continue until at least 1992 (most probably 1995).

b. Funding for an AN/FPN-64(V) Loran-C Solid-State Transmitter employing 56 Half Cycle Generators (HCG) to replace LORSTA Kure's existing AN/FPN-42 Loran-C Transmitter has already been approved and our assumption is that installation will occur during FY-85.

c. A 700-foot antenna (vice 625-foot or 1350-foot antenna) is the logical choice for any new or relocated LORSTA based on cost and availability considerations.

d. An AN/FPN-64(V) Loran-C Solid-State Transmitter employing 56 HCG operating into a 625-foot or 700-foot antenna is capable of output peak powers of approximately 750 kW or 1000 kW respectively.

e. The present CENPAC Loran-C navigational coverage is shown in Figure 1. In addition, the resulting CENPAC coverage



PREDICTED COVERAGE CENPAC LORAN-C CHAIN
RATE 4990
YANKEE SECONDARY (KURE IS.) RELOCATED TO MIDWAY IS.

FIGURE 1

3. e. (Cont'd) if LORSTA Kure were moved to Midway is illustrated. It is obvious from this diagram that there will be an increase in effective Loran-C coverage if LORSTA Kure is relocated to Midway and/or the Loran-C transmitter upgrade is accomplished. It is assumed that this increase is significant since the coverage would be expanded eastward to include passages between all the Hawaiian Islands. It should be noted that geometry limitations will preclude Loran-C coverage for the Island of Hawaii even if a CENPAC Loran-C Chain reconfiguration (i.e., LORSTA Kauai established as MASTER) were implemented. Relocating LORSTA Kure to Midway eliminates the need for this costly CENPAC Loran-C reconfiguration (1981 Shore Facilities Requirements List Serial #2152: LORSTA Kauai - $3736K) if the primary determining factor is Loran-C coverage for the Hawaiian Islands. It should also be noted that moving LORSTA Kure to Midway causes no loss in the Loran-C coverage in the western area since the coverage in this direction is range limited by LORSTA Upolu Point's signal. If LORSTA Kure were relocated new CENPAC Loran-C charts would have to be developed and promulgated.

4. Alternatives:

a. Disestablish CENPAC Loran-C Chain.

The requirements of reference (a) preclude this alternative from consideration.

b. Disestablish LORSTA Kure Without Replacement.

Without LORSTA Kure or its replacement (i.e., LORSTA Midway) there would be no hyperbolic CENPAC Loran-C coverage. Therefore the requirements of reference (a) also preclude this alternative from consideration.

c. Remain on Kure (Status Quo).

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

d. Remain on Kure (Replace Loran-C Transmitter).

Continue to operate on Kure but replace the existing AN/FPN-42 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 one ET1 and one ET3 billets). The operational, personnel, and logistic problems remain as in alternative 4c. Recurring costs remain high.

4. e. Relocate LORSTA Kure to Midway

Relocating LORSTA Kure to Midway and operating the LORSTA in an unwatched mode is very attractive based on operational, personnel, economic, and logistic considerations.

5. Recommended Solution: Our recommended solution to the problem is to relocate LORSTA Kure to Midway and to employ an AN/FPN-64(V) Loran-C Solid-State Transmitter and a 700-foot antenna. Maximum cost savings would result if this relocation were implemented in conjunction with the unique opportunity provided by the already programmed Loran-C transmitter replacement (for LORSTA Kure) scheduled for 1985. In addition, the physical relocation of Kure's equipment to Midway could be accomplished during a regularly scheduled LORSTA Johnston Island antenna maintenance period (i.e., CENPAC Loran-C Chain off air) to reduce the operational effects of this relocation. This solution is very attractive based on the following considerations:

a. Cost Savings - The initial investment is recouped in less than 3 years and after that the savings is at least $1200K annually.

b. Personnel - LORSTA Midway would require a personnel allowance of five billets, therefore 15 billets could be released for other duties within the Coast Guard. (There are several desired billet changes within the District for which no offsetting resources are presently available. Proposals to utilize some of the excess billets resulting from implementation of this relocation will be the subject of separate correspondence). In addition, although LORSTA Midway would be restricted duty, the quality of life enjoyed by the personnel assigned there would be an order of magnitude better than the existing conditions on Kure.

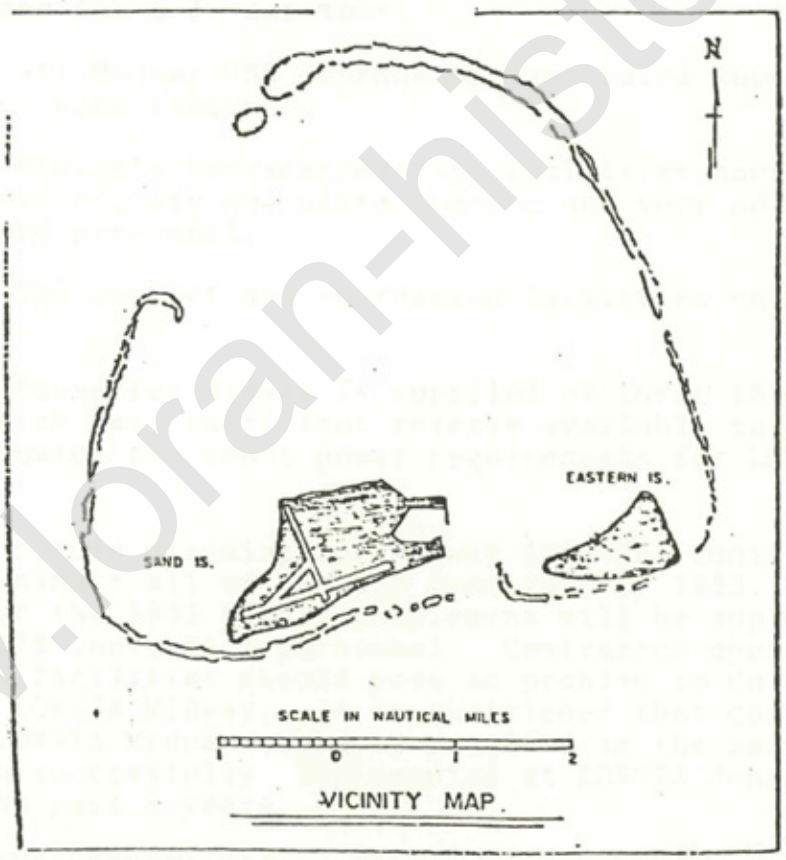
c. Operations - Significantly improved if LORSTA Kure is relocated to Midway since the resulting Loran-C coverage would encompass all the Hawaiian Islands (less Hawaii) and the present inherently troublesome Kure/Midway communications link would no longer be required.

d. Logistics - Significantly improved since Midway is serviced by twice weekly regularly-scheduled MAC flights vice the present twice monthly Coast Guard flights to Kure. In addition, Midway is serviced regularly once a quarter by a USN or contractor cargo vessel.

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

a. Midway Atoll.

Midway Atoll is located at the western end of the Hawaiian Archipelago (approximately 50 nm from Kure Island) and is composed of two islands as shown in Figure 2. Sand Island is what is commonly referred to as "Midway Island." Located on Sand Island are all USN facilities (including power plant, berthing, messing, recreation, etc.) and the one active Midway aircraft runway. East Island is an abandoned island which formerly housed an USA communications facility. Based on common sense and previous experience involving LORSTA Johnston Island the advantages of locating LORSTA Midway on Sand Island vice East Island are obvious. These



MIDWAY ATOLL

FIGURE 2

6. a. (Cont'd) advantages include: Coast Guard personnel would live/play/work on the same island (i.e., no commuting), no transportation boats would be necessary, would not require a long submarine cable to furnish primary power, no VHF-FM/ cable communications link between islands would be required. The only disadvantage is that the Loran-C antenna would be closer to the active runway. (Preliminary discussions with USN representatives at the working staff level have indicated that locating the Loran-C antenna would be acceptable.) Based on the above criteria Sand Island should be considered the much preferred site for LORSTA Midway.

b. Sand Island Situation.

(1) Midway has approximately 500 Navy personnel assigned to the Naval Air Facility and various other Navy tenant commands. Navy personnel are assigned to this restricted area for a 1-year tour.

(2) All Midway USN dependents/associated support personnel have been removed.

(3) Midway's barracks/messing facilities have been recently renovated, are now ultra-modern, and very adequate for Coast Guard personnel.

(4) The support and recreation facilities on Midway are excellent.

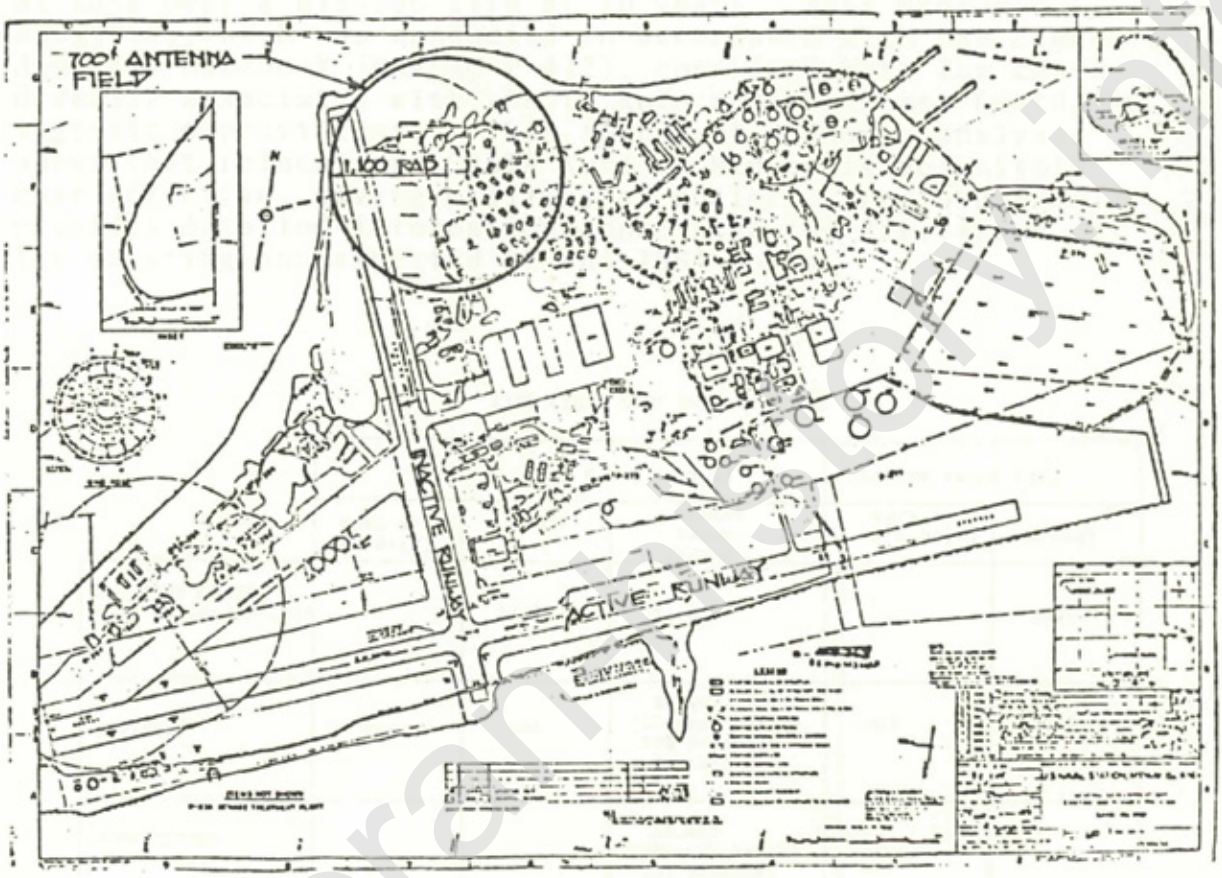
(5) Power for Midway is supplied by three 1850 kW generators which have sufficient reserve available to adequately provide the input power requirements for LORSTA Midway.

(6) Future planning for Midway includes contractor operation of almost all of the USN functions by 1983. It is estimated that the 1983 Midway complement will be approximately 25 Navy and 175 contractor personnel. Contractor operation of Midway USN facilities should pose no problem to Coast Guard operation of LORSTA Midway. It is envisioned that contractor support for LORSTA Midway would be provided in the same manner that has been successfully implemented at LORSTA Johnston Island for the past 5 years.

c. Possible LORSTA Midway Site.

During a October 1981 preliminary site survey, CDR GOODMAN (CCGD14(eee)) identified one excellent Midway site which is shown in Figure 3. The technical questions involving relocation to this Sand Island site are described in enclosure (1) and this site has been used as an example in the Kure to Midway relocation technical cost estimates shown in enclosure (2).

6. c. (Cont'd)



PROPOSED LORSTA MIDWAY SITE

FIGURE 3

d. Personnel Allowance Analysis.

Relocating LORSTA Kure to Midway and installing a AN/FPN-64(V) Loran-C Solid-State Transmitter will result in a net personnel allowance reduction of 15 military billets with a corresponding life cycle cost savings (estimated for 1983) of approximately $502.8k per year. There are no indigenous personnel involved in the operation of LORSTA Kure and none are envisioned for the operation of LORSTA Midway. A detailed personnel allowance analysis for the proposed LORSTA Kure/Midway relocation is shown in enclosure (3).

6. e. Cost/Saving Analysis.

Table I depicts the one time/recurring costs of relocating LORSTA Kure to Midway (Sand Island) or remaining at Kure 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 Kure and the Coast Guard/MAC logistic support costs. This technical economic analysis shows that relocating LORSTA Kure to Midway is definitely cost effective, saving millions of dollars. Enclosure (4) 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)	
	KURE W/ FPN-64(V)	MIDWAY	PRESENT VALUE FACTOR	KURE W/ FPN-64(V)	MIDWAY
ONE TIME COSTS (See Enclosure (1))	-	3427	X1.0	-	3427
OE/ISSA	848	530	X6.447 (10-year period, 10% discount factor)	5467	3417
BUOY TENDER REFUELING	72	-	X6.447 (10-year period, 10% discount factor)	464	-
AIRCRAFT TRANSPORTATION FOR SUPPORT	875	24	X6.447 (10-year period, 10% discount factor)	5641	155
NET PRESENT VALUE (TOTAL)	-	-	-	11572	6999

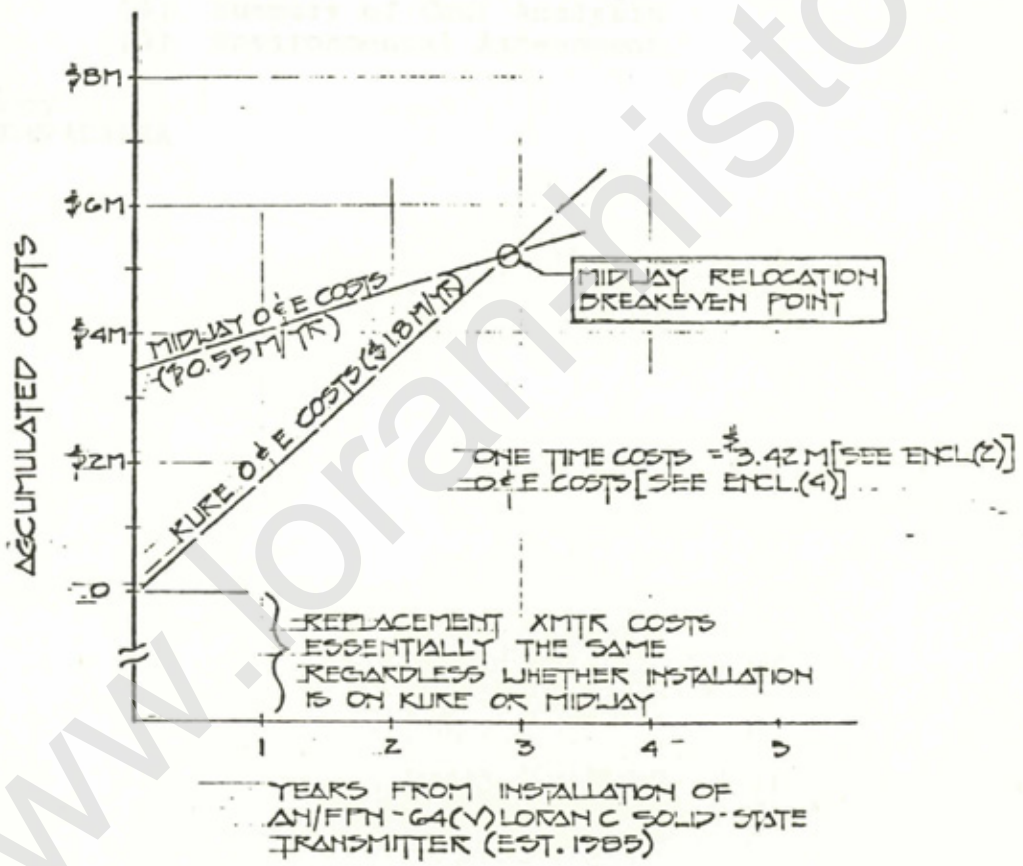
ECONOMIC ANALYSIS OF PROPOSED MOVE OF LORSTA KURE TO MIDWAY

TABLE I

7. Environmental Assessment: A statement concerning the environmental considerations of relocating LORSTA Kure to Midway is included as enclosure (5).

8. Conclusion:

Besides the obvious advantages (i.e., significant personnel allowance reduction, reduced requirement for isolated/restricted duty, improved quality of life, deletion of troublesome communications link, decreased supply lines, etc.), the cost effectiveness of relocating LORSTA Kure to Midway (Sand Island) is so attractive that it is an opportunity that should be seriously considered. Figure 4 is a graphic



COST EFFECTIVENESS OF RECOMMENDED SOLUTION
(I.E., RELOCATING LORSTA KURE TO MIDWAY)

FIGURE 4

Subj: Relocation of LORSTA Kure to Midway Island, PP-14-06-81

8. (Cont'd) presentation of the cost effectiveness of the recommended solution and shows that our initial investment is recouped within the first 3 years. From that moment on the Coast Guard saves at least $1200K per year.

B. E. THOMPSON

Encl: (1) Technical Information Concerning Relocating LORSTA Midway (Sand Island)
(2) Estimated Technical Costs for Relocating LORSTA Kure to Midway (Sand Island)
(3) Personnel Allowance Changes and Life Cycle Cost Savings
(4) Summary of Cost Analysis
(5) Environmental Assessment

Copy:
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INFORMATION CONCERNING TECHNICAL COSTS TO
RELOCATE LORSTA KURE TO MIDWAY

Loran-C Timing/Control Equipment

Since LORSTA Kure's Loran-C Timing/Control Equipment would be relocated to LORSTA Midway during a regularly scheduled LORSTA Johnston Island antenna maintenance period (i.e., CENPAC Loran-C Chain off air), the cost of this equipment is not considered in this analysis.

Loran-C Transmitter

Since funding for a AN/FPN-64(V) Loran-C Solid State Transmitter to replace Kure's existing AN/FPN-42 Loran-C Transmitter has already been programmed regardless of whether installation is at Kure or Midway, this cost is not considered in the analysis. The very minimal residual (i.e., salvage) value for the FPN-42 transmitter is also not considered in this analysis.

LORSTA Midway Site Preparation

This cost considers clearing/grubbing of the antenna field.

LORSTA Midway Building

A single building LORSTA similar to LORSTA Port Hardy is envisioned. This building would provide space for the OPS Center/Loran-C timing equipment, AN/FPN-64(V) Loran-C Solid-State Transmitter, emergency generators, shop/spare parts storage, day room, and bunk room/head with a total area of approximately 3000 square feet.

Antenna Procurement/Erection

A 700-foot antenna (vice 625-foot or 1350-foot antenna) would be used for LORSTA Midway. Antenna procurement/erection/inspection and ground plane procurement/installation costs must be considered.

ENCLOSURE (1)

NAF/LORSTA Midway Prime Power Interface

Although NAF Midway's three 1850 kW generator have sufficient reserve available to adequately provide the input power requirements for LORSTA Midway, suitable prime power interface (e.g., additional switchboard, etc.) would have to be designed, procured, and installed.

Emergency Generators

An emergency power capability must be provided to insure a continuous Loran-C signal on-air condition in the event of a loss of NAF Midway power. Although NAF Midway has an emergency power capability the power restoration period is approximately 30 minutes which is too long to satisfy the Loran-C requirement. Therefore LORSTA Midway must have its own emergency power capability. Based on the input power repetition rate (49900 us), the emergency generator required must be at least 250 kW. Two emergency generators would be required for redundancy purposes.

Disestablishing LORSTA Kure

There would be numerous costs involved in the "close up" of the Kure site. The major costs would involve equipment removal/transportation, building mothballing, and antenna removal.

Technical Costs

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

ESTIMATED TECHNICAL COSTS
RELOCATING LORSTA KURE TO MIDWAY (NOTE 1)

ITEM	COST ($K)	
Loran-C Timing/Control Equipment	0	(Note 2)
AN/FPN-64(V) Loran-C Solid-State Transmitter	0	(Note 3)
LORSTA Midway Site Preparation	364	
LORSTA Midway Building	1224	
700-foot Antenna (procurement & erection)	1214	
NAF/LORSTA Midway Prime Power Interface	264	
Emergency Generators	261	
Disestablish LORSTA Kure	100	
Total Technical Costs	3427	

NOTES:
1. Detailed information concerning these cost estimates contained in following pages.
2. LORSTA Kure's Loran-C Timing/Control Equipment would be relocated to LORSTA Midway during a regularly scheduled LORSTA Johnston Island antenna maintenance period (i.e., CENPAC Loran-C Chain off air) to reduce initial equipment costs and minimize operational degradation due to relocation.
3. Funding for an AN/FPN-64(V) Loran-C Solid-State Transmitter to replace LORSTA Kure's existing AN/FPN-42 Loran-C Transmitter has already been approved.

BASIC ASSUMPTIONS

1. The power consumption values provided for SST 56 HCG - 200 kW with auxiliary power requirements of 50 kW.

2. All estimates are in 81 dollars.

3. The new LORSTA would closely resemble the LORSTA built for Port Hardy in building layout, siting, etc.

4. The geographic cost factors in the Civil Engineering Manual, CG-251, are accurate.

5. The Midway alternative considers using a new 700-foot tower and not salvaging the tower at Kure.

6. Approximately half the cost for installing ground radials at LORSTA Baudette was for site clearing which is included under a separate accounting for our analysis.

7. The new gensets for Hokkaido provide a good basis for costing out gensets with some adjustment (see Note 3).

INFORMATION CONCERNING ESTIMATED TECHNICAL COSTS RELOCATING LORSTA KURE TO MIDWAY

1. LORSTA Midway Site Preparation: Site clearing (antenna field; using costs from Means (1981); geographic cost factor IAW CG-251 (See Note 1))

   (87 acres) ($1900/acre) (2.2) $364K

2. LORSTA Midway Building: Using adjusted LORSTA Baudette construction costs; adjusted geographic cost factor IAW CG-251 (See Note 2); inflation adjusted (See Note 4)

   $$\frac{(3000 \text{ sq.ft})}{(5338 \text{ sq.ft})} (\$861K) \left(\frac{2.2}{1.15}\right) (1.15)^2$$ $1224K

3. 700-Foot Antenna:

   a. Ground plane (LORSTA Baudette construction costs; adjusted geographic cost factor IAW (CG-251)(See Note 2); inflation adjusted (See Note 4)

      $$(\$19.9K) \frac{2.2}{1.15} (1.15)^2 = \$ 50K$$

      GFE Ground Radials $ 60K

   b. Tower procurement $725K

   c. Tower erection (costs for LORSTA Baudette; adjusted geographic cost factor IAW CG-251 (See Note 2); inflation adjusted (See Note 4)

      $$(\$125K) \frac{(2.2)}{(1.15)} (1.15)^2 = \$316K$$

   d. Erection inspection (costs for LORSTA Baudette; adjusted geographic cost factor IAW CG-251 (See Note 2); inflation adjusted (See Note 4)

      $$(\$25K) \frac{(2.2)}{(1.15)} (1.15)^2 = \$ 63K$$ $1214

4. NAF/LORSTA Midway Prime Power Interface:
(distance from power plant to site; cost from Means (1981); geographic cost factor IAW CG-251 (See Note 2)

(4800 feet) ($25/foot) (2.2) $264K

5. Emergency Generators:

a. Procurement (based on Hokkaido gensets x adjustment factor; including switchgear, panels, etc. (See Note 3); inflation adjusted (See Note 4)

Generator (250 kW)(2 each) ($280/kW) $(1.15)^2$ = $185K

b. Installation (cost for LORSTA Baudette; geographic cost factor IAW CG-251 (See Note 2); inflation adjusted (See Note 4))

$$(\$30K)\ \frac{(2.2)}{(1.15)}\ (1.15)^2 = \$76K$$

$261K

6. Disestablish LORSTA Kure:

Remove tower (do not salvage); move gear to Midway; close station buildings. $100K

NOTES

1. IAW CG-251, Geographic Cost Factor (GCF) for Midway = 2.2
   Geographic Cost Factor (GCF) for Baudette, Minn = 1.15

2. Adjusted Geographic Cost Factor = $\frac{\text{GCF Midway}}{\text{GCF Baudette, Minn}} = \frac{2.2}{1.15} = 1.91$

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

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

4. Estimated inflation has been 15% over the recent years, apply a 1.15 factor for each year's inflation.

LORSTA PERSONNEL ALLOWANCE

LORSTA KURE (STATUS QUO)		LORSTA KURE W/ FPN-64(V) XMTR			LORSTA MIDWAY		
BILLETS	COST($K)	BILLETS	COST($K)	SAVINGS($K)	BILLETS	COST($K)	SAVINGS($K)
LTJG	48.0	LTJG	48.0				48.0
ELC4	66.0	ELC4	66.0		ELC4	66.0	
ETC	44.2	ETC	44.2				44.2
ET1	37.2			37.2	ET1	37.2	
ET2	31.0	ET2	31.0		ET2	31.0	
ET3	27.4	ET3	27.4		ET3	27.4	
ET3	27.4			27.4			27.4
SK1	37.2	SK1	37.2				37.2
MKC	44.2	MKC	44.2				44.2
MK1	37.2	MK1	37.2				37.2
EM1	37.2	EM1	37.2				37.2
DC2	31.0	DC2	31.0				31.0
MK3	27.4	MK3	27.4				27.4
2FN	48.8	2FN	48.8				48.8
SS1	37.2	SS1	37.2				37.2
HM1	37.2	HM1	37.2				37.2
3SN	73.2	3SN	73.2				73.2
					SK3	27.4	(-)27.4
TOTALS 1-1-18	691.8	1-1-16	627.2	64.6	0-1-4	189.0	502.8

NOTE: (1) Annual life cycle savings determined from standard personnel salary costs multiplied by a factor of 2.0. (References: Commandant Instruction 7100 of 12 March 1981 and Coast Guard Planning and Programming Manual (COMDTINST M16010.1, Appendix N)).

(2) Fourteenth Coast Guard has justifiable need for the excess billets shown and this matter will be subject of future correspondence.

ENCLOSURE (3)

OPERATING EXPENSE BREAKDOWN

OG-01: Military Pay and Allowances (See Enclosure (3))

OG-30: Operating and Maintenance Costs

	Kure (Status Quo)	Kure(w/FPN-64 Xmtr)	Midway
Unit Contingency	$1K	$1K	$1K
Printing/Reproduction	1K	1K	1K
Electronic Maintenance Unit	38K	8K	8K
District	7K	4K	4K
Shore Unit Maintenance	30K	30K	15K
Fuel District	105K	84K	2K
Unit	3K	2K	2K
Boat Maintenance	2K	2K	ISSA
Recreation	1K	1K	ISSA
Medical	1K	1K	ISSA
Housekeeping	$10K	$10K	$3K
OG-30 TOTAL	$199K	$144K	$36K

OG-42: Electronics Programs

District-controlled electronics (test equipment procurement, communications equipment procurement, etc.)

Kure (either alternative)	Midway
$6K	$2K

OG-43: Shore Unit Program

Kure (either alternative)	Midway
$75K (average annual OG-43 over past 5 yrs)	$29K (for estimate use 1% of construction cost IAW OG-251) plus annualized antenna maintenance costs

MIDWAY ISSA

Based on LORSTA Johnston Island's ISSA

Housing and Lodging) Laundry and Dry Cleaning) Messing)	$51K
Utilities, water, etc. - using FPN-64(V) Xmtr (56HOG) = 200kW plus auxiliary load (50 kW) at $72.45/100 kWH (adjusted NAF Midway cost figure)	
(200+50 kWH) (24 hrs/day) (365 days/year) (0.07245/kWH) = $159K	
Medical/Dental Services	$2K
Shore Maintenance (includes minor repair, refuse collection, etc.)	$40K
Transportation Support	$2K
Other (recreation, personnel services, etc.)	$20K
ISSA TOTAL	$274K

REFUELING

For Kure - Annual refueling operation buoy tender for 4 days at $750/hour equals:

(4 days) (24 hrs/day) ($750/hr) = $72K

AIRCRAFT USE

For Kure - Annual estimate based on 35 flights/year, 10 hours/flight, and HC-130H aircraft flight cost of $2500/hour (Aviation Operating Costs, FY-80; page 4).

(35 flights/year) (10 hrs/flight) ($2.5K/flight hour)

= $875K

MAC SERVICES

For Midway - annual MAC transportation charge estimate

(12 months) ($2K/month)

= $24K

PROJECT YEAR 0

COMDT

1.	PROCURE 700' TOWER AND COUPLER	650K
2.	TRANSPORT 700' TOWER AND COUPLER	75K
		$725K (See Enclosure (2))

PROJECT YEAR 1 (OG-43)

3.	RETENTION AND PLUMB TOWER	4K
4.	MINOR POST CONSTRUCTION MAINTENANCE	10K
5.	REPAINT TOWER	35K
	(NPV FACTOR 0.954) (NPV = $47K)	$ 49K

PROJECT YEARS 5, 9 (4-YEAR CYCLE MAINTENANCE) (OG-43)

6.	RETENSION AND PLUMB TOWER	4K
7.	REPAINT TOWER	35K
8.	MISCELLANEOUS MAINTENANCE	20K
	NPV FACTORS (0.652, 0.445) (NPV = $65K)	$59K

TOTAL NPV = $112K

ANNUALIZED = $\frac{\$112K}{UAC\ 10} = \frac{\$112K}{6.447} = \$17K$

ANNUAL OE/ISSA

	KURE (Status Quo)	KURE (w/FPN-64 Xmtr)	MIDWAY
OG-01	$ 691.8K	$ 627.2K	$189.0K
OG-30	$ 199.0K	$ 144.0K	$ 36.0K
OG-42	$ 6.0K	$ 2.0K	$ 2.0K
OG-43	$ 75.0K	$ 75.0K	$ 29.0K
ISSA	-	-	$274.0K
SUBTOTAL	$ 971.8K	$ 848.2K	$530.0K
BUOY TENDER REFUELING	$ 72.0K	$ 72.0K	-
AIRCRAFT TRANSPORTATION FOR SUPPORT	$ 875.0K	$ 875.0K	$ 24.0K
TOTAL O&E COSTS	$1918.8K	$1795.2K	$554.0K

STATEMENT CONCERNING THE ENVIRONMENTAL CONSIDERATIONS OF RELOCATING LORSTA KURE TO MIDWAY ISLAND

A comprehensive Environmental Impact Assessment concerning relocating LORSTA Kure to Midway will be prepared by COMPACDIV, Naval Facilities Engineering Command, Pearl Harbor, Hawaii if this planning proposal is approved in concept. The assessment would be available within 3 months once the decision is initiated to commence action. The following is a preliminary statement of the environmental considerations involved in relocating LORSTA Kure to Midway Island:

1. Establishing a LORSTA on Midway Island

a. Physical Facilities - The LORSTA would be located on Sand Island (Midway) at the extreme northwestern corner of the island. The LORSTA's location would be in an isolated area of the Naval Air Facility's reservation with no "neighbors" in close proximity. Construction of the LORSTA building and erection of a 700-foot antenna with 850-foot ground radials would cause insignificant impact to Midway's flora and fauna environment.

b. LORSTA Midway 700-foot Antenna - LORSTA Midway's antenna should pose no problems for arriving or departing aircraft from Midway's one active runway due to the geographical separation and the relative locations. Informal discussions at the working staff level indicate that there are no plans to activate either of Midway's two inactive runways. Of course an official USN concurrence on both issues would have to be obtained if this planning proposal is approved in concept.

c. Mutual RF Interference - Due to the primary frequency spectrums involved and the harmonic frequency suppression criteria, no mutual RF interference would exist between the proposed LORSTA Midway and the Naval Air Facility (or tenant command) transmitting or receiving capabilities.

d. Quality of Life for LORSTA Midway's Personnel - Although the assignment at Midway would be a restricted tour, the quality of life for the five Coast Guardsmen involved would be a significant improvement over Kure. The extensive USN facilities readily available on Midway include: modern barracks, exchange, messing/restaurant, chapel, library, and recreational facilities (e.g., boating, bowling, golf course, tennis courts, hobby shops, gymnasium, ball fields, etc.). The addition of LORSTA Midway's five-man crew would have an insignificant impact on the aforementioned USN facilities.