

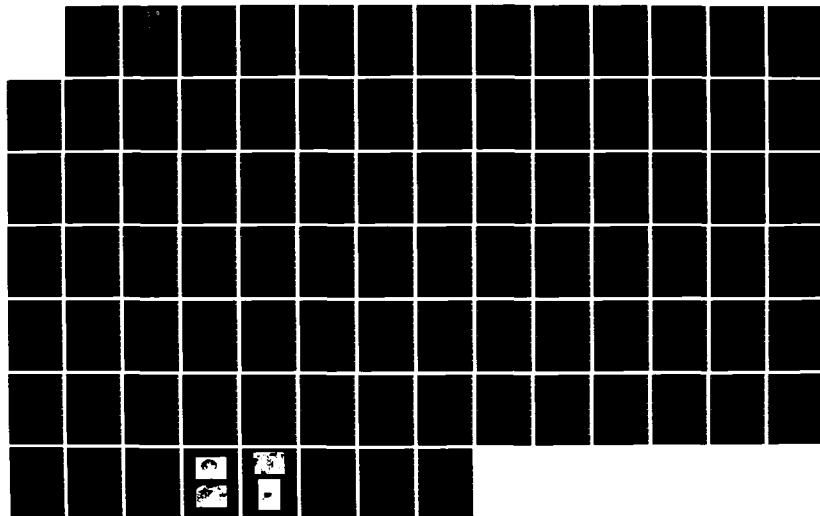
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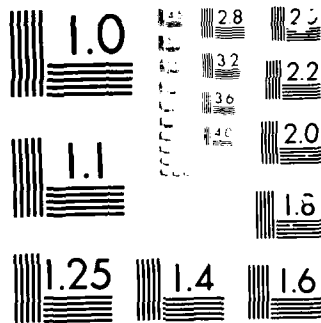
DIEGO GARCIA FLEET MOORING UNDERWATER INSPECTION REPORT 1/1
(U) NAVAL FACILITIES ENGINEERING COMMAND WASHINGTON DC
CHESAPEAKE DIV AUG 84 CHES/NAVFAC-FPO-1-84(17)

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Mr. Rowlett

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DIEGO GARCIA FLEET MOORING UNDERWATER INSPECTION REPORT

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AUGUST 1984

OCEAN ENGINEERING
AND CONSTRUCTION PROJECT OFFICE
CHESAPEAKE DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
WASHINGTON, DC 20374

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ABSTRACT

This report contains the results of the inspection of 13 fleet moorings (19 buoy systems) located in the lagoon at Diego Garcia, BIOT. A CHESNAV-FACENGCOM-assigned Engineer-in-Charge and divers from Underwater Construction Team Two conducted the inspection from 6 to 31 May 1984.

Some of the top jewelry contained in nine moorings (FM 2, 4, 5, 8N, 8S, 9N, 9S, 10, and POL-S) is in unsatisfactory condition and must be replaced or removed if these buoys are to remain in service. Once this is accomplished, all moorings, except 5, 8N, 9S and POL-S, will be in fair condition and satisfactory for continued fleet use.

Buoy FM 5 is riding on its side and apparently is taking on water. This buoy is in unsatisfactory condition for continued fleet use and should be removed and overhauled at the earliest practical time. Moorings 8N, 9S, and POL-S must be downgraded in classification due to worn anchor chain assemblies.

Detailed information and specific comments concerning each of these moorings are included within this report.

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Detailed information and specific comments concerning each of these moorings are included within this report.

TABLE OF CONTENTS

<u>Paragraph</u>		<u>Page</u>
ABSTRACT		
1.0	INTRODUCTION	1
1.1	Background	1
1.2	Moorings Historical Data	1
2.0	INSPECTION PROCEDURES	5
2.1	Inspection Objectives	5
2.2	Buoy	6
2.2.1	Buoy Topside	6
2.2.2	Buoy Lower Portion	6
2.3	Riser Subassembly	6
2.4	Anchor Chain Subassembly	6
3.0	INSPECTION SUMMARY	6
<u>Annex</u>		
A	MOORING INSPECTION RESULTS	A-1
A.1	Cargo Free Swinging Moorings	A-2
A.2	Cargo Bow/Stern Moorings	A-17
A.3	Tender Free Swinging Mooring	A-43
A.4	Tender Bow/Stern Mooring	A-48
B	PHOTOGRAPHS	B-1
C	PRELIMINARY INSPECTION REPORT	C-1

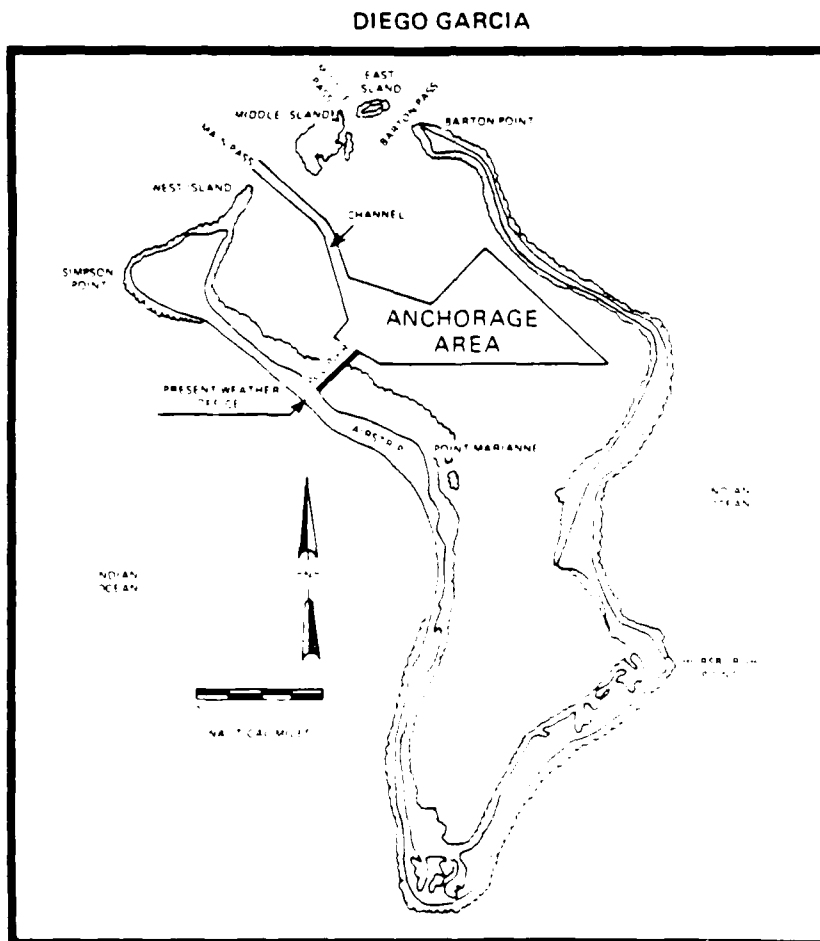
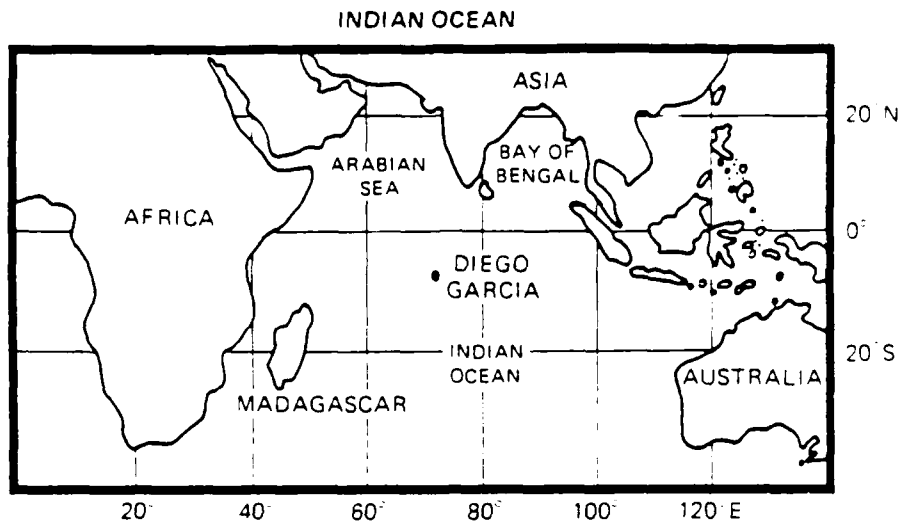
DIEGO GARCIA FLEET MOORING UNDERWATER INSPECTION REPORT

1.0 INTRODUCTION

1.1 Background. Under the COMNAVFACENGCOM Fleet Mooring Maintenance (FMM) Program, CHESNAVFACENGCOM has been assigned the responsibility to plan and conduct periodic diver inspections of all fleet moorings worldwide. In carrying out this responsibility, CHESNAVFACENGCOM designated an Engineer-in-Charge (EIC) to provide inspection planning and onsite technical direction for the underwater inspection of fleet moorings located in the lagoon at Diego Garcia, BIOT. (see Figures 1 and 2). The actual underwater portion of the inspection was performed by divers of Underwater Construction Team Two (UCT TWO). The inspection was conducted from 6 to 31 May 1984.

1.2 Mooring Historical Data. During April and May of 1980, two Buoy Dolphin Systems were installed in Diego Garcia as part of the POL Pier Project. The POL pier is a platform 40-feet wide by 550-feet long and is connected by a trestle to the shore at its southeasterly end. The two Buoy Dolphins secure the bow and stern lines of large classes of ships and are located at the two ends of the pier approximately 175 feet from the edge of the pier and set back 60 feet (inshore) from the pier face. Each of the Buoy Dolphin Systems consists of a modified MARK II Peg Top Buoy, five anchor chain subassemblies, sinkers, and propellant embedment anchors. The locations of the Buoy Dolphin Systems are shown in Figure 3.

On 17 March 1981, the installation of 11 fleet moorings in the lagoon at Diego Garcia was completed. These moorings were installed in response to new Navy requirements for support of the Indian Ocean Battle Group. The positions of these moorings are shown in Figure 4. The 11 moorings consist of four different classes of moorings which are comprised of 17 buoy systems. Each of these buoy systems is cathodically protected with zinc anodes.



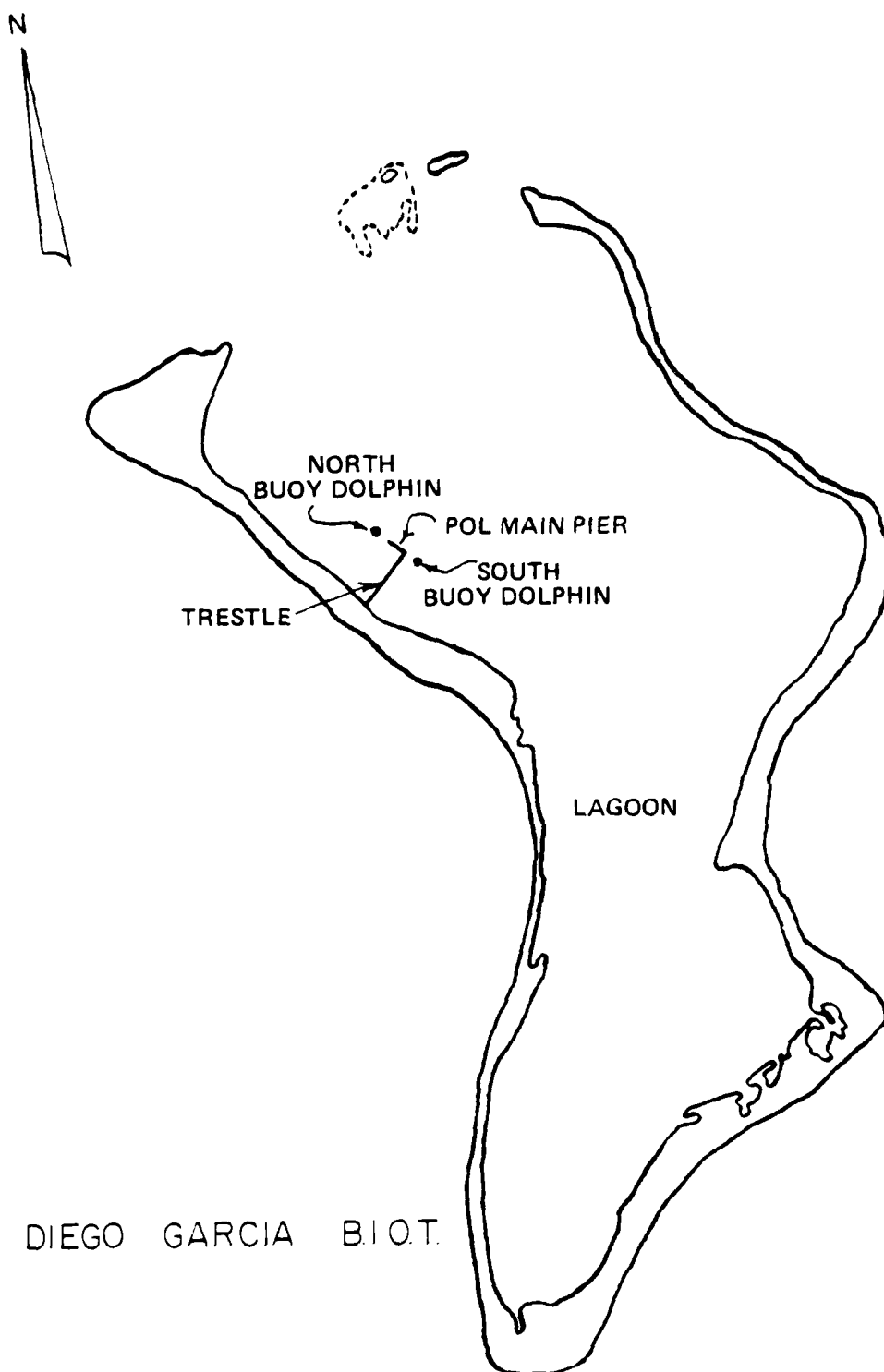


FIGURE 3. GENERAL LOCATION OF POL PIER AND BUOY DOLPHINS

An underwater inspection of all of the Diego Garcia fleet moorings was conducted in May of 1982. With the exception of one leg of mooring POL-S, the chain and chain accessories were found to be in good condition. However, the buoy tops were in poor condition because of heavy rusting.

2.0 INSPECTION PROCEDURES

2.1 Inspection Objectives. The purpose of the mooring inspections was to determine the general condition of the buoys and chain assemblies and, when possible, to verify or update existing as-built and maintenance records. Divers inspected only a portion of the submerged buoy hull and chain assemblies in order to compile a general description of the mooring's condition. The existence of fairly consistent measurements during this inspection provides a good indication of the mooring's overall condition. It should be kept in mind that periodic underwater inspections are intended as an expedient and relatively inexpensive supplement to accurate maintenance records.

Chain wire diameter measurements are used to evaluate the condition of a mooring. A selective sampling of the wire diameter of chain links and connecting hardware was taken in order to determine the amount of deterioration due to corrosion and wear. At each sampling area, the chain was cleaned to bare metal. Single-link measurements were taken where the chain was slack to detect corrosion loss. Double-link measurements were taken where two links connected under tension to detect the combined effects of corrosion and wear. Chain links and other components which measured 90 percent or greater of original wire diameter are considered to be in "good" condition; measurement between 80 and 90 percent of original diameter is considered "fair" condition and is cause for the mooring to be downgraded in classification; any measurement less than 80 percent is considered "poor" and is cause for the mooring to be declared unsatisfactory for fleet use.

Standard underwater inspection procedures do not call for the inspection of any part of the mooring which has been buried or which is below a water depth of 130 feet if scuba gear is used. Anchor chain and riser subassemblies

were observed only to the point at which they became buried; no attempt was made to locate and inspect anchors or other mooring materials which were not readily visible.

2.2 Buoy

2.2.1 Buoy Topside. Each buoy was inspected to determine its general condition. The buoy markings were checked for conformance to those noted in applicable charts. Physical damage such as holes, dents, or listing was described. Hatches, openings, and penetrations were examined and worn material and rust were reported.

The buoy fenders and chafing strips were checked for integrity and secure connection to the buoy. Buoy top jewelry was measured with calipers to find the overall outside dimensions and areas of most severe reduction in wire size.

2.2.2 Buoy Lower Portion. Divers inspected the buoy below the waterline. The thickness of marine growth was recorded and the condition of the buoy bottom was noted.

2.3 Riser Subassembly. To determine chain wear, each riser chain was inspected by taking three consecutive double link measurement, using pre-cut gauges and/or calipers, at both ends and at the center of the riser. To determine original chain size, divers took single link measurements of the wire diameter and measured the link length (link length should be six times the wire diameter).

2.4 Anchor Chain Subassembly. Using pre-cut gauges and calipers, UCT TWO divers took sample measurements of these subassemblies. Most of this chain was found to be in satisfactory condition.

3.0 INSPECTION SUMMARY

An in-depth discussion of the inspection results is contained in Annex A. Annex B contains photographs and Annex C contains a copy of the preliminary report of the inspection results. A detailed evaluation of the information gathered during the inspection revealed the following:

- o Of the 19 buoy systems inspected, none were found to be in good condition. Some of the top jewelry of nine buoy systems are in unsatisfactory condition (less than 80% of original wire diameter) and must be removed or replaced at once if the moorings are to remain in service. When this top jewelry has been removed, all moorings (except 5, 8N, 9S, and POL-S) will be in fair condition and deemed satisfactory for continued fleet use.
- o Mooring 5 is in poor condition due to its poor buoy condition and chain measurements between 80 and 90 percent of original wire diameter. One or more buoy compartments are apparently taking on water and the buoy may be in danger of sinking. The buoy is unsatisfactory for continued fleet use and should be overhauled as soon as possible.
- o Mooring 8N is in fair condition, due to anchor chain subassembly measurements between 80 and 90 percent of original wire diameter. It must be downgraded in classification and its holding capacity restricted to 125,000 pounds. The mooring should be overhauled during the next scheduled maintenance period.
- o Mooring 9S is in poor condition due to the buoy condition and anchor chain subassembly which measures between 80 and 90 percent of original wire diameter. This mooring should be downgraded in classification and the holding capacity restricted to 125,000 pounds. The mooring should be overhauled during the next scheduled maintenance period. In addition, the top jewelry, some of which measures less than 80 percent, should be replaced.

- o PUL-S is in poor condition due to chain measurements on leg S-3 of less than 80 percent of original wire diameter (reported in the last inspection). However, because leg S-3 is not considered essential for the mooring to function, this mooring need only be downgraded in classification and the holding capacity restricted to 75,000 pounds. The mooring should be overhauled during the next scheduled maintenance period.
- o All buoys should be overhauled as soon as possible.

TABLE 1. INSPECTION SUMMARY

Mooring Number	Condition (1)			Comments
	Good	Fair	Poor	
1		X		Top jewelry spider plate should be replaced and wire rope cables attached to top jewelry removed. All chain subassembly measurements >90%. Buoy needs to be overhauled.
2(2)		X		Mooring scheduled for removal. Pear links in top jewelry <80% and must be replaced. All chain subassembly measurements >90%. Use of mooring restricted until top jewelry replaced.
3		X		Most of top jewelry should be replaced. All chain subassembly measurements >90%. Buoy needs to be overhauled.
4		X		Pear links in top jewelry measured <80%. Use of mooring should be restricted until these links are removed or replaced. All chain subassembly measurements >90%. Buoy needs to be overhauled.
5			X	Much of top jewelry measures <80% and must be removed or replaced. Some chain links in anchor subassembly C are between 80-90%. Buoy riding on side, which may indicate it is taking on water. Mooring is in unsatisfactory condition for continued use. The buoy should be removed and overhauled.
6(2)		X		Spider plates in top jewelry are worn to 80-90% while all chain subassemblies are >90%. Buoy needs to be overhauled. Mooring is to be removed from service. If used prior to this time, worn spider plates must be removed or replaced.
7N		X		Much of top jewelry measured between 80-90% of original diameter. Chain subassembly measurements >90%. The buoy needs to be overhauled and the top jewelry replaced.
7S		X		Some of top jewelry measures between 80 and 90%. Chain subassemblies measure >90%. Buoy needs to be overhauled and the top jewelry replaced.

Notes: (1) All top jewelry with measurements less than 80 percent of original wire diameter must be removed or replaced before the mooring conditions shown in this table can be obtained.

(2) To be removed from service in FY 84.

TABLE 1. INSPECTION SUMMARY (Continued)

Mooring Number	Condition (1)			Comments
	Good	Fair	Poor	
3N		X		Some top jewelry measures <80%. Sections of anchor chain subassembly B-2 were measured to be between 80 and 90%. Use of the mooring should be restricted until the worn top jewelry is replaced. The buoy needs to be overhauled and due to the condition of subassembly B-2, the mooring must be downgraded.
3S		X		Some of top jewelry measures <80%. Use of the mooring should be restricted until the worn top jewelry is replaced. Buoy needs to be overhauled.
9N		X		Two pear links in the top jewelry measured <80%. Anchor chain subassemblies measured >90%. Buoy needs to be overhauled. Use of this mooring should be restricted until worn top jewelry is replaced.
9S			X	Some of the top jewelry measures <80%. Subassemblies B-2 and C-2 measured between 80 and 90%. The buoy needs to be overhauled. Missing 3-inch pipe vent plug should be replaced. The use of this mooring should be restricted until the top jewelry is removed or replaced. The mooring must be downgraded.
10(2)		X		Some of the top jewelry measured <80%. All subassembly measurements >90%. The mooring is scheduled for removal. Use should be restricted until the top jewelry is replaced.
11NE(2)		X		Top jewelry worn to 80-90%. Chain subassemblies measured >90%. Buoy needs to be overhauled. Buoy system scheduled for removal. Worn top jewelry should be replaced if the buoy is to be used prior to removal.
11NW(2)		X		Top jewelry worn to 80-90%. Chain subassemblies measured >90%. Buoy needs to be overhauled. Buoy system scheduled for removal. Worn top jewelry should be replaced if the buoy is to be used prior to removal.
11SE(2)		X		Top jewelry worn to 80-90%. Chain subassemblies measured >90%. Buoy needs to be overhauled. Buoy system scheduled for removal. Worn top jewelry should be replaced if the buoy is to be used prior to removal.

TABLE 1. INSPECTION SUMMARY (Continued)

Mooring Number	Condition (1)			Comments
	Good	Fair	Poor	
11Sw(2)		X		Top jewelry worn to 80-90%. Chain subassemblies measured >90%. Buoy needs to be overhauled. Buoy system scheduled for removal. Worn top jewelry should be replaced if the buoy is to be used prior to removal.
POL-N		X		Top jewelry measured between 80 and 90%. All chain subassemblies >90%. Buoy needs to be overhauled and top jewelry replaced. Buoy system in satisfactory condition for continued use.
POL-S			X	Some of top jewelry measured <80%. Anchor chain sub-assembly S-3 measured <80% in previous inspection. Buoy should be overhauled, the worn top jewelry removed, and subassembly S-3 replaced. S-3 replaced.

ANNEX A

MOORING INSPECTION RESULTS

This Annex contains the following for each mooring:

- o a summation of the inspection data obtained by the CHESNAVFACENGCOM EIC, UCT TWO divers, and NSF divers; and
- o a diver data reporting form.

CHESNAVFACENGCOM REPORT FPO-1-84(17), "DIEGO GARCIA FLEET MOORING
UNDERWATER INSPECTION REPORT."

A.1 CARGO FREE SWINGING MOORINGS

Six cargo free swinging moorings are installed in the lagoon at Diego Garcia (Fleet Moorings 1 through 6). Each of these moorings is a riser type and includes a MK II Peg-Top Buoy, a chain swivel shot of riser chain subassembly, a ground ring, three 540-foot anchor chain subassemblies, wire rope anchor pendants, and three 100 KIP propellant embedment anchors. The buoy and chain subassemblies of these moorings are cathodically protected with zinc anodes and wire rope continuity cable systems. Figure A-1 is an isometric drawing of this type of mooring system.

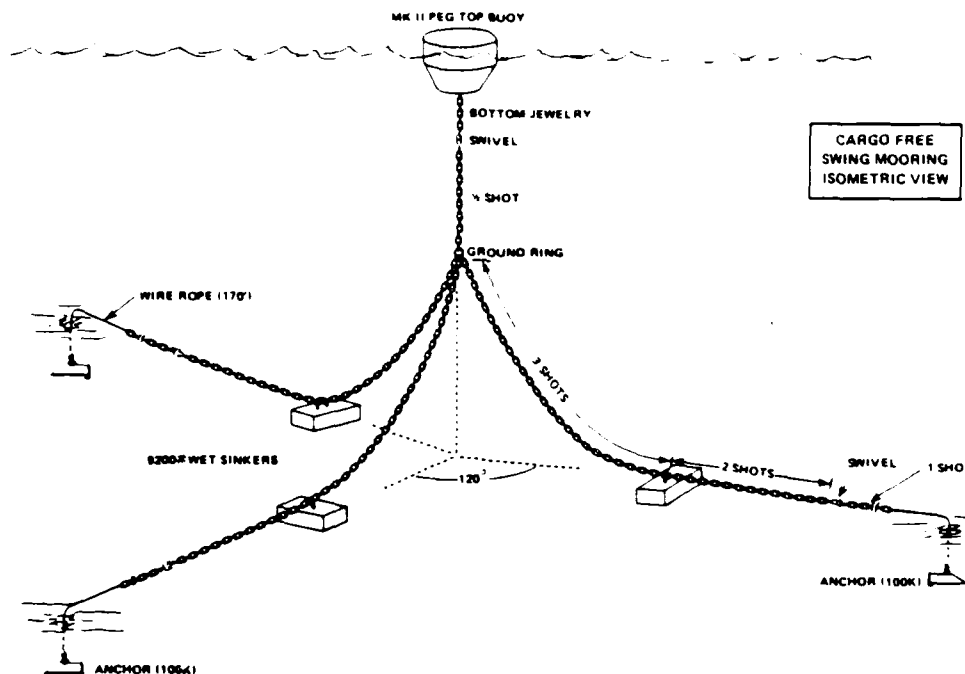


FIGURE A-1. CARGO FREE SWINGING MOORING

CHESNAVFACENGCOM REPORT FP0-1-84(17), "DIEGO GARCIA FLEET MOORING UNDERWATER INSPECTION REPORT."

MOORING 1

Buoy

This is a 12-foot-diameter peg-top buoy with a tension bar. Its freeboard is between 52 and 54 inches and the buoy's underwater hull is covered with about a half-inch of marine growth. The fenders and chafing strips are in satisfactory condition, but the 3-inch spider plate in the top jewelry measured only between 80 and 90 percent of its original wire diameter. There are 10 wire rope cables attached to the top jewelry and hanging in the water. Between 1 and 1 1/2 inches of each buoy anode has been consumed and the top deck and top jewelry are lightly rusted.

Riser Chain Subassembly

This chain appears to be in good condition. Chain link measurements were greater than 90 percent of original wire diameter. The ground ring was located at a depth of 70 feet and has a number of unused pear links attached to it.

Anchor Chain Subassemblies

This chain is in good condition. All chain link measurements taken were greater than 90 percent of the original wire diameter.

Cathodic Protection System (CPS)

The cathodic protection system appears to be operating as designed. Numerous underwater voltmeter readings taken over the length of the visible riser and anchor chain subassemblies were between -.894 and -1.007 volts. During the

inspection, a 250 pound anode was installed on each of the three anchor pendants.

Conclusions/Recommendations

This mooring is in satisfactory condition for continued use. However, the spider plate in the top jewelry must be replaced and the ten wire rope cables removed. The buoy needs to be overhauled.

CHESNAVFACENGCOM REPORT FPO-1-84(17), "DIEGO GARCIA FLEET MOORING
UNDERWATER INSPECTION REPORT."

MOORING NO.: 1 CLASS: SPEC. RISER LOCATION: DIEGO GARCIA LAT: 0° 18' 16.31" S LONG: 72° 27' 09.19" E
 BUOY TYPE: PEG TOP ANCHOR SIZE/TYPE: 100K PEA WATER DEPTH: 102' VISIBILITY: 8' BOTTOM TYPE: SILT 6-8"
 DATE: 11 MAY 84 ENGINEER-IN-CHARGE: J. M. LADAGHLIN DIVERS: UCT TWO

COMPONENTS		GAUGE SIZE	CONDITION							COMMENTS
			LINK LENGTH	SINGLE LINK %		DOUBLE LINK %			DEPTH	
				90+	80+	80-	90+	80+		
BUOY HARDWARE	BUOY 12' x 9' 6"									BOY ANODES DOWN 1'-1 1/2", HALF INCH
	BUOY PAD EYE	2 3/4"	✓							MARINE GROWTH, FEEDERS OK.
	SPIDER PLATE	3"		✓						CHAFING STRIPS OK, 52"/54"
	SPIDER PLATES (2)	2 3/4"								FREEBOARD. TEN WIRE CABLES
	PEAR LINKS (4)	2 1/8"								HANGING ON JEWELRY.
RISER	NEAR BUOY	2 1/4"	✓✓✓				✓✓✓			
	MIDDLE	2 1/4"	✓✓✓				✓✓✓			
	NEAR GRD RG	2 1/4"	✓✓✓				✓✓✓			
GROUND RING		19 ID							70'	4" DIA. LARGE WELDED LINKS ON GR.
BLANK 015° GROUND LEG NO. A	UPPER END	2"	✓✓✓				✓✓✓			CONTINUITY WIRE OK
	MIDDLE		✓✓✓				✓✓✓			ANODE INSTALLED ON PENDANT
	ENTERS BOTTOM		✓✓✓				✓✓✓		102'	PILE OF APPROX 30 LINKS ON BOTTOM
BLANK 115° GROUND LEG NO. B	UPPER END		✓✓✓				✓✓✓			
	MIDDLE		✓✓✓				✓✓✓		50'	SHINY LINKS
	ENTERS BOTTOM		✓✓✓				✓✓✓		95'	INSTALLED ANODE ON PENDANT
BLANK 235° GROUND LEG NO. C	UPPER END		✓✓✓				✓✓✓			
	MIDDLE		✓✓✓				✓✓✓		80'	SHINY LINKS
	ENTERS BOTTOM		✓✓✓				✓✓✓		97'	INSTALLED ANODE ON PENDANT

FOR ADDITIONAL LEGS USE OTHER SHEETS

SHEET 1 OF 1

CHESNAVFACENGCOM REPORT FP0-1-84(17), "DIEGO GARCIA FLEET MOORING"

UNDERWATER INSPECTION REPORT."

MOORING 2

Buoy

This is a 12-foot-diameter peg-top buoy with a tension bar. Its freeboard measures 44 and 48 inches. The buoy's fenders and chafing strips are in satisfactory condition. The top deck and top jewelry are moderately rusted. The buoy anodes are in good condition. The four pear links at the ends of the top jewelry are worn to less than 80 percent of their original wire diameter.

Riser Chain Subassembly

This chain appears to be in good condition. chain link measurements were greater than 90 percent of their original wire diameters. The ground ring was located at a depth of 21 feet.

Anchor Chain Subassemblies

The anchor leg chain is in good condition. All chain link measurements taken were greater than 90 percent of the original wire diameter.

Cathodic Protection System (CPS)

The cathodic protection system appears to be functioning as designed. The installed anodes and continuity cable are in good condition.

Conclusions/Recommendations

This mooring is to be removed from service in the near future. If it is to be utilized prior to removal, the top jewelry must be replaced with adequately sized spider plates and pear links.

CHESNAVFACENGCOM REPORT FPO-1-84(17), "DIEGO GARCIA FLEET MOORING
UNDERWATER INSPECTION REPORT."

MOORING NO.: 2 CLASS: SPEC. RISER LOCATION: DIEGO GARCIA LAT: 01°17'10.50"S LONG: 72°25'56.42"E

BUOY TYPE: SPG TOP ANCHOR SIZE/TYPE: 100K PEA WATER DEPTH: 98' VISIBILITY: 20' BOTTOM TYPE: CORAL

DATE: 25 MAY 84 ENGINEER-IN-CHARGE: J. M. LAUGHLIN DIVERS: UCT TWO

COMPONENTS	GAUGE SIZE	CONDITION							COMMENTS
		LINK LENGTH	SINGLE LINK %			DOUBLE LINK %			
			90+	80+	80-	90+	80+	80-	
BUOY HARDWARE	BUOY 9' 6" X 12'								FREEBOARD 48"/44". BUOY ANODES
	BUOY PAD EYE	2 3/4"	✓						OK
	LG SPIDER PLATE	3"		✓					
	SH SPIDER PLATE(2)	2 3/4"		✓					
	PEAR LINKS (4)	2 1/8"			✓✓✓				PEAR LINKS WORK
RISER	NEAR BUOY	2 1/4"	✓✓✓			✓✓✓			
	MIDDLE		✓✓✓			✓✓✓			
	NEAR GRD RG		✓✓✓			✓✓✓			
GROUND RING								21'	
GROUND LEG NO A	UPPER END	2"	✓✓✓				✓✓✓		CONTINUITY WIRE OK. ANODES OK.
	MIDDLE		✓✓✓				✓✓✓		SWIVEL OK.
	ENTERS BOTTOM		✓✓✓				✓✓✓	96'	LAST SHOT IN TENSION
GROUND LEG NO B	UPPER END		✓✓✓				✓✓✓		CONTINUITY WIRE AND ANODES
	MIDDLE		✓✓✓				✓✓✓		OK. SWIVEL OK.
	ENTERS BOTTOM		✓✓✓				✓✓✓	98'	
GROUND LEG NO C	UPPER END		✓✓✓				✓✓✓		CONTINUITY WIRE OK. SWIVEL
	MIDDLE		✓✓✓				✓✓✓		OK. ANODES OK. LEG VERY
	ENTERS BOTTOM		✓✓✓				✓✓✓	98'	TAUT.

MOORING 3

Buoy

This is a 12-foot-diameter peg-top buoy with a tension bar. Its freeboard measures 45 and 48 inches, and its fenders are in satisfactory condition. Three feet of the outside chafing strip is missing and should be replaced. Much of the top deck jewelry measures between 80 and 90 percent of original wire diameter and is covered with medium rust. The manhole bolts are heavily corroded and there is an 18- by 2-inch dent in the buoy's hull.

Riser Chain Assembly

The riser chain is in good condition. All chain link measurements were greater than 90 percent of original wire diameter. The ground ring was located at a depth of 60 feet and is in good condition.

Anchor Chain Subassemblies

Only the upper ends of the three anchor chain subassemblies were visible. Each subassembly was buried within 25 feet of bottom touchdown. The visible chain measured was greater than 90 percent of its original wire diameter.

Cathodic Protection System (CPS)

Underwater voltmeter readings taken were between $-.957$ and $-.981$ volts. The installed cathodic protection system appears to be operating effectively.

Conclusions/Recommendations

This mooring is in satisfactory condition for continued use as a fleet mooring. However, the buoy should be overhauled and the top jewelry replaced during the next scheduled maintenance period.

CHESNAVFACENGCOM REPORT FPO-1-84(17), "DIEGO GARCIA FLEET MOORING
UNDERWATER INSPECTION REPORT."

MOORING NO: 3 CLASS: SPEC RISER LOCATION: DIEGO GARCIA LAT: 07° 18' 43.09" N LONG: 72° 37' 34.49" E

BUOY TYPE: REG TOP ANCHOR SIZE/TYPE: 100K PEA WATER DEPTH: 90' VISIBILITY: 15' BOTTOM TYPE: SILT

DATE: 16 MAY 84 ENGINEER IN CHARGE: J M LARSEN DIVERS: UAT TWO

COMPONENTS	GAUGE SIZE	CONDITION						COMMENTS
		LINK LENGTH	SINGLE LINK %		DOUBLE LINK %		DEPTH	
			90+	80+	80-	90+		
BUOY HARDWARE								FREEBOARD 48"/45" FENDERS/TWO
BUOY EYE	3"		✓					CHAFING STRIPS OK, OUTSIDE
16 SPIDER PLATE	3"			✓				CHAFING STRIP DAMAGED, THREE
54 SPIDER PLATE (2)	2 3/4"			✓				FEET OF THIS STRIP DAMAGED /
160R LINKS (4)	2 3/4"			✓				MISSING/ROTTEN, MAN HOLE BOLTS
RISER	NEAR BUOY	2 1/4"	✓✓✓		✓✓		10'	CORRODED, TOP DECK RUSTED, 18"
	MIDDLE		✓✓✓		✓✓✓		30'	WIDE 3' HIGH DENT IN BUOY'S HULL.
	NEAR GRD RG	✓	✓✓✓		✓✓✓		50'	
GROUND RING		2 1/2 ID					60'	4 1/2" DIAM. LARKS GOOD
	UPPER END	2"	✓✓✓		✓✓✓			SHINY CHAIN. ONLY UPPER 30'
	MIDDLE							DESCENDED ON EARTH LEG
GROUND LEG NO. A	ENTERS BOTTOM						89'	15' OF CHAIN ON BOTTOM BEFORE
	UPPER END		✓✓✓		✓✓✓			BURIED
	MIDDLE							
GROUND LEG NO. B	ENTERS BOTTOM						89'	25' OF CHAIN ON BOTTOM
	UPPER END		✓✓✓		✓✓✓			
	MIDDLE							
GROUND LEG NO. C	ENTERS BOTTOM	✓					89'	10' OF CHAIN ON BOTTOM
	UPPER END							
	MIDDLE							

MOORING 4

Buoy

This is a 12-foot-diameter peg-top buoy with a tension bar. Its freeboard measures 45 and 51 inches. The topside jewelry is heavily rusted and the four pear links in this jewelry are in unsatisfactory condition (worn to less than 80 percent of original wire diameter). The buoy anodes are in good condition, but the buoy needs to be refurbished.

Riser Chain Subassembly

This chain appears to be in good condition. All chain link measurements were greater than 90 percent of original wire diameter. The ground ring was located at a depth of 60 feet.

Anchor Chain Subassembly

The chain is in good condition with all measurements greater than 90 percent of the original wire diameter.

Cathodic Protection System (CPS)

Underwater voltmeter readings were between $-.926$ and $-.989$ volts. About two inches of previously installed anodes have been depleted. Remaining anodes are of grayish hue with dark (black) corners. Three new anodes (one per anchor chain subassembly) were installed on the wire rope anchor pendants.

Conclusions/Recommendations

The buoy should be overhauled during the next scheduled maintenance period. The use of this mooring must be restricted until the worn top jewelry can be replaced.

CHESNAVIACENGCOM REPORT FPO-1-84(17), "DIEGO GARCIA FLEET MOORING
UNDERWATER INSPECTION REPORT."

MOORING NO.: 4 CLASS: SPEC RISER LOCATION: DIEGO GARCIA LAT: 07°17'37.51" N LONG: 72°26'49.33" E
 BUOY TYPE: PEG TOP ANCHOR SIZE/TYPE: 100K PEA WATER DEPTH: 110' VISIBILITY: 10' BOTTOM TYPE: CORAL/SILT
 DATE: 7 MAY 84 ENGINEER-IN-CHARGE: J. McLAUGHLIN DIVERS: UCT TWO

COMPONENTS		GAUGE SIZE	CONDITION						COMMENTS
			LINK LENGTH	SINGLE LINK %		DOUBLE LINK %		DEPTH	
				90+	80+	80-	90+		
BUOY HARDWARE	BUOY 12' x 4' 6"								FREEBOARD 45 1/2" (6" LIST), ONLY
	BUOY PAD EYE	3 3/4"		✓					TWO BUOY ANODES (OK). TOPSIDE
	LG SPIDER PLATE	3"		✓					JEWELRY SEVERLY RUSTED (1/4"-1/2")
	SH SPIDER PLATE (2)	2 3/4"			✓✓				TWO OLD NUMBERS SHOWING
	PEAR LINKS (4)	2 1/4"				✓✓✓			THROUGH THE BUOY PAINT.
RISER	NEAR BUOY	2 1/4"	✓✓✓	✓✓✓		✓✓✓			
	MIDDLE		✓✓✓	✓✓✓		✓✓✓			
	NEAR GRD RG	↓	✓✓✓			✓✓✓			
GROUND RING 20" ID			✓					60'	4" DIAM
BENG 068 GROUND LEG NO. A	UPPER END	2"	✓✓✓			✓✓✓			
	MIDDLE		✓✓✓			✓✓✓			
	ENTERS BOTTOM		✓✓✓			✓✓✓		92'	NEW ANODE, SWAGE FITTING OK
BENG 180 GROUND LEG NO. B	UPPER END		✓✓✓			✓✓✓			
	MIDDLE		✓✓✓			✓✓✓		100'	ANODE ON WIRE ROPE
	ENTERS BOTTOM		✓✓✓			✓✓✓		110'	ANODES ARE GREY WITH BLACK CORNERS. DOWN ABOUT 2"
BENG 310 GROUND LEG NO. C	UPPER END		✓✓✓			✓✓✓			
	MIDDLE		✓✓✓			✓✓✓			
	ENTERS BOTTOM	↓	✓✓✓			✓✓✓		92'	

MOORING 5

Buoy

This is a 12-foot-diameter peg-top buoy with a tension bar. The buoy is riding on its side which was initially thought to be due to the weight of a number of wire ropes attached to its top jewelry and hanging over the side of the buoy. However, after these wire ropes were removed, the buoy did not right itself. This indicates that one or more of its four watertight compartments may be taking on water. This buoy has four anodes attached: two in re-bar cages and two in recessed sea chests. The two smaller spider plates (2 3/4") and the four pear links in the top jewelry measured less than 80 percent of their original wire diameters.

Riser Chain Assembly

The riser chain is in good condition. All chain link measurements were greater than 90 percent of original wire diameter. The ground ring was located at 50 feet.

Anchor Chain Subassembly

Some chain link measurements in anchor chain subassembly C were between 80 and 90% of original wire diameter. This subassembly should be replaced during the next scheduled maintenance period. The other two subassemblies are in good condition with all measurements greater than 90 percent of original wire diameter.

Cathodic Protection System (CPS)

The continuity wire is intact on all three anchor chain subassemblies. Underwater voltmeter readings taken were for the most part between -.900 and -.985 volts and indicate the CPS is operating effectively. At one point

CHESNAVFACENGCOM REPORT FPO-1-84(17), "DIEGO GARCIA FLEET MOORING
UNDERWATER INSPECTION REPORT."

(76-foot depth), on anchor chain subassembly B, a voltmeter reading of only -.640 volts was obtained. The cause of this abnormal reading has not been determined.

Conclusions/Recommendations

Due to the buoy apparently taking on water, it is in danger of sinking and is considered to be in unsatisfactory condition for continued fleet use. The buoy should be recovered at the earliest practical time and taken ashore to await overhaul. During overhaul, the top jewelry should be replaced. In addition, anchor chain subassembly C should be replaced during the next scheduled maintenance period.

RESEAVER/ENGINEER REPORT FPO-1-84(17), "DIEGO GARCIA FLEET MOORING
UNDERWATER INSPECTION REPORT."

MOORING NO.: 5 CLASS: SPEC RISER LOCATION: DIEGO GARCIA LAT: 07° 17' 42.98" S LONG: 72° 25' 14.15" E

BUOY TYPE: PEG TOP ANCHOR SIZE/TYPE: LOK PEA WATER DEPTH: 84' VISIBILITY: 8' BOTTOM TYPE: SILT

DATE: 19 MAY 84 ENGINEER IN CHARGE: JM LARGHLIN DIVERS: UCT TWO

COMPONENTS	GAUGE SIZE	CONDITION						COMMENTS
		LINK LENGTH	SINGLE LINK %		DOUBLE LINK %		DEPTH	
			90+	80+	80-	90+		
BUOY HARDWARE	BUOY 12' x 9' 6"							BUOY LYING ON ITS SIDE. ONE OR
	BUOY PAD EYE	3"	✓					MORE COMPARTMENTS MAY BE FLOODED
	1/8 SPIDER PLATE	3"		✓				FOUR ARDES ON BUOY (TWO
	1/8 SPIDER PLATE (3)	2 3/4"			✓✓			RECESSED IN SEA CHESTS).
	FEAR LINK (4)	2 1/2"			✓✓✓			
RISER	NEAR BUOY	2 1/4"	✓✓✓			✓✓✓	20'	SWIVEL OK. LOCATED 4 LINKS BELOW
	MIDDLE	2 1/4"	✓✓✓			✓✓✓	40'	BUOY
	NEAR GRD RG	2 1/4"	✓✓✓			✓✓✓	50'	
GROUND RING 1/2" ID							52'	4 3/4" WIRE DIAMETER
BRG 007 GROUND LEG NO. A	UPPER END	2"	✓✓✓			✓✓✓	65'	CONTINUITY WIRE CONTINUOUS ALL
	MIDDLE		✓✓✓			✓✓✓	70'	LEGS
	ENTERS BOTTOM		✓✓✓			✓✓✓	76'	PILE OF WIRE ROPE ON BOTTOM. ALL
BRG 132 GROUND LEG NO. B	UPPER END		✓✓✓			✓✓✓	-	LEGS ENTER BOTTOM AFTER CLUMP.
	MIDDLE		✓✓✓			✓✓✓	70'	ARDES, CLAMPS, HARDWARE OK
	ENTERS BOTTOM		✓✓✓			✓✓✓	82'	ALL LEGS. SHINY LINKS AT 76' LEG
BRG 220 GROUND LEG NO. C	UPPER END		✓✓	✓		✓✓✓	64'	BURLIES BEFORE SWIVEL.
	MIDDLE		✓✓	✓		✓✓✓	84'	
	ENTERS BOTTOM	✓	✓✓	✓		✓✓✓	84'	CHAIN IN/OUT OF BOTTOM ALL LEGS.

FOR ADDITIONAL LEGS USE OTHER SHEETS

SHEET 1 OF 1

CHESNAVFACENGCOM REPORT FPO-1-84(17), "DIEGO GARCIA FLEET MOORING

UNDERWATER INSPECTION REPORT."

MOORING 6

Buoy

This is a 12-foot-diameter peg-top buoy with a tension bar. Its freeboard is 45 inches, and its bottom fender is missing. The top fender and its chafing strips are in satisfactory condition. There is moderate rust on the top deck and jewelry with some flaking of the hardware. The two small spider plates in the top jewelry are worn to between 80 and 90 percent of their original wire diameter.

Riser Chain Subassembly

The chain appears to be in satisfactory condition. All chain link measurements are greater than 90 percent of their original wire diameters. The ground ring was located at a depth of 50 feet.

Anchor Chain Subassembly

This chain is in good condition. All measurements taken were greater than 90 percent of the chain's original wire diameter.

Cathodic Protection System (CPS)

Anodes on the anchor chain subassemblies have eroded about 3/4 of an inch. The continuity wire appears to be intact and the CPS system working effectively.

Conclusions/Recommendations

This mooring is to be removed from service in the near future. If it is to be utilized prior to removal, the small spider plates in the top jewelry should be replaced.

CHESNAVFACENGCOM REPORT FPO-1-84(17), "DIEGO GARCIA FLEET MOORING
UNDERWATER INSPECTION REPORT."

MOORING NO.: 6 CLASS, SPEC. RISER LOCATION: DIEGO GARCIA LAT: 07° 17' 13.705" N LONG: 72° 25' 45.52" E
 BUOY TYPE: PG TOP ANCHOR SIZE TYPE: LOOK PEA WATER DEPTH: 90' VISIBILITY: 5'-8' BOTTOM TYPE: SILT
 DATE: 25 MAY 84 ENGINEER IN CHARGE: J. H. LARSEN DIVERS: UCT TWO

COMPONENTS		GAUGE SIZE	CONDITION						COMMENTS
			LINK LENGTH	SINGLE LINK %		DOUBLE LINK %		DEPTH	
				90+	80+	80-	90+		
BUOY HARDWARE	BUOY 12' x 9' 6"								FREEDBOARD 45"
	BUOY PAD EYE	3"		✓					BOTTOM FENDER MISSING. TOP
	16 SPIDER PLATE	3"		✓					FENDER AND CHAFING STRIPS OK.
	SM SPIDER PLATE (2)	2 3/4"			✓				
	PEAR LINKS (4)	2 3/4"							
RISER	NEAR BUOY	2 1/4"	13 3/8"	✓✓✓			✓✓✓		
	MIDDLE			✓✓✓			✓✓✓		
	NEAR GRD RG	↓	↓	✓✓✓			✓✓✓		
GROUND RING		4 1/2"							50'
GROUND LEG NO. A	UPPER END	2"	12"	✓✓✓			✓✓✓		
	MIDDLE			✓✓✓			✓✓✓		
	ENTERS BOTTOM			✓✓✓			✓✓✓		87'
GROUND LEG NO. B	UPPER END			✓✓✓			✓✓✓		
	MIDDLE			✓✓✓			✓✓✓		
	ENTERS BOTTOM			✓✓✓			✓✓✓		90'
GROUND LEG NO. C	UPPER END			✓✓✓			✓✓✓		
	MIDDLE			✓✓✓			✓✓✓		
	ENTERS BOTTOM	✓	✓	✓✓✓			✓✓✓		80'

FOR ADDITIONAL LEGS USE OTHER SHEETS
 SHEET 1 OF 1
 CHESNAVFACEGCOM REPORT FP0-1-84(17), "DIEGO GARCIA FLEET MOORING
 UNDERWATER INSPECTION REPORT."

A.2 CARGO BOW/STERN MOORINGS

Three cargo bow/stern moorings are installed at Diego Garcia, each consisting of two buoy systems (Fleet Moorings 7N, 7S, 8N, 8S, 9N, and 9S). Each buoy system consists of a 16-foot-diameter non-riser (telephone) buoy, three 2 3/4-inch equalizers attached to three of the four buoy padeyes and three ground leg pairs. Each leg of a leg pair contains three and one-half shots of chain, 25,000 pounds of sinkers, 170 feet of 2 1/4-inch wire rope, and a 150 KIP propellant embedment anchor. A seven shot backstay leg with 170 feet of 2-inch wire rope and a 100 KIP embedment anchor is attached directly to the buoy's fourth padeye. The buoy, backstay leg, and the ground legs contain cathodic protection systems. Figure A-2 is an isometric drawing of each of these six buoy systems.

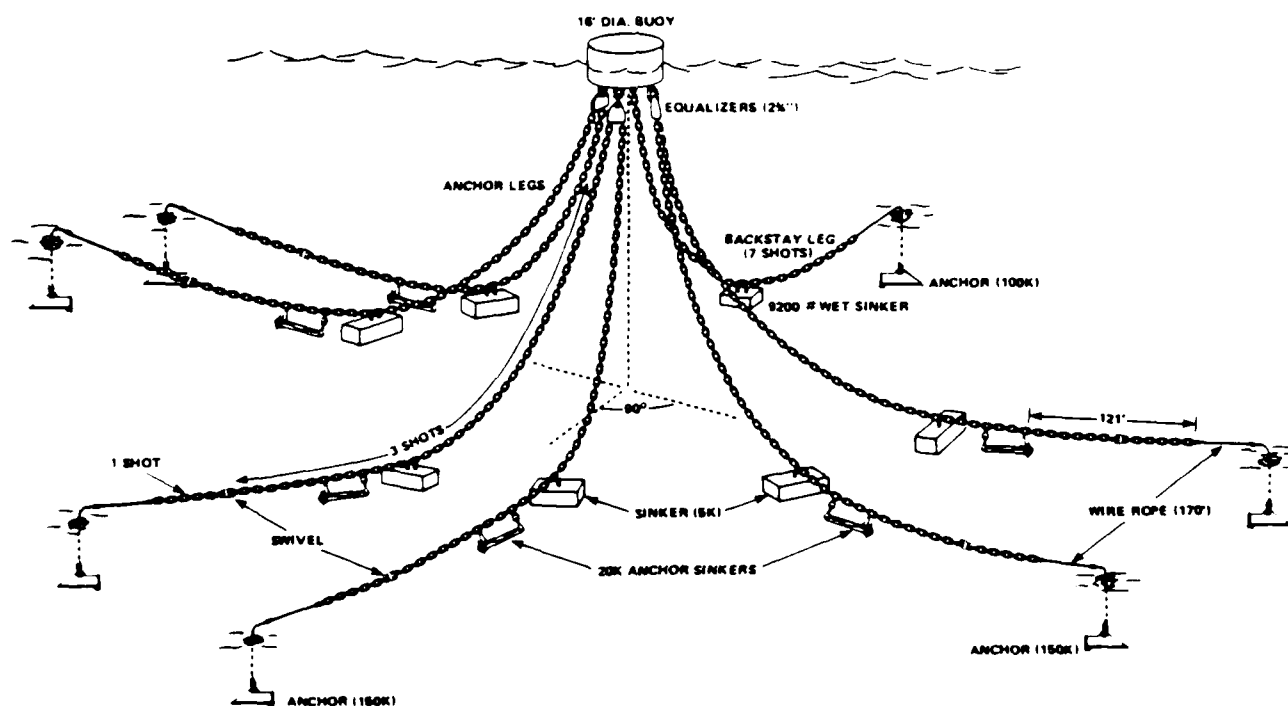


FIGURE A-2. CARGO BOW/STERN MOORING

CHESNAVFACENGCOM REPORT FPO-1-84(17), "DIEGO GARCIA FLEET MOORING UNDERWATER INSPECTION REPORT."

MOORING 7

BUOY 7N

Buoy

This is a 16-foot-diameter non-riser type buoy. The buoy is covered with rust and its top jewelry is rusted to a depth of 1/16 to 1/4 inch. Two welded links and two pear links in the top jewelry measured only between 80 and 90 percent of their original wire diameters.

Anchor Chain Subassemblies

This chain appears to be in good condition, and all measurements taken were greater than 90 percent of its original wire diameter. An anode was installed near or on each of the six wire rope anchor pendants. No attempt was made to install an anode on the backstay leg.

Cathodic Protection System (CPS)

Underwater voltmeter readings were between -.750 and -.985 volts with the lower reading obtained on leg B-1. The CPS appears to be working effectively.

Conclusions/Recommendations

This mooring is in fair condition because some of the top jewelry measured between 80 and 90 percent of its original wire diameter and because of the rusted condition of the buoy. The buoy needs to be overhauled and the top jewelry replaced.

CHESNAVFACENGCOM REPORT FP0-1-84(17), "DIEGO GARCIA FLEET MOORING
UNDERWATER INSPECTION REPORT."

MOORING NO.: 7N CLASS: SPECIAL CARGO BOW/STEEL LOCATION: DIEGO GARCIA LAT: 07 11.02° S LONG: 73 27 59.45 E
 BUOY TYPE: NEW RISER (TELEPHONE) ANCHOR SIZE/TYPE: BACKSTAY 100K PEA WATER DEPTH: 86' VISIBILITY: 10'-15' BOTTOM TYPE: SILT/CORAL
 DATE: 10 MAY 84 ENGINEER-IN-CHARGE: J. M. LAUGHLIN DIVERS: UCT TWO

COMPONENTS		GAUGE SIZE	CONDITION						COMMENTS
			LINK LENGTH	SINGLE LINK %		DOUBLE LINK %		DEPTH	
				90+	80+	80-	90+		
BUOY HARDWARE	BUOY 16' DAM								BUOY IS RUST COATED. TOP
	SWIVEL EYES (2)	4 1/4"	✓✓						JEWELRY HAS HEAVY RUST, 1/2"
	WELDED LINK (2)	3 1/4"		✓✓					to 1/4" THICK
	PEAR LINK (2)	2 1/2"		✓✓					
RISER 1'A	NEAR BUOY								
	MIDDLE								
	NEAR GRD RG								
GROUND RING (1'A)									
PEAK 280° GROUND LEG NO. 1-1	UPPER END	2 1/2"	✓✓✓				✓✓✓		
	MIDDLE		✓✓✓				✓✓✓		
	ENTERS BOTTOM		✓✓✓				✓✓✓	86'	ANODE CONNECTED CHAIN TO WIRE
PEAK 280° GROUND LEG NO. 1-2	UPPER END		✓✓✓				✓✓✓		
	MIDDLE		✓✓✓				✓✓✓		RED LINK AT BEGINNING OF LAST SHOT
	ENTERS BOTTOM		✓✓✓				✓✓✓	86'	ANODE CONNECTED WIRE TO WIRE
PEAK 235° GROUND LEG NO. 1-1	UPPER END		✓✓✓				✓✓✓		
	MIDDLE		✓✓✓				✓✓✓		
	ENTERS BOTTOM		✓✓✓				✓✓✓	86'	ANODE CONNECTED CHAIN TO WIRE

SHEET 1 OF 3

FOR ADDITIONAL LEGS USE OTHER SHEETS

CHESNAVFACENGCOM REPORT FP0-1-84(17), "DIEGO GARCIA FLEET MOORING UNDERWATER INSPECTION REPORT."

MOORING NO.: 7N CLASS: SPECIAL CARGO BOWDOYER LOCATION: DIEGO GARCIA LAT 01°17'11.07" S LONG: 22°27'59.45 E

BUOY TYPE: New Riser/TELEPHONE ANCHOR SIZE/TYPE: BACKSTAY 100K PEA WATER DEPTH: 85' VISIBILITY: 15' BOTTOM TYPE: SILT

DATE: 10 MAY 84 ENGINEER-IN-CHARGE: J. M. LAUGHLIN DIVERS: DOT TWO

COMPONENTS		GAUGE SIZE	CONDITION							COMMENTS	
			LINK LENGTH	SINGLE LINK %		DOUBLE LINK %			DEPTH		
				90+	80+	80-	90+	80+			80-
BUOY HARDWARE	SEE SHEET 1 OF 3										
RISER N/A	NEAR BUOY										
	MIDDLE										
	NEAR GRD RG										
GROUND RING		N/A									
3430° GROUND LEG NO. 8-2	UPPER END	2 1/2"	✓✓✓				✓✓✓				CHAIN LEGS CRISSCROSS
	MIDDLE	2 3/4"	✓✓✓				✓✓✓				
	ENTERS BOTTOM	2 3/4"	✓✓✓				✓✓✓				
3430° GROUND LEG NO C-1	UPPER END	2 1/2"	✓✓✓				✓✓✓			86'	ANODE CONNECTED CHAIN TO WIRE
	MIDDLE		✓✓✓				✓✓✓				
	ENTERS BOTTOM		✓✓✓				✓✓✓			85'	
3430° GROUND LEG NO. C-2	UPPER END		✓✓✓				✓✓✓				ANODE CONNECTED CHAIN TO WIRE
	MIDDLE		✓✓✓				✓✓✓				
	ENTERS BOTTOM		✓✓✓				✓✓✓			85'	
			✓✓✓				✓✓✓				

FOR ADDITIONAL LEGS USE OTHER SHEETS

CHESNAVFACENGCOM REPORT FP0-1-84(17), "DIEGO GARCIA FLEET MOORING UNDERWATER INSPECTION REPORT."

SHEET 21 OF 33

MOORING NO: 71N CLASS: CARGO BOW SPECIAL LOCATION: DIEGO GARCIA LAT: 07°17'11.02" S LONG: 172°37'59.45E
 BUOY TYPE: NON-RISER (BELL) ANCHOR SIZE/TYPE: 100K PEA WATER DEPTH: 106' VISIBILITY: 10' BOTTOM TYPE: SILT
 DATE: 10 MAY 84 ENGINEER IN CHARGE: J. H. LAUGHLIN DIVERS: DET TWO

COMPONENTS		GAUGE SIZE	CONDITION							COMMENTS
			LINK LENGTH	SINGLE LINK %		DOUBLE LINK %			DEPTH	
				90+	80+	80-	90+	80+		
BUOY HARDWARE SEE SHEET 1 OF 3										
NEAR BUOY MIDDLE NEAR GRD RG										
GROUND RING										
GROUND LEG NO. D BACKSTAY	2"	12"	VVV			VVV				BACKSTAY LEG. NO ANCHORS INSTALLED. LEG FUTURES.
			VVV			VVV				
			VVV			VVV			106'	BOTTOM ABOUT 150' TOWARD MOORING 73. ONLY 1 1/2 SHOTS VISIBLE.
GROUND LEG NO. B/A										
GROUND LEG NO. C/A										

SHEET 3 OF 3

FOR ADDITIONAL LEGS USE OTHER SHEETS
 CHESNAVFACNGCOM REPORT FP0-1-84(17), "DIEGO GARCIA FLEET MOORING
 UNDERWATER INSPECTION REPORT."

MOORING 7

BUOY 7S

Buoy

This is a non-riser type buoy with a 16-foot diameter. Its freeboard measures 33 and 27 inches. The sides and top are covered with a heavy rust coating. A section of the outer chafing strip is missing, and the top jewelry is severely rusted. The two pear links in the top jewelry measure only between 80 and 90 percent of original wire diameter.

Anchor Chain Subassembly

The chain is in good condition with all chain link measurements greater than 90 percent of the original wire diameter. An anode was installed on or near each wire rope anchor pendant. The chain equalizers show no signs of movement.

Cathodic Protection System (CPS)

Underwater voltmeter readings were between $-.809$ and $-.990$ volts. All continuity wire appeared to be intact, and the CPS system is operating effectively.

Conclusions/Recommendations

This mooring is in fair condition due to some of the top jewelry measuring between 80 and 90 percent of their original wire diameter and the rusted condition of the buoy. The buoy needs to be overhauled and the top jewelry replaced.

CHESNAVFACEGCOM REPORT FPO-1-84(17), "DIEGO GARCIA FLEET MOORING
UNDERWATER INSPECTION REPORT."

MOORING NO.: 718 SPECIAL CLASS CHARGED BOW INTERLOCATION: DIEGO GARCIA LAT: 07 17 17.41 S LONG: 122 04 19 E

BUOY TYPE NO. 135 (TELEPHONE) ANCHOR SIZE/TYPE: 10' 10" PEW WATER DEPTH: 80-90' VISIBILITY: 10' BOTTOM TYPE MUD/HARD MUD

DATE: 2 MAY 84 ENGINEER-IN-CHARGE: J. M. LAUGHLIN DIVERS: UCT TWO

COMPONENTS		GAUGE SIZE	CONDITION						COMMENTS										
			LINK LENGTH	SINGLE LINK %		DOUBLE LINK %		DEPTH											
				90+	80+	80-	90+			80+	80-								
BUOY HARDWARE																			
	BUOY 16' DIAM																		FREEBOARD 33"/27" TOP DECK
	SWIVEL EYES (2)	4 1/4"	✓✓																RUSTY, SIDES HEAVIER RUST, ONE
	DETACHABLE LINKS (2)	3 1/2"	✓✓																CHAFING STRIP CUT AWAY FOR
	PEAR LINK (2)	2 3/4"		✓✓															MULTI-LINE SMALL BOAT USE. TOP
																			JEWELRY SEVERE RUSTING (1/2" to 3/4")
RISER N/A	NEAR BUOY																		
	MIDDLE																		
	NEAR GRD RG																		
GROUND RING		N/A																	
BRAC 025° GROUND LEG NO. A-1	UPPER END	2 1/2"	✓✓✓						✓✓✓										EQUALIZERS SHOWN IN
	MIDDLE		✓✓✓						✓✓✓							80'			ADJUMENT
	ENTERS BOTTOM		✓✓✓						✓✓✓							80'			ADDDE ON WIRE TO WIRE CONNECTOR
BRAC 080° GROUND LEG NO. A-2	UPPER END		✓✓✓						✓✓✓										
	MIDDLE		✓✓✓						✓✓✓										
	ENTERS BOTTOM		✓✓✓						✓✓✓							88'			ANKLE ON CHAIN TO WIRE CONNECTOR
BRAC 135° GROUND LEG NO. B-1	UPPER END	↓	✓✓✓						✓✓✓										
	MIDDLE	2 3/4"	✓✓✓						✓✓✓										
	ENTERS BOTTOM	2 3/4"	✓✓✓						✓✓✓							89'			ANKLE ON CHAIN TO WIRE CONNECTOR

FOR ADDITIONAL LEGS USE OTHER SHEETS

SHEET 1 OF 3

CHESNAVFACENGCOM REPORT FP0-1-84(17), "DIEGO GARCIA FLEET MOORING

UNDERWATER INSPECTION REPORT."

MOORING NO.: 78 CLASS: SPECIAL LOCATION: DIEGO GARCIA LAT: 07°17'17.41" S LONG: 155°08'09.6" E

BUOY TYPE: ANCHOR RISER (TELEPHONE) ANCHOR SIZE/TYPE: 100K PEA LEGS: 150K PEA PEAWATER DEPTH: 55'-90' VISIBILITY: 10' BOTTOM TYPE: HARD MUD

DATE: 9 MAY 84 ENGINEER-IN-CHARGE: J. M. LAUGHLIN DIVERS: UCT TWO

COMPONENTS		GAUGE SIZE	CONDITION							COMMENTS
			LINK LENGTH	SINGLE LINK %			DOUBLE LINK %		DEPTH	
				90+	80+	80-	90+	80+		
BUOY HARDWARE SEE SHEET 1 OF 3										
RISER N/A	NEAR BUOY									
	MIDDLE									
	NEAR GRD RG									
GROUND RING		N/A								
BRACE 145° GROUND LEG NO. B-2	UPPER END	2 1/2"	✓✓✓				✓✓✓			CONTINUITY WIRE CONTINUOUS
	MIDDLE	2 3/4"	✓✓✓				✓✓✓			MADE ON WIRE TO WIRE CONNECTION
	ENTERS BOTTOM	2 3/4"	✓✓✓				✓✓✓		85'	CHAIN CLEAN FOR 10' OFF BOTTOM
BRACE 345° GROUND LEG NO. C-1	UPPER END	2 1/2"	✓✓✓				✓✓✓			CONTINUITY WIRE CONTINUOUS, CHAIN
	MIDDLE	2 3/4"	✓✓✓				✓✓✓			HARDWARE OK.
	ENTERS BOTTOM		✓✓✓				✓✓✓		89'	MADE ON CHAIN TO WIRE CONNECTION
BRACE 255° GROUND LEG NO. C-2	UPPER END		✓✓✓				✓✓✓			
	MIDDLE		✓✓✓				✓✓✓			
	ENTERS BOTTOM	✓	✓✓✓				✓✓✓		90'	MADE ON CHAIN TO WIRE CONNECTION

LAT: 07° 17' 41" S LONG: 73° 28' 04.96 E
 DEPTH: 10' BOTTOM TYPE: HARD MUD
6-10' SAND/SILT

COMPONENTS		GAUGE SIZE	CONDITION							COMMENTS
			LINK LENGTH	SINGLE LINK %			DOUBLE LINK %		DEPTH	
				90+	80+	80-	90+	80+		
BUOY HARDWARE SEE SHEET 1 OF 3										
RISER N/A	NEAR BUOY									
	MIDDLE									
	NEAR GRD RG									
PAX'S DAY GROUND LEG NO. D	GROUND RING N/A									
	UPPER END	3"	12"	V/V			V/V		20'	CONTINUITY WIRE CONTINUOUS
	MIDDLE			V/V			V/V		50'	NO ANODE IN WATER COLUMN
	ENTERS BOTTOM			V/V			V/V		80'	BURIED AFTER TWO SHOTS. RETURN
GROUND LEG NO.B	UPPER END									ANODE OK
	MIDDLE									
	ENTERS BOTTOM									
GROUND LEG NO. C	UPPER END									
	MIDDLE									
	ENTERS BOTTOM									

SHEET 5 OF 3

CHESNAVFACENGCOM REPORT FP0-1-84(17), "DIEGO GARCIA FLEET MOORING UNDERWATER INSPECTION REPORT."

MOORING 8

BUOY 8N

Buoy

This is a non-riser buoy with a 16-foot diameter. Its freeboard measures 34 and 39 inches. The fenders and chafing strips are in good condition, but the top and sides of the buoy are heavily rusted. Some of the top jewelry measures less than 80 percent of their original wire diameter. The underwater portion of the buoy is covered with one-half inch of marine growth.

Anchor Chain Subassembly

This chain is in fair condition. The upper and lower sections of chain subassembly B-2 were measured to be within 80 and 90 percent of their original wire diameter.

Cathodic Protection System (CPS)

Anodes were installed on or near each wire rope anchor pendant. Low CPS readings (-.6 volts) were obtained on the last shot of chain in subassemblies A-2 and C-1. Previously installed anodes have eroded about one half of an inch.

Conclusions/Recommendations

This mooring is in fair condition due to anchor chain subassembly measurements between 80 and 90 percent of original wire diameters. This mooring must be downgraded and its holding capacity reduced to 125,000 pounds. The use of this mooring should be restricted until the worn top jewelry is removed or replaced. The buoy needs to be overhauled.

CHESNAVFACENGCOM REPORT FPU-1-84(17), "DIEGO GARCIA FLEET MOORING
UNDERWATER INSPECTION REPORT."

MOORING NO.: 8N SPECIAL CLASS: CARGO BOW/STERN LOCATION: DIEGO GARCIA LAT 0° 1' 0" N LONG: 72 28 28.80 E
 BUOY TYPE NEW RISEE (TELEPHONE) ANCHOR SIZE/TYPE ACKSTAY 100K PEA WATER DEPTH: 82' VISIBILITY: 8' BOTTOM TYPE MUD/SILT
 DATE: 14 MAY 84 ENGINEER IN CHARGE: J. M. LAUGHLIN DIVERS: UCT TWO

COMPONENTS		GAUGE SIZE	CONDITION							COMMENTS												
			LINK LENGTH	SINGLE LINK %			DOUBLE LINK %		DEPTH													
				90+	80+	80-	90+	80+			80-											
BUOY HARDWARE																						
BUOY 16' DIAM																					FREEBOARD 34"/39" FEEDERS	
SWIVEL EYES (2)			4"																		GOOD, SIDES AND TOP RUSTED	
DETACHABLE LINKS (2)			3 1/2"																		ONE HALF INCH MARINE GROWTH	
SPIDER PLATE (2)			3 1/4"											✓✓							ON BOTTOM.	
PEAR LINKS (4)			2 1/2"											✓✓✓								
NEAR BUOY																						
MIDDLE																						
NEAR GRD RG																						
NA																						
GROUND RING			NA																			
BRK 050° GROUND LEG NO. A-1			UPPER END	2 1/2"	15"	✓✓✓					✓✓✓										20'	ANODES DOWN 1/2" CONTINUITY WIRE
			MIDDLE	2 3/4"	16 1/2"	✓✓✓					✓✓✓										40'	GOOD CONDITON
			ENTERS BOTTOM			✓✓✓					✓✓✓										82'	ANODE CONNECTED WIRE TO WIRE.
BRK 060° GROUND LEG NO. A-2			UPPER END			✓✓✓					✓✓✓											ANODE CONNECTED WIRE TO WIRE.
			MIDDLE			✓✓✓					✓✓✓											LOW CPS READING NEAR LOWER LEG SWIVEL (-1.6).
			ENTERS BOTTOM			✓✓✓					✓✓✓										81'	ANODE CONNECTED WIRE TO WIRE.
BRK 020° GROUND LEG NO. B-1			UPPER END			✓✓✓					✓✓✓											
			MIDDLE			✓✓✓					✓✓✓											LOW CPS READING(-7). LOOSE CHAIN ON BOTTOM.
			ENTERS BOTTOM		✓	✓✓✓					✓✓✓										82'	ANODE CONNECTED WIRE TO WIRE

FOR ADDITIONAL LEGS USE OTHER SHEETS

SHEET 1 OF 3

CHESNAVFACNGCOM REPORT FP0-1-84(17), "DIEGO GARCIA FLEET MOORING
 UNDERWATER INSPECTION REPORT."

MOORING 8

BUOY 8S

Buoy

This is a non-riser buoy with a 16-foot diameter. Its freeboard measures about 30 inches and a light to moderate coat of rust on the top deck. The manhole covers are in poor condition due to heavy rust, and their 1 1/2-inch-diameter bolts have eroded to 1 inch. About 1/16 to 1/2 inch of rust covers the top hardware. The two spider plates and four pear links in the top jewelry measure less than 80 percent of original wire diameter. The wooden fenders and chafing strips are in good condition.

Anchor Chain Subassembly

All single and double link measurements were greater than 90 percent of original wire diameters.

Cathodic Protection System (CPS)

An anode was installed on or near each wire rope anchor pendant. The middle section of anchor chain subassembly B-2 and the lower portion of subassembly C-1 provided relatively low CPS readings (-.5 and -.66 volts respectively.) The continuity wires appear to be intact.

Conclusions/Recommendations

This mooring is in fair condition. Due to the poor buoy condition and top jewelry measurements of less than 80 percent, the use of this mooring should be restricted until the worn top jewelry is removed or replaced. The buoy needs to be overhauled.

CHESNAVFACENGCOM REPORT FPO-1-84(17), "DIEGO GARCIA FLEET MOORING
UNDERWATER INSPECTION REPORT."

MOORING NO: 85 SPECIAL CLASS CARGO BUD/STERN LOCATION: DIEGO GARCIA LAT: 07 17 57.09" S LONG: 128 01 35.06 E
 BUOY TYPE: NON-RISER (TELEPHONE) ANCHOR SIZE/TYPE: BORE STAY 100K PEA WATER DEPTH: 90' VISIBILITY: 15' BOTTOM TYPE: SILT
 DATE: 16 MAY 84 ENGINEER-IN-CHARGE: J. M. LAUGHLIN DIVERS: UCT TWO

COMPONENTS		GAUGE SIZE	CONDITION							COMMENTS
			LINK LENGTH	SINGLE LINK %		DOUBLE LINK %			DEPTH	
				90+	80+	80-	90+	80+		
BUOY HARDWARE	BUOY 16.0' DIAM									FREEBOARD 32 1/2" DIA, TOP DECK LIGHT TO MODERATE RUST. MANHOLE COVERS POOR DUE RUST. 1 1/2" BOLTS RUSTED TO 1". TOP HARDWARE RUSTING AWAY. APPROX 1/16" TO 1/8" THICK RUST. FEW DEFS AND CHAFING STRIPS OK.
	SWIVEL EYES (2)	4"		✓✓						
	DETACHABLE LINKS (2)	3 1/2"		✓✓						
	SPIDER PLATE (2)	3 3/4"			✓✓					
	PEAR LINKS (4)	2 3/4"			✓✓✓					
RISER	NEAR BUOY									
	MIDDLE									
	NEAR GRD RG									
GROUND RING	N/A									
	UPPER END	2 1/2"	✓✓✓				✓✓✓			
	MIDDLE	2 3/4"	✓✓✓				✓✓✓			
GROUND LEG NO. A-1	ENTERS BOTTOM	2 3/4"	✓✓✓				✓✓✓		90'	HEAVY SILT COVERS LAST SHOT, APPROX CONNECTED CHAIN TO WIRE
	UPPER END	2 1/2"	✓✓✓				✓✓✓			CHAIN LOOSE AND BOTTOM APPROX CONNECTED AT CHAIN TO WIRE. APPROX DOWN 2"-3".
	MIDDLE	2 3/4"	✓✓✓				✓✓✓			
ENTERS BOTTOM	2 3/4"	✓✓✓				✓✓✓		90'		
GROUND LEG NO. A-2	UPPER END	2 1/2"	✓✓✓				✓✓✓			
	MIDDLE	2 3/4"	✓✓✓				✓✓✓			
	ENTERS BOTTOM	2 3/4"	✓✓✓				✓✓✓		90'	
GROUND LEG NO. B-1	UPPER END	2 1/2"	✓✓✓				✓✓✓			
	MIDDLE	2 3/4"	✓✓✓				✓✓✓			
	ENTERS BOTTOM	2 3/4"	✓✓✓				✓✓✓		90'	APPROX CONNECTED AT CHAIN TO WIRE

FOR ADDITIONAL LEGS USE OTHER SHEETS

CHESNAVFACNGCOM REPORT FPO-1-84(17), "DIEGO GARCIA FLEET MOORING
 UNDERWATER INSPECTION REPORT."

SHEET 1 OF 3

MOORING NO.: 85 SPECIAL CLASS CARGO BOW/STEM LOCATION: DIEGO GARCIA LAT 07° 17' 57.09" S LONG 171° 28' 35.06" E

BUOY TYPE NON-RISER (TELEPHONE) ANCHOR SIZE/TYP BACKSTAY 100 K PA WATER DEPTH: 90' VISIBILITY: 15' BOTTOM TYPE: CLAY W/SILT

DATE: 16 MAY 84 ENGINEER-IN-CHARGE: J. M. LAUGHLIN DIVERS: UCT TWO

COMPONENTS		GAUGE SIZE	CONDITION						COMMENTS
			LINK LENGTH	SINGLE LINK %		DOUBLE LINK %		DEPTH	
				90+	80+	80-	90+		
BUOY HARDWARE	SEE SHEET 1 OF 3								
RISER NA	NEAR BUOY								
	MIDDLE								
	NEAR GRD RG								
GROUND RING		NA							
BULK 155° GROUND LEG NO. B-2	UPPER END	2 1/2"	15"	✓✓✓			✓✓✓		ANODES/CONTINUITY WIRE OK.
	MIDDLE	2 3/4"	16 1/2"	✓✓✓			✓✓✓	52'	LOW CPS READING (-.5) LOOP IN LEG.
	ENTERS BOTTOM	2 3/4"	16 1/2"	✓✓✓			✓✓✓	90'	ANODE CONNECTED CHAIN TO WIRE
BULK 232° GROUND LEG NO. C-1	UPPER END	2 1/2"	15"	✓✓✓			✓✓✓		
	MIDDLE	2 3/4"	16 1/2"	✓✓✓			✓✓✓		
	ENTERS BOTTOM	2 3/4"	16 1/2"	✓✓✓			✓✓✓	83'	ANODE CONNECTED WIRE TO WIRE
BULK 245° GROUND LEG NO. C-2	UPPER END	2 1/2"	15"	✓✓✓			✓✓✓		LOW CPS READING (-.66) NEAR ANODE
	MIDDLE	2 3/4"	16 1/2"	✓✓✓			✓✓✓		
	ENTERS BOTTOM	2 3/4"	16 1/2"	✓✓✓			✓✓✓	83'	ANODE CONNECTED AT WIRE TO WIRE

FOR ADDITIONAL LEGS USE OTHER SHEETS

SHEET 2 OF 3

CHESNAVACGCOM REPORT FP0-1-84(17), "DIEGO GARCIA FLEET MOORING UNDERWATER INSPECTION REPORT."

MOORING NO: 85 SPECIAL CLASS: CARGO BOWSTEER LOCATION: DIEGO GARCIA LAT 01° 17' 09" N LONG 72° 28' 35.06" E

BUOY TYPE Non-Riser (FLEPPAGE) ANCHOR SIZE TYPE BACKSTAY 100K PEANUT DEPTH: 85' VISIBILITY: 15' BOTTOM TYPE: SILT

DATE: 16 MAY 84 ENGINEER-IN-CHARGE: J. H. LAUGHLIN DIVERS: UCT TWO

COMPONENTS		GAUGE SIZE	CONDITION							COMMENTS
			LINK LENGTH	SINGLE LINK %		DOUBLE LINK %		DEPTH		
				90+	80+	80-	90+		80+	
SEE SHEET 1 OF 3										
BUOY HARDWARE										
RISER NA	NEAR BUOY									
	MIDDLE									
	NEAR GRD RG									
GROUND RING NA										
Blue 331° GROUND LEG NO. D BACKSTAY	UPPER END	2" ↓	12" ✓✓✓				✓✓✓			
	MIDDLE		✓✓✓				✓✓✓			
	ENTERS BOTTOM	↓	✓✓✓				✓✓✓		85'	LEG BUOY 5
GROUND LEG NO. B	UPPER END									
	MIDDLE									
	ENTERS BOTTOM									
GROUND LEG NO. C	UPPER END									
	MIDDLE									
	ENTERS BOTTOM									

MOORING 9
BUOY 9N

Buoy

This is a non-riser buoy with a 16-foot diameter. Its freeboard measures 27 and 33 inches. A 5-foot section of the upper wooden fender is loose, and the below water hull is covered with about a half inch of marine growth. Two detachable links and two pear links in the top jewelry measured between 80 and 90 percent and less than 80 percent respectively.

Anchor Chain Subassembly

Single and double link measurements of this chain were all greater than 90 percent of the original wire diameter.

Cathodic Protection System (CPS)

Approximately 1 inch of previously installed anodes have been depleted. The continuity cable appears to be in satisfactory condition. One anode was installed on or near the wire rope anchor pendant. CPS readings were between -.78 and -.985 volts. The CPS appears to be working effectively.

Conclusions/Recommendations

Because the top jewelry measured less than 80 percent, the use of this mooring should be restricted until the top jewelry is replaced. The buoy needs to be overhauled during the next maintenance period.

CHESNAVFACENGCOM REPORT FPO-1-84(17), "DIEGO GARCIA FLEET MOORING
UNDERWATER INSPECTION REPORT."

MOORING NO: 9N SPECIAL CLASS: CARGO BOWSTEIN LOCATION: DIEGO GARCIA LAT: 0° 17' 48.33" S LONG: 72° 17' 34.38" E
 BUOY TYPE: ANCHOR RISE (TELEPHONE) ANCHOR SIZE: TYPE BACKSTAY 100K PEA WATER DEPTH: 98' VISIBILITY: 15' BOTTOM TYPE: LIGHT SILT OVER CORAL
 DATE: 20 MAY 84 ENGINEER IN CHARGE: J. H. LAUBHLIN DIVERS: VCT TWO

COMPONENTS		GAUGE SIZE	CONDITION							COMMENTS	
			LINK LENGTH	SINGLE LINK %		DOUBLE LINK %		DEPTH			
				90+	80+	80-	90+		80+		80-
BUOY HARDWARE	BUOY 16" DIAMETER										FREEBOARD 37 1/32", ONE 5' SECTION
	SHOVEL EYES (2)	4"	✓✓								OF UPPER FENDER IS LOOSE, 1/2"
	DETACHABLE LINKS (2)	3 3/4"		✓✓							MARINE GROWTH ON BUOY BOTTOM, CUT AWAY LINES AND CABLES FROM
	PEAR LINKS (2)	3 1/2"			✓✓						BUOY TOP JEWELRY, TWO DETACH LINKS
RISER	NEAR BUOY										HARKED 3 1/2" BUT MEASURED 3 3/4"
	MIDDLE										
	NEAR GRD RG										
N/A											
AC 16 0350	GROUND										
	LEG	2 1/2"	✓✓✓				✓✓✓				CHAIN HITS BOTTOM AT 98' THEN
	NO. A-1		✓✓✓				✓✓✓				GOES UPHILL TO 70' WHERE ANODES
AC 16 0100	ENTERS BOTTOM		✓✓✓				✓✓✓			98'	ANODE CONNECTED AT WIRE TO WIRE
	UPPER END		✓✓✓				✓✓✓				
	MIDDLE		✓✓✓				✓✓✓				CONTINUITY WIRE OK
NO. A-2	ENTERS BOTTOM		✓✓✓				✓✓✓			98'	ANODE CONNECTED AT WIRE TO WIRE
	UPPER END		✓✓✓				✓✓✓				
	MIDDLE		✓✓✓				✓✓✓				OLD ANODES LOOK GOOD
AC 16 0350	ENTERS BOTTOM		✓✓✓				✓✓✓				
	UPPER END		✓✓✓				✓✓✓				
	MIDDLE		✓✓✓				✓✓✓				
NO. B-1	ENTERS BOTTOM	✓	✓✓✓				✓✓✓			96'	ANODE CONNECTED AT WIRE TO WIRE

SHEET 1 OF 3

FOR ADDITIONAL LEGS USE OTHER SHEETS

CHESNAVFACENGCOM REPORT FP0-1-84(17), "DIEGO GARCIA FLEET MOORING

UNDERWATER INSPECTION REPORT."

MOORING NO.: 9 N CLASS: SPECIAL CARGO BOWTIE LOCATION: DIEGO GARCIA LAT: 0° 17' 44.835" N LONG: 122° 27' 36.38" E
BUOY TYPE NEW R, SELF TELEPHONE ANCHOR SIZE TYPE BACKSTAY 100K PEA WATER DEPTH: 100' VISIBILITY: 15' BOTTOM TYPE: LIGHT SILT OVER CORAL
DATE: 20 MAY 84 ENGINEER IN CHARGE: J. H. LADGHELLIN DIVERS: UCT TWO

COMPONENTS		GAUGE SIZE	CONDITION							COMMENTS	
			LINK LENGTH	SINGLE LINK %		DOUBLE LINK %		DEPTH			
				90+	80+	80-	90+		80+		80-
SEE SHEET 1 OF 3											
BUOY HARDWARE											
RISER N/A	NEAR BUOY										
	MIDDLE										
	NEAR GRD RG										
GROUND RING N/A											
60x 335° GROUND LEG NO. B-2	UPPER END	2 1/2"	15"	✓✓✓				✓✓✓			
	MIDDLE	2 1/2"	15"	✓✓✓				✓✓✓			
	ENTERS BOTTOM	2 3/4"	16 1/2"	✓✓✓				✓✓✓	96'		APODES DOWN 1" APODE CONNECTED WIRE TO WIRE
60x 335° GROUND LEG NO. C-1	UPPER END	2 1/2"	15"	✓✓✓				✓✓✓			
	MIDDLE			✓✓✓				✓✓✓			APODES/CONTINUITY WIRE OK
	ENTERS BOTTOM			✓✓✓				✓✓✓	100'		APODE CONNECTED WIRE TO WIRE
60x 335° GROUND LEG NO. C-2	UPPER END			✓✓✓				✓✓✓			
	MIDDLE			✓✓✓				✓✓✓			
	ENTERS BOTTOM	2 3/4"	16 1/2"	✓✓✓				✓✓✓	100'		APODE CONNECTED WIRE TO WIRE

FOR ADDITIONAL LEGS USE OTHER SHEETS

ER SHEETS
CHESNAFACENGCOM REPORT FPO-1-84(17), "DIEGO GARCIA FLEET MOORING
UNDERWATER INSPECTION REPORT."

SHEET 2 OF 3

MOORING NO.: 9N SPECIAL CLASS DIEGO GARCIA LOCATION: DIEGO GARCIA LAT 0° 12' 44.83" S LONG: 72° 20' 34.38" E
 BUOY TYPE NEW RISE TELEPHONE BACKSTAY 100K PEAWATER DEPTH: 106' VISIBILITY: 15' BOTTOM TYPE: LIGHT SILT OVER CORAL
 DATE: 20 MAY 84 ENGINEER-IN-CHARGE: J. H. LAUGHLIN DIVERS: UCT TWO

COMPONENTS		GAUGE SIZE	CONDITION							COMMENTS
			LINK LENGTH	SINGLE LINK %		DOUBLE LINK %		DEPTH		
				90+	80+	80-	90+		80+	
BUOY HARDWARE SEE SHEET 1 OF 3										
RISER NA	NEAR BUOY									
	MIDDLE									
	NEAR GRD RG									
GROUND RING NA										
BENS 149" GROUND LEG NO. D BACKSTAY	UPPER END	2"	10"	✓✓✓			✓✓✓			CONTINUITY WIRE AND HARDWARE
	MIDDLE			✓✓✓			✓✓✓			
	ENTERS BOTTOM			✓✓✓			✓✓✓		106'	ANODE CONNECTED WIRE TO WIRE
GROUND LEG NO. B	UPPER END									
	MIDDLE									
	ENTERS BOTTOM									
GROUND LEG NO. C	UPPER END									
	MIDDLE									
	ENTERS BOTTOM									

MOORING 9

BUOY 9S

Buoy

This is a non-riser buoy with a 16-foot diameter and a freeboard of about 23 inches. The top deck has severe rusting (as much as 1/2-inch deep) and the manhole cover bolts have been reduced by 1/4-inch due to rusting. The top jewelry is badly corroded with some measurements less than 80 percent of its original wire diameter. The chafing strip shows evidence of rubbing wear. About 21 feet of the upper fender is missing and the plug for a 3-inch-diameter pipe vent on the upper deck of the buoy is missing.

Anchor Chain Subassembly

Some links of subassemblies B-2 and C-2 measured between 80 and 90 percent of original wire diameters. The remaining subassemblies measured greater than 90 percent.

Cathodic Protection System (CPS)

The continuity wires appear to be intact. An anode was installed on or near each wire rope anchor pendant. A low CPS reading (-.404 volts) was noted near the lower swivel in anchor chain subassembly C-2. The remaining readings were between -.905 and -.994 volts and show the CPS to be working effectively.

Conclusions/Recommendations

Because the top jewelry measured less than 80 percent, the use of this mooring should be restricted until this top jewelry is replaced. A plug for the 3-inch pipe on top of the buoy should be acquired and installed as soon as practical. In addition, due to anchor chain subassembly measurements between

CHESNAVFACENGCOM REPORT FPO-1-84(17), "DIEGO GARCIA FLEET MOORING
UNDERWATER INSPECTION REPORT."

80 and 90 percent of original wire diameters, this mooring must be downgraded and its holding capacity reduced to 125,000 pounds. The buoy should be overhauled during the next maintenance period.

CHESNAVFACENGCOM REPORT FPO-1-84(17), "DIEGO GARCIA FLEET MOORING
UNDERWATER INSPECTION REPORT."

MOORING NO.: 95 SPECIAL CLASS Diego Buoy LOCATION: DIEGO GARCIA LAT 07 50.45 S LONG 127 40.10 E

BUOY TYPE Non-Riser (Telepole) ANCHOR SIZE/TYPE 100K SEA WATER DEPTH: 103' VISIBILITY: 10' BOTTOM TYPE: SILT OVER CORAL

DATE: 18 MAY 84 ENGINEER-IN-CHARGE: J. M. LAUGHLIN DIVERS: UCT TWO

COMPONENTS	GAUGE SIZE	CONDITION							COMMENTS
		LINK LENGTH	SINGLE LINK %		DOUBLE LINK %			DEPTH	
			90+	80+	80-	90+	80+		
BUOY HARDWARE	BUOY 16' DIAMETER								FREEDBOARD 24"/22", AN 8 FT ² AREA
	SWIVEL EYES (2)	4"	✓						OF TOP DECK HAS SEVERE RUST (1/4").
	DETACHABLE LINKS (2)	3"		✓✓					A 2 FT ² SECTION HAS 1/2" DEEP RUST.
	SPIDER PLATES (2)	3"							HANDHOLE BOLTS REDUCED BY 1/4", ALL
	PEARL LINKS (4)	2 3/4"				✓✓✓			JEWELRY BADLY CORRODED (AS MUCH AS 5/8"). CHAFING STRIP HAS SOME RUBBING WEAR. 21' OF UPPER FENDER MISSING. 3" PIPE PLUG MISSING.
RISER N/A	NEAR BUOY								
	MIDDLE								
	NEAR GRD RG								
LEG 060 ⁰ GROUND NO. A-1	GROUND RING	N/A							
	UPPER END	2 1/2"	✓✓✓				✓✓✓		
	MIDDLE	2 3/4"	✓✓✓				✓✓✓		
	ENTERS BOTTOM		✓✓✓				✓✓✓	103'	SWIVEL 30' AFTER CHAIN HITS BOTTOM. ANODE CONNECTED AT CHAIN TO WIRE
LEG 070 ⁰ GROUND NO. A-2	UPPER END	↓	✓✓✓				✓✓✓		
	MIDDLE	2 1/2"	✓✓✓				✓✓✓		
	ENTERS BOTTOM	2 1/2"	✓✓✓				✓✓✓	102'	ANODE INSTALLED ON WIRE
	UPPER END	2 3/4"	✓✓✓				✓✓✓		CONTINUITY WIRE STARTS BELOW EQUALIZER
LEG 153 ⁰ GROUND NO. B-1	MIDDLE	↓	✓✓✓				✓✓✓		C/WIRE, CHAIN, ANODES GOOD
	ENTERS BOTTOM	↓	✓✓✓				✓✓✓	97'	ANODE CONNECTED AT WIRE TO WIRE

FOR ADDITIONAL LEGS USE OTHER SHEETS

CHESNAFACENGCOM REPORT FPO-1-84(17), "DIEGO GARCIA FLEET MOORING UNDERWATER INSPECTION REPORT."

SHEET 1 OF 3

A.3 TENDER FREE SWINGING MOORING

Fleet Mooring 10 is the only Tender free swinging mooring installed at Diego Garcia. This mooring consists of a single 16-foot telephone buoy, four 2-3/4-inch equalizers attached to the buoy padeyes and four ground leg pairs. Each leg of a leg pair consists of 3 1/2 shots of chain, 25,000 pounds of sinkers, 170 feet of 2 1/4-inch wire rope, and a 150 KIP propellant embedment anchor. The design of this mooring is identical to that of each of the Cargo Bow/Stern buoy systems with the exception that this mooring has a fourth leg pair instead of a backstay leg. Figure A-3 is an isometric drawing of this mooring.

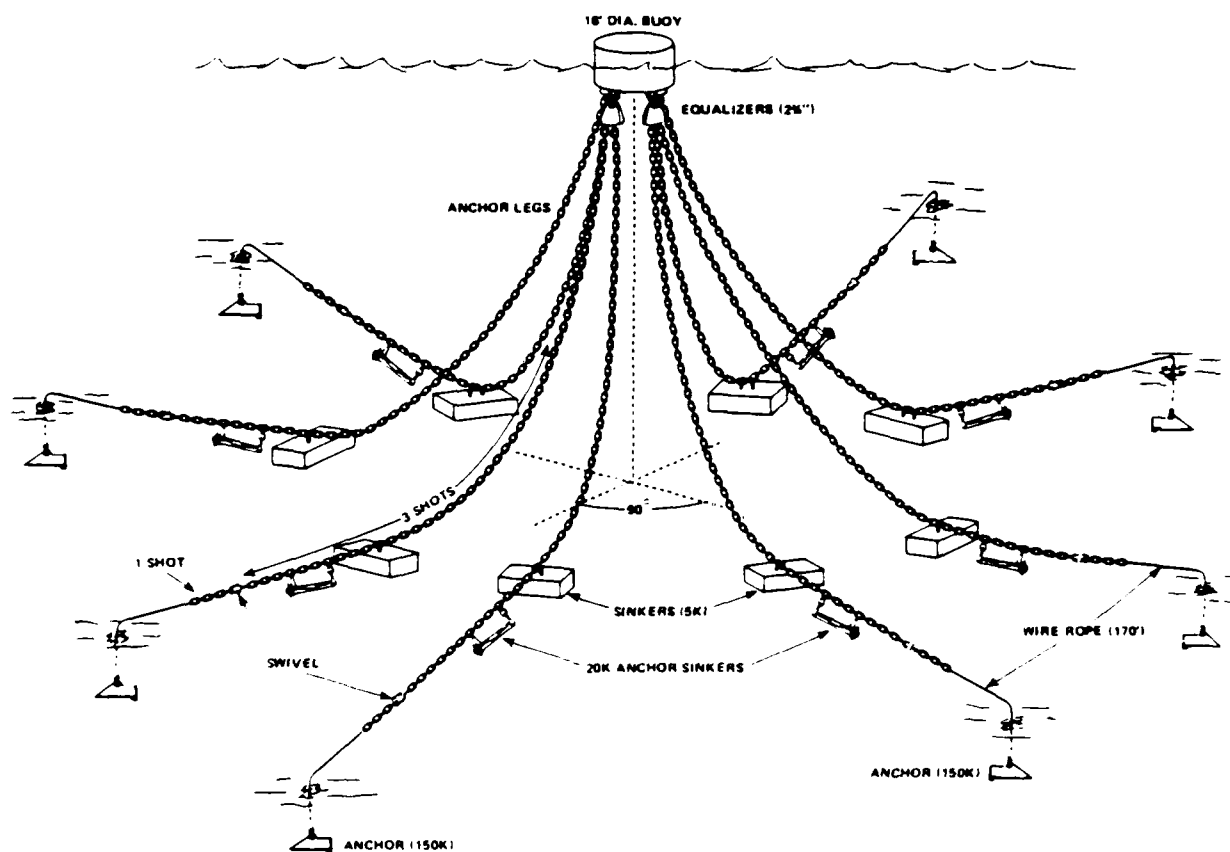


FIGURE A-3. TENDER FREE SWINGING MOORING

CHESNAVFACENGCOM REPORT FPO-1-84(17), "DIEGO GARCIA FLEET MOORING
UNDERWATER INSPECTION REPORT."

MOORING 10

Buoy

This is a 16-foot-diameter non-riser type buoy with a freeboard of 25 to 28 inches. About 25 feet of the top fender are missing and another 15 feet are damaged. The top deck has medium rust blisters and the manhole hatch cover and bolts are severely rusted. Two detachable links in the top jewelry were measured to be between 80 and 90 percent of original diameter while two pear links measured less than 80 percent.

Anchor Chain Subassembly

The four chain equalizers are in good condition but show no evidence of chain movement. All single- and double-link measurements were greater than 90 percent of original wire diameter. All subassemblies have loose chain lying on the bottom. There is a loop in subassembly C-2.

Cathodic Protection System (CPS)

All continuity cables appear to be intact. No CPS readings were taken.

Conclusions/Recommendations

This mooring is scheduled to be removed from service in the near future. Because the top jewelry measured less than 80 percent, the use of this mooring should be restricted until the top jewelry is replaced or the mooring removed.

CHESNAVFACENGCOM REPORT FPO-1-84(17), "DIEGO GARCIA FLEET MOORING
UNDERWATER INSPECTION REPORT."

MOORING NO.: 10 CLASS: FREE SWING LOCATION: DIEGO GARCIA LAT 07° 12' 05" N LONG 72° 15' 29.96 E
 BUOY TYPE: NEW-RISER TELEPHONE ANCHOR SIZE/TYPE: 150 K PEA WATER DEPTH: 92' VISIBILITY: 15' BOTTOM TYPE: CORAL
 DATE: 25 MAY 84 ENGINEER-IN-CHARGE: J. McLAUGHLIN DIVERS: UCT TWO / NSF (HARBOR OPS)

COMPONENTS		GAUGE SIZE	CONDITION							COMMENTS	
			LINK LENGTH	SINGLE LINK %			DOUBLE LINK %				DEPTH
				90+	80+	80-	90+	80+	80-		
BUOY HARDWARE											
BUOY 16" DIAMETER											
SUNBEL EYES (2)		3 3/4"	✓✓								
DETACHABLE LINKS (2)		3 1/2"		✓✓							
PEAR LINKS (2)		2 1/4"			✓✓						
RISER NA	NEAR BUOY										
	MIDDLE										
	NEAR GRD RG										
GROUND RING		NA									
GROUND LEG NO. A-1	UPPER END	2 1/2"	✓✓				✓✓✓				
	MIDDLE	2 3/4"	✓✓✓				✓✓✓				
	ENTERS BOTTOM	2 3/4"	✓✓✓				✓✓✓		92'		
GROUND LEG NO. A 2	UPPER END	2 1/2"	✓✓✓				✓✓✓				
	MIDDLE	2 3/4"	✓✓✓				✓✓✓				
	ENTERS BOTTOM	2 3/4"	✓✓✓				✓✓✓		92'		
GROUND LEG NO. B-1	UPPER END	2 1/2"	✓✓✓				✓✓✓				
	MIDDLE	2 3/4"	✓✓✓				✓✓✓				
	ENTERS BOTTOM	2 3/4"	✓✓✓				✓✓✓		90'		

SHEET 1 OF 3

FOR ADDITIONAL LEGS USE OTHER SHEETS

CHESNAVFACENGCOM REPORT FP0-1-84(17), "DIEGO GARCIA FLEET MOORING

UNDERWATER INSPECTION REPORT."

COMPONENTS		GAUGE SIZE	CONDITION							COMMENTS	
			LINK LENGTH	SINGLE LINK %			DOUBLE LINK %				DEPTH
				90+	80+	80-	90+	80+	80-		
BUOY HARDWARE											
<i>SEE SHEET 10F3</i>											
RISER <i>N/A</i>	NEAR BUOY										
	MIDDLE										
	NEAR GRD RG										
GROUND RING <i>N/A</i>											
GROUND LEG NO. B-2	UPPER END	<i>2 1/2"</i>	<i>VVV</i>					<i>VVV</i>			
	MIDDLE	<i>2 3/4"</i>	<i>VVV</i>					<i>VVV</i>			
	ENTERS BOTTOM	<i>2 3/4"</i>	<i>VVV</i>					<i>VVV</i>		<i>96'</i>	<i>WIDE ROPE / PENDANT OK</i>
<i>BULK 240°</i> GROUND LEG NO. C-1	UPPER END	<i>2 1/2"</i>	<i>VVV</i>					<i>VVV</i>			
	MIDDLE		<i>VVV</i>					<i>VVV</i>			
	ENTERS BOTTOM		<i>VVV</i>					<i>VVV</i>		<i>90'</i>	<i>LOOP IN CHAIN LEG. LOOSE CHAIN ON BOTTOM. LAST SHOT MARKED.</i>
<i>BULK 253°</i> GROUND LEG NO. C-2	UPPER END		<i>VVV</i>					<i>VVV</i>			
	MIDDLE		<i>VVV</i>					<i>VVV</i>			
	ENTERS BOTTOM		<i>VVV</i>					<i>VVV</i>		<i>90'</i>	<i>LOOSE CHAIN ON BOTTOM</i>

FOR ADDITIONAL LEGS USE OTHER SHEETS

SHEET 2 OF 3

UNDERWATER INSPECTION REPORT."

MOORING NO.: 10 CLASS: FREE SWING LOCATION: DIEGO GARCIA LAT 07 17 05.60 S LONG: 71 25 29.96 E
TENDER
BUOY TYPE: NON-RIGID TELEPHONE ANCHOR SIZE/TYPE: 150 K PEA WATER DEPTH: 90' VISIBILITY: 15' BOTTOM TYPE: CORAL
DATE: 25 MAY 84 ENGINEER-IN-CHARGE: J. H. LAUGHLIN DIVERS: UCT TWO / NSF (HARBOR OPS)

COMPONENTS		GAUGE SIZE	CONDITION							COMMENTS	
			LINK LENGTH	SINGLE LINK %			DOUBLE LINK %				DEPTH
				90+	80+	80 -	90+	80+	80 -		
BUOY HARDWARE SEE SHEET 1 OF 3											
RISER N/A	NEAR BUOY										
	MIDDLE										
	NEAR GRD RG										
GROUND RING		N/A									
8204 330° GROUND LEG NO. D-1	UPPER END	2 1/2"	15"	✓✓				✓✓			
	MIDDLE	2 1/2"	15"	✓✓				✓✓		CLUMPS AND SWIVEL OK	
	ENTERS BOTTOM	2 3/4"	16 1/2"	✓✓				✓✓	90'		
GROUND LEG NO. D-2	UPPER END	2 1/2"	15"	✓✓				✓✓			
	MIDDLE	2 1/2"	15"	✓✓				✓✓			
	ENTERS BOTTOM	2 3/4"	16 1/2"	✓✓				✓✓	90'	ROPE AND FLOAT ON LAST SHOT	
GROUND LEG NO.	UPPER END										
	MIDDLE										
	ENTERS BOTTOM										

FOR ADDITIONAL LEGS USE OTHER SHEETS

SHEET 3 OF 3

CHESNAVFACENGCOM REPORT FP0-1-84(17), "DIEGO GARCIA FLEET MOORING UNDERWATER INSPECTION REPORT."

A.4 TENDER BOW/STERN MOORING

The Tender bow/stern mooring consists of four buoy systems (Buoy 11NE, 11SE, 11SW, and 11NW). Each buoy system consists of a non-riser buoy and a large (3 1/4") equalizer attached to one of the buoy's padeyes. A shot of 3-1/4-inch chain passes through this equalizer, with a 2 3/4-inch equalizer attached to each end of the chain. A ground leg pair passes through each of these equalizers. Each leg of a leg pair contains 3 1/2-shots of chain, 25,000 pounds of sinkers, 170 feet of 2 1/4-inch wire rope, and a 150 KIP embedment anchor. In addition, each buoy has a two-shot backstay leg attached to the padeye opposite the one connected to the larger equalizer. The lower three shots of each half of a leg pair and the backstay leg are cathodically protected. Figure A-4 is an isometric view of each of the four buoy systems comprising this mooring.

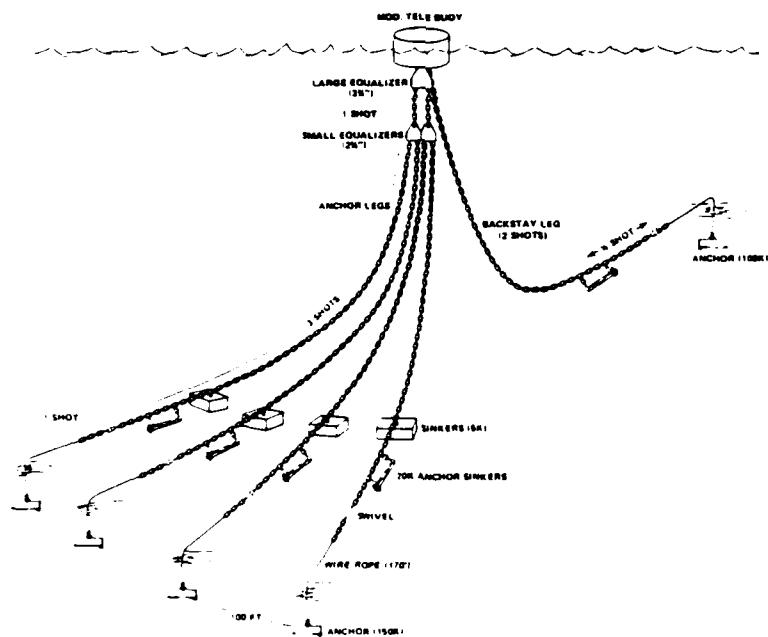


FIGURE A-4. TENDER BOW/STERN MOORING

CHESNAVFACENGCOM REPORT FPO-1-84(17), "DIEGO GARCIA FLEET MOORING
UNDERWATER INSPECTION REPORT."

MUORING 11

BUOY LINE

Buoy

This is a 16-foot-diameter modified non-riser type buoy. The top deck is rust covered and the four shackles in the top jewelry are corroded to between 80 and 90 percent of their original wire diameter.

Anchor Chain Subassembly

This chain is in satisfactory condition. All single- and double-link measurements taken were greater than 90 percent of the original 2 3/4-inch wire diameter.

Cathodic Protection System (CPS)

The wire rope continuity cables are intact and the previously installed anodes have eroded about three-fourths of an inch from their original size. The CPS appears to be working effectively.

Conclusions/Recommendations

This buoy system is scheduled for removal from service in the near future. However, if it is to be utilized prior to removal, the worn top jewelry should be replaced.

MOORING NO: 11 NE CLASS: BOW/STERN LOCATION: DIEGO GARCIA LAT: 07 16 40.20 S LONG: 72 34 56.39 E

BUOY TYPE: MOD. NON-RISER ANCHOR SIZE/TYPE: 150K PEA WATER DEPTH: 94' VISIBILITY: 15' BOTTOM TYPE: CORAL

DATE: 25 MAY 84 ENGINEER IN CHARGE: J. McLAUGHLIN DIVERS: DET TWO

COMPONENTS		GAUGE SIZE	CONDITION							COMMENTS	
			LINK LENGTH	SINGLE LINK %			DOUBLE LINK %		DEPTH		
				90+	80+	80-	90+	80+			80-
BUOY HARDWARE	BUOY (16" DIAMETER)									MODIFIED NON-RISER. MEDIUM RUST ON TOP DECK. FOUR 4"	
	SHACKLES (4)	4"								SHACKLES IN TOP JEWELRY WORN TO 80-90 PERCENT OF ORIG. SIZE.	
RISER	NEAR BUOY										
	MIDDLE										
	NEAR GRD RG										
GROUND RING		NA									
GROUND LEG NO. A-1	UPPER END	2 3/4"	✓✓	✓✓				✓✓			
	MIDDLE		✓✓	✓✓				✓✓			ADDED DOWN 1/2" TO 3/4". SOME CHAIN IN TENSION.
	ENTERS BOTTOM		✓✓	✓✓				✓✓	94'		
GROUND LEG NO. A-2	UPPER END		✓✓	✓✓				✓✓			
	MIDDLE		✓✓	✓✓				✓✓			
	ENTERS BOTTOM		✓✓	✓✓				✓✓	94'		LOOSE CHAIN ON BOTTOM
GROUND LEG NO. B-1	UPPER END		✓✓	✓✓				✓✓			
	MIDDLE		✓✓	✓✓				✓✓			ADDED DOWN 3" TO 3 1/2"
	ENTERS BOTTOM		✓✓	✓✓				✓✓	90'		LOT OF LOOSE CHAIN ON BOTTOM

SHEET 1 OF 2

FOR ADDITIONAL LEGS USE OTHER SHEETS
 CHE SNAVFACENCOM REPORT FP0-1-84(17), "DIEGO GARCIA FLEET MOORING
 UNDERWATER INSPECTION REPORT."

MOORING NO: 111E CLASS: BOW/STERN TENDER DIEGO GARCIA LAT: 07°16'44.20"S LONG: 72°24'56.39"E
 BUOY TYPE: MOD. NON-RATER ANCHOR SIZE/TYPE: BACKSTAY 100K PA WATER DEPTH: 98' VISIBILITY: 15' BOTTOM TYPE: CORAL
 DATE: 25 MAY 84 ENGINEER-IN-CHARGE: J.M. LAUGHLIN DIVERS: UCT TWO

COMPONENTS		GAUGE SIZE	CONDITION							COMMENTS
			LINK LENGTH	SINGLE LINK %			DOUBLE LINK %		DEPTH	
				90 +	80 +	80 -	90 +	80 +		
SEE SHEET 1 OF 2										
BUOY HARDWARE										

MOORING 11

BUOY 11NW

Buoy

This is a 16-foot-diameter modified non-riser type buoy. The top deck is rust covered and the four shackles in the top jewelry are corroded to between 80 and 90 percent of their original wire diameter.

Anchor Chain Subassembly

This chain is in satisfactory condition. All single- and double-link measurements taken were greater than 90 percent of the original 2 3/4 inch wire diameter.

Cathodic Protection System (CPS)

The wire rope continuity cables are intact and the previously installed anodes have eroded about three-fourths of an inch from their original size. The CPS appears to be working effectively.

Conclusions/Recommendations

This buoy system is scheduled for removal from service in the near future. However, if it is to be utilized prior to removal, the worn top jewelry should be replaced.

CHESNAVFACENGCOM REPORT FPO-1-84(17), "DIEGO GARCIA FLEET MOORING
UNDERWATER INSPECTION REPORT."

MOORING NO.: 11NW CLASS: BOW/STEM LOCATION: DIEGO GARCIA LAT 07° 16' 48.14 S LONG 72° 24' 57.65 E

BUOY TYPE MOD. NON-RISER ANCHOR SIZE/TYPE: 150K PEA WATER DEPTH: 92' VISIBILITY: 10-15' BOTTOM TYPE: CORAL

DATE: 25 MAY 84 ENGINEER-IN-CHARGE: J. McLAUGHLIN DIVERS: UCT TWO

COMPONENTS		GAUGE SIZE	CONDITION							COMMENTS	
			LINK LENGTH	SINGLE LINK %		DOUBLE LINK %			DEPTH		
				90+	80+	80 -	90+	80+			80 -
BUOY HARDWARE											MODIFIED NOU-RISER, MEDIUM RUST ON TOP DECK. SHACKLES IN TOP JEWELRY RUSTED TO 80-90 PERCENT OF ORIG. SIZE.
BUOY (16' DIAMETER)											
SHACKLES (4)		4"									
NEAR BUOY											
RISER NA	MIDDLE										
	NEAR GRD RG										
GROUND RING		NA									
GROUND LEG NO. A-1	UPPER END	2 3/4" 16'S"	✓✓✓				✓✓✓				LEG A EQUALIZER LOWER THAN
	MIDDLE		✓✓✓				✓✓✓				LEG B EQUALIZER.
	ENTERS BOTTOM		✓✓✓				✓✓✓		90'		
GROUND LEG NO. A-2	UPPER END		✓✓✓				✓✓✓				
	MIDDLE		✓✓✓				✓✓✓				
	ENTERS BOTTOM		✓✓✓				✓✓✓		92'		
GROUND LEG NO. B-1	UPPER END		✓✓✓				✓✓✓				LEG B EQUALIZER HIGHER
	MIDDLE		✓✓✓				✓✓✓				THAN LEG A EQUALIZER.
	ENTERS BOTTOM	✓✓✓	✓✓✓				✓✓✓		91'		

FOR ADDITIONAL LEGS USE OTHER SHEETS

SHEET 1 OF 2

CHESNAVFACENGCOM REPORT FP0-1-84(17), "DIEGO GARCIA FLEET MOORING UNDERWATER INSPECTION REPORT."

MOORING NO.: 11 NW CLASS: BOW/STEERN LOCATION: DIEGO GARCIA LAT: 07 16 48.14 S LONG: 72 24 52.65 E

LEG 130K PEA
BUOY TYPE: MOD. NON-RISER ANCHOR SIZE/TYPE: 600K PEABUCKSTAY 100K PEA WATER DEPTH: 91' VISIBILITY: 10-15' BOTTOM TYPE: CORAL

DATE: 25 MAY 84 ENGINEER-IN-CHARGE: J. M. ^CLAUGHLIN DIVERS: UCT TWO

[illegible]

FOR ADDITIONAL LEGS USE OTHER SHEETS

SHEET 2 OF 2

CHESNAVFACENGCOM REPORT FPO-1-84(17), "DIEGO GARCIA FLEET MOORING UNDERWATER INSPECTION REPORT."

MOORING 11
BUOY 11SE

Buoy

This is a 16-foot-diameter modified non-riser type buoy. The top deck is rust-covered and the four shackles in the top jewelry were measured to be between 80 and 90 percent of their original wire diameter.

Anchor Chain Subassembly

This chain is in satisfactory condition. All single- and double-link measurements were greater than 90 percent of the original 2 3/4-inch wire diameter.

Cathodic Protection System (CPS)

The wire rope continuity cables are intact and the previously installed anodes have eroded about three-fourths of an inch from their original size. The CPS appears to be working effectively.

Conclusions/Recommendations

This buoy system is scheduled for removal from service in the near future. However, if it is to be utilized prior to removal, the worn top jewelry should be replaced.

CHESNAVFACENGCOM REPORT FPU-1-84(17), "DIEGO GARCIA FLEET MOORING
UNDERWATER INSPECTION REPORT."

MOORING NO.: 115E CLASS: TEPPER BOU STERN LOCATION: DIEGO GARCIA LAT 07 16 42.055 N LONG 72 04 30.83 E
 BUOY TYPE: MOD, NW-RISER ANCHOR SIZE/TY: 150K PEA WATER DEPTH: 92' VISIBILITY: 15' BOTTOM TYPE: CORAL
 DATE: 24 MAY 84 ENGINEER IN CHARGE: J. M. LAUGHLIN DIVERS: UCT TWO

COMPONENTS	GAUGE SIZE	CONDITION							COMMENTS	
		LINK LENGTH	SINGLE LINK %			DOUBLE LINK %		DEPTH		
			90+	80+	80-	90+	80+			80-
BUOY HARDWARE	BOUY (16' DIAMETER)									MEDIUM RUST ON TOP DECK. SHACKLES RUSTED TO BETWEEN 80 AND 90 PERCENT OF ORIG SIZE
	SHACKLES (4)	4"								
RISER NA	NEAR BUOY									
	MIDDLE									
	NEAR GRD RG									
GROUND RING		NA								
GROUND LEG NO. A-1	UPPER END	2 1/2"	15"	VVV			VVV			
	MIDDLE	2 1/2"	15"	VVV			VVV			
	ENTERS BOTTOM	2 3/4"	16 1/2"	VVV			VVV		92'	
GROUND LEG NO. A-2	UPPER END	2 1/2"	15"	VVV			VVV			EQUALIZER IS AT 40' - CLOSER TO THE SURFACE THAN THE ONE IN LEG B
	MIDDLE	2 1/2"	15"	VVV			VVV			
	ENTERS BOTTOM	2 3/4"	16 1/2"	VVV			VVV		92'	
GROUND LEG NO. B-1	UPPER END	2 1/2"	15"	VVV			VVV			
	MIDDLE	2 1/2"	15"	VVV			VVV			
	ENTERS BOTTOM	2 3/4"	16 1/2"	VVV			VVV		92'	

MOORING NO.: 115E CLASS: BOU STERN LOCATION: DIEGO GARCIA LAT: 07°16'42.05" S LONG: 72°24'50.83" E
 BUOY TYPE: Mod. Non-Riser ANCHOR SIZE/TYPE: BACKSTAY 100K PEAWATER DEPTH: 92' VISIBILITY: 15' BOTTOM TYPE: CORAL
 DATE: 24 MAY 84 ENGINEER-IN-CHARGE: J. H. LAUGHLIN DIVERS: UCT TWO

COMPONENTS		GAUGE SIZE	CONDITION							COMMENTS
			LINK LENGTH	SINGLE LINK %		DOUBLE LINK %			DEPTH	
				90+	80+	80-	90+	80+		
SEE SHEET 1 OF 2	BUOY HARDWARE									
NEAR BUOY										
MIDDLE										
NEAR GRD RG										
GROUND RING										
GROUND LEG NO. 8-2	UPPER END	2 1/3"	15"	✓✓✓			✓✓✓			
	MIDDLE	2 1/3"	15"	✓✓✓			✓✓✓			
	ENTERS BOTTOM	2 3/4"	16 1/2"	✓✓✓			✓✓✓		92'	LEGS CROSS AT BOTTOM
GROUND LEG NO. 9-2	UPPER END	2"	12"	✓✓✓			✓✓✓			
	MIDDLE			✓✓✓			✓✓✓			
	ENTERS BOTTOM			✓✓✓			✓✓✓		91'	EXTRA LARGE CLUMP AFT OF ANCHOR
GROUND LEG NO. 10-2	UPPER END									
	MIDDLE									
	ENTERS BOTTOM									
GROUND LEG NO. 11-2	UPPER END									
	MIDDLE									
	ENTERS BOTTOM									
GROUND LEG NO. 12-2	UPPER END									
	MIDDLE									
	ENTERS BOTTOM									
GROUND LEG NO. 13-2	UPPER END									
	MIDDLE									
	ENTERS BOTTOM									
GROUND LEG NO. 14-2	UPPER END									
	MIDDLE									
	ENTERS BOTTOM									
GROUND LEG NO. 15-2	UPPER END									
	MIDDLE									
	ENTERS BOTTOM									
GROUND LEG NO. 16-2	UPPER END									
	MIDDLE									
	ENTERS BOTTOM									
GROUND LEG NO. 17-2	UPPER END									
	MIDDLE									
	ENTERS BOTTOM									
GROUND LEG NO. 18-2	UPPER END									
	MIDDLE									
	ENTERS BOTTOM									
GROUND LEG NO. 19-2	UPPER END									
	MIDDLE									
	ENTERS BOTTOM									
GROUND LEG NO. 20-2	UPPER END									
	MIDDLE									
	ENTERS BOTTOM									
GROUND LEG NO. 21-2	UPPER END									
	MIDDLE									
	ENTERS BOTTOM									
GROUND LEG NO. 22-2	UPPER END									
	MIDDLE									
	ENTERS BOTTOM									
GROUND LEG NO. 23-2	UPPER END									
	MIDDLE									
	ENTERS BOTTOM									
GROUND LEG NO. 24-2	UPPER END									
	MIDDLE									
	ENTERS BOTTOM									
GROUND LEG NO. 25-2	UPPER END									
	MIDDLE									
	ENTERS BOTTOM									
GROUND LEG NO. 26-2	UPPER END									
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	ENTERS BOTTOM									
GROUND LEG NO. 27-2	UPPER END									
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	ENTERS BOTTOM									
GROUND LEG NO. 28-2	UPPER END									
	MIDDLE									
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GROUND LEG NO. 29-2	UPPER END									
	MIDDLE									
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GROUND LEG NO. 30-2	UPPER END									
	MIDDLE									
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GROUND LEG NO. 31-2	UPPER END									
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GROUND LEG NO. 34-2	UPPER END									
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GROUND LEG NO. 36-2	UPPER END									
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GROUND LEG NO. 37-2	UPPER END									
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GROUND LEG NO. 38-2	UPPER END									
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GROUND LEG NO. 40-2	UPPER END									
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GROUND LEG NO. 41-2	UPPER END									
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GROUND LEG NO. 53-2	UPPER END									
	MIDDLE									
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GROUND LEG NO. 54-2	UPPER END									
	MIDDLE									
	ENTERS BOTTOM									
GROUND LEG NO. 55-2	UPPER END									
	MIDDLE									
	ENTERS BOTTOM									
GROUND LEG NO. 56-2	UPPER END									
	MIDDLE									
	ENTERS BOTTOM									
GROUND LEG NO. 57-2	UPPER END									
	MIDDLE									
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GROUND LEG NO. 58-2	UPPER END									
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GROUND LEG NO. 60-2	UPPER END									
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GROUND LEG NO. 77-2	UPPER END									
	MIDDLE									
	ENTERS BOTTOM									
GROUND LEG NO. 78-2	UPPER END									
	MIDDLE									
	ENTERS BOTTOM									
GROUND LEG NO. 79-2	UPPER END									
	MIDDLE									

MOORING 11

BUOY 11SW

Buoy

This is a 16-foot-diameter modified non-riser type buoy. The top deck is covered with medium rust and about 20 feet of one of the chafing strips has been sheared off. Four 4-inch shackles in the top jewelry are badly corroded and measured to be 3 1/2 inches or about 87 percent of their original wire diameter.

Anchor Chain Subassembly

This chain is in satisfactory condition. All single and double link measurements were greater than 90 percent of the original wire diameter. The chain used in the subassemblies is a mixture of 2 1/2- and 2 3/4-inch wire diameters.

Cathodic Protection System (CPS)

The continuity cables are intact and the previously installed anodes are in good condition. These anodes have eroded about 1/2 inch from their original size. The CPS appears to be working effectively.

Conclusions/Recommendations

This buoy system is scheduled for removal from service in the near future. However, if it is to be utilized prior to removal, the worn top jewelry should be replaced.

MOORING NO: 11514 CLASS: BOW STERN LOCATION: DIEGO GARCIA LAT: 07°16'41.265" N LONG: 72°24'54.00 E
 BUOY TYPE: MOD. NON-RISER ANCHOR SIZE/TYPE: 150K PEA WATER DEPTH: 96' VISIBILITY: 15' BOTTOM TYPE: CORAL
 DATE: 25 MAY 84 ENGINEER-IN CHARGE: J. McLAUGHLIN DIVERS: UCT TWO

COMPONENTS		GAUGE SIZE	CONDITION							COMMENTS
			LINK LENGTH	SINGLE LINK %		DOUBLE LINK %			DEPTH	
				90+	80+	80 -	90+	80+		
BUOY HARDWARE	BUOY (16' DIAMETER)									MEDIUM RUST ON TOP DECK, 20'
										OF CHAFING STRIP SHEARED
										OFF, FOUR 4" SHACKLES IN TOP
										JEWELRY CORRODED - NOW DOWN TO 3 1/2" 80-90 PERCENT OF ORIG.
RISER NA	NEAR BUOY									
	MIDDLE									
	NEAR GRD RG									
GROUND RING NA										
	UPPER END	2 3/4"	16 1/2"	✓✓✓						
	MIDDLE	2 3/4"	16 1/2"	✓✓✓						
GROUND LEG NO. A-1	ENTERS BOTTOM	2 1/2"	15"	✓✓✓					96'	
	UPPER END	2 3/4"	16 1/2"	✓✓✓						
	MIDDLE	2 3/4"	16 1/2"	✓✓✓						
GROUND LEG NO. A-2	ENTERS BOTTOM	2 1/2"	15"	✓✓✓					96'	
	UPPER END	2 3/4"	16 1/2"	✓✓✓						
	MIDDLE	2 3/4"	16 1/2"	✓✓✓						
GROUND LEG NO. B-1	ENTERS BOTTOM	2 1/2"	15"	✓✓✓						
	UPPER END	2 3/4"	16 1/2"	✓✓✓						
	MIDDLE	2 3/4"	16 1/2"	✓✓✓						
GROUND LEG NO. B-1	ENTERS BOTTOM	2 1/2"	15"	✓✓✓					95'	
	UPPER END	2 3/4"	16 1/2"	✓✓✓						
	MIDDLE	2 3/4"	16 1/2"	✓✓✓						

SHEET 1 OF 2

FOR ADDITIONAL LEGS USE OTHER SHEETS

CHESNAVFACENGCOM REPORT FP0-1-84(17), "DIEGO GARCIA FLEET MOORING

UNDERWATER INSPECTION REPORT."

MOORING NO: 11SW CLASS: BOW/STEER LOCATION: DIEGO GARCIA LAT 0° 16' 41.26" S LONG 72° 24' 54.00" E
 BUOY TYPE MOD. NON-RISER ANCHOR SIZE/TYPE BACKSTAY 100K PEA WATER DEPTH: 95' VISIBILITY: 15' BOTTOM TYPE: CORAL
 DATE: 25 MAY 84 ENGINEER IN CHARGE: J. McLAUGHLIN DIVERS: DET TWO

COMPONENTS	GAUGE SIZE	CONDITION							COMMENTS
		LINK LENGTH	SINGLE LINK %		DOUBLE LINK %			DEPTH	
			90+	80+	80-	90+	80+		
SEE SHEET 1 OF 2 BUOY HARDWARE									
RISER NA	NEAR BUOY								
	MIDDLE								
	NEAR GRD RG								
GROUND RING NA									
	UPPER END	2 3/4"	16 1/2"	VVV			VVV		
	MIDDLE			VVV			VVV		
GROUND LEG NO. 8-2	ENTERS BOTTOM			VVV			VVV		95'
	UPPER END	2"	12"	VVV			VVV		
	MIDDLE			VVV			VVV		
GROUND LEG NO. BACKSTAY	ENTERS BOTTOM			VVV			VVV		95'
	UPPER END								
	MIDDLE								
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	UPPER END								
	MIDDLE								

BUOY DOLPHIN MOORING SYSTEM

Each Buoy Dolphin system contains a standard peg-top buoy, modified by the addition of a skirt which gives the buoy a cylindrical shape which provides greater buoyancy. Each buoy was filled with foam.

Each of the two systems contains a riser assembly, ground ring, and five legs - a single ground leg, a ground leg pair through an equalizer, and two backstay legs attached to a spider plate. The lower end of each of the five legs is attached to a 2-inch wire rope anchor pendant leading to a 100 KIP propellant embedment anchor. See Figure A-5 for layout of the legs.

Both Buoy Dolphin systems are cathodically protected. There are two anodes attached by brackets to the bottom of each buoy and two attached to the 20K anchor clump shackled to each chain leg. Wire rope continuity cable (3/4") is weaved through each of the five legs and clamped to the chain and to the anodes on the anchor clumps.

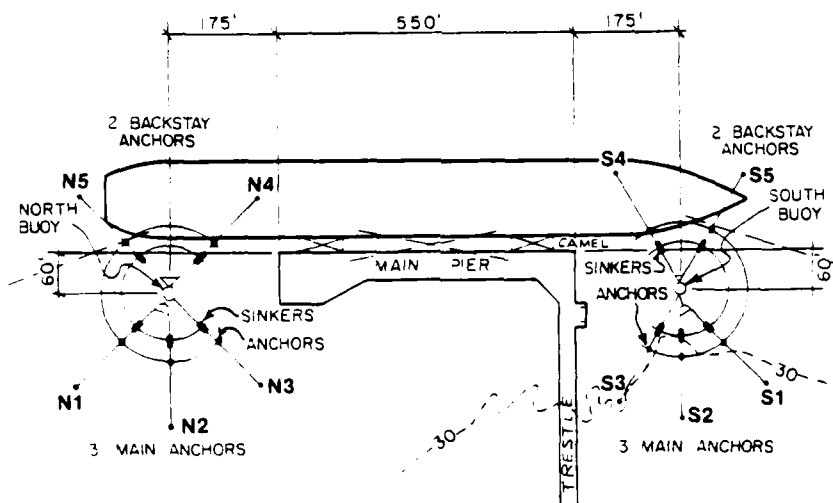


FIGURE A-5. POL PIER MOORING SITE LAYOUT

CHESNAVFACENGCOM REPORT FPU-1-84(17), "DIEGO GARCIA FLEET MOORING UNDERWATER INSPECTION REPORT."

BUOY POL-N

Buoy

This is a 12-foot by 9 1/2-foot modified peg-top buoy. The freeboard is 31 to 47 inches. The metal retaining bands are missing from the fenders and the chafing strips and have fallen down the riser. The hawsepipe and rubbing casting are in satisfactory condition, but the buoy sides and top deck are rusted. The two shackles in the top jewelry are worn to between 80 and 90 percent of their original wire diameters.

Riser Chain Subassembly

Single- and double-link measurements were all greater than 90 percent of original wire diameter. The ground ring was located at a depth of 12 feet.

Anchor Chain Subassembly

These subassemblies consist of 2 1/4- and 2 1/2-inch chain. All chain link measurements taken were greater than 90 percent.

Cathodic Protection System (CPS)

Anodes were installed on the wire rope pendant where visible or on the last length of chain when the wire rope was buried. CPS readings were between -.785 and -1.005 volts and the system appears to be working effectively.

Conclusions/Recommendations

The buoy should be overhauled and the top jewelry replaced. Otherwise, the mooring is in satisfactory condition for continued use. The retaining band that has fallen down the riser should be removed during the next scheduled maintenance period.

CHESNAV FACENGCOM REPORT FPO-1-84(17), "DIEGO GARCIA FLEET MOORING
UNDERWATER INSPECTION REPORT."

MOORING NO: POL-N CLASS BODY DOLPHIN LOCATION: DIEGO GARCIA LAT: — LONG: —
 BUOY TYPE: MOD. PEG TOP ANCHOR SIZE/TYPE: 100K PEA WATER DEPTH: N2 58' VISIBILITY: 3' BOTTOM TYPE: SILT OVER CORAL AND SAND
 DATE: 8 MAY 84 ENGINEER IN CHARGE: J. M'LAUGHLIN DIVERS: UCT TWO / NSF (HARBOR OPS)

COMPONENTS		GAUGE SIZE	CONDITION							COMMENTS
			LINK LENGTH	SINGLE LINK %		DOUBLE LINK %			DEPTH	
				90+	80+	80 -	90+	80+		
BUOY HARDWARE	Buoy 12' x 9' 6"									FREEBOARD 47 7/31". METAL CONTAIN-
	CHAIN LINK	3 1/2"								MENT BAND MISSING & FROM BOTH
	ATL	4"	✓							FENDERS AND CHAFING STRIPS, BUOY
	SHACKLE	2 1/2"			✓					SIDES AND TOP RUSTED. HANSE PIPE/
	F-SHACKLE W/LUGS	3 1/2"	22 1/2"		✓					RUBBING CASTING OK. QUICK RELEASE
RISER	NEAR BUOY	3 1/2"	21"	✓✓✓			✓✓✓			ATTACHED TO EACH LUG.
	MIDDLE	3 1/2"	21"	✓✓✓			✓✓✓			
	NEAR GRD RG	3 1/2"	21"	✓✓✓			✓✓✓			
GROUND RING		12 ID.							12'	6" WIRE DIAMETER
BRG 075° GROUND LEG NO. N-1	UPPER END	2 1/4"	13 1/2"	✓✓✓			✓✓✓			
	MIDDLE	2 1/4"	13 1/2"	✓✓✓			✓✓✓			
	ENTERS BOTTOM	2 1/2"	15"	✓✓✓			✓✓✓			ANODE CONNECTED TO WIRE PENDANT
BRG 168° GROUND LEG NO. N-2	UPPER END	2 1/4"	13 1/2"	✓✓✓			✓✓✓			
	MIDDLE	2 1/4"	13 1/2"	✓✓✓			✓✓✓			
	ENTERS BOTTOM	2 1/2"	15"	✓✓✓			✓✓✓			ANODE CONNECTED TO LAST VISIBLE CHAIN.
BRG 242° GROUND LEG NO. N-3	UPPER END	2 1/4"	13 1/2"	✓✓✓			✓✓✓			
	MIDDLE	2 1/4"	13 1/2"	✓✓✓			✓✓✓			
	ENTERS BOTTOM	2 1/2"	15"	✓✓✓			✓✓✓			ANODE CONNECTED TO CHAIN AND ORIG CPS

FOR ADDITIONAL LEGS USE OTHER SHEETS

CHESSNAVFACENGCOM REPORT FP0-1-84(17), "DIEGO GARCIA FLEET MOORING
 UNDERWATER INSPECTION REPORT."

SHEET 1 OF 2

MOORING NO: POL-N CLASS: BUOY DOLPHIN LOCATION: DIEGO GARCIA LAT: — LONG: —
 BUOY TYPE: MOD. PEG TOP ANCHOR SIZE/TYPE: 100K PEA WATER DEPTH: — VISIBILITY: 3' BOTTOM TYPE: SILT
 DATE: 15 MAY 84 ENGINEER-IN-CHARGE: J. H. LAUGHLIN DIVERS: UCT TWO

COMPONENTS	GAUGE SIZE	CONDITION					COMMENTS
		LINK LENGTH	SINGLE LINK %			DOUBLE LINK %	
			90+	80+	80-	90+	80-
* BUOY HARDWARE							
* RISER	NEAR BUOY						
	MIDDLE						
	NEAR GRD RG						
GROUND RING *							
Bolt 2 1/2" GROUND LEG NO. N-4	UPPER END	2 1/4"				✓✓✓	
	MIDDLE	2 1/4"	✓✓✓			✓✓✓	
	ENTERS BOTTOM	2 1/2"	✓✓✓			✓✓✓	ANODE CONNECTED AT SWIVEL
Bolt 3/8" GROUND LEG NO. N-5	UPPER END	2 1/4"	✓✓✓			✓✓✓	
	MIDDLE	2 1/4"	✓✓✓			✓✓✓	
	ENTERS BOTTOM	2 1/2"	✓✓✓			✓✓✓	ANODE CONNECTED TO WIRE PENDANT
GROUND LEG NO.	UPPER END						
	MIDDLE						
	ENTERS BOTTOM						

BUOY POL-S

Buoy

This is a 12-foot by 9 1/2-foot modified peg-top buoy. The freeboard is 45 to 53 inches. The metal retaining band and a fender section are missing from the lower fender and have fallen down the riser. The hawsepipe and rubbing casting are in satisfactory condition, but the buoy is rust covered. An F-shackle in the top jewelry is worn to between 80 and 90 percent of its original wire diameter and two quick releases attached to the shackle's lugs are worn to less than 80 percent of their original wire diameters.

Riser Chain Subassembly

Single- and double-link measurements were all greater than 90 percent of the chain's 3 1/2 inch size. The ground ring was located at a depth of 12 feet.

Anchor Chain Subassembly

These subassemblies consist of 2 1/4- and 2 1/2-inch chain. All measurements taken were greater than 90 percent. However, during the May 1982 inspection, the wear zone section of anchor chain subassembly S-3 was measured to be less than 80 percent of its original wire diameter.

Cathodic Protection System (CPS)

An anode was installed on each of the wire rope anchor pendants. CPS readings were between -.857 and -1.005 volts, and the system appears to be working effectively.

CHESNAVFACENGCOM REPORT FPU-1-84(17), "DIEGO GARCIA FLEET MOORING
UNDERWATER INSPECTION REPORT."

Conclusions/Recommendations

The buoy should be overhauled and the top jewelry replaced. Even though a less than 80 percent measurement of subassembly S-3 was observed 2 years ago, this leg is not considered essential for the mooring to function, and restrictions on the use of this buoy may be waived by the responsible command. However, it is recommended that the holding capacity be restricted to 75,000 pounds. Also, the retaining band that has fallen down the riser should be removed during the next scheduled maintenance period.

CHESNAVFACENGCOM REPORT FPO-1-84(17), "DIEGO GARCIA FLEET MOORING
UNDERWATER INSPECTION REPORT."

MOORING NO: PUL-S CLASS: BODY DOLPHIN LOCATION: DIEGO GARCIA LAT: 30°50'N LONG: 157°00'W
 BUOY TYPE: MOD. PEG TOP ANCHOR SIZE/TY: 120K PEA WATER DEPTH: 60' VISIBILITY: 3' BOTTOM TYPE: SILT OVER MUD
 DATE: 8 MAY 84 ENGINEER-IN-CHARGE: J. M. LAUGHLIN DIVERS: UCT TWO / NSF HARBOR OPS

COMPONENTS	GAUGE SIZE	CONDITION							COMMENTS
		LINK LENGTH	SINGLE LINK %			DOUBLE LINK %		DEPTH	
			90+	80+	80-	90+	80+		
BUOY HARDWARE									
Buoy 12' x 9' 6"									FREEBOARD 53"/45" STEEL BAND
CHAIN LINK	3 1/2"		✓						AND FENDER SECTION MISSING
ATL	4"								FROM BOTTOM FENDER. TOP FENDER OK.
F SHACKLE W/LWS	4 3/4"			✓					HAUSE PIPE/RUBBING CASTING OK.
QUICK RELEASE (2)					✓				
RISER	NEAR BUOY	3 1/2"	✓			✓			
	MIDDLE	3 1/2"	✓			✓			
	NEAR GRD RG	3 1/2"	✓			✓			
GROUND RING		18" ID						12'	6" WIRE DIAMETER.
	UPPER END	2 1/4"	✓			✓		25'	STEEL BAND FROM LOWER FENDER
GROUND LEG NO. S-1	MIDDLE	2 1/4"	✓			✓			WRAPPED AROUND ALL LEGS.
	ENTERS BOTTOM	2 1/2"	✓			✓		55'	ANODE CONNECTED TO WIRE PENDANT.
	UPPER END	2 1/4"	✓			✓			
GROUND LEG NO. S-2	MIDDLE	2 1/4"	✓			✓			
	ENTERS BOTTOM	2 1/2"	✓			✓			ANODE CONNECTED TO WIRE PENDANT.
	UPPER END	2 1/4"	✓			✓			
GROUND LEG NO. S-3	MIDDLE	2 1/4"	✓			✓			
	ENTERS BOTTOM	2 1/2"	✓			✓			ANODE CONNECTED TO WIRE PENDANT

SHEET 1 OF 2

FOR ADDITIONAL LEGS USE OTHER SHEETS

CHESNAVFACENCOM REPORT FPO-1-84(17), "DIEGO GARCIA FLEET MOORING UNDERWATER INSPECTION REPORT."

MOORING NO.: POL-S CLASS: BUOY DOLPHIN LOCATION: DIEGO GARCIA LAT: — LONG: —
 BUOY TYPE: MOD. PEG TOP ANCHOR SIZE/TY: 100K PEA WATER DEPTH: 55' VISIBILITY: 3' BOTTOM TYPE: SILT OVER MUD
 DATE: 8 MAY 84 ENGINEER-IN-CHARGE: J. McLAUGHLIN DIVERS: UCT TWO

COMPONENTS		GAUGE SIZE	CONDITION							COMMENTS
			LINK LENGTH	SINGLE LINK %			DOUBLE LINK %		DEPTH	
				90+	80+	80-	90+	80+		
* BUOY HARDWARE										
* RISER	NEAR BUOY									
	MIDDLE									
	NEAR GRD RG									
GROUND RING *										
	UPPER END	2 1/4"	13 1/2"	✓✓				✓✓		
	MIDDLE	2 1/4"	13 1/2"	✓✓				✓✓		
	ENTERS BOTTOM	2 1/2"	15"	✓✓				✓✓	54'	ANODE CONNECTED TO SWIVEL
GROUND LEG NO. S-4	UPPER END	2 1/4"	13 1/2"	✓✓				✓✓		
	MIDDLE	2 1/4"	13 1/2"	✓✓				✓✓		
	ENTERS BOTTOM	2 1/2"	15"	✓✓				✓✓	55'	ANODE CONNECTED TO WIRE PENDANT
GROUND LEG NO. S-5	UPPER END									
	MIDDLE									
	ENTERS BOTTOM									
GROUND LEG NO.	UPPER END									
	MIDDLE									
	ENTERS BOTTOM									

FOR ADDITIONAL LEGS USE OTHER SHEETS * SEE SHEET 1 OF 2 SHEET 2 OF 2
 CHESNAVFACENGCOM REPORT FPO-1-84(17), "DIEGO GARCIA FLEET MOORING
 UNDERWATER INSPECTION REPORT."

ANNEX B

PHOTOGRAPHS



Buoy No. 5 Has Water in its Compartments



Buoy No. 8-S Showing Heavy Corrosion and Wear



An Example of the Deterioration of the Wood Chafing Strips



A Spider Plate on POL N-5

ANNEX C

PRELIMINARY INSPECTION REPORT

UNCLASSIFIED

ROUTINE

R 051415Z JUL 84

FM CHESNAVFACENGCOM WASHINGTON DC

TO NAVSUPFAC DIEGO GARCIA

INFO CINCPACFLT PEARL HARBOR HI
CCMCBPAC PEARL HARBOR HI
PWC SUBIC BAY RP

CCMNAVFACENGCOM ALEXANDRIA VA
PACNAVFACENGCOM PEARL HARBOR HI
UCT TWO

BT

UNCLAS //N11000//

SUBJ: DIEGO GARCIA FLEET MOORING INSPECTION; PRELIMINARY RESULTS

1. A CHESNAVFACENGCOM/UCT TWO UNDERWATER INSPECTION OF THE 13 FLEET MOORINGS LOCATED AT DIEGO GARCIA WAS CONDUCTED DURING THE PERIOD OF 3-31 MAY 84. THE FOLLOWING IS A PRELIMINARY REPORT OF THE INSPECTION RESULTS.

A. ALL 13 BUOYS ARE RECOMMENDED FOR REFURBISHMENT AT THE EARLIEST POSSIBLE TIME. HOWEVER, ALL FLEET MOORINGS ARE SATISFACTORY FOR CONTINUED FLEET USE.

B. POL MOORINGS: THESE MOORINGS SHOULD BE OVERHAULED DURING THE NEXT SCHEDULED MAINTENANCE PERIOD.

2. CHESNAVFACENGCOM POINT OF CONTACT IS MR. C. PENNINGTON AT A/V 288-6608 OR 202-433-6608.

BT

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