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# PUBLIC WORKS CENTER PEARL HARBOR FLEET MOORINGS UNDERWATER INSPECTION PLAN

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## 15 APRIL 1983

OCEAN ENGINEERING AND CONSTRUCTION PROJECT OFFICE CHESAPEAKE DIVISION NAVAL FACILITIES ENGINEERING COMMAND WASHINGTON, D.C. 20374

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CHESNAVFACENGCOM has designated an Engineer-in-Charge (EIC) to provide on-site technical guidance to Underwater Construction Team Two (UCT-2) divers who were tasked by CINCPACFLT message 210331Z August 1982 to perform the underwater portion of the inspection. In addition, the EIC will prepare the post inspection report which will include the results of the inspection and recommendations for required maintenance actions. Second 2:

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## PWC PEARL HARBOR UNDERWATER INSPECTION PLAN

#### 1.0 BACKGROUND

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As part of COMNAVFACENGCOM's Fleet Mooring Maintenance (FMM) Program, CHESNAV-FACENGCOM has been assigned the responsibility to conduct the underwater inspections of fleet moorings worldwide. This plan provides guidelines for the underwater inspection of 45 fleet moorings operated and maintained by the Public Works Center, Pearl Harbor, HI. The inspection is scheduled to take place during the 1 - 21 May time frame.

CHESNAVFACENGCOM has designated an Engineer-in-Charge (EIC) to provide on-site technical guidance to Underwater Construction Team Two (UCT-2) divers who were tasked by CINCPACFLT message 210331Z August 1982 to perform the underwater portion of the inspection. In addition, the EIC will prepare the post inspection report which will include the results of the inspection and recommendations for required maintenance actions.

#### 2.0 PROJECT RESPONSIBILITIES

CHESNAVFACENGCOM will develop the FM underwater inspection plan, provide technical assistance to the dive team, prepare the required inspection forms, evaluate the observed inspection data, and report the results of the inspection to interested activities.

UCT-2 will provide sufficient divers to accomplish the inspection within the allotted time frame, gather and accurately report all required data, and ensure that the required amount of diving support material/equipment is available. In addition, UCT-2 divers will perform the underwater inspection in accordance with this plan and collect the data specified in paragraph 4.0.

The activity responsible for the moorings being inspected will provide logistics support as required by the Engineer-in-Charge and the UCT dive team.

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#### 3.0 GENERAL MOORING HISTORY

PWC Pearl Harbor currently operates and maintains 45 fleet moorings. The geographical positions of these moorings are shown in Figure 1. Although these moorings have been periodically removed,



inspected, repaired, overhauled, and downgraded as required, they have been in use for 30-35 years and much of the currently utilized mooring material is probably deteriorated and near the wear limit. The last underwater inspection of most of these moorings was conducted in November 1979 by CHESNAVFAC-ENGCOM with the assistance of divers from UCT-2.

The design of the PWC Pearl Harbor mooring systems and their mooring components vastly differ from the standard designs contained in DM-26. For example, the anchors for all of these systems are comprised of concrete clumps, concrete anchors, or combinations of both. In addition, the actual class of most of the moorings, based on results of the 1979 inspection, represents a substantial downgrade from the intended class indicated in PWC Pearl Harbor records (see Table 1). As-built data, schematics, and other historical data concerning these buoys are contained in Annex C.

#### 4.0 INSPECTION PROCEDURES

4.1 <u>Inspection Objectives.</u> The purpose of mooring inspections is to determine the general physical condition of buoys and chain assemblies and, when possible, to verify or update existing as-built and maintenance records. Divers inspect 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. As such, they cannot fully substitute for a complete inspection involving recovery of the mooring and the measurement and evaluation of each component.

One of the more important parameters used to evaluate the condition of a mooring is chain wire diameter. After cleaning to bare metal, a selective sampling of the wire diameter of chain links and connecting hardware is taken in order to determine the amount of deterioration due to corrosion and wear. "Single Link" measurements are taken where chain is slack, and detect only corrosion loss. "Double Link" measurements, taken where two links connect under tension, detect the combined effects of corrosion and wear. Chain links and other components which measure 90% or greater of original wire diameter are considered to be in "good" condition; a measurement between 80% and 90% of original diameter is considered "fair" condition and is cause for the mooring to be downgraded in classification; any measurement less than 80% is considered "poor" and is cause for the mooring to be declared unsatisfactory for fleet use. Figure A-1 in Annex A depicts the proper method of taking both single and double link measurements.

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Mooring No	Mooring Class <sup>(1)</sup> (Designed/Current)	Water Depth (Ft.)	Last Overhaul
incoming the			
AM13	C/D	31	?
AM13A	C/C	38	?
CMN	G/G	39	5/70
CMM	G/G	39	5/70
CMS	G/G	42	5/70
D1M	C/G	34	3/78
D2N	A/D	33	?
D2S	A/G	25	?
NEU	A/G	34	10/75
035		33	7
DAN	Δ/G	32	3/78
DAS	A/G	22	2
DEN		22	2
DEM	0/F	37	7
		24	ן 1 / די
D55	D/G	24	1/71
D6N	D/D	35	3/78
D6M	C/C	35	7
D6S	D/D	24	?
D7N	D/D	34	8/82
D7M	C/C	29	1/81
D7S	D/D	23	1/81
D8N	D/D	35	1/81
D8M	C/C	34	1/81
D8S	D/D	23	12/82
D9N	A/A	27	12/82
D9M	A/A	20	12/82
D9S	A/A	21	12/82
D10N	A/F	24	9/71
D10M	A/F	24	9/71
D 10S	A/F	27	9/71
D103		27	5/70
D11M		23	5/70
	A/D	27	5/70 A/69
DID		27	4/00
DIZN		24	2/74
		20	2/74
D125	A/F	28	9/71
DPIN	A/A	40	3/82
DP1S	A/A	40	3/82
DP2N	C/C	36	3/82
DP2S	C/C	40	3/82
DP3A	C/F	12	1/72
DP6N	C/C	12	3/82
T1N	C/G	29	1/72
T1S	C/G	28	1/72
X9S	A/A	42	12/82

(1) Lower classification is a result of downgrading after 1979 underwater inspection.

(2) Buoy broke loose from anchorage in 1979 and is currently on shore.

Standard underwater inspection procedures do not call for the inspection of any part of the mooring which is buried. Ground legs and risers are observed only to the point at which they become buried; no attempt is made to locate and inspect anchors or other mooring materials which are not readily visible.

4.2 <u>Buoy</u>. The geographic position of each buoy will be verified. In order to accomplish this, a transit will be used to sight each buoy from known positions ashore.

**4.2.1 Buoy Upper Portion.** The buoy shall be observed to determine its general condition. The size of the buoy (diameter and height' should be recorded along with its freeboard. Physical damage such as holes, dents, or listing shall be described. If the buoy is fiberglass coated, the fiberglass should be inspected for cracks, wear, peeling, or rust-bleeding. A check will be made to see if the hatches have been fiberglassed over. If the buoy has not been fiberglassed, the paint will be checked for cracking, chipping, and peeling. Hatches, openings, and penetrations will be examined and broken parts and rust will be reported. Inspection check lists are contained in Annex B.

The buoy fenders and rubbing rails shall be checked for integrity and secure connection to the buoy.

Buoy top jewelry shall be identified and measured with calipers to find the overall outside dimensions and areas of most severe reduction in wire size. Methods for presetting calipers are contained in Annex A.

**4.2.2 Buoy Lower Portion.** Divers shall thoroughly inspect the buoy below the waterline. The thickness of marine growth shall be recorded, three one-foot-square areas shall be selected and cleared of growth without damaging the paint or fiberglass, and the condition of the paint or fiberglass will be noted. If the buoy is a riser-type with a hawse pipe, the presence and condition of the rubbing casting shall be recorded. If the buoy is cathodically protected, the condition, dimensions, and connection of anodes are to be noted. Then, electrical potential readings are to be taken with an underwater voltmeter at three locations on the buoy bottom.

**4.2.3 Bottom Jewelry.** On each mooring, the jewelry connecting the buoy to the riser shall be identified and measured with calipers. As with the topside jewelry, the overall dimensions and the smallest wire size of each type of link or shackle will be recorded.

4.3 <u>Riser.</u> Three consecutive double link measurements using pre-cut gauges will be made at both ends and near the center of the riser. Procedures for the use of pre-cut gauges are also contained in Annex A. The swivel and detachable links contained within the riser assembly shall be visually inspected and measured. As the divers swim down the riser, all chain links and other mooring hardware will be visually observed. Material suspected to be in worn or damaged condition will be investigated.

4.4 <u>Ground Legs.</u> Three consecutive double link measurements of each ground leg shall be taken at both ends and near the center of the visible portion of each ground leg. If the visible portion is longer than 90 feet, measurements shall be made every 45 feet. In those cases where the ground leg chain is slack and not in tension, three single link measurements shall be taken of each selected link as shown in Figure A-1 (Annex A). All connecting hardware including detachable links, anchor joining links, pear links, end links, swivels and shackles shall be identified and measured with calipers. Worn hardware and unusual chain joining practices shall be recorded and photographed.

The legs shall be labeled A, B, C, etc., clockwise from magnetic northand their orientation (determined by the diver's compass) sketched as in Figure 2.

4.5 <u>Anchors.</u> If an anchor is located, a pop float shall be attached to it so that the relative positions of the anchor from the mooring buoy can be observed from the surface. The anchor's position shall be recorded. The hardware connecting an anchor to its ground leg will be measured by calipers and the wire diameters recorded.

#### 4.6 Photography

**4.6.1 Topside.** Topside photography and ashore photographs are the responsibility of the Engineerin-Charge.

Photographs will be taken of each buoy showing its general condition. Photographs of the topside jewelry and damaged buoy components will be taken as deemed appropriate by the EIC.

Photographs will be taken of ashore spare mooring material inventories and construction equipment as deemed necessary.

**4.6.2** <u>Underwater</u>. Underwater photography shall be the responsibility of the dive team. Buoy bottoms, bottom jewelry, worn links, swivels, ground rings, and other hardware shall be photographed wherever



required to support material conditions and when environmentally feasible. Photographs shall include clear annotation as to the location of the hardware being photographed.

**4.7** <u>Cathodic Protection.</u> Any moorings found to have cathodic protection will be inspected using the following procedures.

The underwater voltmeter will be used (after on-site calibration by the dive team) to probe the chain every 5 feet commencing with the buoy and bottom jewelry and continuing until the anchor is reached or the chain disappears into the bottom. All potential measurements will be recorded in the "Comments" column of Figure B-1. Before cleaning, divers will photograph each anode and record the thickness, type and accumulation of the coating. Several anodes should be brushed to remove the oxidation and the length, width and depth of the remaining zinc measured and photographed. Anodes in poor condition should be measured, reported and photographed.

#### 5.0 DOCUMENTATION

The Engineer-in-Charge will document the inspection procedures used and record the data obtained by the dive team. He may require additional or alternative inspection procedures as deemed necessary during the course of the inspection. He will maintain a time log of events occurring during the inspection, and the master inspection form. In addition, the EIC must be prepared to debrief each diver, upon his return to the surface, in order to gain immediate knowledge of what the diver observed. The information obtained from the divers will be recorded, and this data will subsequently be the basis for the development of the moorings as-built configuration and for the preparation of the Fleet Mooring Inspection Report, which will contain the results of the inspection and recommendations for corrective maintenance actions.

While on site, the EIC will investigate the availability and cost of local mooring maintenance support. In addition he will conduct a cursory inspection of any on-shore Fleet Mooring Inventory (FMI) used for maintenance and repair or ready reserve. The type, size, quantity and general condition of the inventory shall be reported.

#### 6.0 MEETINGS/BRIEFINGS

Upon arrival on site, the Engineer-in-Charge will conduct a pre-dive briefing to familiarize diving personnel with the mooring inspection procedures and to advise them of possible modifications to this

inspection plan. In addition, after approval by CHESDIV, the EIC will give a post-inspection debriefing to advise station personnel of the preliminary inspection findings.

#### 7.0 LOGISTICS

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7.1 <u>UCT TWO.</u> All arrangements for messing, berthing, and transportation of diver personnel, and the acquisition of a suitable dive platform/boat, will be the responsibility of UCT-2. In addition, the following equipment will be provided by the divers in support of this inspection:

- All diving support equipment
- Measuring aids
  - Inclinometer
  - 100' tape measures for use underwater
  - Scales 1, 2, and 3 feet with large numbers suitable for underwater photo documentation
  - Accurate depth gauges
  - Marker tags to relocate or mark chain links or accessories
  - Calipers (24 inch minimum)
  - Go/no-go guages
- Survey equipment
  - Compass (diver's)
  - Survey buoys with line (pop floats)
  - Surveying transits for establishing mooring buoy locations.
- Underwater voltmeters.
- Two Underwater still cameras (35mm) with film (color and B & W) and flash with spare batteries
- Cleaning equipment Hand tools including wire brushes, chipping hammers, and sharp chisels.
   Water blaster with water or hydraulic power supply and brush tool.

7.2 CHESNAVFACENGCOM. The CHESNAVFACENGCOM Engineer-in-Charge will provide the following:

- Inspection plan
- Data sheets and forms
- 35mm surface camera and film
- Drafting supplies, graph paper, scales
- Calculator
- Pre-dive briefing data
- DM-26

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ANNEX A

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## MEASURING DEVICES AND THEIR USE

#### ANNEX A

#### 1.0 MEASURING DEVICES AND THEIR USE

Tables A-1 and A-2 outline the 80 and 90 percent measurements for mooring components. These tables are based on the standard sizes of mooring material listed in DM-26 and can be used to preset calipers before measuring various items. For example, a class BB riser type mooring will require calipers set to 3.15" (90%) and 2.8" (80%) for single link measurements on the riser. These values are then doubled obtaining 6.3" (90%) and 5.6" (80%) for double link measurements on the riser. Similarly, for the ground legs, single link measurements of 2.25" (90%) and 2.0" (80%) are obtained from Table A-1. These values are also doubled to obtain 4.5" and 4.0" for double link measurements. For the ground ring, the 90% and 80% single link measurements are determined to be 5.85" and 5.2".

The preferred measuring devices, however, are back-to-back 80 and 90 percent "go-no go" gauges. These gauges simplify the diver's job in that, unlike calipers, they have to be damaged to be knocked out of adjustment underwater, and they normally do not have to be reset between dives. The locations for measuring chain links are shown in Figure A-1. Figure A-2 contains the drawings and data required to fabricate these gauges. Although these gauges provide a simpler way of sampling the wire size of chain links and some jewelry, the divers still have to carry calipers to measure ground rings and chain connecting links.



SINGLE LINK MEASUREMENT



(DOUBLE LINK MEASUREMENTS ARE OBTAINED BY MULTIPLYING SINGLE LINK MEASUREMENTS BY TWO) TABLE A-1. SINGLE LINK MEASUREMENTS FOR COMPONENTS OF RISER-TYPE MOORINGS

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00         4,018         1,285         type         1,6         1,12,7,2         2,455         type         2,505         type         2,506         2,505         1,506         2,506         2,505         1,506         2,506	V-V	8	5 3/8		4		4	6.4		1/6 5	2 3/4"		
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A         100 $3.7/8$ $2.3/4$		28	3.35		19461	5.4	3461		•		2462		
90 $1.468$ $1.008$ $1.018$ $2.435$ $1yre$ $2.435$ $1yre$ $2.435$ $1yre$ $2.235$ $2.755$ <t< th=""><th>&lt;</th><th>8</th><th>8// C</th><th>8/C C</th><th>2 3/4</th><th>1/6 5</th><th>.1/6 2</th><th>s.</th><th></th><th>2/6 5</th><th>2 3/4"</th><th></th><th></th></t<>	<	8	8// C	8/C C	2 3/4	1/6 5	.1/6 2	s.		2/6 5	2 3/4"		
100       31 $2^{11}$ <		8	3.488	9.038	type	2.05	type	4.95	•	2.475	type	25.000	•
100 $33$ $31/6$ $73^{-1}_{-1}$ $73^{-1}_{-1}$ $73^{-1}_{-1}$ $73^{-1}_{-1}$ $23$		3			1								
$ \begin{bmatrix} 100 & 2.13 \\ 2.6 & 2.5 \\ 2.6 & 2.5 \\ 0 & 1.0 \\ 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 &$	•	8	~		~			4 )( 4 2/5		~		000 00	11,000
$ \begin{bmatrix} 100 & 11/8 & 2.14 & 2.7 & 2.6 & 2.7 & 2.6 & 2.6 & 2.6 & 2.5 & 2.7 & 4.05 & -2.025 & 17.06 & 2.5 & 2.5 & 1.06 & 2.5 & 2.5 & 1.06 & 2.5 & 2.5 & 1.06 & 2.5 & 2.5 & 1.06 & 2.5 & 2.5 & 1.06 & 2.5 & 2.5 & 1.06 & 2.5 & 2.5 & 1.06 & 2.5 & 1.06 & 1.6$			<b>6.</b> <b>6</b>	2.5		2.0.2	2411	3.8			-		
90 $2.413$ $2.613$ $2.613$ $1.96$ $2.05$ $1.96$ $2.055$ $1.96$ $2.055$ $1.96$ $2.055$ $1.96$ $2.055$ $1.96$ $2.055$ $1.96$ $2.055$ $1.96$ $2.055$ $1.96$ $1.6$ $2.25$ $2.725$ $2.725$ $2.725$ $2.725$ $2.755$ $2.755$ $2.755$ $1.966$ $1.166$ $1.166$ $1.166$ $1.166$ $1.166$ $1.166$ $1.166$ $1.1000$ 7 $2.255$ $2.755$ $1.966$ $1.166$ $1.767$ $1.166$ $2.755$ $1.166$ $2.755$ $1.166$ $2.755$ $1.166$ $2.755$ $1.166$ $2.755$ $1.166$ $1.176$	J	001	9/1 (	2 3/4	2			÷.		ž.	2		
$ \begin{bmatrix} 0 & 100 & 2 & 17/16 & 2^{*} & 2^{$		8	2.813	2.813	l ype	2.025	type	\$. •	•	2.025	type	10,000	000.01
0.0 $2.51$ $2.5$ $1.6$ $1.6$ $1.6$ $1.6$ $1.6$ $1.000$ $2.531$ $2.531$ $2.735$ $2.00$ $1.6$ $1.6$ $1.6$ $1.6$ $1.000$ $2.531$ $2.535$ $2.0$ $1.06$ $1.6$ $1.6$ $1.6$ $1.6$ $1.000$ $2.716$ $2.7$ $2.025$ $1.976$ $1.3/4$			¢.2	; ;	;		;		•				
$ \begin{bmatrix} 100 & 2.25 & 2.0 \\ 0 & 2.114 & 2.025 & 1704 & 1744 & 1747 & 75 \\ 0 & 2.114 & 2.025 & 1796 & 1.515 & 1796 & 1.15 \\ 0 & 1.95 & 1.8 & 2.025 & 1796 & 1.515 & 1796 & 1.15 \\ 0 & 1.95 & 1.8 & 1.74 & 1.744 & 1.144 & 1.144 & 1.144 \\ 0 & 1.95 & 1.8 & 1.8 & 1.125 & 1796 & 1.14 & 1.14 \\ 0 & 1.915 & 1.916 & 1.125 & 1796 & 2.013 & 1.125 & 1796 & 5.000 \\ 0 & 1.14 & 1.74 & 1.125 & 1796 & 2.013 & -11.125 & 1796 & 5.000 \\ 0 & 1.14 & 1.76 & 1.78 & 178 & -11.125 & 1796 & 5.000 \\ 0 & 1.14 & 1.76 & 1.78 & 1778 & -11.125 & 1796 & 5.000 \\ 0 & 1.14 & 1.716 & .1 & 774 & 774 & -778 & -11.125 & 1796 & 5.000 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 $	•	3		, x 	1	, ,	1 vBe			د ۱.۴	t vne	000.01	6.000
$ \begin{bmatrix} 100 & 2 \\ 90 & 2 \\ 0 & 2 \\ 1.95 & 1.0 \\ 0 & 1.95 & 1.0 \\ 0 & 1.95 & 1.0 \\ 0 & 1.95 & 1.0 \\ 0 & 1.95 & 1.0 \\ 0 & 1.95 & 1.0 \\ 1.4 & 1.7 & 2.025 \\ 1.9 & 1.7 & 2.025 \\ 1.9 & 1.6 & 1.4 \\ 1.4 & 1.7 & 2.8 \\ 1.9 & 1.6 & 1.4 \\ 1.0 & 1.14 & 1.7 \\ 1.7 & 2.18 & 1.14 \\ 1.9 & 1.7 & 2.14 \\ 1.1 & 1.7 & 2.14 \\ 1.1 & 1.1 & 1.1 \\ 1.1 & 1.1 \\ 1.1 & 1.1 \\ 1.1 & 1.1 \\$		28	2.25	\$.0 2.0						9.			-
90     2.114     2.025     type     1.15     -     1.575     type     1.16     9,000       6     100     1     1     1     1     1     1     1     1     1       6     100     1     1     1     1     1     1     1     1     1       6     100     1     1     1     1     1     1     1     1     1       6     100     1     1     1     1     1     1     1     1       6     100     1     1     1     1     1     1     1     1       7     1     1     1     1     1     1     1     1     1       7     1     1     1     1     1     1     1     1       80     1     1     1     1     1     1     1       6     100     1     1     1     1     1       80     .956     .9     1     1     1     1       90     .956     .9     1     1     1       1     1     1     1     1     1	-	. 001	2 7/16	2.2	-9/6 1	1 1/1	. V/C 1	ŗ.		1 1/4	-1/6 1		
f     100     1     1/4		8	2.174	2.025	type	1.575	type	5 5	•	1.575	l vpe	000'6	000
f     100     1     1/4     1     1/4		2	<u>.</u>			•					1		
6     100     1.1.4     1.1.5     1.1.6     1.1.6     1.1.6     1.1.6       6     100     1     1/16     .1     1/4     1/5     1/16     1.1       6     100     1     1/16     .1     1/4     1/4     1/16     1.1       60     .956     .9     1/96     .675     1/16     1     1       60     .956     .9     1/96     .675     1/66     1.6     3,000	•	<u>8</u>			-		-	2/1		1.			2 000
6 100 1 1/16 .1 3/4 1/4 1 1/8 3/4 1 <sup>-</sup> 90 .956 .9 type .675 type 1.648675 type 3,000 60 .85 .8 iype 1.54865 type 3,000				· · · ·	1 yure	0.1	- 11-	2.5	•	0.1	r the		
90 .956 .9 type .615 i.jpe 1.648675 type 3,000 60 .85 .8 .6 .6 1.5 1.5	J	001	1 1/16		3/4"	3/4	-1/1	1 1/8		4/E	-		
<b>60 . . . . . . . . . .</b>		8	.956	6.	type	6/5	iype	1.6AB		.615	type	000 <sup>°</sup> .t	000
		2	5 <b>9</b> .	•.		•	-			_ و			

AJL measurement vary according to manufacturor, sen 194-76 Assumes firm sand bottom Assumes cast steel chain

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(DOUBLE LINK MEASUREMENTS ARE OBTAINED BY MULTIPLYING SINGLE LINK MEASUREMENTS BY TWO) TABLE A-2. SINGLE LINK MEASUREMENTS FOR COMPONENTS OF TELEPHONE-TYPE MOORINGS

	51	•	000.(1	10.000	•	•	000'(1	10,000	•.000
And hor '	Startless/Stabilizer	000°52	50,000	18,000	000 <sup>°</sup> U	52,000	20.000	000' 81	000'(1
1401 10	(hain	2)(2 2,05 2.5	2.25	2'. 2.025 1.8	~~~	2.2	2.25	2. 2.025 1.8	8.g ~
Ground	איי	2 .1/4" tupe	2, <sup>-</sup>	2:- type	]" Lype	2 1/4- type	2:," type	Z."	2 t vre
اعداه	Chider	1.6 2.1	4 J.6 2.7 J.6 2.7	1.2 2.1	_				
o-f.round	. 11.7	4- Lyre	, 2 , 2 , 1	).'' I vpe	J" Lyne	2 3/4" Lyue	2º,5 type	2.'. 	
thuov-t	2/1-5446116	4 11/16 4.219 3.75	4 11/16 4.219 3.75	4 11/16 4.219 3.75	4 11/16 4.219 3.75	8/C C 1.446	3.15 2.8	3 1/8 2.813 2.5	2 11/16 2.511 2.25
Buby	- 11	4: Lype	4- Lype	4- lype	4: Lype	Jr." type	Jr,- Lype	J.," type	
low of	Ind Link	4. 3.285 2.92	4. 1.285 2.92	4. J. 285 2.92	4. J. 285 2.92	3/8 3.038 2.7	1 1/8 3.038 2.7	8/C C 3.038 2.7	8/L C N.U.U 1.2
Pactant	ויייוש	00 90 80	585	96	558	595	<u>6</u> 85	99 <del>8</del> 8	ei Ve
1	Haar ing	4.4	-	רי נינ	9-0	4	4	ų	c

All measurements vary according to wanufacturer, see DM-26 Assumes firm sand hulton Assumes cast steel chain

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FIGURE A-2. 10 PERCENT "GO-NO-GO" GAUGES

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1-7/8 1-3/4 1-1/2 1.1.4

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1.60 2.00

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A-5

#### ANNEX B

### SAMPLE INSPECTION FORMS

Figures B-1 and B-2 depict two forms the EIC and divers may use to record measurements and as-built summations.

NTED LETI-         ARCHOR SZET/TYE:         BOY TYE:         DANC         NILL         DANC         NILL         D. Column         N. real impered, incom           TITOLITYE:         DAND         DLAY         DCAN         DOME         D. NILL         D. real impered, incom           ACMPONENTS         NIL         NILL         DAND         DLAY         DCAN         NILL         D. real impered, incom           COMPONENTS         NIL         NILL         DOME LINK         D         D         DOME         D         D           COMPONENTS         NIL         NILL         DOME LINK         D <th>DORING N</th> <th>10<sup>.</sup>:</th> <th>_ CLAS</th> <th></th>	DORING N	10 <sup>.</sup> :	_ CLAS													
$eq:linear_line$	ATER DEP	TH:		ANCHOR	SIZE/TYPE				BUOY T	YPE:						
Andrewents         Net         CONDUCTION         Net         CONDUCTION         Del         Del <thdel< th="">         Del         <thdel< th=""></thdel<></thdel<>	VT MOTIC	PE: SAN	g		Ō	CLAY		ORAL	Ē	OCK	Visibil	ly	D = dept	Z	- not inspected	d, inacces
$\label{eq:linearized constraints} \mbox{Intervalue} Interv$								NOI								
Image:	CON	IPONENTS	ž	NEW	SING	LE LINK	*	DOUBI	E LINK	*	Q			COMMEN	L	
BIOY HATOWARE         I					3 +0 <del>6</del>	1 +01	B0-	+06	<del>8</del> 0+	80-				ļ		
Isen         Isen         Isen         Isen         Isen           Mean Buoy         Mean Buoy         Mean Buoy         Mean Buoy         Mean Buoy           Mean Buoy         Mean Buoy         Mean Buoy         Mean Buoy         Mean Buoy           Mean Buoy         Mean Buoy         Mean Buoy         Mean Buoy         Mean Buoy           Mean Buoy         Mean Buoy         Mean Buoy         Mean Buoy         Mean Buoy           Mean Buoy         Mean Buoy         Mean Buoy         Mean Buoy         Mean Buoy           Mean Buoy         Mean Buoy         Mean Buoy         Mean Buoy         Mean Buoy           Mean Buoy         Mean Buoy         Mean Buoy         Mean Buoy         Mean Buoy           Muon E         Muon E         Muon E         Moon E         Moon E           Muon E         Muon E         Muon E         Moon E         Moon E           Muon E         Muon E         Moon E         Moon E         Moon E           Muon E         Muon E         Moon E         Moon E         Moon E           Muon E         Muon E         Moon E         Moon E         Moon E         Moon E           Muon E         Muon E         Muon E         Moon E         M	BUOY	HARDWARE														
Isen         Isen Buov         Ise																
Isea Buov         Isea Buov <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td> </td><td> </td><td> </td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>																
NERBUOY         NEABUOY         NEADUC          NEADUC																
NEAR BLOY         NEAR BLOY         NEAR BLOY         NEAR BLOY         NEAR BLOY           NEAR BLOS         NEAR BLOY         NEAR BLOY         NEAR BLOY         NEAR BLOY           AROUND         NEAR GRD RG         NEAR GRD RG         NEAR GRD RG         NEAR GRD RG           GAOUND RING         UPFER END         NEOLE         NED C         NEOLE         NED C           GAOUND RING         UPFER END         NEOLE         NEOLE         NEOLE         NEOLE           GOUND         UPFER END         NEOLE         NEOLE         NEOLE         NEOLE           GUND         UPFER END         NEOLE         NEOLE         NEOLE         NEOLE         NEOLE           GUND         UPFER END         NEOLE         NEOLE         NEOLE         NEOLE         NEOLE           GUND         UPFER END         NEOLE         NEOLE         NEOLE         NEOLE         NEOLE           GUND         UPFER END<										-						
ISEN         MIDLE         MIDLE         MIDLE         MIDLE           ACMUND RING         NEAR GRD RG         N         N         N         N           ACMUND RING         NEAR GRD RG         N         N         N         N         N           ACMUND RING         N         N         N         N         N         N         N           ACMUND RING         N         N         N         N         N         N         N           ACMUND RING         N         N         N         N         N         N         N           ACMUND RING         N         N         N         N         N         N         N           ACMUND RING         N         N         N         N         N         N         N           ACMUND RING         N         N         N         N         N         N         N           ACMUND RING         N		NEAR BUOY					-									
NEAR GRD RG	ISER	MIDDLE														
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		NEAR GRD RG														
MDULE         UPEAF END         I         <	GRO	UND RING														
MIDUE         MIDUE         MIDUE           0.A         ENTERSBOTTOM              0.A         ENTERSBOTTOM               0.A         ENTERSBOTTOM                0.A         UPPER END                 MOUND         MIDULE                  MIDULE                   MOUND         MIDULE		UPPER END														
ENTERS BOTTOM         ENTERS B	EG EG	MIDDLE														
HOUND 6.6         UPFER END         I         I         I         I           0.8         MIDDLE         I         I         I         I         I           0.8         ENTER BOTTOM         I         I         I         I         I         I           0.0         UPPER END         I         I         I         I         I         I         I           MDDLE         I         I         I         I         I         I         I         I         I           MDDLE         I	c 2	ENTERS BOTTOM														
EG         MIDDLE         Induction         Inductin         Induction         Induction	UNION	UPPER END														
ENTERS BOTTOM         ENTERS BOTTOM         ENTERS BOTTOM           ROUND         UPPER END             GO.C         ENTERS BOTTOM             O.C         ENTERS BOTTOM             MDDLE              O.C         ENTERS BOTTOM             MDDLE              O.C         ENTERS BOTTOM             MDDLE              MDDLE              MDDLE              MDLE              MDLE              MDLE              MDLE              MDLE               MDLE               MDLE               MDLE               MDLE	EG B	MIDDLE														
ROUND EG         UPPER END           D0.C         EITERS BOTTOM           LIPPER END         EITERS BOTTOM		ENTERS BOTTOM														
MIDDLE         MIDDLE           0. C         ENTERS BOTTOM           UPPER END         UPPER END           MIDULE         Important           0. D         LNTEHS BOTTOM           EG         Important           0. D         LNTEHS BOTTOM		UPPER END			_											1
ENTERS BOTTOM HOUND HOUND EG MIDILE LATERS BOTTOM LATERS BOTTOM ED LATERS BOTTOM	EG	MIDDLE														
UPPER END EG MIDDLE IO. D ENTERS BOTTOM	5	ENTERS BOTTOM							_							
EG MIDDLE O. D ENTERS BOTTOM		UPPER END									-					
ENTERS BOITOM	EG EG	MIDDLE								-						
		<b>ENTERS BOTTOM</b>														

B-2

MOORING	DATA SUMMARY FOR	E B-2 PREPARATION OF AS-BU	ILTS
MOORING#	CLASS		DATE
ВОТТОМ ТҮРЕ	WATER DEPTH	MOORING	
ENGINEER-IN-CHARGE	······	DIVERS	
BUOY TYPE DIMENSIONS CONDITION TOP HARDWARE BOTTOM HARDWARE		LEG C LENGTH EXPOSED LENGTH . TYPE CHAIN LINK WIDTH . WIRE DIAM.	
RISER LENGTH TYPE CHAIN LINK WIDTH WIRE DIAM.		LEG D LENGTH EXPOSED LENGTH . TYPE CHAIN LINK WIDTH WIRE DIAM.	
GROUND RING LOC. OUTER DIAM. WIRE DIAM. CONDITION		RISER CONNECTIONS	
		LEG CONNECTIONS	
LEG A LENGTH EXPOSED LENGTH TYPE CHAIN LINK WIDTH WIRE DIAM.		OTHER	
LEG B LENGTH EXPOSED LENGTH TYPE CHAIN LINK WIDTH WIRE DIAM.			

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ANNEX C

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MOORING HISTORICAL DATA SUMMARY

(GFI PROVIDED BY PWC PEARL HARBOR)

FLEET MOORING DATA SHEET
MRG ID = AM13 GENERAL LOC = Ford Island (Near F-13) DES CLASS = _ C 1+)
DATE ESTAB = 1943 DEPTH = 31.0 ft. MANN BOTTOM = Mud
LAT. COORD. (N) = $2i^{2} - 22' - 30.5''$ LONG. COORD. (W) = $157^{2} - 57' - 38.0''$
BUOY TYPE = Riser-chain wy hawsepipe SIZE = 12 + × 6 hi
FENDER = Wood FIBERGLASS COATING = No
CHAIN SIZE = $2^{3}/4^{4}$
SINKER = WT. OF SINKER = $20,000 \neq 4$ PADEYE SIZE = $2\frac{1}{4}\frac{1}{4}$
# OF ANCHORS = 2
ANCHOR 1 WT = $60,000 \pm 4$ PADEYE SIZE = $2/a \pm 4$ ANCHOR 2 WT = $(50.)$ PADEYE SIZE = $(00.)$ ANCHOR 3 WT = $-$ PADEYE SIZE = $-$ ANCHOR 4 WT = $-$ PADEYE SIZE = $-$
USAGE DURING PAST YEAR = Odays
TYPE OF SHIPS MOORED = CV
DATE OF LAST REPAIR/COST = $\frac{1977}{34,050}$
DATE OF LAST OVERHAUL/COST =
DATE OF LAST UNDERWATER INSPECTION = 1970 CONDUCTED BY = CHLODIV (UCT TWO)
NEXT SCHED. REPAIR = 1985
NEXT SCHED. OVERHAUL = 1987
DATE SHEET COMPILED = 5-82/MG
(+) Dowin-groded to class D after 1979 W/W Insp.

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FLEET MOORING DATA SHEET
MRG ID = <u>AMISA</u> GENERAL LOC = Form Island (Nr. F-13) DES CLASS = <u>C</u>
DATE ESTAB = $1945$ DEPTH = $36.0 \text{ ft}$ (iv) BOTTOM = Mud
LAT. COORD. (N) = $21^{-3}2^{-3}-31.8^{"}$ LONG. COORD. (W) = $157^{\circ}-57^{-3}-34.3^{"}$
BUOY TYPE = Riser-chain wy hawse pipe SIZE = 12'& × 6'hi
FENDER = Ive od FIBERGLASS COATING = No
CHAIN SIZE = $2^{3}/4^{11}$
SINKER = WT. OF SINKER = GO, CCC $4^{\pm}$ PADEYE SIZE = $\frac{2!4!}{4!}$
# OF ANCHORS =
ANCHOR 1 WT =        PADEYE SIZE =          ANCHOR 2 WT =        PADEYE SIZE =          ANCHOR 3 WT =        PADEYE SIZE =          ANCHOR 4 WT =        PADEYE SIZE =
USAGE DURING PAST YEAR = O doys
TYPE OF SHIPS MOORED = $CV$
DATE OF LAST REPAIR/COST = $1977 / 24,050$
DATE OF LAST OVERHAUL/COST = ?/?
DATE OF LAST UNDERWATER INSPECTION = 1279 CONDUCTED BY = CIESDIV (UCT TWD)
NEXT SCHED. REPAIR =
NEXT SCHED. OVERHAUL = $1937$
DATE SHEET COMPILED = 8-82/MS

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FLEET MOORING DATA SHEET
MRG ID = <u>CMN</u> GENERAL LOC = <u>Nest Loch</u> DES CLASS = G
DATE ESTAB = 1943 DEPTH = 39.0 H., MUN) BOTTOM = Mud
LAT. COORD. (N) = $2i^{-}2i^{-}26.E''$ LONG. COORD. (W) = $157^{-}59^{-}34.3''$
BUOY TYPE = Risch-chain ut hairsepipe SIZE = $12'\phi \times 6'hi$
FENDER = Rubber FIBERGLASS COATING = Yes
CHAIN SIZE = $\frac{2^2}{a^2}$
SINKER = WT. OF SINKER = $34,000$ $\pm$ PADEYE SIZE = $2^{1/2}$ $\phi$
# OF ANCHORS = 0
ANCHOR 1 WT =        PADEYE SIZE =          ANCHOR 2 WT =        PADEYE SIZE =          ANCHOR 3 WT =        PADEYE SIZE =          ANCHOR 4 WT =        PADEYE SIZE =
USAGE DURING PAST YEAR = 365 days
TYPE OF SHIPS MOORED = Army calision
DATE OF LAST REPAIR/COST = 1977/22,750
DATE OF LAST OVERHAUL/COST = 5-70/ ?
DATE OF LAST UNDERWATER INSPECTION = 1979 CONDUCTED BY = CHESUN (ACT TWO)
NEXT SCHED. REPAIR = 1988
NEXT SCHED. OVERHAUL = 1985
DATE SHEET COMPILED = B-B=/MS

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FLEET MOORING DATA SHEET
MRG ID = CMM GENERAL LOC = West Loch DES CLASS = G
DATE ESTAB = 1943 DEPTH = 39.0 H (MLW) BOTTOM = Mud
LAT. COORD. (N) = $2i^{2}2i^{2}-24.6''$ LONG. COORD. (W) = $157^{2}-59-33.2''$
BUOY TYPE = Riscr-chain NJ hawsepipe SIZE = 12'4 × 6' hi
FENDER = <u>Rubber</u> FIBERGLASS COATING = Yes
CHAIN SIZE = $23/2^{11}$
SINKER = WT. OF SINKER = $34.000 \text{ H}$ PADEYE SIZE = $2\frac{1}{4}^{2} \text{ PADEYE}$
$\# \text{ OF ANCHORS} = \underline{C}$
ANCHOR 1 WT =        PADEYE SIZE =          ANCHOR 2 WT =        PADEYE SIZE =          ANCHOR 3 WT =        PADEYE SIZE =          ANCHOR 4 WT =        PADEYE SIZE =
USAGE DURING PAST YEAR = 363 days
TYPE OF SHIPS MOORED = calisson
DATE OF LAST REPAIR/COST = $\frac{1977}{$2,750}$
DATE OF LAST OVERHAUL/COST = $5-70/?$
DATE OF LAST UNDERWATER INSPECTION = 1979 CONDUCTED BY = <u>CHESDIV (UCT TWO)</u>
NEXT SCHED. REPAIR = 1983
NEXT SCHED. OVERHAUL = 1985
DATE SHEET COMPLLED = $8^{-82}/MS$

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FLEET MOORING DATA SHEET
MRG ID = <u>CIAS</u> GENERAL LOC = <u>West Loch</u> DES CLASS = <u>G</u>
DATE ESTAB = $1940$ DEPTH = $42.0$ ft. (must) BOTTOM = Mud
LAT. COORD. (N) = $2i^{\circ}-2i'-22.9''$ LONG. COORD. (W) = $157^{\circ}-59'-33.1''$
BUOY TYPE = Riser-chain W hansepipe SIZE = 124×6/hi
FENDER = Rubber FIBERGLASS COATING = Yes
CHAIN SIZE = $\frac{2\frac{3}{4}}{4}$
SINKER = _ WT. OF SINKER = _ $34,000 \neq$ PADEYE SIZE = $2\frac{1}{4}^{4}$
# OF ANCHORS = $\mathcal{O}$
ANCHOR 1 WT =          ANCHOR 2 WT =          ANCHOR 3 WT =          ANCHOR 4 WT =          PADEYE SIZE =
USAGE DURING PAST YEAR = 365 days
TYPE OF SHIPS MOORED = <u>Army</u> causson
DATE OF LAST REPAIR/COST = $1977/22,750$
DATE OF LAST OVERHAUL/COST = $5.70/?$
DATE OF LAST UNDERWATER INSPECTION = 1979 CONDUCTED BY = CHESCIV (UCT TWO)
NEXT SCHED. REPAIR = 1988
NEXT SCHED. OVERHAUL = 1985

DATE SHEET COMPILED =  $\frac{8 - 82}{MS}$ 

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FLEET MOORING DATA SHEET
MRG ID = $D1M$ GENERAL LOC = <u>Middle Loch (ISMF</u> ) DES CLASS = $C/r^{2}$
DATE ESTAB = 1950 DEPTH = 34.0 $(1.000)$ BOTTOM = Mud
LAT. COORD. (N) = $24^{\circ} 22' - 19.2''$ LONG. COORD. (W) = $157^{\circ} - 59' - 00.6''$
BUOY TYPE = Riser-chain 107 hawcepipe SIZE = 15 \$ 6 hi
FENDER = No
CHAIN SIZE = $\frac{2^{3}/4}{4}$
SINKER = WT. OF SINKER = $60,000 \neq $ PADEYE SIZE = $2\frac{14}{4}$
# OF ANCHORS =
ANCHOR 1 WT =        PADEYE SIZE =          ANCHOR 2 WT =        PADEYE SIZE =          ANCHOR 3 WT =        PADEYE SIZE =          ANCHOR 4 WT =        PADEYE SIZE =
USAGE DURING PAST YEAR = $\sigma$
TYPE OF SHIPS MOORED = ?
DATE OF LAST REPAIR/COST = $\frac{1977}{4.4,850}$
DATE OF LAST OVERHAUL/COST = $3-7\varepsilon/2$
DATE OF LAST UNDERWATER INSPECTION = 1974 CONDUCTED BY = <u>CHEEDIV (UCT TWO)</u>
NEXT SCHED. REPAIR = $1985$
NEXT SCHED. OVERHAUL = $\frac{1982}{(1+4)}$
DATE SHEET COMPILED = - 04/NS
(*) Diwn-groded to class G offer 1979 u/W Insp.
isk' overhaul expected is be accomplished by Contr. 1162471-82-C-2164 in 1982; However, DBS substituted vice this mooring in contract work.

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FLEET MOORING DATA SHEET
MRG ID = J2N GENERAL LOC = Middle Lock (TSHF) DES CLASS = A (*)
DATE ESTAB = 1943 DEPTH = 33.0 ft./www. BOTTOM = Mud
LAT. COORD. (N) = $21^{2}-22^{2}-22.9^{4}$ LONG. COORD. (W) = $157^{2}-59^{2}-01.0^{4}$
BUOY TYPE = Riser-chain "Thanscripe SIZE = 12 & x G hi
FENDER = <u>RABBOR</u> FIBERGLASS COATING = Yes
CHAIN SIZE = $\frac{2^{3}/4}{4}$
SINKER =
# OF ANCHORS = $\underline{d}$
ANCHOR 1 WT = $60,000 \pm 10^{\circ}$ PADEYE SIZE = $21/4^{\circ} \pm 10^{\circ}$ ANCHOR 2 WT = $(100,1)^{\circ}$ PADEYE SIZE = $(100,1)^{\circ}$ ANCHOR 3 WT = $(100,1)^{\circ}$ PADEYE SIZE = $(100,1)^{\circ}$ ANCHOR 4 WT = $(100,1)^{\circ}$ PADEYE SIZE = $(100,1)^{\circ}$
USAGE DURING PAST YEAR = <u>365 days</u>
TYPE OF SHIPS MOORED = $\frac{\gamma o / \gamma c v / o \tau e c}{1 + c v / o \tau e c}$
DATE OF LAST REPAIR/COST = 1976/ P2,000
DATE OF LAST OVERHAUL/COST = $?/?$
DATE OF LAST UNDERWATER INSPECTION = 1979 CONDUCTED BY = CHTSEV (ACT THE)
NEXT SCHED. REPAIR =
NEXT SCHED. OVERHAUL = $1024$
DATE SHEET COMPILED = 8-82/NS
(r) comparadicit to class D after 1979 UNU Insp.

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FLEET MOORING DATA SHEET
MRG ID = 52.3 GENERAL LOC = Middle Loch (ZSMF) DES CLASS = A(+)
DATE ESTAB = 1943 DEPTH = 25.0 ft./Minux) BOTTOM = Mud
LAT. COORD. (N) = $21.72-20.2$ LONG. COORD. (W) = $.57-59-05.2$ "
BUOY TYPE = Riser-chain M hawsepipe SIZE = 12 &× 6 hi
FENDER = Rubber FIBERGLASS COATING = Yes
CHAIN SIZE = $2^{3/4}$
SINKER = WT. OF SINKER = $\frac{60,000}{1000}$ PADEYE SIZE = $\frac{214}{100}$
# OF ANCHORS = <u>4</u>
ANCHOR 1 WT = $60,000$ $44$ PADEYE SIZE = $2/4$ $66$ ANCHOR 2 WT = $(U_{C})$ PADEYE SIZE = $(C_{C})$ ANCHOR 3 WT = $(U_{C})$ PADEYE SIZE = $(C_{C})$ ANCHOR 4 WT = $(U_{C})$ PADEYE SIZE = $(C_{C})$
USAGE DURING PAST YEAR = 265 days
TYPE OF SHIPS MOORED = YO/YOY/OTEC
DATE OF LAST REPAIR/COST = $\frac{1976}{2,000}$
DATE OF LAST OVERHAUL/COST = $?/?$
DATE OF LAST UNDERWATER INSPECTION = $1079$ CONDUCTED BY = $CH_{1}SONV(uct Two)$
NEXT SCHED. REPAIR = $1987$
NEXT SCHED. OVERHAUL = 1964
DATE SHEET COMPILED = 8-82/103
(*) town-graded to class & ofter 1979 U/W Insp.

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FLEET MOORING DATA SHEET
MRG ID = DEN GENERAL LOC = Middle Loch (ISMF) DES CLASS = A (*)
DATE ESTAB = 21-22-27.0" DEPTH = 34.0 ft. (ALW) BOTTOM = Mud
LAT. COORD. (N) = $21^{2}2^{2}-27.0^{\circ}$ LONG. COORD. (W) = $157^{2}-59^{2}-03.6^{\circ}$
BUOY TYPE = Riccr-chain N7 hawsepice SIZE = 124×6 hi
FENDER = Kuller FIBERGLASS COATING = Yes
CHAIN SIZE = $2\frac{3}{4}$
SINKER = WT. OF SINKER = $\frac{66.000 \text{ ff}}{1000 \text{ ff}}$ PADEYE SIZE = $\frac{2}{4}$
# OF ANCHORS = <u>4</u>
ANCHOR 1 WT = $2\sigma_1 crc_1 t =$ PADEYE SIZE = $2/2 - \frac{1}{2}$ ANCHOR 2 WT = $(D_{0,1})$ PADEYE SIZE = $(D_{0,1})$ ANCHOR 3 WT = $(D_{0,1})$ PADEYE SIZE = $(D_{0,1})$ ANCHOR 4 WT = $(D_{0,1})$ PADEYE SIZE = $(D_{0,1})$
USAGE DURING PAST YEAR = O days
TYPE OF SHIPS MOORED = ?/OTEC
DATE OF LAST REPAIR/COST = 1977 / 13,000
DATE OF LAST OVERHAUL/COST = $10-75/?$
DATE OF LAST UNDERWATER INSPECTION = 979 CONDUCTED BY = <u>chr. Span</u> (1000 710)
NEXT SCHED. REPAIR = 1956
NEXT SCHED. OVERHAUL = 1983
DATE SHEET COMPILED = $\frac{6 - 8\pi^2 v s}{2}$
(r) Down-grided to class & after 1979 U/W Insp.

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FLEET MOORING DATA SHEET
MRG ID = $D33$ GENERAL LOC = <u>Middle Loch (ISMF)</u> DES CLASS = <u>A</u>
DATE ESTAB = 1943 DEPTH = 33.0 $ff.h.h.(N)$ BOTTOM = Mud
LAT. COORD. (N) = $21^{\circ} - 22^{\circ} - 24 \cdot 6^{\circ}$ LONG. COORD. (W) = $157^{\circ} - 54^{\circ} - 27 \cdot 8^{\circ}$
BUOY TYPE = Ricer-chain M hawscripe (*) SIZE = 126×6hi
FENDER = $\frac{No}{No}$ FIBERGLASS COATING = $\frac{No}{No}$
CHAIN SIZE = $\frac{2^{3}/2^{*}}{2^{3}/2}$
SINKER = WT. OF SINKER = GO, CCO $\stackrel{i}{\leftarrow}$ PADEYE SIZE = $\frac{2^{1}}{4} \stackrel{o}{\leftarrow}$
# OF ANCHORS = <u>4</u>
ANCHOR 1 WT = $60, c C O = 41$ PADEYE SIZE = $2/4 = 45$ ANCHOR 2 WT = $(Co.)$ PADEYE SIZE = $(Co.)$ ANCHOR 3 WT = $(Co.)$ PADEYE SIZE = $(Co.)$ ANCHOR 4 WT = $(Co.)$ PADEYE SIZE = $(Co.)$
USAGE DURING PAST YEAR = $\mathcal{O}(x)$
TYPE OF SHIPS MOORED = ?
DATE OF LAST REPAIR/COST = $\frac{1977/34,550}{1977/34,550}$
DATE OF LAST OVERHAUL/COST = $\frac{?/?}{}$
DATE OF LAST UNDERWATER INSPECTION = 1979 CONDUCTED BY = CHESDIV (UCT THO)
NEXT SCHED. REPAIR = 1983
NEXT SCHED. OVERHAUL = 1983
DATE SHEET COMPILED = 8.87/100
(X) Euroy broke loose from anchoroge 1970; Euroy presently on shore

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FLEET MOORING DATA SHEET
MRG ID = $54 \text{N}$ GENERAL LOC = Middle Lock (TEMP) DES CLASS = $A(*)$
DATE ESTAB = $1943$ DEPTH = $32.0 \pm (MLW)$ BOTTOM = Mud
LAT. COORD. (N) = $21^{\circ} 22' - 30.1''$ LONG. COORD. (W) = $157^{\circ} - 59' - 06.2''$
BUOY TYPE = Riscrichain "Thanscripe SIZE = 126×6'hi
FENDER = <u>Rubber</u> FIBERGLASS COATING = Yes
CHAIN SIZE = $2^{\frac{3}{4}}$
SINKER = 1 WT. OF SINKER = $\frac{60,000}{4}$ PADEYE SIZE = $\frac{2}{4}$
#  OF ANCHORS = 4
ANCHOR 1 WT = $60,000$ 41PADEYE SIZE = $2/4$ 40ANCHOR 2 WT = $(20)$ PADEYE SIZE = $(20)$ ANCHOR 3 WT = $(20)$ PADEYE SIZE = $(20)$ ANCHOR 4 WT = $(20)$ PADEYE SIZE = $(20)$
USAGE DURING PAST YEAR = <u>365 days</u>
TYPE OF SHIPS MOORED = DER/ASK/YFN /OTEC
DATE OF LAST REPAIR/COST = 1979/# 980
DATE OF LAST OVERHAUL/COST = $3-7\epsilon/?$
DATE OF LAST UNDERWATER INSPECTION = $1979$ CONDUCTED BY = $CHESDV(uct Two)$
NEXT SCHED. REPAIR = 1983
NEXT SCHED. OVERHAUL = 1985
DATE SHEET COMPILED = 8-82/MG
(*) Sown-graded to class & after 1979 Will Ensp.

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FLEET MOORING DATA SHEET
MRG ID = <u>543</u> GENERAL LOC = <u>Midale Luch (ISMF)</u> DES CLASS = $A(*)$
DATE ESTAB = 1943 DEPTH = 27.0 (4./MLN) BOTTOM = Mud
LAT. COORD. (N) = $2i^{2}-22i^{2}-27.1i^{2}$ LONG. COORD. (W) = $157^{2}-54i^{2}-10.4i^{2}$
BUOY TYPE = Riscr-chain MThansepice SIZE = 120×6hi
FENDER = Rubber FIBERGLASS COATING = Yes
CHAIN SIZE = $\frac{2^{3}/4^{4}}{4}$
SINKER = WT. OF SINKER = $\frac{60,000 \pm}{2000 \pm}$ PADEYE SIZE = $\frac{2}{4}$
#  OF ANCHORS = 4
ANCHOR 1 WT = $60,000 = 4$ PADEYE SIZE = $2/4 = 6$ ANCHOR 2 WT = $(Co_{0})$ PADEYE SIZE = $(20)$ ANCHOR 3 WT = $(20)$ PADEYE SIZE = $(20)$ ANCHOR 4 WT = $(20)$ PADEYE SIZE = $(20)$
USAGE DURING PAST YEAR = 365 days
TYPE OF SHIPS MOORED = DER/ASE/YEN/OTEC
DATE OF LAST REPAIR/COST = $1979/313,000$
DATE OF LAST OVERHAUL/COST = $\frac{3}{2}$
DATE OF LAST UNDERWATER INSPECTION = 279 CONDUCTED BY = CHESCIV (UCT TWO)
NEXT SCHED. REPAIR = 1988
NEXT SCHED. OVERHAUL = 1985
DATE SHEET COMPILED = <u>8-82/MG</u>
(t) bown-graded to class <u>e</u> after 1979 4/14 Insp.

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RG ID = <u>2514</u>	GENERAL LOC = $\mu$	iddie Loch (ISMF	) DES CLASS	= D (44)
ATE ESTAB =	4-	)EPTH = 37.0 f	H. MIN) BOTTOM	= Mua
AT. COORD. $(N) = 21^{\circ}$	22-33.8	LONG. COORD.	(W) = 157°-59-	08.6"
JOY TYPE = <u>Riser-clu</u>	in wy housepipe	SIZE =	12'0 × 6 hi	
FENDER = <u>Fubl</u>	<u>FI</u>	BERGLASS COATIN	G = <u>Yes</u>	_
HAIN SIZE = 23/2				
(NKER = WT	. OF SINKER =	<u> </u>	PADEYE SIZE	=
OF ANCHORS =				
ANCHOR 1 WT = ANCHOR 2 WT = ANCHOR 3 WT = ANCHOR 4 WT =	60,000 # 	PADEYE PADEYE PADEYE PADEYE	$SIZE = \frac{2\frac{1}{4}}{-}$ $SIZE = -$ $SIZE = -$ $SIZE = -$	
SAGE DURING PAST YEA	R = <del>2 da+\$</del>			
(PE OF SHIPS MOORED	= <u>-</u> 107EC	- /		
ATE OF LAST REPAIR/C	0ST = <u>1979/</u>	° 9,060		
TE OF LAST OVERHAUL	/COST = <u>?</u> /	?		
TE OF LAST UNDERWAT CONDUCTED BY =	ER INSPECTION = CHESDY ALCT TH	: <u>1979</u> 3)		
EXT SCHED. REPAIR =	1.63			
IXT SCHED. OVERHAUL	= 1983			
TE SHEET COMPILED	= <u>5-82/MS</u>			

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$RG ID = \underline{D5M} \qquad GENERAL LOC = \underline{Middle Loch (ISMF)} \qquad DES CLASS = \underline{C(+)}$ $ATE ESTAB = \underline{1950} \qquad DEPTH = \underline{24.0 ft.lmuv} BOTTOM = \underline{Mud}$ $AT. COORD. (N) = \underline{21^{\circ}-22^{\prime}-31.6^{\prime\prime}} \qquad LONG. COORD. (W) = \underline{157^{\circ}-59^{\prime}-10.9^{\prime\prime}}$
ATE ESTAB = <u>1950</u> ATE ESTAB = <u>1950</u> DEPTH = <u>24.0 ft.(hally</u> ) BOTTOM = <u>Mud</u> AT. COORD. (N) = <u>21°-22'-31.8</u> LONG. COORD. (W) = <u>157°-59'-10.9</u>
AT. COORD. (N) = $2!^{\circ} - 22' - 3! \cdot \epsilon''$ LONG. COORD. (W) = $157^{\circ} - 59' - 10.9''$
JOY TYPE = <u>Riscr-chain "Thawsepipe</u> SIZE = <u>124×6hi</u>
FENDER = Rubber FIBERGLASS COATING = Yes
HAIN SIZE = $234''$
INKER = WT. OF SINKER = GO, CCO $i^{\pm}$ PADEYE SIZE = $2^{1}/4^{-1}$
OF ANCHORS = $\mathcal{D}$
ANCHOR 1 WT =ANCHOR 2 WT =ANCHOR 3 WT =ANCHOR 4 WT =PADEYE SIZE =ANCHOR 4 WT =PADEYE SIZE =PADEYE SIZE =PADEYE SIZE =
SAGE DURING PAST YEAR =
YPE OF SHIPS MOORED = ?/?. / OTEC
ATE OF LAST REPAIR/COST = $\frac{1976}{52,000}$
ATE OF LAST OVERHAUL/COST = $\frac{?/?}{}$
ATE OF LAST UNDERWATER INSPECTION = 1979 CONDUCTED BY = CHESDIV (UCT TWO)
EXT SCHED. REPAIR = 1086
EXT SCHED. OVERHAUL = 1933
ATE SHEET COMPILED = 3-87-/46
r) Down-aradina to class & offer 1979 K/W Insp.

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FLEET MOORING DATA SHEET
MRG ID = $DSS$ GENERAL LOC = Middle Loch (ISMF) DES CLASS = $D(*)$
DATE ESTAB = $$
LAT. COORD. (N) = $21^{\circ} - 72' - 30.3''$ LONG. COORD. (W) = $157^{\circ} - 59' - 13.0''$
BUOY TYPE = Riser chain M hawsepipe SIZE = 126×6 hi
FENDER = Rubber FIBERGLASS COATING = Yes
CHAIN SIZE = $23$
SINKER = WT. OF SINKER = PADEYE SIZE =
# OF ANCHORS =
ANCHOR 1 WT = $60, ccC \pm$ PADEYE SIZE = $2/4 \pm$ ANCHOR 2 WT =PADEYE SIZE =PADEYE SIZE =ANCHOR 3 WT =PADEYE SIZE =PADEYE SIZE =ANCHOR 4 WT =PADEYE SIZE =PADEYE SIZE =
USAGE DURING PAST YEAR = <u>365 days</u>
TYPE OF SHIPS MOORED = $CTEC - I$
DATE OF LAST REPAIR/COST = $1979/44,680$
DATE OF LAST OVERHAUL/COST = $\frac{1-7i}{?}$
DATE OF LAST UNDERWATER INSPECTION = $1979$ CONDUCTED BY = $CHESSIV(UCTTVO)$
NEXT SCHED. REPAIR = $\frac{1986}{1000}$
NEXT SCHED. OVERHAUL = 1988
DATE SHEET COMPILED = 8-82/45
(4) Down-graded to class <u>G</u> after 1979 U/iJ Insp.

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	FLEET MOOF	RING DATA SHEET
MRG I	$D = DG^{(1)}$ GENERAL LOC = Mia	idle Loch (ISMF) DES CLASS = $D$
DATE	ESTAB = 1944- DE	EPTH = 35.0 ft.(MISI) BOTTOM = Mud
LAT.	COORD. (N) = $21^{2}22^{2}36.4^{11}$	LONG. COORD. (W) = $\frac{57^{\circ} - 59' - 11.4''}{57^{\circ} - 59' - 11.4''}$
BUOY	TYPE = Rizer-chail, wy howsepute	SIZE = $\frac{12^{4} \times 6^{4} hi}{12}$
	FENDER = Public FIBE	ERGLASS COATING = Yes
CHAIN	$SIZE = 2\frac{3}{6}$	
SINKE	ER = WT. OF SINKER =	PADEYE SIZE =
# 0F	ANCHORS =	
	ANCHOR 1 WT = $60.000 \pm 100$ ANCHOR 2 WT = $-1000$ ANCHOR 3 WT = $-1000$ ANCHOR 4 WT = $-1000$	PADEYE SIZE = $\frac{\frac{2}{4}}{\phi}$ PADEYE SIZE = $\frac{-}{-}$ PADEYE SIZE = $\frac{-}{-}$ PADEYE SIZE = $\frac{-}{-}$
USAGE TYPE	DURING PAST YEAR = <del>2 days</del> OF SHIPS MOORED = <u>? / OTEC</u>	. / DD 948
DATE	OF LAST REPAIR/COST = 1979/1	*780
DATE	OF LAST OVERHAUL/COST = _3-78	/?
DATE	OF LAST UNDERWATER INSPECTION = CONDUCTED BY = <u>CHESSIV</u> (UCT TW	1979
NEXT	SCHED. REPAIR = $\frac{12.37}{2}$	
NEXT	SCHED. OVERHAUL = 1984-	
DATE	SHEET COMPILED = $\frac{8 - 82/100}{100}$	

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FLEET MOORING DATA SHEET
MRG ID = DGM GENERAL LOC = Middle Loch (ISMF) DES CLASS = C
DATE ESTAB = 1950 DEPTH = 35.0 ft./MLV BOTTOM = Muci
LAT. COORD. (N) = $21^{\circ} zz' - 35.4^{\circ}$ LONG. COORD. (W) = $157^{\circ} - 59 - 13.4^{\circ}$
BUOY TYPE = Beer-chrin M hausefier SIZE = 126×6/hi
FENDER = $\frac{\beta u_{c} b_{c} r}{1}$ FIBERGLASS COATING = $\frac{\gamma c s}{1}$
CHAIN SIZE = $2^{\frac{2}{4}}$
SINKER = WT. OF SINKER = PADEYE SIZE =
# OF ANCHORS =
ANCHOR 1 WT = $60,000$ HPADEYE SIZE = $2/4$ HANCHOR 2 WT = $$ PADEYE SIZE = $$ ANCHOR 3 WT = $$ PADEYE SIZE = $$ ANCHOR 4 WT = $$ PADEYE SIZE = $$
USAGE DURING PAST YEAR =
TYPE OF SHIPS MOORED = ? /OTEC/DC948
DATE OF LAST REPAIR/COST = 1976/12.000
DATE OF LAST OVERHAUL/COST = 3/3
DATE OF LAST UNDERWATER INSPECTION = 1979 CONDUCTED BY = CHESCHY (UCT TWO)
NEXT SCHED. REPAIR = 1987
NEXT SCHED. OVERHAUL = 1060

DATE SHEET COMPILED = B-BEING

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FLEET MOORING DATA SHEET
MRG ID = PGS GENERAL LOC = Middle Loch (ISMF) DES CLASS = D
DATE ESTAB = 1944 DEPTH = 24.0 ft. (MUN) BOTTOM = Mud
LAT. COORD. (N) = $21^{\circ} - 22^{\circ} - 33.4^{\circ}$ LONG. COORD. (W) = $157^{\circ} - 59^{\circ} - 15.5^{\circ}$
BUOY TYPE = Riser-chain w/ hawsepipe SIZE = 12'\$ × 6'hi
FENDER = Rubber FIBERGLASS COATING = Yes
CHAIN SIZE = $2^{3/k}$
SINKER = WT. OF SINKER = PADEYE SIZE =
# OF ANCHORS = _
ANCHOR 1 WT = $60, 000 \pm$ PADEYE SIZE = $21/4^{-1} \pm$ ANCHOR 2 WT =-PADEYE SIZE =-ANCHOR 3 WT =-PADEYE SIZE =-ANCHOR 4 WT =-PADEYE SIZE =-
USAGE DURING PAST YEAR =
TYPE OF SHIPS MOORED = <u>? / OTEC / DD948</u>
DATE OF LAST REPAIR/COST = $\frac{1979}{1000}$
DATE OF LAST OVERHAUL/COST = $\frac{2}{2}$
DATE OF LAST UNDERWATER INSPECTION = 1979 CONDUCTED BY = CHESDIV ALCT TWO)
NEXT SCHED. REPAIR = 1967
NEXT SCHED. OVERHAUL = 1984
DATE SHEET COMPILED = $3 \cdot 82^{1/3}$

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FLEET MOORING DATA SHEET
MRG ID = $D7N$ GENERAL LOC = <u>Middle Loch</u> (ZSMF) DES CLASS = $D$
DATE ESTAB = 1944 DEPTH = 34.0 ft./MLW) BOTTOM = Mud
LAT. COORD. (N) = $21^{\circ} 22' - 39.6''$ LONG. COORD. (W) = $157^{\circ} - 59' - 13.9''$
BUOY TYPE = Riser-chain wy hawseripe SIZE = 12 + x & hi
FENDER = Rubles (B"D) FIBERGLASS COATING = YES
CHAIN SIZE = $2\frac{3}{4}$
SINKER = WT. OF SINKER = PADEYE SIZE =
$\# \text{ OF ANCHORS} = \underline{l}$
ANCHOR 1 WT = $10,000 \neq (\star)$ PADEYE SIZE = $3'' \neq$ ANCHOR 2 WT =-PADEYE SIZE =-ANCHOR 3 WT =-PADEYE SIZE =-ANCHOR 4 WT =-PADEYE SIZE =-
USAGE DURING PAST YEAR =
TYPE OF SHIPS MOORED = $\frac{?}{DD}$ 34
DATE OF LAST REPAIR/COST = $\frac{1979}{250}$
DATE OF LAST OVERHAUL/COST = 8-82/Permove + replace meaning + #25,000 (*)
DATE OF LAST UNDERWATER INSPECTION = $1979$ CONDUCTED BY = <u>CHESDIV (MCT TVO)</u>
NEXT SCHED. REPAIR = 1964
NEXT SCHED. OVERHAUL = 1986

DATE SHEET COMPILED = 8-62 7 MS

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12) Overhaul finally accomplished under Jo. 185-8161 (FY79 Funds) with Linds expiring 9-30-35 - only 10,000 # anchor available (computed from deperminent Facility on 3-82); accomplished by HUNSY fideling crane # Pulstoned forces



FLEET MOORING DATA SHEET
MRG $ID = D7M$ GENERAL LOC = Middle Luch (ISMF) DES CLASS = C
DATE ESTAB = 1950 DEPTH = 29.0 ft. (MLW) BOTTOM = Mud
LAT. COORD. (N) = $21^{2} \cdot 22^{2} - 36 \cdot 2^{4}$ LONG. COORD. (W) = $157^{2} - 59^{4} - 16 \cdot 0^{4}$
BUOY TYPE = Riscr-chain #7 harusepice SIZE = 12 & x 6 hi
FENDER = <u>Rubber</u> FIBERGLASS COATING = <u>Yes</u>
CHAIN SIZE = $2\frac{3}{4}$
SINKER = WT. OF SINKER = PADEYE SIZE =
# OF ANCHORS =
ANCHOR 1 WT = $4c, ccc^{4t}$ PADEYE SIZE = $2/4$ ANCHOR 2 WT =-PADEYE SIZE =-ANCHOR 3 WT =-PADEYE SIZE =-ANCHOR 4 WT =-PADEYE SIZE =-
USAGE DURING PAST YEAR = TYPE OF SHIPS MOORED =? / DD 34
DATE OF LAST REPAIR/COST = $1975/37,200$
DATE OF LAST OVERHAUL/COST = $(-81/625,000)$ (*)
DATE OF LAST UNDERWATER INSPECTION = 1979 CONDUCTED BY = CHTSUIV (UCT TWO)
NEXT SCHED. REPAIR = 1994
NEXT SCHED. OVERHAUL = 1986
DATE SHEET COMPILED = S-BZ/MS

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(4) Contr. NG2471-BO-C-1422 (Heavy-Tibbets) : Remove & replace mooring and begin to 21 brows.

FLEET MOORING DATA SHEET
MRG ID = $D73$ GENERAL LOC = Middle Loch (ISMI) DES CLASS = $D$
DATE ESTAB = $(944 - DEPTH = 23.0 + (1013))$ BOTTOM = Mud
LAT. COORD. (N) = $21^{\circ} - 22^{\circ} - 36.6^{\circ}$ LONG. COORD. (W) = $157^{\circ} - 59^{\circ} - 18.1^{\circ}$
BUOY TYPE = Ficer-chain wy hawscripe SIZE = 12'& × 6'hi
FENDER = Rubber FIBERGLASS COATING = 165
CHAIN SIZE = $2\frac{34}{4}$
SINKER = WT. OF SINKER = PADEYE SIZE =
# OF ANCHORS =
ANCHOR 1 WT = $GC, COD$ #PADEYE SIZE = $2^{1}/4^{-1} d_{2}$ ANCHOR 2 WT =-PADEYE SIZE =-ANCHOR 3 WT =-PADEYE SIZE =-ANCHOR 4 WT =-PADEYE SIZE =-
USAGE DURING PAST YEAR =
TYPE OF SHIPS MOORED = $?/DD34$
DATE OF LAST REPAIR/COST = $\frac{1976}{32,000}$
DATE OF LAST OVERHAUL/COST = 1-31/ #25,000 (*)
DATE OF LAST UNDERWATER INSPECTION = 1979 CONDUCTED BY = CHESD'N (ACT TWO)
NEXT SCHED. REPAIR = $198A$
NEXT SCHED. OVERHAUL = $1936$
DATE SHEET COMPILED = <u>3-82/MS</u>

(4) Portr. N62471-80-C-1422 (Healy Tilkets): Remove & replace mooring and registricish bung

FLEET MOORING DATA SHEET
MRG ID = $\frac{28M}{28M}$ GENERAL LOC = Middle Loch (ICMF) DES CLASS = $D$
DATE ESTAB = 1945 DEPTH = $35.C ff.(MUV)$ BOTTOM = Mud
LAT. COORD. (N) = $21^{\circ}-22^{\circ}-42.7^{\circ}$ LONG. COORD. (W) = $157^{\circ}-59^{\circ}-16.5^{\circ}$
BUOY TYPE = Ricer-chain NT harvse pipe SIZE = 120×6 hi
FENDER = <u>Rubbar</u> FIBERGLASS COATING = <u>Yes</u>
CHAIN SIZE = $\frac{2^{\frac{3}{4}4^{4}}}{2^{\frac{3}{4}4^{4}}}$
SINKER = WT. OF SINKER = PADEYE SIZE =
# OF ANCHORS =
ANCHOR 1 WT = $GC, COC = 4$ PADEYE SIZE = $2^{1}/4^{-1}$ ANCHOR 2 WT = $-$ PADEYE SIZE = $-$ ANCHOR 3 WT = $-$ PADEYE SIZE = $-$ ANCHOR 4 WT = $-$ PADEYE SIZE = $-$
USAGE DURING PAST YEAR = <del>O days</del>
TYPE OF SHIPS MOORED = ?
DATE OF LAST REPAIR/COST = $\frac{1977}{32,750}$
DATE OF LAST OVERHAUL/COST = $1-\frac{6!}{25,000}$ (*)
DATE OF LAST UNDERWATER INSPECTION = 1979 CONDUCTED BY = CHUSEN (UCT TWO)
NEXT SCHED. REPAIR = $19 \mathcal{E}^{4}$
NEXT SCHED. OVERHAUL = $1486$
DATE SHEET COMPILED = 8-82/MS

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(\*) Contr. NG2471-10-0-1422 (Healy Tilberis): Remove & replace mooring and reput tion lawy

FLEET MOORING DATA SHEET
MRG ID = DBM GENERAL LOC = Middle Loch (ISMF) DES CLASS = C
DATE ESTAB = 1950 DEPTH = 34.0 (MIN) BOTTOM = Mud
LAT. COORD. (N) = $2^{1}-22^{2}-41.2^{2}$ LONG. COORD. (W) = $157^{2}-59-18.6^{2}$
BUOY TYPE = Rissrichain wy hawscripe SIZE = 120 x 6 hi
FENDER = E. Ubrr FIBERGLASS COATING = Yes
CHAIN SIZE = $23/4$ ."
SINKER = WT. OF SINKER = PADEYE SIZE =
# OF ANCHORS =
ANCHOR 1 WT = $60, cco d'$ PADEYE SIZE = $2'/4'' d'$ ANCHOR 2 WT =-PADEYE SIZE =-ANCHOR 3 WT =-PADEYE SIZE =-ANCHOR 4 WT =-PADEYE SIZE =-
USAGE DURING PAST YEAR =
TYPE OF SHIPS MOORED = ? / YW101/YW83/YOG68
DATE OF LAST REPAIR/COST = $\frac{1977}{92,150}$
DATE OF LAST OVERHAUL/COST = $1-31/\frac{3}{25,000}$ (#)
DATE OF LAST UNDERWATER INSPECTION = 1979 CONDUCTED BY = CHESCIV (UCT TNO)
NEXT SCHED. REPAIR = 1984
NEXT SCHED. OVERHAUL = 1986
DATE SHEET COMPILED = 3-02/00 S

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(+) Contr. NG2471-BO-C-1922 (Healy-Tibbets) : Kemove & replace mooring and refurbish buoy

FLEET MOORING DATA SHEET
MRG ID = DES GENERAL LOC = Middle Loch (ICMF) DES CLASS = D
DATE ESTAB = 1945 DEPTH = 23.0 ft. (MLW) BOTTOM = Mud
LAT. COORD. (N) = $21' - 22' - 39.7''$ LONG. COORD. (W) = $57' - 59' - 20.7''$
BUOY TYPE = Ricer-chain wy house pipe SIZE = 12 + x 6 ini
FENDER = Eublish FIBERGLASS COATING = $Yes$
CHAIN SIZE = $\frac{2^{3}/4^{4}}{4}$
SINKER = WT. OF SINKER = PADEYE SIZE =
# OF ANCHORS =
ANCHOR 1 WT = $4c, occ = 1$ PADEYE SIZE = $2^{3}4^{4} +$ ANCHOR 2 WT = $ -$ PADEYE SIZE = $-$ ANCHOR 3 WT = $ -$ PADEYE SIZE = $-$ ANCHOR 4 WT = $ -$ PADEYE SIZE = $-$
USAGE DURING PAST YEAR =
TYPE OF SHIPS MOORED = $\frac{7}{7} \frac{1000}{7} $
DATE OF LAST REPAIR/COST = $\frac{1977}{22,750}$
DATE OF LAST OVERHAUL/COST =
DATE OF LAST UNDERWATER INSPECTION = 1979 CONDUCTED BY = CHESDIV (UCT TUR)
NEXT SCHED. REPAIR = 1986
NEXT SCHED. OVERHAUL = 1086
DATE SHEET COMPILED = $\frac{4-83}{5-62}/115$
(1) Contr. NG2471-BO Calt22 (Healy-Tibbete): Remove & replace mooring and refurbich bury
(*) Overhaul accomplished by Contr N62471-82-C-2164; Necessitated when mooring failed due to high winds during passage of Hurricane Iwa 11/23/82; This mooring done vice DIM of original contract.
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FLEET MOORING DATA SHEET
MRG ID = D?M GENERAL LOC = Middle Loch (ISMF) DES CLASS = A (*)
DATE ESTAB = $1946$ DEPTH = $27.0 \text{ fl.}(MUN)$ BOTTOM = Mud
LAT. COORD. (N) = $21^{\circ} - 22^{\circ} - 45.9^{\circ}$ LONG. COORD. (W) = $157^{\circ} - 59^{\circ} - 19.1^{\circ}$
BUOY TYPE = Ricer-chain of hawsepipe SIZE = 12/4×6/hi
FENDER = <u>Rubbei</u> FIBERGLASS COATING = <u>Yes</u>
CHAIN SIZE = $2\frac{3}{4}$
SINKER = WT. OF SINKER = $\frac{60,000 }{234}$ PADEYE SIZE = $\frac{244}{234}$
# OF ANCHORS = 3
ANCHOR 1 WT = $60, CC \in H^{\circ}$ PADEYE SIZE = $2\frac{1}{4}$ ANCHOR 2 WT = $(20.)$ PADEYE SIZE = $(20.)$ ANCHOR 3 WT = $(20.)$ PADEYE SIZE = $(20.)$ ANCHOR 4 WT = $-$ PADEYE SIZE = $(20.)$
USAGE DURING PAST YEAR = 365 days
TYPE OF SHIPS MOORED = $\frac{7WN}{70G/10/10C/10N}$
DATE OF LAST REPAIR/COST = $\frac{1977}{32,450}$
DATE OF LAST OVERHAUL/COST =
DATE OF LAST UNDERWATER INSPECTION = 1979 CONDUCTED BY = CHESDIV (UCT TWO)
NEXT SCHED. REPAIR = 1984-
NEXT SCHED. OVERHAUL = $1982$ (4+)
DATE SHEET COMPILED = 4-83
(*) - Power-graded to - class France 1979- U/W insp.
44) Crackaul concaled to be accomplished by Contr. NG2471-82-C-2164

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FLEET MOORING DATA SHEET
MRG ID = 2914 GENERAL LOC = Middle Loch (ISMF) DES CLASS = A ++++
DATE ESTAB = $1950$ DEPTH = $20.0$ 26.0 H (M S) BOTTOM = Mud
LAT. COORD. (N) = $21^{\circ}-22^{\circ}-44.4^{\circ}$ LONG. COORD. (W) = $157^{\circ}-59^{\circ}-21.2^{\circ}$
BUOY TYPE = Ricer-chain "Thousepipe SIZE = 12'& x 6'hi
FENDER = Rubber FIBERGLASS COATING = Yes
CHAIN SIZE = $2\frac{3}{4}$
SINKER = WT. OF SINKER = GO, OCC = PADEYE SIZE = $\frac{2^{4}}{2^{4}} = 2^{3}/4 \phi$
# OF ANCHORS = $\underline{\Delta}$
ANCHOR 1 WT = $60,000 \pm 2$ PADEYE SIZE = $2\frac{3}{4} \pm 2$ ANCHOR 2 WT = $(20.)$ PADEYE SIZE = $(20.)$ ANCHOR 3 WT = $(20.)$ PADEYE SIZE = $(20.)$ ANCHOR 4 WT = $(20.)$ PADEYE SIZE = $(20.)$
USAGE DURING PAST YEAR = 365 days
TYPE OF SHIPS MOORED = YWN/YOG/YO/YCG/YON ///4-YW'S
DATE OF LAST REPAIR/COST = $1979/$450$
DATE OF LAST OVERHAUL/COST = <u>4-71/17</u> 12-82/\$51,000 (**)
DATE OF LAST UNDERWATER INSPECTION = 1979 CONDUCTED BY = CHUSDIV (VCT THD)
NEXT SCHED. REPAIR = 1984
NEXT SCHED. OVERHAUL = 1987
DATE SHEET COMPILED = 4-83
(*) town-graded to class for after 1979 U/W Insp. (*)*) Overhaut expected to be accomplicited by Canto Vacinti-Bar C-Ilad

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FLEET MOORING DATA SHEET
MRG ID = <u>D9</u> G GENERAL LOC = <u>Middle Loch (ICMF)</u> DES CLASS = A A
DATE ESTAB = 194.6 DEPTH = $\frac{21.0}{250.44}$ , (MLH.) BOTTOM = Mud
LAT. COORD. (N) = $21^{\circ} 22' 42.9''$ LONG. COORD. (W) = $157^{\circ} 59' - 23.3''$
BUOY TYPE = Ricer-chain w/ transcripe SIZE = 12 & x 6 hi
FENDER = Cubber FIBERGLASS COATING = Yes
CHAIN SIZE = $2\frac{3}{4}$
SINKER = _ WT. OF SINKER = $60,000$ H PADEYE SIZE = $2^{3}/4^{4}$
# OF ANCHORS = _4
ANCHOR 1 WT = $60, CCC \pm 1$ PADEYE SIZE = $2\sqrt[3]{4} + 1$ ANCHOR 2 WT = $10c()$ PADEYE SIZE = $(co)$ ANCHOR 3 WT = $10c()$ PADEYE SIZE = $(co)$ ANCHOR 4 WT = $10c()$ PADEYE SIZE = $(co)$
USAGE DURING PAST YEAR = 365 days
TYPE OF SHIPS MOORED = $4 - \gamma W's$
DATE OF LAST REPAIR/COST = $\frac{1977}{13,275}$
DATE OF LAST OVERHAUL/COST = $\frac{12 - 82}{851,000}$ (**)
DATE OF LAST UNDERWATER INSPECTION = 1974 CONDUCTED BY = CHESDIV (UCT Tive)
NEXT SCHED. REPAIR = 1934
NEXT SCHED. OVERHAUL = 1987
DATE SHEET COMPILED = 4-83
(+) Down-graded to class F after 1979- U/W Insp.
(++) overhand experied in the accomplished by Contr. Noza71-82-C-2164

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FLEET MOORING DATA SHEET
MRG ID = $\underline{PION}$ GENERAL LOC = <u>Middle Loch (ISMF)</u> DES CLASS = <u>A</u> (*)
DATE ESTAB = $1946$ DEPTH = $24.0 ft.(1101)$ BOTTOM = Mud
LAT. COORD. (N) = $21^{\circ} - 22^{\circ} - 4.7.1^{\circ}$ LONG. COORD. (W) = $157^{\circ} - 59^{\circ} - 21.7^{\circ}$
BUOY TYPE = Riser-chain my hanscripe SIZE = 12 & x 6 hi
FENDER = Kubber FIBERGLASS COATING = Yes
CHAIN SIZE = $2\frac{3}{4}$
SINKER = WT. OF SINKER = GO. COD $44$ PADEYE SIZE = $\frac{z}{4}$
# OF ANCHORS = $4$ -
ANCHOR 1 WT = $(ac, ccc; t)$ PADEYE SIZE = $2/4$ $d$ ANCHOR 2 WT = $(ac)$ PADEYE SIZE = $(ac)$ ANCHOR 3 WT = $(cc)$ PADEYE SIZE = $(cc)$ ANCHOR 4 WT = $(bc)$ PADEYE SIZE = $(cc)$
USAGE DURING PAST YEAR = <u>365 days</u>
TYPE OF SHIPS MOORED = YFN /3-YFRN 'S
DATE OF LAST REPAIR/COST = $\frac{1977}{210,240}$
DATE OF LAST OVERHAUL/COST = $\frac{9-7!}{3}$
DATE OF LAST UNDERWATER INSPECTION = 1979 CONDUCTED BY = CHESCIV (UCT TVO)
NEXT SCHED. REPAIR = 1986
NEXT SCHED. OVERHAUL = <u>1908</u>
DATE SHEET COMPILED = $\frac{\partial}{\partial a} \frac{\partial c}{\partial b}$
(*) fown-graded to class E after 1979 usu Insp

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FLEET MOORING DATA SHEET
MRG ID = DICIA GENERAL LOC = Middle Loch (JEMF) DES CLASS = A(*)
DATE ESTAB = 1950 DEPTH = 24.0 f(.(MLW) BOTTOM = Mud
LAT. COORD. (N) = $24^{-}22^{-}47.5^{+}$ LONG. COORD. (W) = $157^{-}59^{-}23.8^{+}$
BUOY TYPE = Act-chain of lanscripe SIZE = 12446hi
FENDER = Rubber FIBERGLASS COATING = Yes
CHAIN SIZE = $\frac{2^{3}/4}{4}$
SINKER = WT. OF SINKER = $60,000$ # PADEYE SIZE = $2\frac{1}{4}$
# OF ANCHORS = 2
ANCHOR 1 WT = $40,000 4^{t}$ PADEYE SIZE = $2^{t}/4$ .ANCHOR 2 WT = $(10,1)$ PADEYE SIZE = $(20,1)$ ANCHOR 3 WT = $-$ PADEYE SIZE = $-$ ANCHOR 4 WT = $-$ PADEYE SIZE = $-$
USAGE DURING PAST YEAR = <u>365 days</u>
TYPE OF SHIPS MOORED = YEN/ 3-YERN'S /// YEND/YENB/YR/YO
DATE OF LAST REPAIR/COST = $1979/$1,200$
DATE OF LAST OVERHAUL/COST = $\frac{9-71}{7}$
DATE OF LAST UNDERWATER INSPECTION = 1979 CONDUCTED BY = CHESICIA (UCT TWO)
NEXT SCHED. REPAIR = 1986
NEXT SCHED. OVERHAUL = 1983
DATE SHEET COMPILED = $\frac{6 - 82/MS}{1}$
(F) coun-graded to class E after 1979 U/N Insp.

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FLEET MOORING DATA SHEET
MRG ID = $2iCS$ GENERAL LOC = <u>Middle Loch (ISMP</u> ) DES CLASS = <u>A</u> (*)
DATE ESTAB = 1946 DEPTH = 27.0 Ft. (MLW) BOTTOM = Mud
LAT. COORD. (N) = $\frac{21^{\circ} - 22' - 46 \cdot 0''}{1000}$ LONG. COORD. (W) = $\frac{157^{\circ} - 54' - 25 \cdot 9''}{1000}$
BUOY TYPE = Ricor chain "Thansepipe SIZE = 12 & Chi
FENDER = Rubber FIBERGLASS COATING = Yes
CHAIN SIZE = $\frac{234}{}$
SINKER = WT. OF SINKER = $\frac{66,000}{100}$ PADEYE SIZE = $\frac{2}{a}$
# OF ANCHORS = $2^{4}$
ANCHOR 1 WT = $(O_1 \cap C \cap A^1)$ PADEYE SIZE = $(Z_1 \cap A^1)$ ANCHOR 2 WT = $(D_2 \cap A^1)$ PADEYE SIZE = $(Z_2 \cap A^1)$ ANCHOR 3 WT = $(U_2 \cap A^1)$ PADEYE SIZE = $(Z_2 \cap A^1)$ ANCHOR 4 WT = $(U_2 \cap A^1)$ PADEYE SIZE = $(U_2 \cap A^1)$
USAGE DURING PAST YEAR = <u>365 days</u>
TYPE OF SHIPS MOORED = YEND/YENE/YR/YO
DATE OF LAST REPAIR/COST = $\frac{1977}{123275}$
DATE OF LAST OVERHAUL/COST = $\frac{9-71}{?}$
DATE OF LAST UNDERWATER INSPECTION = 1979 CONDUCTED BY = CHESTON (UST TURN)
NEXT SCHED. REPAIR = $1686$
NEXT SCHED. OVERHAUL = 1983
DATE SHEET COMPILED = 8-82/MS
(+) Down-groded to dass E after 1979 U/W Insp

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FLEET MOORING DATA SHEET
MRG ID = $\frac{D(1)}{2}$ GENERAL LOC = $\frac{Middle Loch}{(ISMF)}$ DES CLASS = <u>A</u> (+)
DATE ESTAB = 1946 DEPTH = 23.0 ft. (MLN) BOTTOM = Mud
LAT. COORD. (N) = $2i^{2} \cdot 22 \cdot 52 \cdot 2^{"}$ LONG. COORD. (W) = $157 \cdot 59 \cdot 24 \cdot 2^{"}$
BUOY TYPE = RISCE-Chain 17 hawsepipe SIZE = 126×611
FENDER = Rubber FIBERGLASS COATING = Yes
CHAIN SIZE = $2^{\frac{3}{4}}$
SINKER = 1 WT. OF SINKER = $60,000 \pm 100$ PADEYE SIZE = $2\frac{1}{4}$
# OF ANCHORS = $4$ -
ANCHOR 1 WT = $4c, cco dl$ PADEYE SIZE = $2/a$ ANCHOR 2 WT = $(2c_0)$ PADEYE SIZE = $(2c_0)$ ANCHOR 3 WT = $(2c_0)$ PADEYE SIZE = $(2c_0)$ ANCHOR 4 WT = $(2c_0)$ PADEYE SIZE = $(2c_0)$
USAGE DURING PAST YEAR = 365 days
TYPE OF SHIPS MOORED = YRDH/YRDH
DATE OF LAST REPAIR/COST = $\frac{1979}{140,750}$
DATE OF LAST OVERHAUL/COST = 5.70 /?
DATE OF LAST UNDERWATER INSPECTION = 1979 CONDUCTED BY = GHESDIV ALCT TWO
NEXT SCHED. REPAIR = 1933
NEXT SCHED. OVERHAUL = $1985$
DATE SHEET COMPILED = $\frac{8 \cdot \epsilon_2}{MS}$
(*) Down-graded to class D after 1979 U/W Insp.

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FLEET MOORING DATA SHEET
MRG ID = $2114$ GENERAL LOC = <u>Middle Lech</u> (JCIAF) DES CLASS = <u>A(+)</u>
DATE ESTAB = 1950 DEPTH = 27.0 ft. (IALIV) BOTTOM = Mud
LAT. COORD. (N) = $21^{6} \times 2^{2} - 56.7^{"}$ LONG. COORD. (W) = $157^{2} - 59^{2} - 26.2^{"}$
BUOY TYPE = Ricco chain 17 howcopies SIZE = 12 + x6 hi
FENDER = Kulber FIBERGLASS COATING = Yes
CHAIN SIZE = $2^{\frac{3}{4}}$
SINKER = 1 WT. OF SINKER = $\frac{60,000}{4}$ PADEYE SIZE = $\frac{2\frac{1}{4}}{5}$
$\# \text{ OF ANCHORS} = \underline{3}$
ANCHOR 1 WT = $6c, 0cc$ #PADEYE SIZE = $2\frac{1}{4}$ ANCHOR 2 WT = $(Lc.)$ PADEYE SIZE = $(Lc.)$ ANCHOR 3 WT = $(Lc.)$ PADEYE SIZE = $(Lc.)$ ANCHOR 4 WT = $$ PADEYE SIZE = $$
USAGE DURING PAST YEAR = 365 days
TYPE OF SHIPS MOORED = YRDH/YRDH
DATE OF LAST REPAIR/COST =AA,660
DATE OF LAST OVERHAUL/COST = $\frac{5-70}{?}$
DATE OF LAST UNDERWATER INSPECTION = 1979 CONDUCTED BY = <u>CHEEDIV (HCT True)</u>
NEXT SCHED. REPAIR = $1932$
NEXT SCHED. OVERHAUL = $1985$
DATE SHEET COMPILED = 5.5%/MG
(+) Down-yroded to class D offer 1979 4/W Insu.

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FLEET MOORING DATA SHEET
MRG ID = DIG GENERAL LOC = Middle Loch (ZSIAF) DES CLASS = A(*)
DATE ESTAB = 1946 DEPTH = 27.0 (4. MALW) BOTTOM = MAd
LAT. COORD. (N) = $21^{6} 22^{6} - 49.2^{4}$ LONG. COORD. (W) = $157^{6} - 59^{4} - 28.4^{4}$
BUOY TYPE = Risci-chain 19 bar SIZE = $124 \times 6'hi$
FENDER = Rubber (top & side) FIBERGLASS COATING = Yes
CHAIN SIZE = $\frac{2^{3}}{4}$
SINKER = WT. OF SINKER = $60,000 \pm$ PADEYE SIZE = $\frac{2^{1}/4}{4^{2}}$
# OF ANCHORS = <u>4</u> -
ANCHOR 1 WT = $GC, CCC di$ PADEYE SIZE = $2/4 da$ ANCHOR 2 WT = $1/2 da$ PADEYE SIZE = $(1/2 da)$ ANCHOR 3 WT = $1/2 da$ PADEYE SIZE = $(1/2 da)$ ANCHOR 4 WT = $1/2 da$ PADEYE SIZE = $(1/2 da)$
USAGE DURING PAST YEAR = C days
TYPE OF SHIPS MOORED =
DATE OF LAST REPAIR/COST = $\frac{1977}{$3,275}$
DATE OF LAST OVERHAUL/COST = $\frac{4-6\epsilon/?}{}$
DATE OF LAST UNDERWATER INSPECTION = 1979 CONDUCTED BY = <u>CHESDIV/HCT Turo</u> ;
NEXT SCHED. REPAIR = 1988
NEXT SCHED. OVERHAUL = 1985
DATE SHEET COMPILED = $\frac{8 \cdot 87}{M_{\odot}}$
(A) rown-graded to class <u>D</u> after 1979 U/W Incp.

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FLEET MOORING DATA SHEET
MRG ID = $D(2N)$ GENERAL LOC = Middle Loch (ICMF) DES CLASS = $A(*)$
DATE ESTAB = 1944 DEPTH = 24.0 ft./MLW) BOTTOM = Mud
LAT. COORD. (N) = $21^{\circ}22^{\circ}55.3^{\circ}$ LONG. COORD. (W) = $157^{\circ}59^{\circ}-26.8^{\circ}$
BUOY TYPE = Ricci chain Mhausepipe SIZE = 12'\$ × 6'hi
FENDER = <u>Rubber</u> FIBERGLASS COATING = <u>Yes</u>
CHAIN SIZE = $2\frac{3}{4}$
SINKER = $1$ WT. OF SINKER = $60,000+$ PADEYE SIZE = $2/4^{-6}$
# OF ANCHORS = $2i$
ANCHOR 1 WT = $\underbrace{6C, COO^{-dit}}_{(Do, t)}$ PADEYE SIZE = $\underbrace{2/4 \ ds}_{(Do, t)}$ ANCHOR 2 WT = $\underbrace{(Do, t)}_{(Co, t)}$ PADEYE SIZE = $\underbrace{/(co, t)}_{(Do, t)}$ ANCHOR 3 WT = $\underbrace{(Co, t)}_{(Co, t)}$ PADEYE SIZE = $\underbrace{/(co, t)}_{(Co, t)}$ ANCHOR 4 WT = $\underbrace{(Co, t)}_{(Co, t)}$ PADEYE SIZE = $\underbrace{/(co, t)}_{(Co, t)}$
USAGE DURING PAST YEAR = 365 days
TYPE OF SHIPS MOORED = YTM/YTM/YFR/YF
DATE OF LAST REPAIR/COST = $\frac{1977}{42,750}$
DATE OF LAST OVERHAUL/COST = $\frac{2-74}{?}$
DATE OF LAST UNDERWATER INSPECTION = 1979 CONDUCTED BY = <u>CHEEPIV/UCT TWO</u>
NEXT SCHED. REPAIR = 1937
NEXT SCHED. OVERHAUL = $1964$
DATE SHEET COMPILED = $\frac{6-32/14S}{1}$
(*) Davn-graded to dass F ofter 1979 U/W Ensp.

FLEET MOORING DATA SHEET
MRG ID = DIZIM GENERAL LOC = Middle Loch (ZCMF) DES CLASS = A (4)
DATE ESTAB = 1950 DEPTH = 26.0 ft. (MLW) BOTTOM = Mind
LAT. COORD. (N) = $21^{2}22^{2}-53.8^{\prime\prime}$ LONG. COORD. (W) = $157^{2}-59^{2}-28.9^{\prime\prime}$
BUOY TYPE = Risci-chain My hawse fire SIZE = 12 & x & hi
FENDER = Eucles FIBERGLASS COATING = Yes
CHAIN SIZE = $\frac{2\pi}{3}$
SINKER = WT. OF SINKER = $\frac{GC, CCO^{4+}}{2}$ PADEYE SIZE = $\frac{2!4}{4}$
# OF ANCHORS = 2
ANCHOR 1 WT = $60,000$ thPADEYE SIZE = $2/4.45$ ANCHOR 2 WT = $120$ PADEYE SIZE = $120$ PADEYE SIZE = $120$ PADEYE SIZE =ANCHOR 3 WT =PADEYE SIZE = $120$ PADEYE SIZE = $120$ PADEYE SIZE =ANCHOR 4 WT =PADEYE SIZE = $120$ PADEYE SIZE = $120$ PADEYE SIZE =
USAGE DURING PAST YEAR = 365 days
TYPE OF SHIPS MOORED = $\frac{\gamma TM}{\gamma TM} \frac{\gamma FP}{\gamma FP}$
DATE OF LAST REPAIR/COST = $\frac{1977}{*3,275}$
DATE OF LAST OVERHAUL/COST = $2-74/?$
DATE OF LAST UNDERWATER INSPECTION = 1979 CONDUCTED BY = CHESCIV (MCT TWO)
NEXT SCHED. REPAIR = $19.87$
NEXT SCHED. OVERHAUL = $1134$ -
DATE SHEET COMPILED = <u>6-82/MG</u>
(" Enwn-graded to class E offer 1979 U/W Insp.

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FLEET MOORING DATA SHEET
MRG ID = <u>D12.</u> GENERAL LOC = <u>Middle Loch</u> ( <u>ESMF</u> ) DES CLASS = <u>A</u> (*)
DATE ESTAB = 1946 DEPTH = 22.0 ft./inlw) BOTTOM = Mud
LAT. COORD. (N) = $21-22-52.3''$ LONG. COORD. (W) = $157-59-31.0''$
BUOY TYPE = Riser-chain 57 hauschipe SIZE = 124×6 ht
FENDER = Kubber FIBERGLASS COATING = 1/2
CHAIN SIZE = $2\frac{3}{4}$
SINKER = 1 WT. OF SINKER = $\frac{60,000^{\pm}}{1000^{\pm}}$ PADEYE SIZE = $\frac{2^{2}}{4}$
# OF ANCHORS = $4$
ANCHOR 1 WT = $GC, CCC T^{*}$ PADEYE SIZE = $2/A - b$ ANCHOR 2 WT =PADEYE SIZE =PADEYE SIZE = $$ ANCHOR 3 WT =PADEYE SIZE = $$ ANCHOR 4 WT =PADEYE SIZE = $$
USAGE DURING PAST YEAR = O days
TYPE OF SHIPS MOORED = ?
DATE OF LAST REPAIR/COST = $1977/23,275$
DATE OF LAST OVERHAUL/COST = $\frac{4-7i}{?}$
DATE OF LAST UNDERWATER INSPECTION = <u>1979</u> CONDUCTED BY = <u>CHESDIV (UCT (190)</u>
NEXT SCHED. REPAIR = $(387)$
NEXT SCHED. OVERHAUL = $1934$ -
DATE SHEET COMPILED = $\frac{\partial - \partial^2 / M \hat{c}}{\partial \hat{c}}$
(F) From graded to class E ofter 1979 U/N Insp.

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FLEET MOORING DATA SHEET
MRG ID = <u>DP1N</u> GENERAL LOC = <u>Depending Prc.</u> DES CLASS = $A(r)$
DATE ESTAB = 1942 DEPTH = 40.0 ft. (1444) BOTTOM = Mud
LAT. COORD. (N) = $21^{-}22^{-}12.0^{"}$ LONG. COORD. (W) = $157^{-}56^{-}33.6^{"}$
BUOY TYPE = Riser-chain NT hawsepipe SIZE = 12 & K 6 hi
FENDER = Kubber FIBERGLASS COATING = Yes
CHAIN SIZE = $2\frac{34}{4}$
SINKER = 1 WT. OF SINKER = $\frac{60,000}{4}$ PADEYE SIZE = $\frac{24^{4}}{4}$
# OF ANCHORS = $4$ -
ANCHOR 1 WT = $GC,CCC$ #PADEYE SIZE = $Z'/4$ $\Phi$ ANCHOR 2 WT = $(Do.)$ PADEYE SIZE = $(Do.)$ ANCHOR 3 WT = $(Do.)$ PADEYE SIZE = $(Do.)$ ANCHOR 4 WT = $(Do.)$ PADEYE SIZE = $(Do.)$
USAGE DURING PAST YEAR = 10 days
TYPE OF SHIPS MOORED = $LHA/CC/CV$
DATE OF LAST REPAIR/COST = $\frac{1977}{$3,000}$
DATE OF LAST OVERHAUL/COST = 2-02/Installation cost = 327,000 (**)
DATE OF LAST UNDERWATER INSPECTION = CONDUCTED BY =
NEXT SCHED. REPAIR = 1965
NEXT SCHED. OVERHAUL = $1987$
DATE SHEET COMPILED = $\frac{6-32/MC}{MC}$
(*) Mooring was class C prior to 3/82; was relocated from DIN 4/81
(*** FINE J.O. 190-6626, completed 3/82, ; PHASI Floating crane and diver convires & PWC shop forces; super unstatt accomplishment for Lith deperming 2/82.

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FLEET MOORING DATA SHEET
MRG ID = $DP1G$ GENERAL LOC = <u>Deperming Fac.</u> DES CLASS = <u>A (+)</u>
DATE ESTAB = $1942$ DEPTH = $40.0 \text{ H}.(MUM)$ BOTTOM = Mud
LAT. COORD. (N) = $21^{2} - 22^{2} - co.C^{"}$ LONG. COORD. (W) = $157^{6} - 58^{2} - 35.7^{"}$
BUOY TYPE = Riser-chain wy hawsepipe SIZE = 12'& × 6'hi
FENDER = Rubler FIBERGLASS COATING = Yes
CHAIN SIZE = $2.\frac{3}{4}$
SINKER = WT. OF SINKER = $60,0co$ # PADEYE SIZE = $2\frac{1}{4}$
# OF ANCHORS =
ANCHOR 1 WT = $6c, cco$ $4i$ PADEYE SIZE = $z/4$ $dz$ ANCHOR 2 WT = $(tco.)$ PADEYE SIZE = $(tco.)$ ANCHOR 3 WT = $(tco.)$ PADEYE SIZE = $(tco.)$ ANCHOR 4 WT = $(tco.)$ PADEYE SIZE = $(tco.)$
USAGE DURING PAST YEAR = 10 days
TYPE OF SHIPS MOORED = $LHA/cc/cl$
DATE OF LAST REPAIR/COST =
DATE OF LAST OVERHAUL/COST = 3-80/ Installation cost = 822,000 (++)
DATE OF LAST UNDERWATER INSPECTION = CONDUCTED BY =
NEXT SCHED. REPAIR = 1985
NEXT SCHED. OVERHAUL = $1987$
DATE SHEET COMPILED = 8-82/MS
(*) Mooring was Class C prior to 2/82; was relocated from D1S 4/81
(42" FWC J.D. 190-6626, completed 3/Ba: PHNSY floating crane and diver services & TWC shop forces; super UKGENT accomplishment for LHA depermine 4/62.

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FLEET MOORING DATA SHEET
MRG ID = <u>DP2N</u> GENERAL LOC = <u>Deperming Tac.</u> DES CLASS = <u>C</u>
DATE ESTAB = MULTICH 1982. DEPTH = 36.0 H./MLW) BOTTOM = MUL
LAT. COORD. (N) = $21^{2} - 13.6^{"}$ LONG. COORD. (W) = $157^{2} - 58^{2} - 35.8^{"}$
BUOY TYPE = Ricci-chain =7 hawsepipe SIZE = 12 & x 6 hi
FENDER = Rubber FIBERGLASS COATING = 125
CHAIN SIZE = $2^{2}/4^{11}$
SINKER = WT. OF SINKER = PADEYE SIZE =
$\# \text{ OF ANCHORS} \approx 1$
ANCHOR 1 WT = $(0, ccc^{dt})$ PADEYE SIZE = $2/2^{dt}$ ANCHOR 2 WT =PADEYE SIZE =ANCHOR 3 WT =PADEYE SIZE =ANCHOR 4 WT =PADEYE SIZE =
USAGE DURING PAST YEAR = 10 days
TYPE OF SHIPS MOORED = Lin-1 CG/CV
DATE OF LAST REPAIR/COST =
DATE OF LAST OVERHAUL/COST = Installation cost . \$11,000 (*)
DATE OF LAST UNDERWATER INSPECTION = CONDUCTED BY =
NEXT SCHED. REPAIR = 1985
NEXT SCHED. OVERHAUL = $1987$
DATE SHEET COMPILED = 8-82/M2

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(r) FULC J.O. 190-6626, completed 3 52 : Ellidsy floating crane & diven services and full shop forces; super LIRGENSE accomplishments for Lita. diperming diper.




FLEET MOORING DATA SHEET
MRG ID = 2925 GENERAL LOC = Depending Fac. DES CLASS = C
DATE ESTAB = March 1982 DEPTH = 40.0 ft.(MLW) BOTTOM = Mud
LAT. COORD. (N) = $21^{\circ} - 22' - 01.0''$ LONG. COORD. (W) = $157^{\circ} - 56' - 36.4''$
BUOY TYPE = Ricer-eliain wy hawse pipe SIZE = 12 & chi
FENDER = Rubber FIBERGLASS COATING = Yes
CHAIN SIZE = $\frac{2^{2}/4}{2}$
SINKER = WT. OF SINKER = PADEYE SIZE =
#  OF ANCHORS = 1
ANCHOR 1 WT = $10, coc^{-2t}$ PADEYE SIZE = $2\frac{1}{2}$ .ANCHOR 2 WT =-PADEYE SIZE =-ANCHOR 3 WT =-PADEYE SIZE =-ANCHOR 4 WT =-PADEYE SIZE =-
USAGE DURING PAST YEAR = 10 days
TYPE OF SHIPS MOORED = LHA/CC/CV
DATE OF LAST REPAIR/COST =
DATE OF LAST OVERHAUL/COST = Zistallation cost = \$ 11,000 (+)
DATE OF LAST UNDERWATER INSPECTION = CONDUCTED BY =
NEXT SCHED. REPAIR = 1965
NEXT SCHED. OVERHAUL = $1967$
DATE SHEET COMPILED = $\frac{8-82/MS}{2}$

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(M FUIC J.O. 190-6626, completed 3/82) FHNSY floating crave & diver services and EWC chop forces & super UNGENT accomplicaments for 6114 depending 4/32)

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FLEET MOORING DATA SHEET
MRG ID = DPOA GENERAL LOC = Depending Fac. DES CLASS = $C(*)$
DATE ESTAB = 1948 DEPTH = 12.0 H.(MUN) BOTTOM = Mud
LAT. COORD. (N) = $2i^{2}22 - 02.9^{"}$ LONG. COORD. (W) = $157^{2} - 58^{2} - 39.1^{"}$
BUOY TYPE = Riccr. chain of howscripe SIZE = 12446 hi
FENDER = Richber FIBERGLASS COATING = Yes
CHAIN SIZE = $\frac{2.34}{14}$
SINKER = WT. OF SINKER = PADEYE SIZE =
# OF ANCHORS = $($
ANCHOR 1 WT = $4^{\circ}$ , $ccc$ $4^{\circ}$ PADEYE SIZE = $2^{\circ}/4$ $d^{\circ}$ ANCHOR 2 WT =-PADEYE SIZE =ANCHOR 3 WT =-PADEYE SIZE =-ANCHOR 4 WT =-PADEYE SIZE =-
USAGE DURING PAST YEAR = 10 days
TYPE OF SHIPS MOORED = LIA/CC/CI
DATE OF LAST REPAIR/COST = $\frac{1977/\$2,750}{1977/\$2,750}$
DATE OF LAST OVERHAUL/COST = $\frac{1-72}{2}$
DATE OF LAST UNDERWATER INSPECTION = $1979$ CONDUCTED BY = <u>CHESC''I (ICT Time)</u>
NEXT SCHED. REPAIR = $1985$
NEXT SCHED. OVERHAUL = $1987$
DATE SHEET COMPILED = 6.62/NS
(+1 cown-graded to class E after 1979 W/W Insp.

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MRG	$ID = \underline{VPGN}$ GENERAL LOC = <u>Deperming Fac.</u> DES CLASS = <u>C</u>
DATE	ESTAB = $1943$ DEPTH = $12.0$ f(. (MW) BOTTOM = Mud
LAT.	COORD. (N) = $2!^{6} 22! - 12.8''$ LONG. COORD. (W) = $157 - 58' - 38.8''$
BUOY	TYPE = Ricco-chain of hawscripe SIZE = 120 × 6 hi
	FENDER = Richard FIBERGLASS COATING = Yes
CHAI	N SIZE = $2^{3}/4^{-1}$
SINK	$ER = 1$ (+) WT. OF SINKER = $\frac{66,000}{100}$ PADEYE SIZE = $\frac{2}{4}$
# 0F	ANCHORS = $(\dot{Y})$
	ANCHOR 1 WT = $GC, GCC \neq$ PADEYE SIZE = $2\frac{1}{4} \neq$ ANCHOR 2 WT =-PADEYE SIZE =-ANCHOR 3 WT =-PADEYE SIZE =-ANCHOR 4 WT =-PADEYE SIZE =-
TVDE	E DURING PAST YEAR = $10 \frac{da_{1}s}{c}$
TYPE	E DURING PAST YEAR = $\frac{10 \text{ days}}{10 \text{ days}}$ OF SHIPS MOORED = $\frac{114 \text{ A}/\text{cc}/\text{cv}}{1977/134,050}$
TYPE DATE DATE	E DURING PAST YEAR = $10 \frac{da/s}{10 \frac{da/s}$
TYPE DATE DATE DATE	E DURING PAST YEAR = $10 \frac{days}{d}$ OF SHIPS MOORED = $14A/cc/cv$ OF LAST REPAIR/COST = $1977/44,050$ OF LAST OVERHAUL/COST = $3nstallation cost = 40,000(**)$ OF LAST UNDERWATER INSPECTION = $1979$ CONDUCTED BY = $04t=20V(uct Two)$
TYPE DATE DATE DATE NEXT	E DURING PAST YEAR = $10 \frac{4a}{5}$ OF SHIPS MOORED = $14A/cc/cv$ OF LAST REPAIR/COST = $1977/44,050$ OF LAST OVERHAUL/COST = $5etn/lation cost = 4t_{10},000(***)$ OF LAST UNDERWATER INSPECTION = $1979$ CONDUCTED BY = $64t^{2}SD \cdot V (UCT Two)$ SCHED. REPAIR = $1985$
TYPE DATE DATE DATE NEXT NEXT	E DURING PAST YEAR = $\frac{10 \text{ days}}{14 \text{ days}}$ OF SHIPS MOORED = $\frac{14 \text{ days}}{14 \text{ days}}$ OF LAST REPAIR/COST = $\frac{1977}{44,050}$ OF LAST OVERHAUL/COST = $\frac{50 \text{ days}}{1000}$ (4.**) OF LAST OVERHAUL/COST = $\frac{1977}{1000}$ OF LAST UNDERWATER INSPECTION = $\frac{1979}{1000}$ CONDUCTED BY = $\frac{1985}{1000}$ SCHED. REPAIR = $\frac{1985}{1000}$
TYPE DATE DATE DATE NEXT NEXT DATE	E DURING PAST YEAR = $\frac{10 \text{ days}}{14 \text{ days}}$ OF SHIPS MOORED = $\frac{14 \text{ days}}{14 \text{ days}}$ OF LAST REPAIR/COST = $\frac{1977}{144,050}$ OF LAST OVERHAUL/COST = $\frac{1977}{144,050}$ OF LAST OVERHAUL/COST = $\frac{1979}{1400}$ OF LAST UNDERWATER INSPECTION = $\frac{1979}{1400}$ SCHED. REPAIR = $\frac{1985}{1487}$ SCHED. OVERHAUL = $\frac{1985}{1487}$ SHEET COMPILED = $\frac{5 \cdot 82/142}{1487}$
TYPE DATE DATE DATE NEXT NEXT DATE (*)	E DURING PAST YEAR = $\frac{10 \text{ days}}{10 \text{ days}}$ OF SHIPS MOORED = $\frac{14 \text{ A}/\text{cc}/\text{cv}}{14 \text{ A}/\text{oSO}}$ OF LAST REPAIR/COST = $\frac{1977/\text{#4.0SO}}{\text{Installation cost : #11,000(**)}}$ OF LAST OVERHAUL/COST = $\frac{1977}{100}$ OF LAST UNDERWATER INSPECTION = $\frac{1979}{1000}$ CONDUCTED BY = $\frac{1985}{1000}$ SCHED. REPAIR = $\frac{1985}{1000}$ SCHED. OVERHAUL = $\frac{1985}{1000}$ SCHED. OVERHAUL = $\frac{1985}{1000}$ SHEET COMPILED = $\frac{5 \cdot 82/MS}{10000}$ This class C mooring has 1 sinker & 1 ground log as directed by Experiming inactify.

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FLEET MOORING DATA SHEET
MRG ID = $TIN$ GENERAL LOC = west Loch DES CLASS = $C(*)$
DATE ESTAB = $1957$ DEPTH = $29.0$ ft. (1922) BOTTOM = Mud
LAT. COORD. (N) = $21^{\circ}21^{\circ}-13.5^{\circ}$ LONG. COORD. (W) = $157^{\circ}-58^{\circ}-59.7^{\circ}$
BUOY TYPE = Riser-chain #7 hawscripe SIZE = 12'& x 6'hi
FENDER = Rubber FIBERGLASS COATING = Yes
CHAIN SIZE = $2^{3}/4^{4}$
SINKER = WT. OF SINKER = PADEYE SIZE =
# OF ANCHORS = $1$
ANCHOR 1 WT = $GO,CCO$ $d$ PADEYE SIZE = $21/4$ $d$ ANCHOR 2 WT =PADEYE SIZE =PADEYE SIZE = $-$ ANCHOR 3 WT =PADEYE SIZE = $-$ ANCHOR 4 WT =PADEYE SIZE = $-$
USAGE DURING PAST YEAR = 10 days
TYPE OF SHIPS MOORED = Landing craft
DATE OF LAST REPAIR/COST = $1917 / 32,750$
DATE OF LAST OVERHAUL/COST = $\frac{1-72}{?}$
DATE OF LAST UNDERWATER INSPECTION = 1979 CONDUCTED BY = CHESDIN (UCT TWO)
NEXT SCHED. REPAIR = 1984
NEXT SCHED. OVERHAUL = $1966$
DATE SHEET COMPILED = 8-82/MG
(+) Enwn-graded to Class <u>G</u> after 1979 U/W Insp.

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C-57

FLEET MOORING DATA SHEET
MRG ID = $T1S$ GENERAL LOC = west Loch DES CLASS = $C(*)$
DATE ESTAB = 1957 DEPTH = 28.0 H. (MLW) BOTTOM = Mud
LAT. COORD. (N) = $21^{\circ}-22^{\prime}-14.5^{\prime\prime}$ LONG. COORD. (W) = $157^{\circ}-59^{\prime}-00.7^{\prime\prime}$
BUOY TYPE = Risar-chain wy hawsepipe SIZE = 12'0×6'hi
FENDER = <u>Rubber</u> FIBERGLASS COATING = Yes
CHAIN SIZE = $2\frac{3}{4}$
SINKER = WT. OF SINKER = PADEYE SIZE =
# OF ANCHORS =
ANCHOR 1 WT = $60, CCC = 4^{1}$ PADEYE SIZE = $2^{1}/4^{-6}$ ANCHOR 2 WT =PADEYE SIZE =ANCHOR 3 WT =PADEYE SIZE =ANCHOR 4 WT =PADEYE SIZE =
USAGE DURING PAST YEAR = 10 days
TYPE OF SHIPS MOORED = Landing craft
DATE OF LAST REPAIR/COST = 1977 / #2,750
DATE OF LAST OVERHAUL/COST = $\frac{1-72}{?}$
DATE OF LAST UNDERWATER INSPECTION = 1979 CONDUCTED BY = CHESDIN (ACT TWO)
NEXT SCHED. REPAIR = 1984-
NEXT SCHED. OVERHAUL = 1966
DATE SHEET COMPILED = 5-52/MS
(*) Down-graded to Class <u>G</u> after 1979 U/W Insp.

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FLEET MOORING DATA SHEET	
MRG ID = X95 GENERAL LOC = East Loch	DES CLASS = $A \leftrightarrow$
DATE ESTAB = 194.0 DEPTH = $\frac{42.0}{36.0}$ ft.	(MLN) BOTTOM = Mud
LAT. COORD. (N) = $22^{2}-22^{2}-48.0^{"}$ LONG. COORD. (	W) = 157' - 57' - 16.5''
BUOY TYPE = Riser-chain wy hawsepipe SIZE = _	12 0 x 6 hi
FENDER = <u>Rubber</u> FIBERGLASS COATING	= 4es
CHAIN SIZE = $2\frac{3}{4}$ .	
SINKER = $1$ WT. OF SINKER = $60,000$ #	PADEYE SIZE = $\frac{24}{24}$
# OF ANCHORS = <u>4</u> -	"
ANCHOR 1 WT = $66,000$ =>PADEYE SANCHOR 2 WT = $(70.)$ PADEYE SANCHOR 3 WT = $(100.)$ PADEYE SANCHOR 4 WT = $(100.)$ PADEYE S	$IZE = \frac{2^{1/2} + 2^{3/4} + 2^{3/4}}{1ZE} = \frac{(00.)}{(00.)}$ $IZE = \frac{(00.)}{(00.)}$
USAGE DURING PAST YEAR = $20 \text{ days}$ TYPE OF SHIPS MOORED = $CG/DDG/DD/FF/AO/ARS$	, 
DATE OF LAST REPAIR/COST = $\frac{1977}{#3,075}$	
DATE OF LAST OVERHAUL/COST = $\frac{27/22}{12-B2}$	/\$51,000 (**)
DATE OF LAST UNDERWATER INSPECTION = 1979 CONDUCTED BY = <u>CHUSCIV (UCT TWA)</u>	
NEXT SCHED. REPAIR = 1985	
NEXT SCHED. OVERHAUL =	
DATE SHEET COMPILED = 4-83 8-82/MG	
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