USCGC IDA LEWIS (WLM 551)

SPECIFICATION FOR DRYDOCK REPAIRS

FY2020

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(Rev-2, 3 February 2020)

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REVISIONS RECORD

This page is used to record specification revisions, which may have occurred subsequent to a Revision 0 (Rev-0) package. Information listed is intended to provide contractors and field unit personnel a means to ensure all the current specification revision pages are present when reviewing or utilizing this specification package.

DATE	REV#	WORK ITEM#	CHANGES MADE
01/31/2020	2	50	Paragraphs 3.2 to 3.3 numbering was corrected.
01/31/2020	2	39	Paragraph 1.1 SCOPE; Clarification of surfaces to be preserved
01/31/2020	2	12	Included Table #1 to identify the location of the non accessible voids.

NOTE : All work item and paragraph numbers listed above for a given revision correspond to same numbers in the previous revision. This revised specification is self-contained with all of the above listed changes incorporated.

CONSOLIDATED LIST OF REFERENCES

The below-listed documents form a part of this specification to the extent specified herein. Approval/publication dates or revision dates/numbers are also identified, to ensure that same document versions are used at the time of specification writing and during contract execution.

All Coast guard drawings, technical publications, and standard specifications will be provided to contractors by the Coast Guard at an appropriate time, or upon request, free of charge. Other Government documents may be accessed – free of charge – from links located on the SFLC website. Commercial sites provide access to their respective documents.

COAST GUARD DRAWINGS

2.2T-107-YM

Coast Guard Drawing 175 WLM 114-001, Rev D, Shell Appendages

Coast Guard Drawing 175 WLM 130-001, Rev -Mods to Buoy Deck Incidental to Hawser Pipe Cover

Coast Guard Drawing 175 WLM 184-001, Rev A, V850 Transducer Adaptor Ring

Coast Guard Drawing 175 WLM 184-001, Rev-, CRP-V850 Transducer Adapter Ring

Coast Guard Drawing 175 WLM 184-001, V850 Transducer Adaptor Ring

Coast Guard Drawing 175 WLM 185-001, Rev -, Foundation Incidental to Boss 2.2 GPM OWS

Coast Guard Drawing 175 WLM 201-001, Rev C, Machinery Spaces Arrangement

Coast Guard Drawing 175 WLM 202-002, Rev G, MPCMS Wiring Data (COED)

Coast Guard Drawing 175 WLM 243-2, Rev E, Propulsion Shaft Arrangement

Coast Guard Drawing 175 WLM 245-001, Rev A, Propeller

Coast Guard Drawing 175 WLM 245-002, Rev A, Z-drive Propeller Details, Modified Design

Coast Guard Drawing 175 WLM 256-001, Rev J Seawater Cooling System Diagram

Coast Guard Drawing 175 WLM 256-001, Rev J, Seawater Cooling System Diagram

Coast Guard Drawing 175 WLM 256-003, Rev D, Seawater Cooling System FR 61 Forward

Coast Guard Drawing 175 WLM 256-004, Rev J, Seawater Cooling System Arrangements and Details

Coast Guard Drawing 175 WLM 256-004, Rev J, Sheets 5 and 13, Seawater Cooling System A & D, Hull Blocks 940-970

Coast Guard Drawing 175 WLM 256-005, Rev -, Z-Drive Lube Oil Heat Exchanger Tube Bundle, Replacement and Piping Mods

Coast Guard Drawing 175 WLM 256-012, Rev B, Auxiliary Seawater System Piping Mods

Coast Guard Drawing 175 WLM 256-013, Rev -, Sea Bay Thermometer Installation

Coast Guard Drawing 175 WLM 262-001, Rev J, Lube Oil System Diagram

Coast Guard Drawing 175 WLM 262-002, Rev H, Waste Oil System Diagram

Coast Guard Drawing 175 WLM 262-005, Rev G, Lube Oil System A/D – Hull Blocks 910, 930, 940, & 970

Coast Guard Drawing 175 WLM 320-001, Rev AL, Electrical One-Line Diagram

Coast Guard Drawing 175 WLM 320-004, Rev G, Power System Deck Plan ER and Pump Rm

Coast Guard Drawing 175 WLM 320-012, Rev -, Power System Mods Incidental to OWS

Coast Guard Drawing 175 WLM 505-003, Rev A, Sea Connection Arrangements

Coast Guard Drawing 175 WLM 533-001, Rev G, Potable Water System Diagram

Coast Guard Drawing 175 WLM 533-006, Rev D, Independent Tank Potable Water Hb 950

Coast Guard Drawing 175 WLM 541-001, Rev H, Fuel Oil System Diagram

Coast Guard Drawing 175 WLM 541-006, Rev C, Independent Tanks, Emergency Generator Day Tank IIP:7-1

Coast Guard Drawing 175 WLM 561-001, Rev J, Z-drive Hydraulic System Diagram

Coast Guard Drawing 175 WLM 568-2, Rev M, Bow Thruster Assembly (Model 125 Fixed Pitch)

Coast Guard Drawing 175 WLM 573-001, Rev T, Buoy Deck Arrangement

Coast Guard Drawing 175 WLM 581-001, Rev E, Anchor Handling System Arrangement

Coast Guard Drawing 175 WLM 581-001, Rev F, Anchor Handling System Arrangement

Coast Guard Drawing 175 WLM 581-001, Rev F, Anchor Handling System

Coast Guard Drawing 175 WLM 593-002, Rev H, Oily Bilge System Diagram

Coast Guard Drawing 175 WLM 593-013, Rev C, BOSS 2.2 GPM OWS Piping Installation

Coast Guard Drawing 175 WLM 593-014, Rev A, OWS System Operating Instructions BOSS

Coast Guard Drawing 175 WLM 601-001, Rev L, General Arrangement and Inboard and Outboard Profiles

Coast Guard Drawing 175 WLM 601-001, Rev P, General Arrangement and Inboard and Outboard Profiles

Coast Guard Drawing 175 WLM 601-001, Rev P, General Arrangement Inboard and Outboard Profiles

Coast Guard Drawing 175 WLM 601-001, Rev T, General Arrangement Inboard & Outboard

Coast Guard Drawing 175 WLM 601-001, Rev T, General Arrangement Inboard and Outboard Profiles

Coast Guard Drawing 175 WLM 601-003, Rev F, Booklet of General Drawings (552-564)

Coast Guard Drawing 175 WLM 601-003, Rev F, Booklet of General Drawings 552-564

Coast Guard Drawing 175 WLM 601-003, Rev F, Booklet of General Plans

Coast Guard Drawing 175 WLM 601-003, Rev N, Booklet of General Plans

Coast Guard Drawing 175 WLM 601-1, Rev N, Arrangement, Inboard And Outboard Profiles

Coast Guard Drawing 175 WLM 633-001, Rev D, Cathodic Protection

Coast Guard Drawing 175 WLM 635-001, Rev F, Hull Thermal and Acoustic Insulation Schedule

Coast Guard Drawing 175 WLM 801-001, Rev A, Hull Lines

Coast Guard Drawing 175 WLM 801-003, Rev A, Curves of Form

Coast Guard Drawing 175 WLM 801-006, Rev H, Docking Plan

Coast Guard Drawing 175 WLM 801-006, Rev J, Docking Drawing

Coast Guard Drawing 175 WLM 801-006, Rev J, Docking Plan

Coast Guard Drawing 175 WLM 801-019, Rev C, Shell Expansion

Coast Guard Drawing 175 WLM 801-19, Rev C; Shell Expansion

Coast Guard Drawing 175 WLM 801-6, Rev H; Docking Plan

Coast Guard Drawing 175 WLM 920-001, Rev K, Hull Block 920 Panels

Coast Guard Drawing 175-WLM 262-1, Rev H, Lube Oil System Diagram

Coast Guard Drawing 175-WLM 262-5, Rev F, Lube Oil System a & D, Hull Blocks 930, 940 & 970

Coast Guard Drawing 175-WLM 505-1, Rev C, General Requirements for Piping Systems

Coast Guard Drawing 175-WLM 568-001, Rev B, Bow Thruster Arrangement & Detail

Removal/Installation One-Line Diagram

COAST GUARD PUBLICATIONS

1)

Coast Guard Commandant Instruction(COMDTINS) M10360.3 (series), Coatings and Color Manual

Coast Guard Technical Publication (TP) 3446, Jun 2009, Doppler Speed Log, Model SRD-500 Dual Axis

Coast Guard Technical Publication (TP) 3498, Section A, Jul 2015, Buoy Chain Winch

Coast Guard Technical Publication (TP) 3605A, Nov 2007, MPCMS Operating Manual (Volume

Coast Guard Technical Publication (TP) 3605B, SWBS 86; Section B; Machinery Plant Control & Monitor System (MPCMS) Z-Drive Direction Indicator System Technical Manual

Coast Guard Technical Publication (TP) 3610, Section 167-A, July 2002, Power Operated Cargo Hatch, Coastal Buoy Tender, Model No. D-WK-787

Coast Guard Technical Publication (TP) 3613, Oct 1997; Flexible Coupling

Coast Guard Technical Publication (TP) 3619, Mar 2001 Switchboard, Ship Service & Emergency

Coast Guard Technical Publication (TP) 3622, SWBS 436, Section C, Nov. 2, 2018, H2S Alarm System

Coast Guard Technical Publication (TP) 3628, 1/1/1999; Vol 4 of 9, Instruction Manual, Bow Thruster

Coast Guard Technical Publication (TP) 3628, SWBS 568, Section A, March 2017, Bow Thruster – (Bird-Johnson Company)

Coast Guard Technical Publication (TP) 3630, 07-JAN-97, Manufacturers Instruction Book-SWBS Group(s) 573

Coast Guard Technical Publication (TP) 3631, Section 581-A, Sep 2013, Manufacturer's Instruction Book-SWBS Groups 573-581, Anchor Windlass

Coast Guard Technical Publication (TP) 3653, Jul 2013; SWBS 245, Section A; Z-drive - Model 1350-H

General Requirements

Requirements for Preservation of Ship Structures

Shipboard Electrical Cable Removal, Relocation, Splice, Repair, and Installation

Shipboard Electrical Cable Test

Surface Forces Logistics Center Standard Specification (SFLC Std Spec) 0000, 2014, General Requirements

Surface Forces Logistics Center Standard Specification (SFLC Std Spec) 0740, 2014, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification (SFLC Std Spec) 3042, 2014, Shipboard Electrical Cable Removal, Relocation, Splice, Repair, and Installation

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014,

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2018, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2014, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2014, Welding and Allied Processes.

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2014,

Surface Forces Logistics Center Standard Specification 3041 (SFLC Std Spec 3041), 2014, Shipboard Electrical Cable Test

Surface Forces Logistics Center Standard Specification 3041 (SFLC Std Spec 3041), 2014,

Surface Forces Logistics Center Standard Specification 3042 (SFLC Std Spec 3042), 2014, Shipboard Electrical Cable Removal, Relocation, Splice, Repair, And Installation

Surface Forces Logistics Center Standard Specification 3042 (SFLC Std Spec 3042), 2014,

Surface Forces Logistics Center Standard Specification 5000 (SFLC Std Spec 5000), 2014 Auxiliary Machine Systems

Surface Forces Logistics Center Standard Specification 5000 (SFLC Std Spec 5000), 2014, Auxiliary Machine Systems

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014,

Surface Forces Logistics Center Standard Specification 8634 (SFLC Std Spec 8634), 2014, Drydocking

Surface Forces Logistics Center Standard Specification 8635 (SFLC Std Spec 8635), 2014, Temporary Services

Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2014, Temporary Hull Accesses

Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2014,

Temporary Hull Accesses

Welding and Allied Processes

OTHER REFERENCES

«OTHER_REF»

American Bureau of Shipping (ABS) Approved Chain, Accessory and Bar Manufacturing Facilities List, Oct 2016

American National Standards Institute/American Water Works Association (ANSI/AWWA) C652, 2011, Disinfection of Water-Storage Facilities

American National Standards Institute/National Electrical Manufacturers Association (ANSI/NEMA) AB 4, Mar 2011, Guidelines for Inspection and Preventive Maintenance of Molded Case Circuit Breakers Used in Commercial and Industrial Applications

American National Standards Institute/NSF International (ANSI/NSF) 61, 2008, Drinking Water System Components - Health Effects

American Society for Nondestructive Testing (ASNT) SNT-TC-1A, 2013, Recommended Practice for Personal Qualification and Certification in Nondestructive Testing

American Society for Testing and Materials (ASTM), F1508, 2010, Standard Specification for Angle Style, Pressure Relief Valves for Steam, Gas, and Liquid Services

American Society of Mechanical Engineers (ASME) B16.34, 2004, Valves-Flanged, Threaded, and Welding End

American Society of Mechanical Engineers (ASME) B16.34, 2017, Valves-Flanged, Threaded, and Welding End

Appleton Marine Control Valve Retrofit Manual 20793

ASTM International (ASTM) A106, 2015, Standard Specification for Seamless Carbon Steel Pipe, for High-Temperature Service

ASTM International (ASTM) D1330, 2004, Standard Specification for Rubber Sheet Gaskets

ASTM International (ASTM) D1330, 2010, Standard Specification for Rubber Sheet Gaskets

ASTM International (ASTM) D5363, 2016, Standard Specification for Anaerobic Single-Component Adhesives (AN)

ASTM International (ASTM) F1387-99, 2012, Standard Specification for Performance of Piping and Tubing Mechanically Attached Fittings

ASTM International (ASTM) F992, 2006, Standard Specification for Valve Label Plates

ASTM International (ASTM) F992, 2017, Standard Specification for Valve Label Plates

Commercial Item Description (CID) A-A-59313, Nov 2003, Thread Compound; Anti-seize, Zinc Dust-Petrolatum

Commercial Item Description (CID) A-A-59588, 2013, Rubber Silicone

Federal Specification (Fed Spec) HH-P-151, Mar 1991, Packing; Rubber-Sheet, Cloth-Insert

Federal Specification (Fed Spec) QQ-N-281, Oct 1985, Nickel-Copper Alloy Bar, Rod, Plate, Sheet, Strip, Wire, Forgings, and Structural and Special Shaped Sections

Federal Specification (Fed Spec) RR-C-271, Rev E, Dec 2010, Chain and Attachments, Welded and Weldless

Federal Specification (Fed Spec) RR-C-271, Rev E, Mar 2016, Chains and Attachments, Carbon and Alloy Steel

IEEE-STD-45, 11 Oct 2002, Recommended Practice for Electrical Installations on Shipboard

Manufacturers Standardization Society of the Valve and Fittings Industry (MSS) SP-61, 2003 Edition, Pressure Testing Of Steel Valves

Manufacturers Standardization Society of the Valve and Fittings Industry (MSS) SP-61, 2013 Edition, Pressure Testing Of Steel Valves

Manufacturers Standardization Society of the Valve and Fittings Industry (MSS) SP-67, 2002 Edition, Butterfly Valves

Manufacturers Standardization Society of the Valve and Fittings Industry (MSS) SP-67, 2017 Edition, Butterfly Valves

Manufacturers Standardization Society of the Valve and Fittings Industry (MSS) SP-72, 1999 Edition, Ball Valves with Flanged or Butt-Welding Ends for General Service

Manufacturers Standardization Society of the Valve and Fittings Industry (MSS) SP-72, 2018 Edition, Ball Valves with Flanged or Butt-Welding Ends for General Service

Manufacturers' Standardization Society of the Valve and Fittings Industry (MSS) SP-80, 2008 Edition, Bronze Gate, Globe, Angle and Check Valves

Manufacturers' Standardization Society of the Valve and Fittings Industry (MSS) SP-80, 2013 Edition, Bronze Gate, Globe, Angle and Check Valves

Manufacturers Standardization Society of the Valve and Fittings Industry (MSS), SP-58, 2009, Pipe Hangers and Supports – Materials, Design, Manufacture, Selection, Application and Installation

MIL PRF-16173, Sep 2006, Corrosion Preventive Compound, Solvent Cutback, Cold-Application

MIL-A-18001, May 2005, Anodes, Sacrificial Zinc Alloy (Commercially Accepted - ASTM B418)

MIL-A-22262, Mar 1996; Abrasive Blasting Media Ship Hull Blast Cleaning

MIL-C-24633, Oct 2014, Chain, Stud Link, Anchor, Low Alloy Steel, Flash Butt Welded

MIL-DTL-23549, Sep 2016, Grease, General Purpose

MIL-F-24402, May 1995, Filters (Hydraulic), Filter Elements (High Efficiency), and Filter Differential Pressure Indicators, General Specification

MIL-PRF-16173, Sep 2006, Corrosion Preventive Compound, Solvent Cutback, Cold-Application

MIL-S-45180, 1998, Sealing Compound, Gasket, Hydrocarbon Fluid and Water Resistant

Model

Naval Sea Systems Command (NAVSEA) Underwater Ship Husbandry Manuals (UWSH) S0600-AA-PRO-160, Jan 2011, Chapter 16, Cofferdams

Naval Sea Systems Command (NAVSEA) Underwater Ship Husbandry Manuals (UWSH) S0600-AA-PRO-160, Nov 2011, Chapter 16, Cofferdams

Naval Ships Technical Manual (NSTM) Chapter 074 Volume 3, 01 Aug 2011, Gas Free Engineering, Appendix G, PERMISSIBLE EXPOSURE LIMITS (PEL)

Recovered Energy, Inc, BOSS 107 Separator System Operation & Maintenance Manual – YM

Society of Automotive Engineers (SAE) Aerospace Material Specification (AMS) C6183, 2007, Cork and Rubber Composition Sheet; For Aromatic Fuel And Oil Resistant Gaskets

Society of Automotive Engineers (SAE) Aerospace Material Specification (AMS) G-6032, 2014 Grease, Plug Valve, Gasoline and Oil Resistant, NATO Code Number G-363, Metric

Society of Automotive Engineers (SAE) Aerospace Material Specification (AMS) G-6032, 2014, Grease, Plug Valve, Gasoline and Oil Resistant, NATO Code Number G-363, Metric

The Society for Protective Coatings (SSPC) Surface Preparation Specification No. 1 (SSPC-SP 1), 2004, Solvent Cleaning

The Society for Protective Coatings (SSPC) Surface Preparation Specification No. 1 (SSPC-SP 1), 2015, Solvent Cleaning

The Society for Protective Coatings (SSPC) Surface Preparation Specification No.1 (SSPC-SP 1), 2004, Solvent Cleaning

The Society for Protective Coatings (SSPC) Surface Preparation Specification No.1 (SSPC-SP 1), 2015, Solvent Cleaning

The Society for Protective Coatings (SSPC) Surface Preparation Specification No.11 (SSPC-SP 11), 2004, Power Tool Cleaning to Bare Metal

The Society for Protective Coatings (SSPC) Surface Preparation Specification No.11 (SSPC-SP 11), 2012, Power Tool Cleaning to Bare Metal

The Society for Protective Coatings (SSPC) Surface Preparation Specification No.3 (SSPC-SP 3), 2004, Power Tool Cleaning

The Society for Protective Coatings (SSPC)/NACE International (NACE) Joint Surface Preparation Standard SSPC-SP 6/NACE No. 3, 2007, Commercial Blast Cleaning

The Society for Protective Coatings (SSPC)/NACE-International (NACE) Joint Surface Preparation Standard SSPC-SP 10/NACE No. 2, 2007, Near-White Blast Cleaning

Underwriters Laboratories Inc. (UL) 1066, Low-Voltage AC and DC Power Circuit Breakers Used in Enclosures, Apr 2012

CONSOLIDATED LIST OF GOVERNMENT-FURNISHED PROPERTY

The following is a list of property, which the Government will furnish. This list supersedes any other material obligations indicated or implied by referenced drawings.

WORK ITEM	MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
15	N	Christie & Grey Resilient Engine Mount	PN: TSC T10 65/400	4 ea.	600.00
15	Y	Christie & Grey Resilient Engine Mount	PN: TSC T10 65/800	4 ea.	600.00
15	N	Vulkan RATO Flexible Coupling Element (EG1721R000)	PN: 01-466-3015	2 ea.	12,020.00
17	Y	Starboard Z-drive (CCW rotation)	NSN: 2010-21-920-0919	1 ea.	500,250.00
17	Y	Port Z-drive (CW rotation)	NSN: 2010-21-920-0899	1 ea.	500,250.00
17	Y	Special Alignment Pointer Set- CG Tool	N/A	1 ea.	500.00
17	Y	Z Drive Alignment Tool	NSN: 5220-01-F16-4720	1 ea.	3600.00
21	Y	**3in Duplex Strainer	NSN: 4730-01-643-2221 PN: 3-792FB (Mueller)	1 ea.	4,400.00
23	N	Seal Kit, Bow Thruster	NSN: 2010-01-555-9048	1 ea.	3,634.00
23	N	Anode, Zinc	NSN: 5365-01-495-5350	9 ea.	113.75
24	N	Anchor Windlass Overhaul kit	NSN: 5430-01-546-4684	1 ea.	12,474.00
24	N	Ball Valve	NSN: 4820-01-013-3430	1 ea.	87.36
24	N	Valve, Counterbalance	NSN: 4820-01-F16-4571 PN: CBEH-LKN-BCL Sun Hydraulics Corp	1 ea.	354.00
24	N	** Motor, Hydraulic	NSN: 4320-01-419-3520	1 ea.	1,811.00
24	N	** Valve, Linear, Directional Control	NSN: 4810-01-511-3173	1 ea.	983.14
24	N	Hydraulic Brake	NSN: 2530-01-F14-4033 P/N: 90B3C4G087	1 ea	2000.00
35	Y	*Transducer Cover Plate	N/A	2 ea.	50.00
41	N	Boss 2.2 GPM OWS NSN: 4330-01-F13-3461	PN: BOSS 2.2T-107 YM	1 ea.	14,300.00
42	N	Item 3. 53in W x 72in H Electric Heated Clear Heat Treated Double Pane Window, Hinged Top, Frame 52,	NSN: 2090-01-425-6426	1 ea.	7800.00

		9in-2in off CL, Port			
42	N	Item 3. 53in W x 72in H Electric Heated Clear Heat Treated Double Pane Window, Fixed Bottom, Frame 52, 9in-2in off CL Starboard	NSN: 2090-01-425-6426	1 ea.	7800.00
42	N	Item 5.6in W x 42in H Electric Heated Clear Heat Treated Window, Top, 5-1/2in Aft Frame 53, 17in-3ft off CL Starboard	NSN: 2090-01-425-6462	1 ea.	3250.00
42	N	Item 10. 60in W x 42in H Electric Heated Clear Heat Treated Window, Hinged, Frame 58, 13in-4in off CL Port	NSN: 2090-01-425-3864	1 ea.	8100.00
52	N	Model X40-08-N4X, Gas Detection & Alarm Control System	NSN: 6320-01-F19-5650 DETCON PN: 954-X08000-024	1 ea.	1,250.00
52	N	ElectrarayÂ® rotating warning light, amber, 120VAC	NSN: 6210-01-454-4748 Federal Signal PN: 225-120A	1 ea.	176.69
52	N	SONALERT 120VAC 80in 95dB, D Case Style, Type SC110N	NSN: 6350-01-196-0142 Newark PN: 64F276	1.ea.	48.77
54	Y	**Z-Drive Lube Oil Cooler	NSN: 4420-01-505-9267	2 ea.	7,725.00
54	N	Heat Exchanger, Gasket	NSN: 5330-01-449-2451	2 ea.	22.53
54	N	Heat Exchanger, Gasket	NSN: 5330-01-449-2479	2 ea.	18.66
55	N	***Fathometer Transducer, Shallow Water, 50-200 kHz (Airmar Technology SS505)	NSN: 5845-01-470-2500	1 ea.	343.63
58	N	HDRAULIC CONTROL VALVE ASSEMBLY PARTS KIT	PN: AMD-2633 ACN 4810-01-F18-5588	1	15,061.00
59	Y	Winch, Boat Davit	NSN: 2030-01-505-1581 PN: 49396	1 ea	$22,366.77
59	N	Wire Rope Assembly, 75ft - 5/8in, 6x37, IWRC, EIPS	NSN: 4010-01-602-8365	1 ea	600.00

***Government-loaned property, which shall be returned to the vessel upon completion of the availability.**
****New or refurbished equipment that the Government may provide for installation in place of existing equipment.**
*****Government-furnished property, which is to be supplied by either the vessel or the C4IT ServiceCenter**

CONSOLIDATED LIST OF CRITICAL INSPECTION ITEMS

The following is a list of work items, which contain Critical Inspection reports, which the Contractor must complete within the first 25% of the availability contract period (see SFLC Std Spec 0000, paragraph 3.2.6.5 (Inspection report particulars)):

Work Item	Title
1	Hull Plating (Side Scan), Ultrasonic Testing
2	U/W Body, Preserve (100%)
10	Appendages (U/W), Leak Test
12	Voids (Non-Accessible), Leak Test
17	Z-Drive Propulsion Unit, Renew (Drydock)
21	Sea Strainers - Duplex (All Sizes), Overhaul
24	Anchor Windlass, Inspect And Service
25	Anchor Chain(s) and Ground Tackle, Inspect and Repair
43	Vent Space, Deck, Preserve
49	Sea Bay, Clean and Inspect
53	Tanks (Mp Fuel Stowage And Overflow), Clean And Inspect
58	Crane Winch DCV, Replace
59	Single Point Davit Winch, Replace
61	Power Circuit Breakers, Inspect, Maintain & Test

PRINCIPAL CHARACTERISTICS - TENDER

175' WLM, BUOY TENDER	
PHYSICAL	
Length overall	174' 8"
Length between perpendiculars	155' 1"
Depth	14' 8"
Maximum beam	36' 0"
Designed draft	8' 0"
Mast height (above 8' waterline)	58' 8"
Frame spacing	20"
Full load displacement	855.15 Long Tons SW
Light load displacement	719.78 Long Tons SW
Minimum op condition displ	852.19 Long Tons SW
HULL	
Hull material	Steel
MACHINERY	
Main propulsion	Two Caterpillar 3508 DITA V-8 diesel; 999 BHP ea @ 1500 RPM Two Ulstein 360 degree steerable Z-Drives, 403 SRPM @ 1600 ERPM
Reduction gears	Two Z-Drive units, Cardan shafting; 3.973:1 gear ratio
Shaft seal	John Crane Type ND
Shaft bearings	Five pedestal mounted, Cooper split roller bearings
Number of propellers	2
Number of blades	4
Diameter	57.1"
Rudders	None; Z-drive
Ship's service generators	Three Caterpillar Model 3406 DITA Turbocharged; 285KW, 450V, 60 Hz, 1800 RPM
Emergency diesel generator	One Caterpillar Model 3406 DIT 210 KW, 24V, 60 Hz, 1800 RPM
TANK CAPACITIES	
Diesel oil capacity (100%)	16,385 gal
Fresh water capacity (100%)	7,339 gal
Lubricating oil (100%)	86 gal

General Requirements

1. SCOPE

1.1 Intent. This standard specification invokes general requirements for conducting vessel repairs performed at a commercial contractor's facility for Coast Guard vessels.

1.2 Term interchangeability. The terms 'Contractor', 'CG Yard', 'NAVSTA EVERETT', 'shipyard', 'Base', and 'Coast Guard Industrial' are used interchangeably in this specification. Where the primary service provider is Coast Guard personnel, references to contractor and other noted descriptors within this specification or within drawings, publications, SFLC Standard Specifications or other commercial and military references are deemed the same as prime service provider.

2. REFERENCES

COAST GUARD DRAWINGS

None

COAST GUARD PUBLICATIONS

Coast Guard Commandant Instruction(COMDTINS) M10360.3 (series), Coatings and Color Manual

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2014, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General. The Contractor shall conform to all requirements specified in SFLC Std Spec 0000 and in this item, as applicable, during the performance of this availability.

NOTE

The requirements of paragraph 3.1 (General) applies to all work under the scope of this contract, whether explicitly stated in work items or not, and to all other work subsequently authorized by changes, modifications, or extensions to the contract.

3.2 Contractor-provided fire watch personnel. The Contractor shall provide fire watch personnel and equipment.

3.3 Preservation requirements. The Contractor shall accomplish all preservation tasks, including touch-ups, in accordance with SFLC Std Spec 6310.

3.3.1 Brand name approval. Ensure that all contractor-furnished coatings are in accordance with SFLC Std Spec 6310, Appendix C (Authorized Coatings for Use on Cutters and Boats).

3.3.2 Coating colors and system color schemes. Ensure that all colors and color coat/paint schemes are in accordance with COMDTINST M10360.3, Chapter 6 (Cutter and Boat Colors Exterior and Interior).

NOTE

Unless a waiver has been granted (in writing) by the KO, deviations from authorized coatings (listed in Appendix C of SFLC Std Spec 6310) and colors and color schemes (provided in Chapter 6 of COMDTINST M10360.3) are strictly prohibited.

3.4 Welding and brazing requirements. The Contractor shall perform all welding and allied processes, and NDE in accordance with SFLC Std Spec 0740.

3.5 Environmental protection requirements. The Contractor shall adhere to the following environmental protection requirements in accordance with the SFLC Stand Spec 0000:

3.5.1 Contractor operated (non USCG) facilities. The Contractor shall provide and maintain environmental protection as defined in SFLC Std Spec 0000 Appendix A, Requirements for Environmental Protection at Contractor Operated (Non USCG) Facilities, as applicable, during the performance of this availability. Contractor shall plan for and provide environmental protective measures to control pollution that develops during normal practice, as well as plan for and provide environmental protective measures required to correct conditions that develop during the project. Contractor shall comply with applicable Federal, state, and local laws, codes, ordinances, and regulations in their entirety. Any reference to a specific portion of a Federal, state, or local law, code, ordinance, or regulation in this or any other item shall not be construed to mean that relief is provided from any other sections of the law, code, ordinance, or regulation.

3.5.2 Test and procedures. The Contractor shall be required to promptly conduct tests and procedures for the purpose of assessing whether operations are in compliance with applicable Environmental Laws. Analytical work shall be done by qualified laboratories; and where required by law, the laboratories shall be certified.

3.5.3 Regulatory notifications. The Contractor shall be responsible for all regulatory notification requirements in accordance with Federal, State and local regulations. In cases where the Coast Guard must also provide public notification, such as storm water permitting, the Contractor must coordinate with the Contracting Officer or COR, and if work is being performed at a USCG Facility, the local Facility Engineer or Engineering Officer. The Contractor shall submit copies of all regulatory notifications to the Contracting Officer and the local Facility Engineer or Engineering Officer prior to commencement of work activities. Regulatory notifications shall be provided for including but not limited to demolition, renovation, National Pollutant Discharge Elimination System (NPDES) defined site work, and remediation of controlled substances such as asbestos, hazardous waste, and lead paint.

3.5.4 Environmental manager. The Contractor shall appoint in writing an Environmental Manager for the project, and shall be responsible for coordinating Contractor compliance with Federal, State, local, and station environmental requirements. The Environmental Manager shall ensure compliance with Hazardous Waste Program requirements, including hazardous waste handling, storage, manifesting, and disposal; implement the Contractors' Environmental Management Plan; ensure that all environmental permits are obtained, maintained,

and closed out; ensure compliance with Storm Water Program Management requirements; ensure compliance with Hazardous Materials including storage, handling, and reporting requirements; as well as coordinate any remediation of regulated substances such as lead, asbestos, and polychlorinated biphenyl (PCB). This may be a collateral position; however the individual must be trained to accomplish the following duties; ensure waste segregation and storage compatibility requirements are met; inspect and manage Satellite Accumulation areas; ensure only authorized personnel add wastes to containers; ensure all Contractor personnel are trained in 40 CFR requirements and individual position requirements; coordinate removal of waste containers; and maintain the Environmental Records binder and required documentation, including environmental permits compliance and close-out.

3.5.5 HW disposal. Contractor shall comply with SFLC Std Spec 0000 Appendix A, Requirements For Environmental Protection At Contractor Operated (Non USCG) Facilities for HW disposal.

3.6 Local Policy. None.

3.7 SFLC standard specification approved changes. The Contractor shall be aware that the following are approved changes to published SFLC 2014 Edition Standard Specifications and supersede published content:

3.7.1 Change to SFLC Std Spec 0000, paragraph 1.3. ‘Acronyms and term definitions’, page 5, “PCL (Paint Containing Lead)” definition replaced by, “Any paint or coating containing lead in excess of 0.009 percent by weight (1.0 mg/cm2 or 90 ppm). Lead Based Paint (LBP) is an interchangeable term with PCL.”

3.7.1.1 Change Std Spec 0000 paragraph 3.2.4.2.3(QP 1 inspector or tech rep duties) bullet, “Determine when applied coats have sufficiently cured for overcoating or for system service resumption (see paragraph 3.1.19 of SFLC Std Spec 6310 (Critical drying time requirements)).” to “Determine when applied coats have sufficiently cured for overcoating or for system service resumption (see paragraph 3.1.17 of SFLC Std Spec 6310 (Critical drying time requirements)).”

3.7.2 Change to Std Spec 5000, paragraph D2.2.1.1 bullet, "For running rigging, furnish class 6x37, uncoated, independent wire rope core (IWRC), right regular lay (RRL) wire rope or Dyform-18, rotation resistant wire rope," to "For running rigging, furnish class 6x36, uncoated, independent wire rope core (IWRC), right regular lay (RRL) wire rope or Dyform-18, rotation resistant wire rope."

3.7.2.1 Change to Std Spec 5000, page D-2, Table D-1 title from "DYFORM-18, 6X19 AND 6X37 IWRC RRL," to " DYFORM-18, 6X19 AND 6X36 IWRC RRL"

4. NOTES

4.1 QA inspection forms. QA inspection forms (QA-1 thru QA-5), required in SFLC Std Spec 6310 to be completed and submitted during preservation of “critical-coated surfaces”, are provided at the end of this document.

QA-1 - QUALITY ASSURANCE INSPECTION FORM
(PRESERVATION CHECKLIST)

VESSEL NAME	HULL #	WORK ITEM #	WORK ITEM TITLE
LOCATION OF WORK (INCL. FRAME #'S)			**AREA (SQFT)**

CHECKPOINT 1 – COATING SYSTEM COMPLIANCE	
	Ensure all coatings are in compliance with SFLC Std Spec 6310, Appendix C.
CHECKPOINT 2 - PAINT STORAGE	
	Ensure all coatings are kept at a temperature of 65 to 85°F at all times, unless otherwise specified by the coating mfgr.
CHECKPOINT 3 - AMBIENT CONDITIONS	
	Ensure surface and surrounding temperatures are each between 50 and 90°F for water-containing coatings, and 35 and 95°F for other coatings, unless otherwise specified by the coating manufacturer(s).
	Ensure maximum relative humidity (RH) is as follows, from surface preparations through final curing of topcoat: 50% for tanks, voids, and vent plenum; and 85% for all other areas, unless otherwise specified by manufacturer(s).
	Ensure surface temperature is at least 5°F above the dew point, unless otherwise specified by the coating mfgr.
CHECKPOINT 4 - PRE-SURFACE PREPARATION	
	Remove surface contaminants (soluble salts, loose rust, mud, and marine growth) with low pressure fresh water wash down (maximum 5,000 psi). If oil and grease are present, perform solvent cleaning, as per SSPC SP-1.
	Verify equipment setup, blast media, and surface preparation methods match designated test coupon.
CHECKPOINT 5 - SURFACE PREPARATION	
	Verify environmental conditions (see CHECKPOINT 3).
	Ensure cleanliness of prepared surface is as per specification (i.e.: SSPC SP-11, SP-10, SP WJ-2…).
	Verify surface anchor profile using ASTM D4417-Methods B or C against SFLC Std Spec 6310. Conduct profile readings at a minimum of 5 locations for the first 1000-sqft area, and 2 locations for each succeeding 1000-sqft area.
	Measure soluble salt conductivity in accordance with SSPC-Guide 15. Conduct 5 measurements per each 1000-sqft area (max. threshold: 70 microsiemens/cm for non-submerged surfaces, 30 microsiemens/cm for submerged surfaces).
CHECKPOINT 6 - PRIMER COAT APPLICATION	
	Verify environmental conditions (see CHECKPOINT 3).
	Verify proper mixing and stand-in (induction) times.
	Ensure no paint is applied when the temperature is expected to drop to freezing before the paint has dried.
	Ensure surfaces are completely dry, unless otherwise allowed by the coating manufacturer(s).
	Verify wet film thickness (WFT) at random, to prevent under or over application. Verify final DFT.
	Brush out all runs, sags, drips, and puddles.
	Perform visual inspection for holidays and other defects.
CHECKPOINT 7 – STRIPE COAT APPLICATION	
	Verify environmental conditions (see CHECKPOINT 3).
	Ensure overcoating window is as per manufacturer's instructions.
	After primer coat (mist coat after inorganic zinc), brush-apply un-thinned coat of same primer paint over edges, weld seams, cut-outs, and areas of complex geometries @ 3-4 mils wet film thickness (WFT).
CHECKPOINT 8 – TOP COAT APPLICATION	
	Verify environmental conditions (see CHECKPOINT 3).
	Ensure overcoating window is as per manufacturer's instructions.
	Verify proper mixing and stand-in (induction) times, as applicable.
	Verify wet film thickness at random, to prevent under or over application.
	Brush out all runs, sags, drips, and puddles.
CHECKPOINT 9 – FINAL INSPECTION	
	Verify final system dry film thickness. Conduct 5 sets of 3 readings for each of the first 3 100-sqft areas, followed by 5 sets of 3 readings for each succeeding 1000-sqft area.
	Ensure that system cure is in accordance with manufacturer's recommendation for intended service.
	Ensure potable water tank exhaust ventilation is maintained continuously from and during coating application through final system cure, to exhaust all solvent to the atmosphere and to prevent solvent entrapment.
	For immersion coatings (including tank U/W body), record date and time of the following events: Final coat application: _____/_____ ; Return to service or removal from environment controls: _____/_____
CHECKPOINT 10 – RECORD KEEPING	
	Complete, sign, and submit all provided QA Inspection Forms.

NAME OF QP-1/NACE INSPECTOR	SIGNATURE	CERT. #	DATE / TIME

QA-2 - QUALITY ASSURANCE INSPECTION FORM
(ENVIRONMENTAL READINGS)

VESSEL NAME	HULL #	WORK ITEM #	WORK ITEM TITLE

Use one sheet for each activity. Record conditions every four hours from before surface preparation to application of final coating system coat.

DATE & TIME	ACTIVITY (SURFACE PREPARATION, PRIMER COAT, BARRIER COAT, TOP COAT, ETC…)	LOCATION (FRAME & DECK, RELATION TO EQUIPMENT, ETC.)	TEMPERATURE				% REL. HUMID-ITY
			DEW PT.	SURFACE	AMBIENT	ΔT | DP - SURFACE |	

NAME OF QP-1/NACE INSPECTOR	SIGNATURE	CERT. #	DATE / TIME

USCGC IDA LEWIS (WLM-175) DRYDOCK AVAILABILITY FY2020

QA-3a - QUALITY ASSURANCE INSPECTION FORM

(SURFACE PROFILE LOG FOR PROFILE MEASUREMENTS IAW ASTM D4417-METHOD-C)

VESSEL NAME	HULL #	WORK ITEM #	WORK ITEM TITLE
LOCATION OF WORK (INCL. FRAME #'S)			AREA (SQFT)

SURFACE PREPARATION METHOD		PROFILE ACHIEVED (MILS)		
		MIN	MAX	MEAN
SSPC-SP-10/NACE No. 2	☐			
SSPC-SP WJ-1/NACE WJ-1	☐			
SSPC-SP WJ-2/NACE WJ-2	☐			
SSPC-SP WJ-3/NACE WJ-3	☐			
SSPC-SP WJ-4/NACE WJ-4	☐			
SSPC-SP-3	☐			
SSPC-SP-11	☐			
SSPC-SP-11 (inaccessible area)	☐			
Brush-blasting (non-metallic substrate)	☐			
ABRASIVE MANUFACTURER:		**ABRASIVE SIEVE SIZE:**		

PLACE SURFACE PROFILE REPLICA TAPES IN THE SPACES PROVIDED BELOW, TO SERVE AS PERMANENT QA RECORD. MAINTAIN A SEPARATE LOG FOR EACH LOCATION. WHEN AN AREA IS DIVIDED INTO SEPARATE SECTIONS, MAINTAIN A SEPARATE LOG FOR EACH SECTION.					
Place Surface Profile Replica Tape Here		Place Surface Profile Replica Tape Here		Place Surface Profile Replica Tape Here	
Reading (mils):		Reading (mils):		Reading (mils):	
Place Surface Profile Replica Tape Here		Place Surface Profile Replica Tape Here		Place Surface Profile Replica Tape Here	
Reading (mils):		Reading (mils):		Reading (mils):	
Place Surface Profile Replica Tape Here		Place Surface Profile Replica Tape Here		Place Surface Profile Replica Tape Here	
Reading (mils):		Reading (mils):		Reading (mils):	
Place Surface Profile Replica Tape Here		Place Surface Profile Replica Tape Here		Place Surface Profile Replica Tape Here	
Reading (mils):		Reading (mils):		Reading (mils):	
Place Surface Profile Replica Tape Here		Place Surface Profile Replica Tape Here		Place Surface Profile Replica Tape Here	
Reading (mils):		Reading (mils):		Reading (mils):	
MEAN MIL READING (IAW ASTM D4417-METHOD C) FOR ABOVE 15 READINGS:					

NAME OF QP-1/NACE INSPECTOR	SIGNATURE	CERT. #	DATE /

			TIME

QA-3b - QUALITY ASSURANCE INSPECTION FORM

(SURFACE PROFILE LOG FOR PROFILE MEASUREMENTS IAW ASTM D4417-METHOD-B)

VESSEL NAME	HULL #	WORK ITEM #	WORK ITEM TITLE
LOCATION OF WORK (INCL. FRAME #'S)			**AREA (SQFT)**

SURFACE PREPARATION METHOD		PROFILE ACHIEVED (MILS)		
		MIN	MAX	MEAN
SSPC-SP-10/NACE No. 2	☐			
SSPC-SP WJ-1/NACE WJ-1	☐			
SSPC-SP WJ-2/NACE WJ-2	☐			
SSPC-SP WJ-3/NACE WJ-3	☐			
SSPC-SP WJ-4/NACE WJ-4	☐			
SSPC-SP-3	☐			
SSPC-SP-11	☐			
SSPC-SP-11 (inaccessible area)	☐			
Brush-blasting (non-metallic substrate)	☐			
ABRASIVE MANUFACTURER:		**ABRASIVE SIEVE SIZE:**		

RECORD MEASUREMENTS TAKEN IN THE SPACES PROVIDED BELOW, TO SERVE AS PERMANENT QA RECORD. MAINTAIN SEPARATE LOG FOR EACH LOCATION. WHEN AN AREA IS DIVIDED INTO SEPARATE SECTIONS, MAINTAIN A SEPARATE LOG FOR EACH SECTION.					
Reading (mils):					
Reading (mils):					
Reading (mils):					
Reading (mils):					
Reading (mils):					
Reading (mils):					
Reading (mils):					
Reading (mils):					
Reading (mils):					
Reading (mils):					
Mean Reading (mils)					
Mean Reading (mils) IAW ASTM DD4417).					

NAME OF QP-1/NACE INSPECTOR	SIGNATURE	CERT. #	DATE / TIME

QA-4 - QUALITY ASSURANCE INSPECTION FORM
(SURFACE SOLUBLE SALT CONDUCTIVITY LOG)

VESSEL NAME	HULL #	WORK ITEM #	WORK ITEM TITLE
LOCATION OF WORK (INCL. FRAME #'S)			AREA (SQFT)

SOLUBLE SALT CONDUCTIVITY MEASUREMENTS IAW SSPC-GUIDE 15.		
DATE	TEST LOCATIONS	CONDUCTIVITY (MICROSIEMENS/CM)

NAME OF QP-1/NACE INSPECTOR	SIGNATURE	CERT. #	DATE / TIME

QA-5 - QUALITY ASSURANCE DATA FORM
(COATING THICKNESS)

(Use one sheet for each sequence)

VESSEL NAME	HULL #	WORK ITEM #	WORK ITEM TITLE

COATING MFG	PRODUCT NAME	BATCH #	INDUCTION TIME	COATING SYSTEM SEQUENCE (PRIMER/TOUCHUP/3RD COAT, ETC.)

DRY FILM THICKNESS (DFT) MEASUREMENTS IAW SSPC-PA 2.						
SPOT	1	2	3	4	5	AVERAGE VALUE
*BASE METAL READING (BMR) Required, If Magnetic Pull-Off (Type I/Banana) Gauge Is Used.						

LOCATION (FRAME REFERENCE):								
SPOT	1	2	3	4	5	OVERALL AVG. DFT	ADJUSTMENTS	
1							AVG. BMR	DEVIATION
2								
3						BEFORE ADJUSTMENTS	AFTER ADJUSTMENTS	
AVG.								

LOCATION (FRAME REFERENCE):								
SPOT	1	2	3	4	5	OVERALL AVG. DFT	ADJUSTMENTS	
1							AVG. BMR	DEVIATION
2								
3						BEFORE ADJUSTMENTS	AFTER ADJUSTMENTS	
AVG.								

LOCATION (FRAME REFERENCE):								
SPOT	1	2	3	4	5	OVERALL AVG. DFT	ADJUSTMENTS	
1							AVG. BMR	DEVIATION
2								
3						BEFORE ADJUSTMENTS	AFTER ADJUSTMENTS	
AVG.								

APPLICATION METHOD (AIRLESS, CONVENTIONAL SPRAY, ROLLED)	AVERAGE DFT

NAME OF QP-1/NACE INSPECTOR	SIGNATURE	CERT. #	DATE / TIME

WORK ITEM 1: Hull Plating (Side Scan), Ultrasonic Testing

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to perform thickness measurements of underwater (u/w) hull plating by ultrasonic side scan method.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 801-6, Rev H; Docking Plan

Coast Guard Drawing 175 WLM 801-19, Rev C; Shell Expansion

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

OTHER REFERENCES

American Society for Nondestructive Testing (ASNT) SNT-TC-1A, 2013, Recommended Practice for Personal Qualification and Certification in Nondestructive Testing

3. REQUIREMENTS

3.1 General.

3.1.1 CIR. The Contractor shall submit a CIR for the inspections listed in the following paragraph(s):

- 3.2 Side scan requirements and procedures.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and

protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the following:

- Hull zinc anode system
- Docking blocks.

3.2 Work coordination and preparation. The Contractor shall plan all specified vessel work detailed in this specification package to ensure the side scan survey does not necessitate a work stoppage. The Contractor shall abide by the following guidance, to facilitate the ultrasonic survey:

- Ensure that all u/w body surface preparation and primer coat application tasks are completed within ten days of lifting the vessel.
- Provide a continuous supply of fresh water at .50 gpm within 50 feet of the vessel with standard hose bib fitting.
- Provide 110 VAC electrical power, and scaffolding or other suitable means of access to bring inspection personnel within one foot of all the body surface inspection areas that are five feet above ground level.
- After completion of the hull survey, and authorized hull repairs, resume/complete u/w body preservation process by applying the second coat of the anti-corrosive coating system, and all anti-fouling paint coats.
- Pay close attention to manufacturer’s recommended practices in regards to paint system overcoat time limitations and required degree of surface cleanliness prior to resuming u/w body coating application.

3.3 Side scan requirements and procedures. The Contractor shall ensure the following referring to the Coast Guard drawings listed in Section 2 (References) herein as guidance during the performance of the tasks specified below and submit a CIR.

3.3.1 Testing company and personnel. Provide the services of a qualified ultrasonic testing company, with suitable side scan equipment, to conduct a “Scanning Crawler Automated Test” of the vessel’s u/w hull plating for the presence of metal corrosion and deterioration. Ensure the following:

- All scanning operations are completed by personnel meeting the personnel qualification and certification, as required by contractor process. This contractor developed personnel qualification and certification process must meet, at a minimum, ASNT Recommended Practice No. SNT-TC-1A.
- An SNT Level III Analyst is on site, to oversee the project and evaluate the collected data.
- An SNT Level III or II Analyst is on site, to verify with a hand held gauge all areas on the hull identified as thinner than the specified criteria, in order to expedite all repair procedures.
- Qualified personnel are provided to complete all on-site corrosion inspections.

3.3.2 Coast Guard notification. Accomplish all required tasks within 10 calendar days of the start of the availability.

3.3.2.1 Provide a daily update to the COR on all areas inspected and potential issues or schedule changes.

3.3.2.2 Notify the COR at least 3 days prior to completion for an onsite review of readings and repair areas.

3.3.3 Scanning parameters. Use the following parameters during the course of this inspection:

- Automated scanning resolution shall be set to 0.5" x 0.5"
- Plates where scan data indicating wastage greater than or equal to 25% nominal plate thickness shall be highlighted in "RED" and designated "repair areas".
- Plates where scan data indicating wastage greater than or equal to 15% to 24% of nominal plate thickness shall be highlighted in "YELLOW".
- Plates where scan data indicating wastage greater than or equal to 10% to 14% of nominal plate thickness shall be highlighted in DARK GREEN.
- Hand held UT readings shall be taken to verify bad metal areas found with the side scan equipment. All readings shall be provided to the COR and the lowest reading marked on the hull at the bad metal location.
- Areas that are accessible but cannot be reached by the automated scanner shall be scanned with a hand-held meter at a resolution of 2" x 2". Any repair areas found during the hand scan shall be marked on the ships hull and their approximate positions recorded on the plate drawings and report summary..

3.3.3.1 Any scanning parameter or scope of work changes must be approved by the KO.

3.3.3.2 The echo to echo transducer is not authorized due to inconsistent readings and technical difficulties.

3.3.3.3 There shall be no deviation from the color scheme specified above.

3.3.4 Ensure that the side scan inspection area includes the Port, Starboard, and Transom exterior shell plate below the water line, but shall exclude the following list.

- Areas under and within 6-inches of blocks and side blocks (areas that are accessible 6 inches from blocks and side blocks must be hand scanned.)
- Areas up to 6-inches around any obstacle on the hull including sea suctions, discharges, rudderposts, knuckle, bow stem, stabilizer tubes, and stern tubes, as applicable.
- Any areas blocked by immovable scaffolding or shipyard activity.

3.4 Side scan reports. The Contractor shall submit to the COR a final report within 5 working days after the side scan inspection is completed. A copy of all repair areas shall be clearly marked, in yellow or white, on the provided shell plate drawing(s), and provide a summary document of same areas. Submit two hard copies of the report with two CD's containing the electronic (raw) data, as part of the CIR submission prior to departing the job site. Ensure the reports include:

- Inspection overview.
- Data sheets for each plate with designated repair areas outlined in blue.
- Mosaic of scanned data overlaid on Coast Guard Drawing 175 WLM 801-19.

3.4.1 Photos. Provide digital photos of all designated repair areas.

3.4.2 Electronic files. Ensure CD's contain a complete copy of the report, interactive data files, and digital

pictures. All electronic files shall be compatible with standard USCG workstation operating software. Electronic files format shall be such that the CG has the capability to change the percent of wastage (format conditioning) per plate. Electronic files shall be capable of being opened using MS Word, MS Excel, or PDF software. Digital pictures shall be recorded in JPEG format.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 2: U/W Body, Preserve (100%)

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to preserve U/W body surfaces.

NOTES

1. The purpose of the preservation tasks covered by this item is to completely remove all existing coatings and recoat the U/W body surfaces with a new coating system.

2. U/W body surfaces are as defined in 4.1 (Definitions) and exclude areas covered by docking blocks, unless the vessel is fleeted for the express purpose of preserving blocked areas.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 601-1, Rev N, Arrangement, Inboard And Outboard Profiles

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

OTHER REFERENCES

The Society for Protective Coatings (SSPC) Surface Preparation Specification No.1 (SSPC-SP 1), 2015, Solvent Cleaning

3. REQUIREMENTS

3.1 General.

3.1.1 CIR. The Contractor shall submit a CIR for the inspections listed in the following paragraph(s):

-
- 3.2.3 Post-surface preparation cleaning and inspection

3.1.2 Tech Rep. The Contractor shall refer to SFLC Std Spec 0000, paragraphs 3.2.4.2.1 (Painting contractor certification program requirement) and 3.2.4.2.2 (Coating Tech Rep), for applicable requirements.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness. Specific areas/equipment/components to be protected include, but are not limited to:

- All scuppers and overboard discharges.
- Waterline area where U/W body coating system interfaces with freeboard coating system (unless freeboard surfaces are also being preserved).
- Fathometer transducer surfaces.
- Sea valve openings.
- Propeller shaft bearings and seals.
- Rudder bearings.
- Z-drive seals.
- Propellers.
- Bow and stern thruster propellers and thruster bearings.
- Zinc anodes (unless anodes are being renewed).

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the following:

- Sea chest grating.
- Primer or paint coatings applied to the U/W body in association with Work Item D-001: Hull Plating (Side Scan), Ultrasonic Testing.
- Zinc Anodes

3.1.5 Initial inspection. Prior to removing the existing coating system, the Contractor shall inspect and verify whether all draft marks have permanent markings (weld beads or impressions), showing their location on the hull. Submit a CFR.

3.1.6 Water used in preparation and washing procedures. The Contractor shall ensure that water used in all surface preparation tasks, including pre-surface preparation wash and water jetting, is of sufficient purity and quality that it does not prevent the surface being cleaned from achieving the required degree of surface cleanliness or non-visible contamination criteria.

3.1.6.1 Ensure that surface preparation water does not contain sediments or other impurities that are destructive to the proper functioning of the cleaning equipment.

3.1.6.2 Ensure that all water used in any surface preparation or cleaning procedures is captured, contained, and all spent water disposed of in accordance with all Federal, state and local regulations.

3.1.7 Surface preparation optional methods. The Contractor has the option of using either high/ultrahigh pressure water jetting or abrasive blasting to achieve the required surface preparation, prior to application of the coating system specified in 3.2 (Preservation requirements). The Contractor may add abrasives to the water jet stream, for one or both of the following reasons:

- Achieving greater productivity.
- Achieving the required surface profile.

NOTES

1. Existing coating system on the U/W body surfaces may have a nominal thickness in excess of that which was originally installed, because of "patch-coats" applied during past drydock availabilities.

2. Water jetting without abrasive addition does not provide any additional anchor profile to the surface, beyond what was present after the previous surface preparation.

3.2 Preservation requirements. The Contractor shall accomplish the following tasks:

3.2.1 Pre-surface preparation wash. Accomplish low-pressure (less than 5,000 psi) fresh water wash of all affected surfaces, to remove soluble chlorides and other surface contaminants. Refer to SSPC-SP 1, for guidance.

3.2.2 Surface preparation and coating application. The Contractor shall accomplish the following tasks:

3.2.2.1 The Contractor shall prepare and coat the U/W hull surfaces with the system specified for "Underwater (U/W) Body and Boot-Top (U/W Body and Boot-Top, Icebreaker <235', in Salt Water)", in SFLC Std Spec 6310, Appendix A (Cutter and Boat Exterior Painting Systems).

3.2.2.2 The Contractor shall coordinate U/W Body preservation with side scan/ultrasonic testing if side scan work item is included in availability. If included, the following paragraphs shall be applicable:

3.2.2.2.1 The contractor may elect to apply the anti-abrasion icebreaking coating in two coats rather than one to facilitate side scan procedure if approved by the COR. If selecting this option, the contractor must provide a written statement from the coating manufacturer approving the application of the icebreaking coating in two coats to the COR for approval during the Arrival Conference. Include details of incorporation of side scan procedure in the "Preservation Plan," required by SFLC Std Spec 6310, paragraph 3.2.

3.2.2.2.2 If the two-coat option is approved by the COR, the side scan shall be performed over first coat. Second coat application shall follow completion of side scan. Total DFT of both coats shall meet listed DFT of single coat anti-abrasion icebreaker DFT in SFLC Std Spec 6310, Appendix A. Application of coats shall be in accordance with manufacturer's overcoating intervals.

3.2.2.3 Ensure that the first AF coat is applied over the AC undercoating, while it is still tacky.

3.2.3 Post-surface preparation cleaning and inspection. After completion of surface preparation and prior to coating application, accomplish the following tasks and submit a CIR.

3.2.3.1 Perform a visual inspection of the prepared U/W body steel substrate.

3.2.3.2 Perform solvent cleaning of all prepared surfaces, in accordance with SSPC-SP 1. Capture, contain, and dispose of all wastes from solvent cleaning, in accordance with all Federal, state and local regulations..

NOTE
Lists of all authorized coating materials and suppliers are listed in SFLC Std Spec 6310, Appendix C (Cutter and Boat Authorized Coatings).

3.3 Draft mark painting. The Contractor shall paint all draft marks with two coats of a “Polysiloxane” or “Silicone Alkyd Enamel” coating, at 2.0-3.0 mils DFT, white (17925).

3.4 In-process quality control measures. The Contractor shall abide by all the safety, preservation, and quality control requirements specified in SFLC Std Spec 0000, paragraph 3.2.4.2 (In-process QC measures for “critical-coated surfaces). Surfaces being preserved are considered “critical-coated surfaces”.

3.5 AF system protective measures – in the event of prolong atmospheric exposure. If the vessel will not be refloated within the immersion time as recommended by the coating system manufacturer, the Contractor shall employ suitable measures - including but not limited to keeping the coating system wet and away from direct sun light, to avoid film damage that may reduce or impact the final performance of the AF coating system when placed into service.

4. NOTES

4.1 Definitions.

4.1.1 U/W Body. The underwater body is defined as the areas from the bottom of the keel to the upper edge of the boot-topping, as shown on Coast Guard Drawing 175 WLM 601-1, including z-drive structural wells, z-drive nozzles, z-drive lower units, thruster tunnels and associated gratings, sea chests (including the sea chest inlet up to the final connection with the flange face at the sea chest isolation valve(s)) and sea chest-to-sea bay piping, skegs, and gratings.

WORK ITEM 3: Hull Plating Freeboard, Preserve "100%"

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to preserve 100% of the freeboard surfaces defined in 4.1 Definition of freeboard surfaces.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 601-001, Rev L, General Arrangement and Inboard and Outboard Profiles

Coast Guard Fleet Drawing FL 2804-12, Rev -, U.S.C.G. Emblem

Coast Guard Fleet Drawing FL 2804-22, Rev-, Consolidated Visual ID for Cutters

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.3.1 Apply protective measures as specified in SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection) to the following components, spaces and equipment:

- Areas where underwater body coating system interfaces with freeboard coating system (unless u/w body surfaces are also being preserved).
- Adjacent deck surfaces and deck fittings.
- Deck equipment.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the below-listed:

- None.

3.2 Initial inspection. Prior to removing the existing coating system, the Contractor shall inspect and verify whether or not all hull identification numbers and letters have permanent markings (weld beads or impressions), showing their location on the hull. Submit a CFR.

3.3 Surface preparation optional methods. The Contractor shall have the option of using either high/ultrahigh pressure water Jetting or abrasive blasting to achieve the required surface preparation, prior to application of the coating system specified in 3.6 (Preservation requirements). The Contractor may add abrasives to the waterjet stream, for one or both of the following reasons:

- Achieving greater productivity.
- Achieving the required surface profile.

NOTE

Waterjetting without abrasive addition does not provide any additional anchor profile to the surface, beyond what was present after the previous surface preparation.

3.4 Substrate inspection. After completing surface preparation and before coating application, the Contractor shall perform a visual inspection of the prepared substrate, and submit a CFR.

3.5 Pre-surface preparation wash. The Contractor shall accomplish low-pressure (less than 5,000 psi) fresh water wash of all affected surfaces, to remove soluble chlorides and other surface contaminants. Capture, contain, and dispose of wash water for proper disposal in accordance with all Federal, state and local regulations.

3.6 Preservation requirements. The Contractor shall accomplish the following tasks:

3.6.1 System particulars. Prepare and coat 100% of the freeboard surfaces as designated in paragraph 1.1 (Intent) with the system specified for "Freeboard/Superstructure/Mast (Freeboard/Superstructure)" in SFLC Std Spec 6310. Select the following:

- Select "Option I" system, for the applicable metal substrate.

3.6.2 Visual identification markings. The Contractor shall paint all distinctive visual safety and identification markings as follows :

3.6.2.1 Decals. Coast Guard Emblem decals may be substituted for painted emblems. Vinyl adhesive letters and numbers may also be substituted for painted letters and numbers - at the Contractor's discretion.

3.6.2.2 Painted markings. Paint all distinctive visual identification markings, including the Coast Guard diagonal stripes, "U.S. COAST GUARD" legends, hull numbers, and draft marks in accordance with SFLC Std Spec 6310, and Coast Guard Drawings FL 2804-12 and FL 2804-22 as applicable.

NOTES

Surfaces being preserved are considered "critical-coated surfaces".

Although there may be several possible procurement sources for the Coast Guard Emblem decals and vinyl adhesive letters and numbers, one known source is:

Brace Enterprises
10250 SE 138 Terrace
Dunnellon, FL 34431

352-489-4442 / Fax: 352-489-4476
www.braceenterprise.com

3.6.3 Tear drop. Not applicable.

3.7 In-process quality control measures. The Contractor shall abide by all the safety, preservation, and quality control requirements specified in SFLC Std Spec 0000, paragraph 3.2.4.2 (In-process QC measures for "critical-coated surfaces).

4. NOTES

4.1 Definition of freeboard surfaces. For the purposes of this item the freeboard is defined as exterior steel hull surfaces from the upper limit of the boot-topping to the top of the bulwark, as shown on Coast Guard Drawing 175 WLM 601-001.

WORK ITEM 4: Hull and Structural Plating (General) -10.2-Pound Steel, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew 10.2-pound steel shell plating.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 801-19, Rev C; Shell Expansion

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

NOTE

This item does not address interferences in way of repair work. Cost of interference removal and reinstallation must be negotiated via the Change Request process.

3.2 Renewal. The Contractor shall renew up to 4 square feet of the steel plating specified in Section 1.1 (Intent) herein, as designated by the Coast Guard Inspector. Use Coast Guard Drawing 175 WLM 801-19 as guidance.

3.3 Touch-up preservation. The Contractor shall prepare and coat all new and disturbed surfaces to match existing adjacent surfaces in accordance with SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs.)

4. NOTES

This section is not applicable to this work item.

WORK ITEM 5: Hull and Structural Plating (General) - 12.75-Pound Steel Plate, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew 12.75-pound steel plating.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 801-19, Rev C; Shell Expansion

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

OTHER REFERENCES

«OTHER_REF»

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

NOTE

This item does not address interferences in way of repair work. Cost of interference removal and reinstallation must be negotiated via the Change Request process.

3.2 Renewal. The Contractor shall renew up to 4 square feet of the steel plating specified in Section 1.1 (Intent) herein, as designated by the Coast Guard Inspector. Use Coast Guard Drawing 175 WLM 801-19 as guidance.

3.3 Touch-up preservation, general. The Contractor shall prepare and coat all new and disturbed surfaces to match existing adjacent surfaces in accordance with SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs.)

4. NOTES

This section is not applicable to this work item.

WORK ITEM 6: Hull and Structural Plating (General) - 15.3-Pound Steel Plate, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew 15.3-pound steel shell plating.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 801-19, Rev C; Shell Expansion

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

OTHER REFERENCES

«OTHER_REF»

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

NOTE

This item does not address interferences in way of repair work. Cost of interference removal and reinstallation must be negotiated via the Change Request process.

3.2 Renewal. The Contractor shall renew up to 4 square feet of the steel plating specified in Section 1.1 (Intent) herein, as designated by the Coast Guard Inspector. Use Coast Guard Drawing 175 WLM 801-19 as guidance.

3.3 Touch-up preservation, general. The Contractor shall prepare and coat all new and disturbed surfaces to match existing adjacent surfaces in accordance with SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs.)

4. NOTES

This section is not applicable to this work item.

WORK ITEM 7: Hull And Structural Plating (General) - 20.4-Pound Steel Plate, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew 20.4-pound steel shell plating.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 801-19, Rev C; Shell Expansion

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

NOTE

This item does not address interferences in way of repair work. Cost of interference removal and reinstallation must be negotiated via the Change Request process.

3.2 Renewal. The Contractor shall renew up to 4 square feet of the steel plating specified in Section 1.1 (Intent) herein, as designated by the Coast Guard Inspector. Use Coast Guard Drawing 175 WLM 801-19 as guidance.

3.3 Touch-up preservation. The Contractor shall prepare and coat all new and disturbed surfaces to match existing adjacent surfaces in accordance with SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs.).

4. NOTES

This section is not applicable to this work item.

WORK ITEM 8: Hull and Structural Plating (General) - 7.5-Pound (3/16") Steel Plate, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew 7.5-pound (3/16th) hull plating.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 801-19, Rev C; Shell Expansion

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

NOTE

This item does not address interferences in way of repair work. Cost of interference removal and reinstallation must be negotiated via the Change Request process.

3.2 Renewal. The Contractor shall renew the specified size plating, as designated by the Coast Guard Inspector, up to 4 square feet, using Coast Guard Drawing 175 WLM 801-19 as guidance.

3.3 Touch-up preservation, general. The Contractor shall prepare and coat all new and disturbed surfaces to match existing adjacent surfaces in accordance with SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs.)

4. NOTES

This section is not applicable to this work item.

WORK ITEM 9: Hull and Structural Plating (General) - 7.65- Pound Steel Plate, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew 7.65-pound steel plating.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 801-19, Rev C; Shell Expansion

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

OTHER REFERENCES

«OTHER_REF»

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

NOTE

This item does not address interferences in way of repair work. Cost of interference removal and reinstallation must be negotiated via the Change Request process.

3.2 Renewal. The Contractor shall renew up to 4 square feet of the steel plating specified in Section 1.1 (Intent) herein, as designated by the Coast Guard Inspector. Use Coast Guard Drawing 175 WLM 801-19 as guidance.

3.3 Touch-up preservation, general. The Contractor shall prepare and coat all new and disturbed surfaces to match existing adjacent surfaces in accordance with SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs.)

4. NOTES

This section is not applicable to this work item.

WORK ITEM 10: Appendages (U/W), Leak Test

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to perform leak test of the U/W appendages.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 114-001, Rev D, Shell Appendages

Coast Guard Drawing 175 WLM 184-001, Rev A, V850 Transducer Adaptor Ring

Coast Guard Drawing 175 WLM 801-006, Rev J, Docking Plan

Coast Guard Drawing 175 WLM 801-019, Rev C, Shell Expansion

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2014, Welding and Allied Processes

OTHER REFERENCES

ASTM International (ASTM) D5363, 2016, Standard Specification for Anaerobic Single-Component Adhesives (AN)

MIL-S-45180, 1998, Sealing Compound, Gasket, Hydrocarbon Fluid and Water Resistant

3. REQUIREMENTS

3.1 General.

3.1.1 CIR. The Contractor shall submit a CIR for the inspections listed in the following paragraphs:

- 3.2 Leak test.

- 3.4 Appendage air test.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

3.2 Leak test. In the presence of the Coast Guard Inspector, the Contractor shall accomplish the following tasks for all appendages as designated in Table 1 below, using the Coast Guard drawings listed in Section 2 (References) as guidance:

- Remove and dispose of all existing plugs (e.g. drain plugs, fill/vent plugs), as applicable.
- Submit a CIR noting any liquids draining from any of the appendages – indicating the presence of a leak.
- Dispose of any drained liquids in accordance with all Federal, state, and local laws and regulations.

CAUTION

Some liquids that are drained may be classified as hazardous materials or hazardous waste depending on state and local regulations. The vessel environmental coordinator may assist with determination of waste category.

3.3 Plug renewal. Upon completion of all work on appendages, the Contractor shall accomplish the following tasks:

- Chase the hull insert threads of all plugs.
- Renew all stainless steel, Type 316 and Monel plugs (as applicable) in place of those removed.
- Coat new plugs prior to installation with a sealing and locking compound conforming to ASTM D5363-AN0123 or a flexible joint compound conforming to MIL-S-45180, Type II.

TABLE 1 – PLUGS FOR U/W APPENDAGES

APPENDAGE	FRAME	SIDE
Skeg	79 ½ to 92	CL
Kort Nozzle (part of Z-drive)	95	P/S

3.4 Appendage air test. The Contractor shall accomplish the following tasks for any appendage from the above list designated by the Coast Guard Inspector, with an approved Change Request resulting from the CIR from paragraph 3.2:

- Perform an air test of the appendage, in accordance with SFLC Std Spec 0740, Appendix C.
- Submit a CIR.

4. NOTES

This section is not applicable.

WORK ITEM 11: Appendages (U/W) - Internal, Preserve

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to preserve internal surfaces of designated U/W appendage(s) (see Table 1).

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 114-001, Rev D, Shell Appendages

Coast Guard Drawing 175 WLM 184-001, V850 Transducer Adaptor Ring

Coast Guard Drawing 175 WLM 801-006, Rev H, Docking Plan

Coast Guard Drawing 175 WLM 801-019, Rev C, Shell Expansion

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

OTHER REFERENCES

MIL-PRF-16173, Sep 2006, Corrosion Preventive Compound, Solvent Cutback, Cold-Application

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

3.2 Preservation of void internal surfaces. The Contractor shall accomplish the following tasks for each appendage listed in Table 1, using the Coast Guard Drawings listed in Section 2 (References) herein as guidance:

- Fill all appendage interior surfaces with a rust preventive compound conforming to MIL-PRF-16173, Class II, Grade 3, to coat all surfaces.
- Drain, collect, and dispose of remaining compound in accordance with all applicable Federal, state, and local regulations.
- Ensure that the coated surfaces are left exposed to the atmosphere for 24 hours to allow for adequate drying.

TABLE 1 - DRAIN PLUGS FOR U/W APPENDAGES

APPENDAGE	FRAME	SIDE
Skeg	79 ½ to 92	CL
Kort Nozzle (part of Z-drive)	95	Port //Starboard

4. NOTES

This section is not applicable to this work item.

WORK ITEM 12: Voids (Non-Accessible), Leak Test

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to leak test designated non-accessible voids. Refer to Table 1.

TABLE 1 - PLUGS FOR NON-ACCESSIBLE VOIDS

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 184-001, V850 Transducer Adaptor Ring

Coast Guard Drawing 175 WLM 801-006, Rev H, Docking Plan

Coast Guard Drawing 175 WLM 801-019, Rev C, Shell Expansion

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2014, Welding and Allied Processes

OTHER REFERENCES

ASTM International (ASTM) D5363, 2016, Standard Specification for Anaerobic Single-Component Adhesives (AN)

MIL-S-45180, 1998, Sealing Compound, Gasket, Hydrocarbon Fluid and Water Resistant

3. REQUIREMENTS

3.1 General.

3.1.1 CIR. The Contractor shall submit a CIR for the inspections listed in the following paragraph:

- 3.2 Leak test.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

3.2 Leak test. In the presence of the Coast Guard Inspector, the Contractor shall accomplish the following tasks for all designated non-accessible voids (see Table 1 for list) and submit a CIR, using the Coast Guard drawings listed in Section 2 (References) as guidance:

- Remove and dispose of existing plugs (e.g. drain plugs, fill/vent plugs), as applicable.
- Submit a CIR noting any liquids draining from any of the voids - indicating the presence of a leak.
- Dispose of any drained liquids in accordance with all Federal, state, and local laws and regulations.

CAUTION

Some liquids that are drained may be classified as hazardous materials or hazardous waste depending on state and local regulations. The vessel environmental coordinator may assist with determination of waste category.

3.3 Plug renewal. Upon completion of all work on the designated voids, the Contractor shall accomplish the following tasks:

- Chase the hull insert threads of all plugs.
- Renew all stainless steel, Type 316, or Monel plugs, in place of original plugs.
- Coat new plugs prior to installation with a sealing and locking compound conforming to ASTM D5363-AN0123 or a flexible joint compound conforming to MIL-S-45180, Type II.

3.4 Void air test. If a Change Request is authorized and released, the Contractor shall accomplish the following tasks for any designated non-accessible void from the above list:

- Apply a vacuum or pressure of 2 psig to the void, in accordance with SFLC Std Spec 0740, Appendix C.
- Submit a CFR.

TABLE 1 NON-ACCESSIBLE VOIDS

VOID	FRAME	SIDE
V850 Transducer Fairing	51 - 52	Starboard

4. NOTES

This section is not applicable to this work item.

WORK ITEM 13: Voids (Non-Accessible), Internal Surfaces, Preserve

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to preserve internal surfaces of non-accessible voids. Refer to Table 1.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 184-001, V850 Transducer Adaptor Ring

Coast Guard Drawing 175 WLM 801-006, Rev H, Docking Plan

Coast Guard Drawing 175 WLM 801-019, Rev C, Shell Expansion

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

OTHER REFERENCES

MIL PRF-16173, Sep 2006, Corrosion Preventive Compound, Solvent Cutback, Cold-Application

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

3.2 Work coordination. The Contractor shall coordinate performance of this work item with the "Voids (Non-Accessible), Leak Test" work item, which is a separate work item in this specification package. The Contractor shall refer to the Coast Guard drawing(s) listed in Section 2 (References) for guidance.

3.3 Preservation of void internal surfaces. The Contractor shall accomplish the following tasks for each void designated in Table 1, using the Coast Guard Drawings listed in Section 2 (References) herein as guidance:

- Fill all void interior surfaces with a rust preventive compound conforming to MIL-PRF-16173, Class II, Grade 3, to coat all surfaces.
- Drain, collect, and dispose of remaining compound in accordance with all applicable Federal, state, and local regulations.
- Ensure that the coated surfaces are left exposed to the atmosphere for 24 hours to allow for adequate drying.

TABLE 1 - DRAIN PLUGS FOR NON-ACCESSIBLE VOIDS

VOID	FRAME	SIDE
V850 Transducer Fairing	51 - 52	Stbd

4. NOTES

This section is not applicable to this work item.

WORK ITEM 14: Tanks (Ballast), Clean and Inspect

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean and inspect the following tank(s):

TABLE 1 - TANKS

TYPE OF STRUCTURE	LOCATION	CAPACITY - 95% (GALLONS)	LOW SUCTION (GALLONS)
Forepeak Ballast Tank	3-0-0-V	3,309	99
Ballast Tank	3-35-6-V	7,922	238
Ballast Tank	3-35-1-V	7,922	238

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 601-003, Rev F, Booklet of General Drawings (552-564)

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2014, Welding and Allied Processes

OTHER REFERENCES

ASTM International (ASTM) D1330, 2004, Standard Specification for Rubber Sheet Gaskets

3. REQUIREMENTS

3.1 General.

3.1.1 CIR. The Contractor shall submit a CIR for the inspections listed in the following paragraph(s):

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.2 Operational test - initial. Prior to commencement of work, the Contractor shall witness Coast Guard Personnel perform an initial operational test of the TLI's for tanks listed in paragraph 1.1 (Intent), to demonstrate existing operational condition. Submit a CFR.

3.3 Plug log. The Contractor shall keep a written record of all plugs put in any tanks vents. A separate list shall be kept for each tank being entered.

3.3.1 Ensure that all plugs are removed from each tank upon completion of work in the tank.

3.3.2 The plug log shall be available to the Coast Guard inspector when the inspector is performing his close-out inspection on each tank.

3.3 Content removal. The Contractor shall remove access cover(s); remove and dispose of all fluids and/or residues in accordance with all applicable Federal, state, and local regulations. Plug all inlet and outlet piping in the tank to prevent contaminants from entering the tank. Use plugs with an attached lanyard, ring or other system that will ensure plugs are not lost in the pipe openings. Maintain a plug accountability log outside the tank(s) to prevent any of the installed temporary plugs from being lost inside the tank or forgotten inside at tank closure.

3.4 Cleaning. The Contractor shall clean the designated structure's (see paragraph 1.1 (Intent)) interior surfaces free of all foreign materials, such as sediment, sludge and fungal growth. Remove all persistent residues, taking care not to damage the tank coating system. Remove cleaning media and residues continuously from the compartment during the washing process. Remove any residual wash media and wipe up residual moisture with clean lint-free cloths. Collect, contain, and dispose of all wash media, residues, and cleaning materials in accordance with all Federal, state, and local regulations. The Contractor shall refer to Coast Guard Drawing 175 WLM 601-003 for guidance.

3.5 Inspection. The Contractor shall visually inspect all interior surfaces, including, but not limited to bulkheads, floor and overhead plating, structural members, manhole cover surfaces, fasteners and gasket seating surfaces. Submit a CFR including the following, as applicable:

- Structural condition.
- Inaccessible areas, if any.
- Condition of coating, including measurements taken, percentage, location, and type of coating failure.
- Tank level indicator (TLI) and/or float switch condition.
- Sounding tube and striker plate condition.
- Suction and discharge piping condition.
- Fastener material (stainless steel) and condition.
- Anodes (as applicable).

3.6 Closing. The Contractor shall ensure that the compartment(s) remain open for at least 24 hours after completion of any KO-authorized tank repairs and preservation. Notify the COR at least 24 hours prior to closing the compartment(s). After satisfactory inspection by the Coast Guard Inspector, and completion of all authorized repairs, close the manhole cover(s) with new gasket material conforming to ASTM D1330 and new cotton grommets on each stud (as applicable).

3.6.1 The Contractor shall renew up to 10% of missing or damaged fasteners.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.7 Operational test – post repairs. After completion of work, the Contractor shall thoroughly test, in the presence of the Coast Guard Inspector and demonstrate the designated tank TLI's to be in satisfactory operating condition. Submit a CFR.

3.8 Ultrasonic thickness (UT) measurement. The Contractor shall take a total of (50) UT measurements of tank plating, in locations designated by the Coast Guard Inspector, in accordance with SFLC Std Spec 0740, Appendix C.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 15: Both Main Diesel Engine Mounts, Renewal

1. SCOPE

1.1 Intent. This work item describes the requirements to renew the four engine mounts per engine on both Main Diesel Engines (MDEs) and then realign engine to drive shafting (Vulkan Coupling) on both MDEs. The concerned work area is the Engine Room (3-61-0-E). The MDE mounts are manufactured by Christie-Grey and are supplied Government Furnished. Information on the mounts is found in Figure 1, "TSC T10 Resilient Mount System".

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
N	Christie & Grey Resilient Engine Mount	PN: TSC T10 65/400	4 ea.	600.00
Y	Christie & Grey Resilient Engine Mount	PN: TSC T10 65/800	4 ea.	600.00
N	Vulkan RATO Flexible Coupling Element (EG1721R000)	PN: 01-466-3015	2 ea.	12,020.00

***Government-loaned property, which shall be returned to the vessel upon completion of the availability.**
****New or refurbished equipment that the Government may provide for installation in place of existing equipment.**
*****Government-furnished property, which is to be supplied by either the vessel or the C4IT Service Center.**

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 243-2, Rev E, Propulsion Shaft Arrangement

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3613, Oct 1997; Flexible Coupling

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2018, General Requirements

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep. The Contractor shall provide the services of qualified Tech Rep, who is familiar with – Large Diesel Engine to Z-drive propulsion unit alignment to accomplish the following tasks – on site:

- Measure states of alignment.
- Furnish and use laser alignment tools and fixtures in measuring alignment.
- Determine engine movements and line shaft bearings to obtain satisfactory alignment.
- Determine shim thicknesses as required to evenly and optimally load bearings.

3.1.2.1 The Contractor shall submit the name of the Tech Rep to the COR at the Arrival Conference.

NOTE

The same Alignment Technical Representative is to be used on both this specification as well as companion Work Item "Both Z-Drive Propulsion Trains, Alignment". Include all Alignment Technical Representative cost only in the bid of Work Item "Both Z-Drive Propulsion Trains, Alignment". Do not duplicate the cost in bid of this Work Item.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

3.2 Renew rubber element. The Contractor shall disconnect and remove Vulkan coupling.

3.2.1 Measure with laser alignment tools the existing state of alignment of MDE to Z-drive shafting (with Vulkan coupling unbolted or removed). The purpose is to document existing as-is state of alignment pre-work.

3.2.2 Clean and inspect the Vulkan coupling. Renew the rubber element (item #1 Rato-R 1721 Elem Assy). Submit CFR if any other components require renewal. The Vulkan coupling details are shown in Figure at end of this specification. Figure was obtained from CG Tech Pub 3613 , which shall be consulted along with OEM for additional information as required.

3.3 Renew existing TSC T10 mounts. After baseline alignment readings have been recorded, the Contractor shall accomplish the following tasks.

3.3.1 Using the jacking pad/Jacking bolt assy depicted on Elevation 22-A and Detail 21-A of CG Dwg 175-WLB 233-2 renew the mounts. Contractor shall determine the safe manner and process to follow e.g.

leave all center bolts loosely installed while jacking screws installed, only raise minimum mount, do one mount at a time, etc. Be aware when raising of any attached service connection, keep vertical movement to minimum.

3.3.2 For each mount renewed double check the mount being removed making note of orientation of label plate, and type, and adapter plate. Per drawing forward two mounts have and "Engine rail adapter plate, Item 16 between mount and engine rail. Per drawing forward two mounts are Item 22, TSC T10 65/800 and aft two mounts are Item 21, TSC T10 65/400.

3.3.2.1 Renew the mount to bottom plate fasteners (Item 18, 5/8" bolt and Item 25, Washer). The Mount's top center bolt Item 19, M24 bolt may be reused after inspection.

3.3.2.2 The Center bolt should not be tightened or final torqued until alignment is validated.

3.5 Engine alignment check. The Contractor shall accomplish the following alignment tasks:

3.5.1 The MDEs are Caterpillar 3508 Diesel.

NOTE

The same Alignment Technical Representative is to be used on both this specification as well as companion Work Item "Both Z-Drive Propulsion Trains, Alignment". The MDE alignment is interrelated to the drive shaft alignment.

3.5.2 Confirm the Vulkan coupling is either removed or disconnected.

3.5.3 Measure with laser alignment tools the existing state of alignment of MDE to Z-drive shafting (with Vulkan coupling unbolted or removed). The purpose is to document existing state of alignment post mount work.

3.5.4 In conjunction with related work item "Both Z-Drive Propulsion Trains, Alignment" determine the overall state of overall Z-drive propulsion train (at Vulkan coupling, at cardan shaft, and at each cooper bearing. Decide on an alignment plan that uses a LOS that will satisfy all criteria's of alignment.

NOTE

From past history and drawing reviews the following conditions exist (until proven otherwise):

The MDEs are not vertically shimmed to aide in alignment. They are moved just horizontally to satisfy coupling alignment. For vertical alignment movements cooper bearing #1 would move.

The Z-drive units are not capable of vertical movement and only limited horizontal movement. Horizontal movement is only to very limited degree possible via flange bolting to sea chest and via subassembly makeup/bolting (e.g. lower assembly to intermediate, intermediate to upper, etc.). Unless alignment contractor disagrees in writing, z-drive position can be assumed fix as it is currently bolted. This means only cooper bearing #1 movement would bring drive shaft into alignment with z-drive at cardan shaft (aka alignment pointers).

This to some degrees dictates that the z-drive output shaft defines the LOS. With no design horizontal loads all 5 cooper bearings as well as MDE centerline would follow that horizontal LOS.

The vertical LOS is contained by #1 cooper bearing's height controlling vertical movements for Vulkan coupling alignment (sing MDE appears to be fixed vertically) and by #5 cooper bearing's height controlling vertical pointer alignment at z-drive end. This leaves only cooper bearing #2, #3, and #4 cooper bearings in play for shimming for purpose of obtaining vertical load distribution adjustments.

3.5.5 The of thermal rise of MDE shall be considered. Rough calculations indicate an approximate 0.010" output flange rise in a hot operating engine as compared to cold ambient engine.

3.5.5.1 If the engines have pre-heaters a consideration may be made to turn them on (Coast Guard Cutter's sole decision and action) and the engine brought up to temperature. This will allow actual thermal expansion of the engine to take place (and nullify need to factor in a theoretical rise).

3.5.6 Determine any MDE horizontal movements required to meet alignment criteria. Loosen mounts, and use jacking screws and/or other approved techniques to execute engine movements.

3.5.7 Measure and record the height of each vibration mount following instructions of Christie & Grey Data Sheet DS 094 (attached). Ensure they are within compliance of Christie & Grey Data Sheet DS 096 (attached). Provide copy of post transfer mount heights to Christie & Grey. The heights are expected to be roughly equal at each isolator ensuring they are all carrying equal load. Record the data in a copy of the attached data sheet (found as enclosure at end of specification) for each MDE. Measurements will be witnessed by the COR.

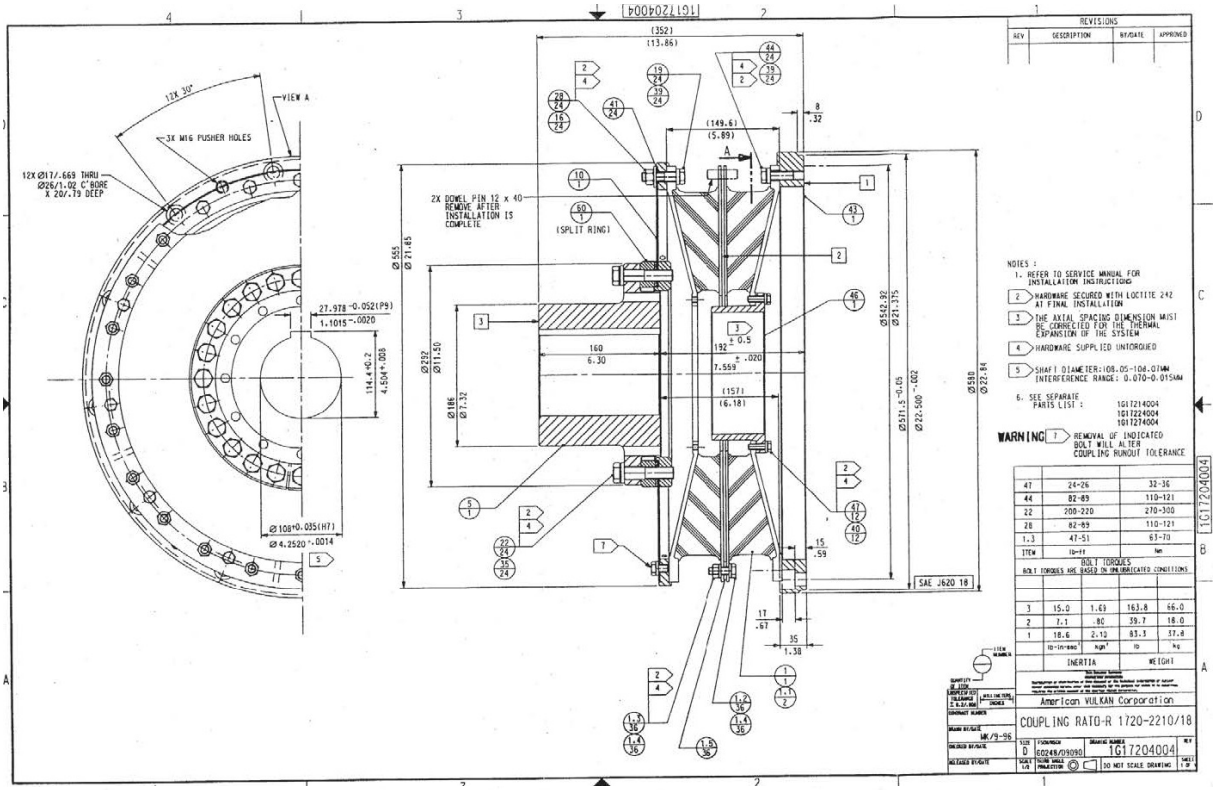
3.5.8 Submit final report to COR with final alignment results, recommendations for future similar jobs, difficulties, and any other notable findings.

3.5.9 Reassemble the engine components, and ensure mounts are final torqued. Ensure any jacking screws used are all removed or withdrawn.

3.6 Operational test – post repairs. Contractor shall perform as required operational testing specified already in companion Work Item "Both Z-Drive Propulsion Trains, Alignment". Do not include in bid of this item.

4. NOTES

This section is not applicable to this work item.



American VULKAN Corporation
P.O. Drawer 376, Winter Haven, Florida 33882
Tel (813) 324-2424 Fax (813) 324-4008

Parts List

Seq	Description	Part No	Qty
1	RATO-R 1721 ELEM ASSY	EG1721R000	1
5	RATO-R 1720 HUB	4G17R47909	1
10	RATO-R 1720 MBRN ASSY	2G17R5000M	1
16	WSHR FL	3G19S20000	24
19	BLT HEX HD M12 X 50 931-10.9	7000112050	24
22	BLT HEX HD M16 X 70 931-10.9	7000116070	24
28	NUT HEX M12 X 1.75 934-10	7020112000	24
35	WSHR FL M16	7033616000	24
39	WSHR FL M12	7033612000	48
40	WSHR FL M8	7033608000	12
41	WSHR FL	3G19S50000	24
43	RATO-S/R FWL ADPTR SAE 18	4G1719002M	1
44	BLT HEX HD M12 X 35 933-10.9	7001112035	24
46	RATO-R 1720 INNER STOP RING	3G17S00000	1
47	BLT HEX HD M8 X 25 933-10.9	7001108025	12
60	RATO-R 1720 SPLIT SPCR RING	3G17R9000M	1

Date: 06/10/97

Part No.: 1G17214004

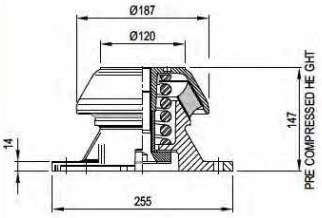
Description: RATO-R 1721-2210/18 CPLG
BO 108MM/KWY 28MM

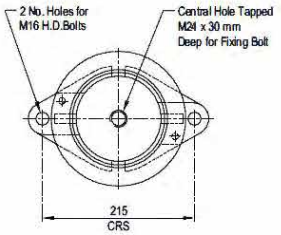
Page: 1

FIGURE 1. VULKAN RATO COUPLING (EXCERPT FROM TEC PUB 3613)

TYPE TSC ISOLATOR SIZE T10

T10

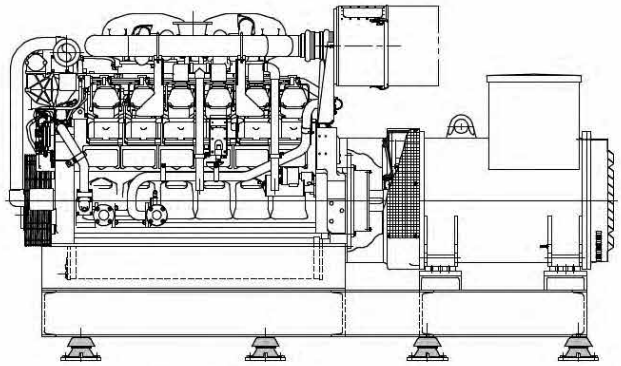




REFERENCE	VERTICAL LOAD RANGE (kg)	DYNAMIC STIFFNESS (kN/m)		WEIGHT (kg) MAX
		VERTICAL	HORIZONTAL	
T10 45/100	400 700	752	813	9.0
T10 45/200	450 750	779	833	
T10 45/300	510 860	848	898	
T10 45/400	560 910	850	910	
T10 45/500	620 950	854	905	
T10 45/600	720 1050	973	1022	
T10 45/800	830 1200	987	1016	
T10 45/1600	1150 1550	1248	1273	
T10 65/200	960 1690	2421	2682	9.0
T10 65/300	1020 1790	2439	2676	
T10 65/400	1060 1810	2442	2693	
T10 65/500	1130 1910	2476	2727	
T10 65/600	1200 2000	2535	2738	
T10 65/800	1320 2150	2576	2781	
T10 65/1060	1600 2500	2712	2902	
T10 65/1500	2100 3000	2618	2743	

- All values of stiffness are nominal subject to ±20% variation on final assembly. The isolator rubber elements are pre-loaded 5 mm upon assembly.
- Stiffness is linear over working load range.
- Dynamic stiffness may vary with frequency. Values stated are reliable for calculation of low frequency characteristics below 100 Hz.

Typical Installation



TSC T10 isolators used on a generating set

Application Notes:

- All connections to and from isolated machine must include flexible lengths, not only to prevent transmission of vibration through the connections and allow the system freedom of movement, but also to avoid possible failure of the connections.
- Analysis of the isolated system is normally undertaken by Christie & Grey to predict the response to ship motion, machine forces and shocks to enable the correct selection of flexible connections.

For full installation instructions please refer to our data sheets DS040 and DS060.
For more detailed information and technical assistance please contact our Technical Department.

In the interests of continual development, the Company reserves the right to make modifications to these details without notice.

CHRISTIE & GREY

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PL001/4 - MARCH 2011 - Rev H

FIGURE 1. TSC T10 RESILIENT MOUNT

TECHNICAL DATA SHEET
DS 094

NON CONTROLLED UNLESS STATED OTHERWISE

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TITLE. Instructions for the measurement of mounting heights using either spring loaded telescopic gauges or a digital DTI set.

This instruction is to be read in conjunction with Data Sheet DS071 Instructions for the Measurement of Mounting Heights.

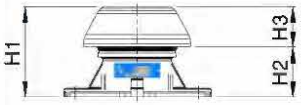


Figure 1
TSC T10/T20 Mount

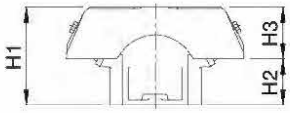


Figure 2
TSC T1/T2 Mount

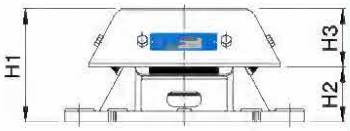


Figure 3
TSC T3 Mount

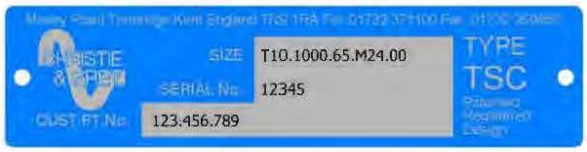
Table 1.

MODEL	COMMISSIONED HEIGHT H1	COMMISIONED HEIGHT H2	MINIMUM HEIGHT H1	MINIMUM HEIGHT H2	HEIGHT H3 ±0.2mm	TELESCOPIC GAUGE or DTI MEASUREMENT RANGE
TSC T1	Greater than 153mm	*From 2011 onwards only* Greater than 68mm	151mm	*From 2011 onwards only* 66mm	85mm	54mm to 90mm
TSC T2	Greater than 158mm	*From 2011 onwards only* Greater than 73mm	156mm	*From 2011 onwards only* 71mm	85mm	54mm to 90mm
TSC T3 IRON Mk 3 TYPE	Greater than 175mm	*From 1996 onwards only* Greater than 79.4mm	171mm	*From 1996 onwards only* 75.4mm	95.6mm	54mm to 90mm
TSC T3 ALUMINIUM	Greater than 175mm	*From 1996 onwards only* Greater than 82.5mm	172mm	*From 1996 onwards only* 79.5mm	92.5mm	54mm to 90mm
TSC T3 Mixed ALY BASE/IRON TOP	Greater than 175mm	*From 1996 onwards only* Greater than 79.4mm	171mm	*From 1996 onwards only* 75.4mm	95.6mm	54mm to 90mm
TSC T10 / TSC T20	Greater than 137mm	*From 2012 onwards only* Greater than 74.6mm	134.5mm	*From 2012 onwards only* 72.1mm	62.4mm	54mm to 90mm

Note! If measuring overall height H1 it is the actual mount height that has to be measured and does not include resin grout, soleplates, proof plates or shims.

Prior to taking height measurements.

A. Identify and record serial number from mount name plate. Typical name plate shown here.



B. Note mount position in relation to machine orientation e.g. from flywheel end.

C. For TSC T3 mounts from 1996, TSC T1/T2 mounts from 2011 and TSC T10/T20 mounts from 2012, top casting skirts are machined to simplify measurement of height H2. If you are unsure about which model you have, please contact our Technical Department for advice stating the mount serial no's.

D. When using spring loaded telescopic gauges refer to Method 1 on page 2 or if using a digital DTI set refer to Method 2 on page 3.

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TITLE.	Instructions for the measurement of mounting heights using either spring loaded telescopic gauges or a digital DTI set.

Using Spring Loaded Telescopic Gauges.

Measure mount height H2 where possible using a spring loaded telescopic gauge (see figures 4 & 5 below). Refer to table 1 on page 1 for heights and measurement range for gauges.

1. Ensure datum measuring points are flat, clean and free from burrs and imperfections.
2. It is critical that measurements are taken perpendicular to the mounting seating face. For example, a two degree error in vertical alignment of the gauge will result in an error of 0.1 mm on a measured height of 150 mm. See figure 4 below.
3. Select a spring loaded telescopic gauge with suitable range for the gap to be measured, see table 1 on page 1.
4. Take four measurements equally spaced from the mount centreline at adjacent corners where possible.
5. Compress telescopic gauge and lock in compressed position.
6. Position gauge below mount and release gauge compression.
7. Apply light finger pressure to hold gauge in position against base support while tightening the gauge locking screws.
8. Carefully remove the gauge by twisting the base.
9. Measure the height of the spring loaded telescopic gauge using a micrometer, vernier callipers or if available a digital height gauge from a flat ground plate.
10. If any mounts are found to be at or below the minimum height (see table 1 on page 1) they are to be replaced. Please contact our Technical Department for advice stating the mount serial no's.

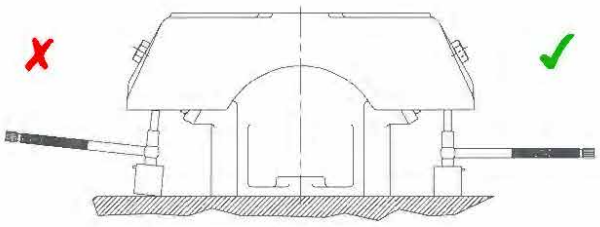

Figure 4

Figure 5

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TITLE.	Instructions for the measurement of mounting heights using either spring loaded telescopic gauges or a digital DTI set.

Using a digital DTI set.

Measure mount height H2 where possible using a digital DTI set (see figures 6 & 7 below). Refer to table 1 on page 1 for heights and measurement range for DTI set.

Combination of interlocking machined shafts and support tubes fixed to digital DTI with a 13 mm plunger movement.

Measurement range dependant upon combination is 125mm to 200mm (can be increased with manufacture of different length machined support).

1. Ensure datum measuring points are flat, clean and free from burrs and imperfections.
2. It is critical that measurements are taken perpendicular to the mounting seating face. For example, a two degree error in vertical alignment of the DTI will result in an error of 0.1mm on a measured height of 150 mm. See figure 6 below.
3. Configure the set and lock off support tubes so that DTI plunger is at a known nominal height within mid range of gap to be measured. It should be noted that a height gauge and surface plate are the best practice for this purpose.
4. Take four measurements equally spaced from the mount centreline at adjacent corners where possible.
5. Position gauge below mount and apply light finger pressure to hold gauge in position against base support foot. Record the readings from the display (the DTI hold function can be used to store the readings whilst the gauge is being removed).
6. Add or subtract the DTI display reading to the nominal value.
7. Regularly check the DTI zero position to ensure it has not altered and adjust as necessary.
8. If any mounts are found to be at or below the minimum height (see table 1 on page 1) they are to be replaced. Please contact our Technical Department for advice stating the mount serial no's.

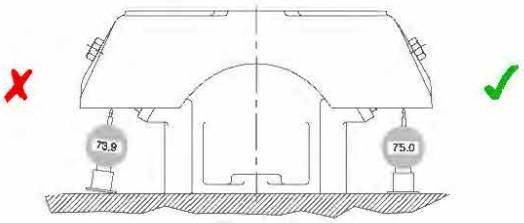

Figure 6

Figure 7

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TECHNICAL DATA SHEET

DS096

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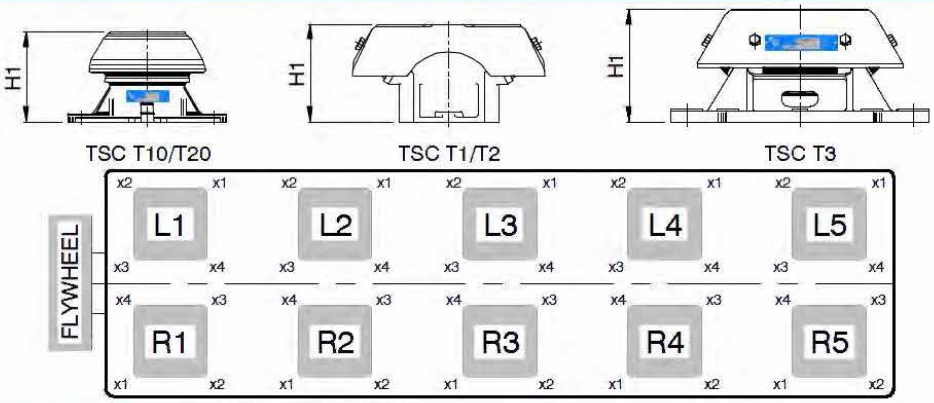
TITLE	MOUNT HEIGHT DATA COLLECTION SHEET FOR NEW INSTALLATIONS AND IN SERVICE MAINTENANCE CHECKS - MARINE DIESEL ENGINES

Customer:		Engine Make:	
Project:		Engine Model/Type:	
C&G Drawing/Calculation #:		Engine Serial Number:	
Date:		Engine Rotation:	*When viewed from flywheel end*
Prepared by:		Position in Vessel:	
Application Type:			

All dimensions are in millimetres. Read in conjunction with DS094 to determine height H1 for the relevant TSC Model.
Mount heights are to be recorded once the load is transferred to the mounts and for new installations after the 48 hour settlement period has been observed.



Identify your TSC model from the images above and from the mount name plate and then select it from the drop down list below.
If your installation uses New Mounts select New Mounts from the drop down list below otherwise leave as Existing Mounts.

Select your TSC Model: _____ **Type of Installation:** _____

Enter the Mount Serial No's & measure and enter heights H1, for positions x1 through to x4 for each mount in your installation.

Enter your mount data in the table below filling in only the yellow boxes.

Mount Position	Mount Serial #	x1 mm	x2 mm	x3 mm	x4 mm	Measurement Cross Check	Average Mount Height mm	Parallelism Check	Commissioning Check
L1									
L2									
L3									
L4									
L5									
R1									
R2									
R3									
R4									
R5									

Once you have entered your readings, they are checked and verified.
Please contact our Technical Department if you have any questions.

Please enter your contact details below:

Name:		Email:	
Tel No:		Date:	

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TECHNICAL DATA SHEET

DS096

NON CONTROLLED UNLESS STATED OTHERWISE

QCF 56 Issue 3

PAGE	2 of 2
ISSUE	2
DATE	2 October 2012
APPROVED	PJB

TITLE — **MOUNT HEIGHT DATA COLLECTION SHEET FOR NEW INSTALLATIONS AND IN SERVICE MAINTENANCE CHECKS - MARINE DIESEL ENGINES**

Instructions

Mount Heights are determined by measuring the four corners of the mount as shown in technical data sheet DS094. The following formulas can be used complete page 1 of form DS096 by hand.

Cross Check for errors: (x1 + x3) - (x2 + x4) = Measurement Cross Check
This helps to see if your measurements make sense. The closer to zero the more accurate your readings. Ignore the "+" & " -" signs, you want to be as close to zero as possible.

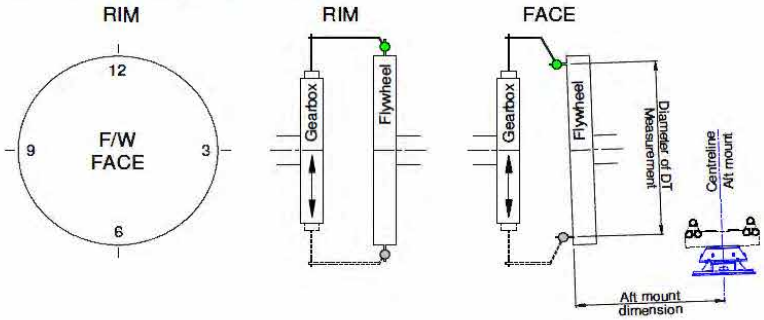
Average Height: (x1 + x2 + x3 + x4) ÷ 4 = Average Mount Height

Delta is the difference between the high and low corner: Largest x - Smallest x = Parallelism
You want the number as small as possible. Check your installation instructions for tolerances or ask C&G Technical Department for advice.

Send us your completed readings sheet. We will always provide free technical support to review your numbers and provide advice and assistance in making adjustments.

Coupling Alignment

If you send us your Rim, Face, DTI Diameter & Aft mount measurements we can advise you on mount shimming if required.



Position	Angle	Rim Measurement	Face Measurement
12 o'clock	0°		
3 o'clock	90°		
6 o'clock	180°		
9 o'clock	270°		

Measurement Units (mm/inches)	
Diameter of DTI Face Measurement	
Centre line Aft mount dimension	

In the example above the DTI is connected to the gearbox flange and the gearbox flange rotated to take the measurements.

It is important to rotate the component that the DTI is connected to.

Fax your readings to (508) 217-3061 (USA) or +44 (0) 1732 359666 (U.K.)
or e-mail your readings to: matthew.coombs@christiegrey.com (USA) or sales@christiegrey.com (U.K.)

Please contact our Technical Department if you have any questions.

Please enter your contact details below:

Name:		Email:	
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WORK ITEM 16: Both Z-Drive Propulsion Trains, Alignment

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to inspect both z-drive's input shafting for proper vertical alignment and bearing performance. It is intended to be performed with a Main Diesel Engines Mount Renewal. Together the two specifications will restore optimal alignment of the entire Z-drive shafts from MDE to Z-drive's input shaft

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 243-2, Rev E, Propulsion Shaft Arrangement

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3613, Oct 1997; Flexible Coupling

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2018, General Requirements

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep. The Contractor shall provide the services of qualified Tech Rep, who is familiar with – Large Diesel Engine to Z-drive propulsion unit alignment to accomplish the following tasks – on site:

- Measure states of alignment.
- Furnish and use laser alignment tools and fixtures in measuring alignment.
- Determine engine movements and line shaft bearings to obtain satisfactory alignment.

- Determine shim thicknesses as required to evenly and optimally load bearings.

3.1.2.1 The Contractor shall submit the name of the Tech Rep to the COR at the Arrival Conference.

NOTE

The same Technical Representative paid for completely in this work Item will also be used as well for common alignment requirements found in companion Work Item "Both Main Diesel Engine Mounts, Renewal". Include all Alignment Technical Representative cost in the bid of this item only

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences in way of work include, but are not limited to the below-listed:

- Shaft guards (5 per shaft).

3.2 Background Information.

3.2.1 The z-drive drive shaft contains 5 cooper bearings. #1 bearing is designated as closest to MDE. The MDE is connected via flexible coupling. #3 bearing is a fixed (thrust bearing). The remaining 4 bearings are floating bearings. #5 bearing is closest to z-drive. The drive shaft is connected to the z-drive via a cardan shaft.

3.2.2 After many years of operation and unsupervised events that may have altered total alignment (e.g. z-drive renewals, individual mount renewals), the intent is to perform a one-time midlife realignment.

3.2.3 This shall be considered performance specification (Government is not stating exactly how to do work, only the end result is stated). Contractor is expected to achieve final result of a z-drive propulsion train alignment. The sequence and timing of events shall be directed by Alignment Contractor.

3.2.4 For purpose of this specification, the alignment of Z-drive propulsion train is considered to be comprised of three parts. Total alignment (not performed since new construction) requires all 3 parts be performed simultaneously to achieve optimal alignment.

3.2.4.1 The three parts are considered to be:

- The MDE to drive shaft connection (via Vulkan coupling)
- The drive shaft supported on 5 cooper bearings.
- The drive shaft to z-drive input (via cardan shaft)

3.5.5 From past history and drawing reviews the following conditions exist (until proven otherwise):

- The MDEs are not vertically shimmed to aide in alignment. They are moved just horizontally to satisfy coupling alignment. For vertical alignment movements cooper bearing #1 would move.

- The Z-drive units are not capable of vertical movement and only limited horizontal movement. Horizontal movement is only to very limited degree possible via flange bolting to sea chest and via subassembly makeup/bolting (e.g. lower assembly to intermediate, intermediate to upper, etc.). Unless alignment contractor disagrees in writing, z-drive position can be assumed fix as it is currently bolted. This means only cooper bearing #1 movement would bring drive shaft into alignment with z-drive at cardan shaft (aka alignment pointers).
- This to some degrees dictates that the z-drive output shaft defines the LOS. With no design horizontal loads all 5 cooper bearings as well as MDE centerline would follow that horizontal LOS.
- The vertical LOS is contained by #1 cooper bearing's height controlling vertical movements for Vulkan coupling alignment (sing MDE appears to be fixed vertically) and by #5 cooper bearing's height controlling vertical pointer alignment at z-drive end. This leaves only cooper bearing #2, #3, and #4 cooper bearings in play for shimming for purpose of obtaining vertical load distribution adjustments.

3.1.5 Closely related and to be performed in conjunction with this specification is the "Both Main Diesel Engine Mounts, Renewal". All alignment decisions, coordination, and planning shall include considerations/requirements of both specifications.

3.1.6 Ensure Bulkhead seals will not interfere with shimming operation or alter results, loosen as required.

3.2 Main Diesel Engine (MDE) alignment. The Contractor shall accomplish the following MDE alignment tasks:

3.2.1 The actual MDE alignment is specified and performed in the "Both Main Diesel Engine Mounts, Renewal" work item.

3.2.2 Since a common line of site (LOS) must be chosen and all components measured and moved (when required) based on the LOS the MDE represents one end anchor point. Normally it is a fixed anchor point, but again in this midlife realignment it is allowed to be moved to facilitate an optimal alignment.

3.2.3 Consideration of thermal rise of MDE shall be considered. Rough calculations indicate an approximate 0.010" output flange rise in a hot operating engine as compared to cold ambient engine.

3.2.3.1 If the engines have pre-heaters they may be able to be turned on (Coast Guard Cutter's sole decision and action) and the engine brought up to temperature. This will allow actual thermal expansion of the engine to take place (and nullify need to factor in a theoretical rise).

3.3 Five Cooper bearing alignments. Contractor shall accomplish the following Cooper bearing alignment tasks:

NOTE

Using a load cell to measure bearing loads represents government's minimum needs. Strain gauge alignment in lieu of load cell is also permissible.

3.3.1 Shaft shall remain installed for this work.

3.3.2 Vertical Loads

3.3.2.1 Determine the vertical loads currently being carried on the 5 drive shaft bearings using a load cell.

3.3.2.2 Present a plan for approval to distribute the loads between the five (5) bearings. Plan should ensure that the bearing closest to Main diesel Engine stays properly loaded during any thermal rise associated with engine warm-up.

3.3.2.3 Upon approval shim the bearings per plan, and re-measure loads using load cell. Continue shimming until loads are satisfactorily achieved.

3.3.3 Horizontal Loads

3.3.3.1 Move bearings onto chosen LOS to eliminate horizontal (side loads).

3.3.4 Thrust bearing adjustment.

3.3.4.1 The number 3 bearing is a fixed (aka thrust bearing) whose axial position is critical. The other 4 bearings are floating bearings.

3.3.4.2 Devise a plan to determine if the thrust bearing is in correct axial position. Obtain USCG concurrence to plan and then execute.

3.4 Cardan shaft Alignment. Contractor shall accomplish the following cardan shaft alignment tasks:

3.4.1 The cardan shaft shall be aligned using laser alignment equipment and techniques. Special alignment pointers will be used in addition as second check, these pointers are provided GFE.

3.4.1.1 Run-outs. The Contractor shall perform run-outs on the provided GFE alignment pointers to ensure straightness.

3.4.1.2 The pointers shall be used as a second check and visual proof of proper alignment.

3.4.2 The Z-drive is considered to be fixed it is bolted firmly to sea bay on gasket. Any play on bolting, or in sub-assemblies has become fixed by final torqueing and assembly. However, if Contractor recommends movement of the z-drive itself a CFR shall be submitted with reasoning.

3.5 Operational test – post repairs. After completion of work, (and in conjunction with companion Work Item “Both Main Diesel Engine Mounts, Renewal” the Contractor shall witness an operational test (by Coast Guard personnel) of all items or shipboard devices that have been disturbed, used, repaired, altered, or installed, to prove that they are in satisfactory operating condition.

3.5.1 Perform a minimum of 3 hours dock or sea trial operational testing to ensure proper bearing operation. The bearing temperatures shall be recorded every half hour. High temperatures, above 130 degrees F, shall be considered a deficiency.

3.5.2 Submit a CFR of test results, including possible causes of any bearing overheating that occurred.

4. NOTES

This section is not applicable to this work item.

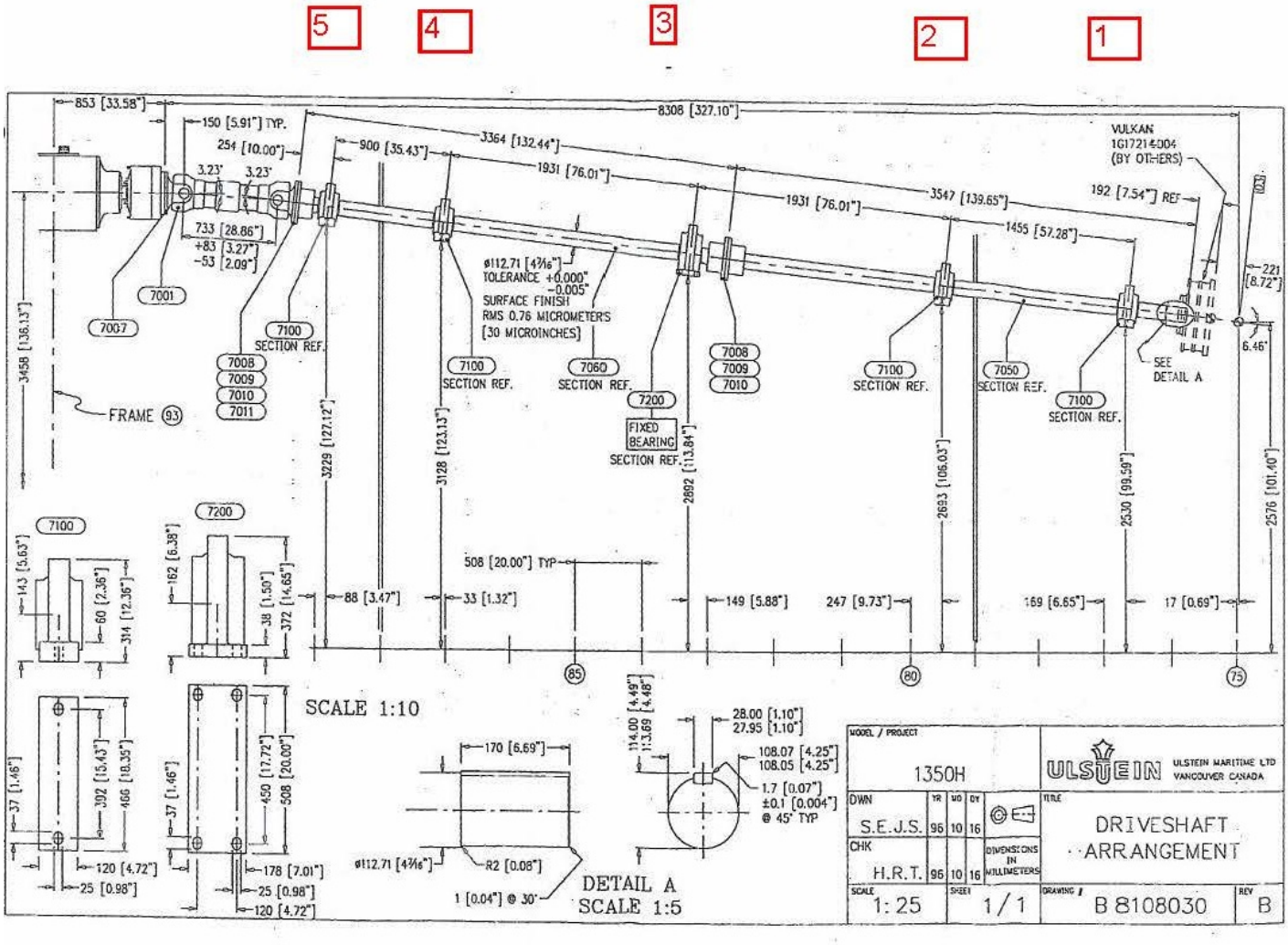


FIGURE 1. Z-DRIVE DRIVESHAFT ALIGNEMNT (EXCERPT FROM TEC PUB 3653)

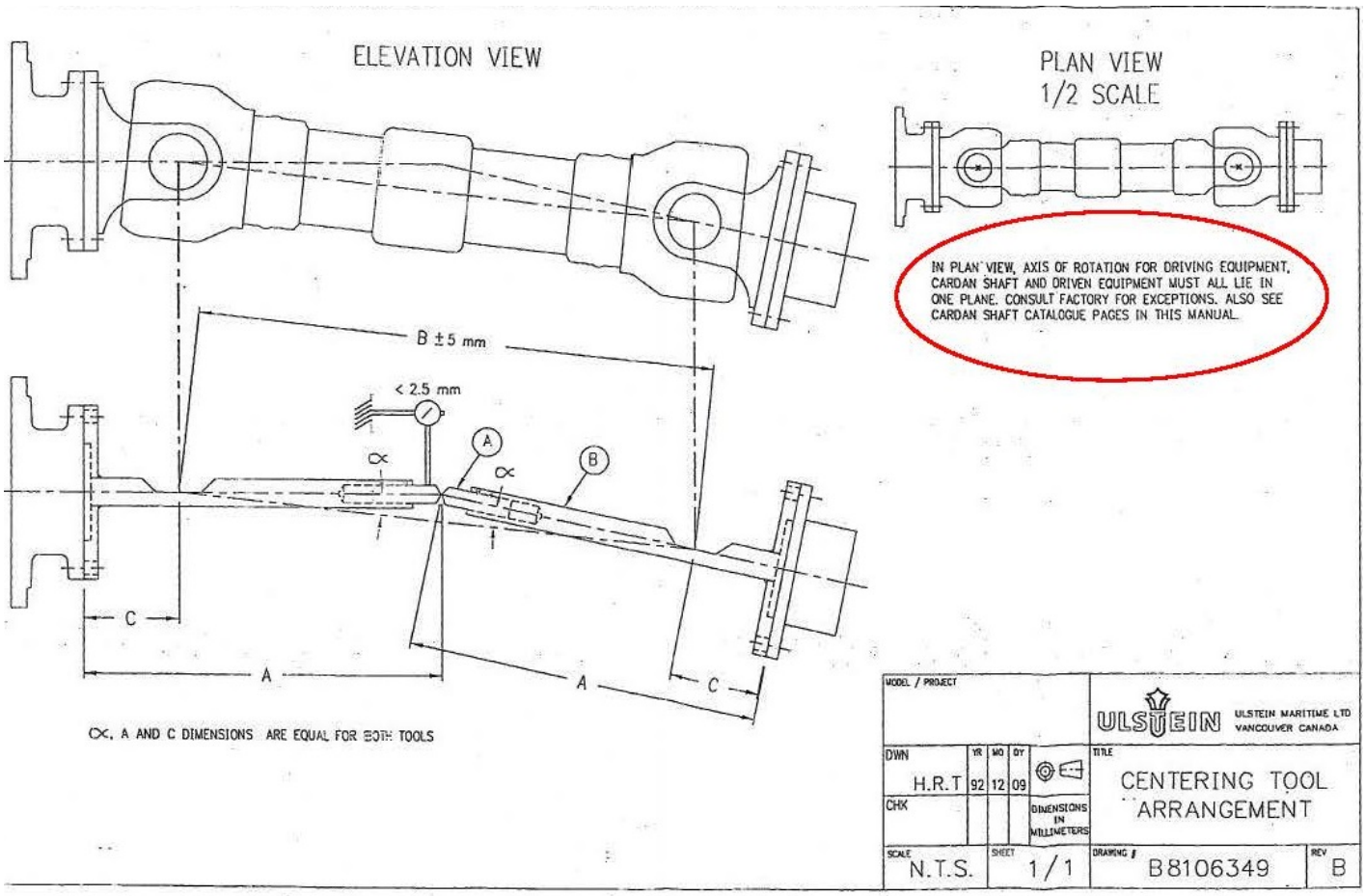


FIGURE 2. Z-DRIVE POINTERS (EXCERPT FROM TEC PUB 3653)

WORK ITEM 17: Z-Drive Propulsion Unit, Renew (Drydock)

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew the designated (port / starboard) Z-drive propulsion unit(s), while the vessel is in dry-dock.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
Y	Starboard Z-drive (CCW rotation)	NSN: 2010-21-920-0919	1 ea.	500,250.00
Y	Port Z-drive (CW rotation)	NSN: 2010-21-920-0899	1 ea.	500,250.00
Y	Special Alignment Pointer Set- CG Tool	N/A	1 ea.	500.00
Y	Z Drive Alignment Tool	NSN: 5220-01-F16-4720	1 ea.	3600.00

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 245-001, Rev A, Propeller

Coast Guard Drawing 175 WLM 245-002, Rev A, Z-drive Propeller Details, Modified Design

Coast Guard Drawing 175-WLM 551-5, Rev E, Compressed Air System a/D Hull Block 940, 950

Coast Guard Drawing 175 WLM 561-001, Rev J, Z-drive Hydraulic System Diagram

Coast Guard Drawing 175 WLM 635-001, Rev F, Hull Thermal and Acoustic Insulation Schedule

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3653, Jul 2013; SWBS 245, Section A; Z-drive - Model 1350-H

Coast Guard Technical Publication (TP) 3605B, SWBS 86; Section B; Machinery Plant Control & Monitor System (MPCMS) Z-Drive Direction Indicator System Technical Manual

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2014, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 5000 (SFLC Std Spec 5000), 2014, Auxiliary Machine Systems

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2014, Temporary Hull Accesses

OTHER REFERENCES

MIL-F-24402, May 1995, Filters (Hydraulic), Filter Elements (High Efficiency), and Filter Differential Pressure Indicators, General Specification

The Society for Protective Coatings (SSPC) Surface Preparation Specification No.1 (SSPC-SP 1), 2015, Solvent Cleaning

3. REQUIREMENTS

3.1 General.

3.1.1 CIR. The Contractor shall submit a CIR for the inspections listed in the following paragraph(s):

- 3.7.3 Post-surface preparation cleaning and inspection

3.1.2 Tech Rep. The Coast Guard will provide the services of a qualified Tech Rep, who is familiar with the Ulstein model number 1350-H (now Rolls Royce) Z-drive propulsion unit, to accomplish the following tasks – on site:

- Assist with proper repair methods, and ensure compliance with manufacturer's procedures and standards during disassembly, inspection, repair, modification, calibration, and reassembly of the equipment/system.
- Technical Representative shall be present for all disassembly, inspection, and reassembly of the Z-drive system.

NOTE

Be aware that the tech rep is not responsible for providing replacement parts or consumables.

3.1.2.1 For Tech Rep scheduling; the Contractor shall provide (at the Arrival Conference) the dates that the Pacific Star Tech Rep will be required onsite.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.3.1 Hydraulic system(s). Maintain existing hydraulic system cleanliness and take all necessary precautions to prevent the introduction of contaminants into the hydraulic system. Immediately after disconnecting or removing components from the hydraulic system, seal all openings to the rest of the

system using caps for externally threaded connection points, bolt-on blanks, or taped-on discs/covers made of durable plastic or sheet-metal that is no less than 1/16-inch thick.

NOTE

Be aware that plastic bags may be used only when arrangement or configuration prevents the use of the other sealing methods specified above.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences in way of work include, but are not limited to:

- Insulation and/or lagging
- Hydraulic piping and hoses
- ASW piping
- Pneumatic piping
- Lighting wiring and fixtures
- Control panels
- Electrical boxes.
- Portable railing bolted to the grating surrounding the Z-drive.
- Shaft guards/covers

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.2 Operational test, initial. Prior to commencement of work, the Contractor shall witness Coast Guard personnel perform an initial operational test of all items or shipboard devices to be disturbed, used, repaired, or altered, to demonstrate existing operational condition. Submit a CFR.

3.2.1 The existing Z-drive itself since being renewed (and possibly damaged/leaking) shall not be operationally tested.

3.3 Patch removal. The Contractor shall cut the access opening required on the 01 Level (23'-0" above baseline). The outline of this access opening is visible on the deck from previous installations. Follow the outline, cut deck plate and lift off of the Cutter. Perform all work required to open and close the access openings in accordance with SFLC Std Spec 8636.

3.3.1 When the access opening is not being utilized for rigging, it shall be kept covered by temporary plywood sheets and a tarp for safety and to limit exposure of internal compartments from the elements.

3.3.2 Boundary test. The Contractor shall verify the integrity of all boundaries affected by this work item using one of the methods described in Std Spec 0740, Appendix C. Submit a CFR.

3.4 System draining. The Contractor shall drain the lubrication, steering, and seal oils from both the Z-drive propulsion units in accordance with TP- 3653 and Coast Guard Drawing 175 WLM 245-001. Dispose all drain fluids in accordance with applicable Federal, state, and local environmental regulations.

3.4.1 The quantities of existing system oil (for EACH Z-Drive unit) to be drained and disposed of are:

- Lube and Seal Oil - 120 gallons.

- Steering Oil - 92 gallons.

3.4.2 Once the systems have been drained, open all system tanks and clean to dry bare metal removing all condensation residue using new low-lint cleaning cloths conforming to CID A-A-59323, Type II.

3.5 Designated Z-drive propulsion unit(s) renewal. The Contractor shall receipt inspect the new GFP Z-drives

3.5.1 Furnish all crane service and riggers required to initially receive the new Z-drive and then later load removed Z-drive onto Government provided transportation. Z-drive will arrive in a horizontal position in a shipping stand. The same shipping stand will be re-used to return removed Z-drive. See photograph at end of specification.

3.5.2 Inspect the new GFP unit for lockwire. If missing, install required lockwire per Technical Representative's guidance. CG Tech Pub 3653 as well as comparison to existing Z-drive (when removed) shall be referenced for lockwire configuration.

3.5.3 Inspect the new GFP unit's clutch for rust, water, or shipping damage. Technical Representative shall assist in the inspection.

3.5.4 Stand the new unit upright and stabilize the cort nozzle with straps and come alongs so that it does not rotate during rigging. See Figure at end of specification, for recommended rigging.

3.5.5 Remove the clutch control system and the steering feedback boxes from the existing units and install them on the new GFP units.

NOTE

The punch marks are to give the Cutter a reference point in case of a mechanical failure of the feedback boxes.

3.6 Remove existing designated unit. The Contractor shall disconnect all ship service connections (electrical, pneumatic, lubrication, etc.) that will prohibit or impede vertical unshipping of the Z-drive. Tag all wires and removed hardware to ensure correct reassembly. Cap or seal all broken piping connections.

3.6.1 Remove the Cardan shaft from the Z-drive's clutch in accordance with the instructions of CG Tech Pub 3653. Rig the Cardan shaft away from the Z-drive to allow for Z-drive vertical removal.

3.6.2 Install alignment pointers and document existing state of alignment.

NOTE

This is necessary to understand any difficulties in obtaining satisfactory alignment of new Z-drives. In the past the new Z-drives would not align with existing drive shaft, and expensive drive shaft realignment was undertaken. It was not apparent if alignment problem was pre-existing or caused by the new Z-drive's introduction.

3.6.3 Unbolt the flange bolting.

3.6.4 Connect rigging to Z-drive unit, under technical representatives' guidance and in accordance with the instructions of CG Tech Pub 3653. Rig the Z-drive to the pier. The Z-drive frame has pad eyes permanently installed to aide rigging evolution.

3.6.5 The Contractor shall furnish / fabricate and fit Z-Drive well "cover plates" IAW the standard protective measures requirement. Once the Z-drives have been removed from the Z-drive wells, the Contractor furnished covers shall be lowered into place and secured onto the existing (old) flange gasket for watertight security. The covers shall be fabricated steel plates.

3.6.6 Immediately prior to landing new Z-drive unit, remove the steel covers and the existing (old) flanged gasket and clean the flange surface in preparation for new gasket. Renew the gasket with a new Contractor furnished one, following Technical Representative's guidance and the instructions of CG Tech Pub 3653.

3.7 Preserve the Z-drive sea well. With the z-drive removed, Contractor shall prepare and paint the interior of the sea well not normally accessible. Coordinate painting with removal/installation of sea well covers (see Figure).

3.7.1 Pre-surface preparation wash. Accomplish low-pressure (less than 5,000 psi) fresh water wash of all affected surfaces, to remove soluble chlorides and other surface contaminants. Refer to SSPC-SP 1, for guidance.

3.7.2 Surface preparation and coating application. Prepare and coat the inside surfaces of the sea well from bottom of opening to the top where mounting flange resides, with the system specified for "Underwater (U/W) Body and Boot-Top (U/W Body and Boot-Top, Icebreaker <235', in Salt Water)", in SFLC Std Spec 6310, Appendix A (Cutter and Boat Exterior Painting Systems).

3.7.2.1 Ensure that the first AF coat is applied over the AC undercoating, while it is still tacky.

3.7.3 Post-surface preparation cleaning and inspection. After completion of surface preparation and prior to coating application, accomplish the following tasks and submit a CIR.

3.7.3.1 Perform a visual inspection of the prepared sea well body steel substrate.

3.7.3.2 Perform solvent cleaning of all prepared surfaces, in accordance with SSPC-SP 1. Capture, contain, and dispose of all wastes from solvent cleaning, in accordance with all Federal, state and local regulations..

NOTE

Lists of all authorized coating materials and suppliers, and coating colors are listed in SFLC Std Spec 6310, Appendix C (Cutter and Boat Authorized Coatings).

The preservation specified here is intended to mirror (not alter, superced, or diminish) the requirements found in related Work Item "U/W Body, Preserve (100%)." In some cases this Z-drive Renewal Work Item may be performed without the related Work Item "U/W Body, Preserve (100%)" in the package.

3.7.3.3 Do not paint flange face (of the sea well) that the gasket seats against.

3.8 Install the new GFP Z-drive. The Contractor shall connect rigging to Z-drive unit, under Tech Rep's guidance and the instructions of CG Tech Pub 3653, and rig the Z-drive from the pier onto the ship. Ensure that during final landing on the flange the gasket is not damaged.

3.8.1 Bolt the Z-drive to the flange under technical representative's guidance and the instructions of CG Tech Pub 3653. During the bolting operation, check the Cardan shaft's alignment using laser alignment equipment and techniques. Special alignment pointers will be used in addition as second check, these pointers are provided GFE. Slight movement of the Z-drive unit may be necessary to ensure Z-drive is in proper alignment. After final torquing make final measurements of Z-drive alignment and obtain Technical Representatives concurrence that alignment is acceptable.

3.9 Run-outs. The Contractor shall perform run-outs on the provided GFE alignment pointers to ensure straightness.

3.9.1 The Z-drives shall be aligned by laser alignment techniques under the direction of the Technical Representatives. The pointers shall be used as a second check and visual proof of proper alignment.

3.10 Piping, hoses and fluids. The Contractor shall pump out the 6 to 7 gallons of storage oil from the new Z-drive unit's main pod. Dispose of oil in accordance with applicable Federal, state and local environmental regulations. The Contractor shall renew the hoses listed in the table below.

HOSE #	LOCATION	QTY	COMPONENT OR ASSEMBLY	TYPE	LENGTH	DIAMETER IN"
3104	**STB Z-DR**	**1**	STBD Z-DRIVE/SUPPLY BY-PASS (J-O)	**FLEX**	**38.5"**	**1**
3105	**STB Z-DR**	**1**	STBD Z-DRIVE LUBE OIL (DIST TO FWD)	**FLEX**	**30"**	**1/2**
3106	**STB Z-DR**	**1**	STBD Z-DRIVE LUBE OIL (DIST TO AFT)	**FLEX**	**27"**	**½**

3107	**STB Z-DR**	**1**	STBD Z-DRIVE LUBE OIL (DIST TO OUTBOAD AFT)	**FLEX**	**10”**	**1/2**
3108	**STB Z-DR**	**1**	STBD Z-DRIVE LUBE OIL (DIST TO INBOARD)	**FLEX**	**25”**	**1/2**
4055	**STB Z-DR**	**1**	STBD Z-DRIVE HPU 1-HS-F-9 STBD STBY HYDRAULIC STRG PUMP LOAD SENSING LINE	**FLEX**	**45”**	**3/8**
4079	**STB Z-DR**	**1**	STBD Z-DRIVE 1-HS-F-26 STBD MNL STRG PUMP PRESSURE/RETURN LINE 22" CONN SHPZ	**FLEX**	**22”**	**1/2**
4080	**STB Z-DR**	**1**	STBD Z-DRIVE 1-HS-F-12 STBD Z-DRIVE CONTROL VALVE LOAD SENSING LINE	**FLEX**	**22”**	**1/2**
4081	**STB Z-DR**	**1**	STBD Z-DRIVE 1-HS-F-25 STBD NML STRG PUMP PRESSURE/RETURN LINE CONN SHP1	FLEX	**32”**	**1/2**
4090	**STB Z-DR**	**1**	STBD Z-DRIVE HOSE 1715 LOOP (FIG.1715 FROM TECH PUB)	FLEX	**26”**	**8**
4091	**STB Z-DR**	**1**	STBD Z-DRIVE HOSE 1715 STRAIGHT (FIG.1715 FROM TECH PUB)	FLEX	**27”**	**8**
6088	**STB Z-DR**	**1**	STBD Z-DRIVE HOSE 9409/9421/9431/9432 CLUTCH AIR	FLEX	**16”**	**1/2**
6089	**STB Z-DR**	**1**	STBD Z-DRIVE HOSE 9409/9421/9430 CLUTCH AIR	FLEX	**19**	**1/2**

7412	**STB Z-DR**	**1**	STBD Z-DRIVE LUBE OIL FROM DIVERTER VALVE TO SUMP	FLEX	**42**	**1**

3.10.1 Connect all disturbed piping and hoses. During connection, visually inspect all hoses for wear and defects. Submit a CFR to report and discovered damage.

3.10.2 Bolt the Cardan shaft to the Z-drive unit's clutch under Tech Rep's guidance and the instructions of CG Tech Pub 3653.

3.10.3 Furnish new replacement oils conforming to the manufacturer's recommendations to the seal oil tank, the Z-drive units and to the steering hydraulic systems. Follow the procedures for renewing the Contractor-furnished oils and filters in accordance with TP-3653. The replacement oil shall be filtered through a non-bypass type filter with a 10-micron filter element conforming to MIL-F-24402 during refilling.

3.10.3.1 The total amount of new oil required for an individual Z-Drive unit is as follows:

- Lube and Seal Oil 120 gallons. Approved oils are shown in "Approved Mineral Lubricants" table of TP-3653.
- Steering Oil 92 gallons. Approved oils are shown in "Approved Mineral Lubricants" table of TP-3653.

3.11 Patch replacement. The Contractor shall prepare the edges of the access opening plate (patch). Position the plate in place. Install the removed access opening plate using continuous full-penetration welds from both sides in accordance with SFLC Std Spec 0740.

3.11.1 Non-destructive test new insert welds in accordance with SFLC Std Spec 0740. Repair all weld deficiencies and retest. Submit a CFR with weld inspection results to the Coast Guard Inspector.

3.12 Addition of pneumatic pressure regulator. The Contractor shall modify the existing ship's service compressed air supply (125 psig) that already provides air supply to accommodate the new pressure reducer. The new Z-drive is delivered with a new type of clutch installed. The new clutch is designed to operate on 85 psig air supply.

3.12.1 Procure the following pressure regulator (1 for each Z-drive being renewed):

- Norgren Excelon® 74 Pressure Regulators for Compressed Air Systems and Pneumatic Control
- R74G/R Series Inline and Modular Air Line Preparation Products
- R74G-4AK-RMG (1/2 PTF threaded ports)

3.12.2 The existing air supply to Z-drives is depicted in CG Dwg 175-WLM 551-1 (sheet 3). New pressure reducer will be inserted downstream of the existing filter depicted as item 9 on drawing sheet. Contractor supply required threaded fittings to accomplish piping changes. Materials shall be consistent with existing materials (CG Dwg 175-WLM 551-5).

3.12.3 During Z-drive commissioning/start-up inspect disturbed joints for air leaks and set pressure regulator to 85 psig.

3.13 Restoration. The Contractor shall renew all removed/disturbed shell plating insulation in accordance with CG Dwg 175-WLM 635-1.

3.14 Touch-up preservation. The Contractor shall prepare and coat all new and disturbed surfaces to match existing adjacent surfaces in accordance with SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs.)

3.15 Calibration. The Contractor, in conjunction with Coast Guard Inspector, shall calibrate the actual versus the indicated azimuth position mechanical indicators throughout the entire azimuth range in accordance with TP-3653. Only Coast Guard Inspector shall operate shipboard equipment.

NOTE

The tech rep is not responsible for calibration grooms with the MPCMS console. It is recommended that the Contractor provide the services of a qualified technician familiar with the 175'WLM MPCMS & MSCC systems. ie L3 Technologies.

3.15.1 Coordinate with the Coast Guard Inspector during calibration to allow for the electronic indicators in the MPCMS and MSCC systems to be also verified true and accurate.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.16 Operational test, post repairs. After completion of work, the Contractor shall thoroughly test, in the presence of the Coast Guard Inspector and demonstrate all items or shipboard devices that have been disturbed, used, repaired, altered, or installed to be in satisfactory operating condition. Submit a CFR.

3.16.1 The systems shall be inspected for oil leaks prior to undocking and while Z-drive propulsion units are operationally tested.

3.16.2 Operational testing shall be performed under the supervision of the Tech Rep.

4. NOTES

4.1Additional Cutter requirements. When the new clutches are introduced, besides the pressure reducer being added to provide the required 85psig air, Cutter must ensure that the required console changes and solenoid switch adjustments also occur. Contact IBCT-PL if additional information is required.

FIGURE 1. Z-DRIVE SHIPPING STAND AND SHIPPING ORIENTATION

FIGURE 2. HISTORIC Z-DRIVE LIFTING ON-OFF CUTTER PHOTOGRAPH

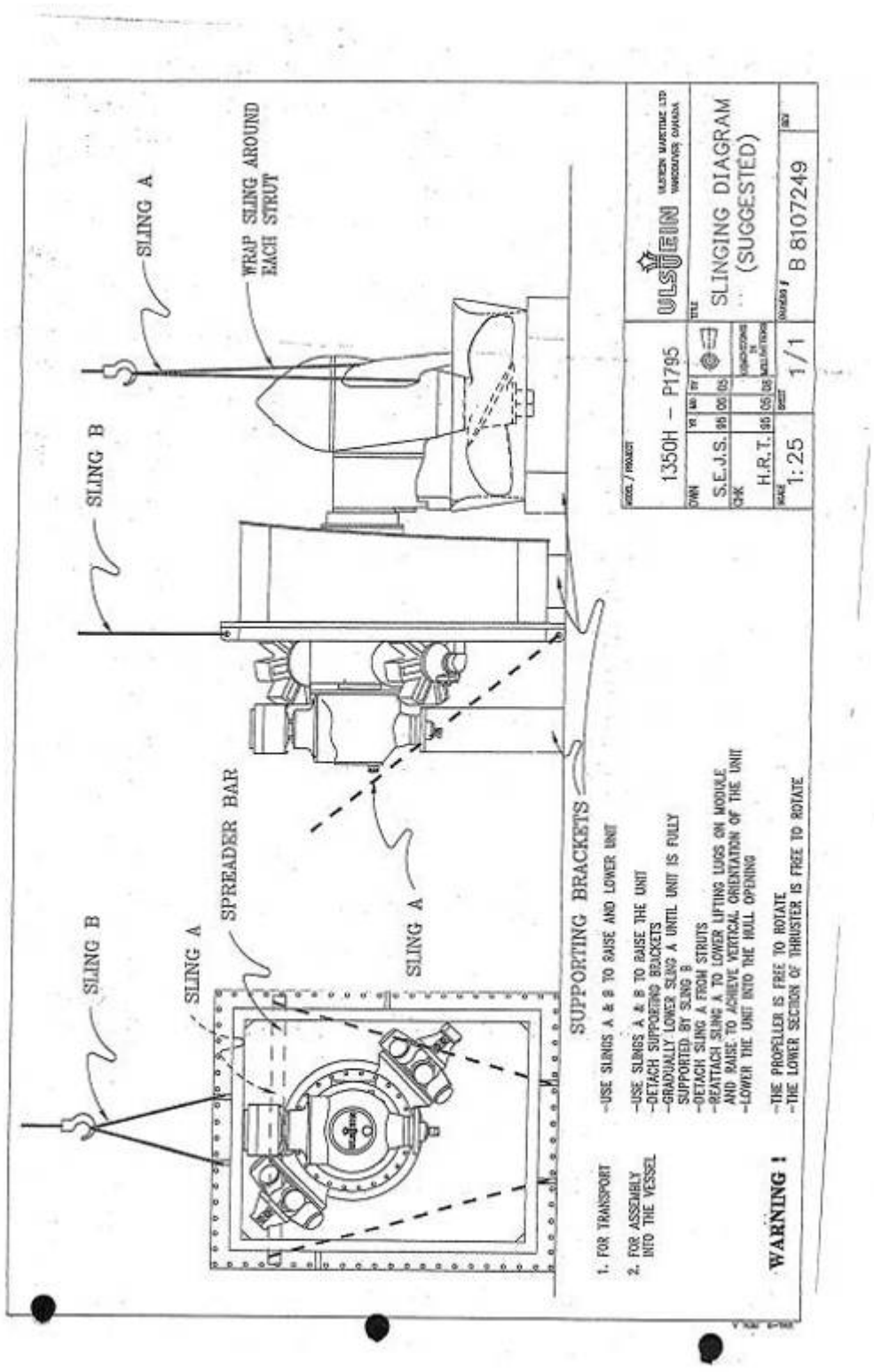


FIGURE 3. Z-DRIVE RIGGING DIAGRAM (PAGE FROM TECH PUB)

Figure, Z-drive Sea Well

Figure, Z-drive Sea Well Covers Installed

FIGURE 4. Z DRIVE SEA WELL AND COVERS INSTALLED

WORK ITEM 18: Underwater (Speed) Log Transducer(s), Service and Inspect

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to inspect and service the designated underwater (speed) log transducer(s).

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

None.

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2014, Welding and Allied Processes

Coast Guard Technical Publication (TP) 3446, Jun 2009, Doppler Speed Log, Model SRD-500 Dual Axis

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.3.1 Protect all exposed ends of transmission lines, control lines, connectors, and cables from weather, moisture, and physical damage while they are disconnected from the transducer.

3.1.3.2 Take all necessary measures to protect transducer from damage during the performance of work specified herein. Inform the COR, in writing, of all damage, if any, that is incurred.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

3.2 Operational test - initial. Prior to commencement of work, the Contractor shall witness Coast Guard personnel test all items or shipboard devices to be disturbed, used, repaired, or altered, to demonstrate existing operational condition. Submit a CFR.

3.3 Transducer maintenance and inspection. The Contractor shall accomplish the following tasks while the vessel is not waterborne using «DWG» for disassembly and reassembly guidance.

3.3.1 Transducer removal. Disconnect and remove the existing speed log transducer, along with the associated transducer hull adapter(s) and gasket(s), if so installed. Retain all mounting hardware for reinstallation.

3.3.2 Remove the mounting bolt covers, mounting bolts, and inspect for damage. Renew any damaged bolts. Protect the face of the transducer with a cover plate or similar suitable protection before performing any maintenance on the drydocked vessel.

3.3.3 Cleaning.

3.3.3.1 Transducer. Clean the removed speed log transducer. Clean the face of the transducer. Special attention shall be made to not damage the face of the transducer. Remove any mineral deposits from the stem of the transducer.

NOTE: The transducer lens is a precision shape and any damage to this surface will affect the operational characteristics of the system. Clean the lens surface with a cleaning powder that contains as little abrasive material as possible.

NOTE: The transducer assembly should NEVER be painted. If the transducer assembly lens is accidentally painted, remove the paint off the lens with paint thinner (such as turpentine), then clean as described above to ensure that no solvents remain.

3.3.3.2 Hull. Clean each transducer hull ring and associated adapter (if so equipped) in accordance with either SSPC SP-10 or SP-11. Clean all vacated tapped holes of anti-seize compound and beeswax tallow. Chase all threads. Protect all tapped holes with plugs or temporary bolts to exclude debris.

3.3.4 Inspection. Perform all inspections in the presence of the Coast Guard Inspector. Visually inspect transducer for cracks. Inspect all cleaned surfaces and surrounding welds for corrosion. Submit CFR.

3.3.5 Preservation. Prepare, prime and paint the hull opening and surrounding areas under the work item for underwater body preservation. Prepare, prime and paint the surfaces of the transducer hull ring adapter in accordance with the Coast Guard drawing(s) listed in Section 2 (References).

3.4 Underwater log transducer reinstallation. After the last coat of paint has cured for at least 24 hours (cure time is dependent upon specific paint system used and environmental conditions), the Contractor shall reinstall the underwater log transducer and remake all electrical connections. Reinstall any hull ring adapter and transducer in accordance with the applicable drawing using new gaskets, mold release coating, and adhesive sealants. Prior to use, coat the mounting bolts with anti-seize compound. Replace the mounting bolt covers.

3.4.1 Be aware that the Government at no additional consideration may elect to furnish new transducers for reinstallation instead of reusing the existing.

3.4.2 Ensure that the horizontal major axis of the transducer is oriented with respect to the vessel's centerline.

3.5 Post installation tests. The Contractor shall accomplish the following tasks after completion of work, in the presence of the Coast Guard Inspector:

3.5.1 Water hose test. If not waterborne, inspect and perform a water hose test of all affected boundaries in accordance with SFLC Std Spec 0740, Appendix C. Submit a CFR.

3.5.2 Static head test. While waterborne, inspect the underwater log transducer penetration for leakage. Repair all leaks. Submit a CFR.

3.5.3 Operational test – post repairs. While underway after completion of work, witness an operational test of the new underwater log transducer to demonstrate that it is operating satisfactorily. Submit a CFR.

4. NOTES

4.1 Operation of equipment. Coast Guard personnel will operate all machinery and equipment.

WORK ITEM 19: Sea Valves and Waster Pieces, Overhaul Or Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to overhaul or renew sea water (hull) valves and Waster Pieces.

1.1.1 Valves designated for overhaul.

TYPE	SIZE (inches)	DESCRIPTION	FRAME NO. VALVE NO.	PRESSURE (psig)
Gate	8"	Stbd Strainer In	MSW-V-3-69-1	50
Gate	8"	Port Strainer In	MSW-V-3-69-2	50
Gate	8"	Stbd Strainer Out	MSW-V-3-69-3	50
Gate	8"	Port Strainer Out	MSW-V-3-69-4	50
Globe	6"	Port Sea Chest Rn	ASW-V-2-70-2	50
Globe	6"	Stbd Sea Chest Rn	ASW-V-2-70-1	50
Gate	3"	#1 MDE Suction	V127-3	50
Gate	3"	#2 MDE Suction	V127-1	50
Butterfly	3"	ASW Suction	V659-1	50
Gate	2.5	#1 SSDG Suction	V126-2	50
Gate	2.5	#2 SSDG Suction	V126-1	50
Gate	2.5	#3 SSDG Suction	V126-3	50

1.1.2 Valves designated for renewal.

TYPE	SIZE (inches)	DESCRIPTION	FRAME NO. VALVE NO.	PRESSURE (psig)
Gate	8"	Doppler Cut-out Valve	Frame 17	50

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175-WLM 256-001, Rev H, Seawater Cooling System Diagram

Coast Guard Drawing 175-WLM 256-003, Rev A, Seawater Cooling System, Fr 61 Fwd Blocks 910, 920, 930

Coast Guard Drawing 175-WLM 256-004, Rev J, Seawater Cooling System A & D, Hull Blks 940-970

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2014, Welding and Allied Processes

OTHER REFERENCES

American Society of Mechanical Engineers (ASME) B16.34, 2017, Valves-Flanged, Threaded, and Welding End

ASTM International (ASTM) F992, 2017, Standard Specification for Valve Label Plates

Manufacturers Standardization Society of the Valve and Fittings Industry (MSS) SP-61, 2013 Edition, Pressure Testing Of Steel Valves

Manufacturers Standardization Society of the Valve and Fittings Industry (MSS) SP-67, 2017 Edition, Butterfly Valves

Manufacturers Standardization Society of the Valve and Fittings Industry (MSS) SP-72, 2018 Edition, Ball Valves with Flanged or Butt-Welding Ends for General Service

Manufacturers' Standardization Society of the Valve and Fittings Industry (MSS) SP-80, 2013 Edition, Bronze Gate, Globe, Angle and Check Valves

Naval Sea Systems Command (NAVSEA) Underwater Ship Husbandry Manuals (UWSH) S0600-AA-PRO-160, Nov 2011, Chapter 16, Cofferdams

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the below-listed:

- Deck plates
- Piping
- Insulation
- Pipe contents
- Associated system tanks and filters
- Valve flanges.

3.2 Valve material. The Contractor shall assume all above-listed valves (paragraphs 1.1.1 and 1.1.2) have a bronze housing and flanged connections for the purposes of bidding. The Contractor shall verify required valve list against referenced drawings and by ship-check prior to purchasing any materials. If the actual required valve list differs from what is listed in this work item, submit a CFR.

3.3 Fluid handling. The Contractor shall drain and dispose of all residual fluids in the piping system in accordance with all Federal, state, and local rules and regulations.

3.4 Remove. The Contractor shall remove all designated valves in Section 1.1 (Intent). Immediately after valve removal, install blank flanges and gaskets over all openings and secure each flange with at least two bolts, 180 degrees apart. Visually inspect associated flanges and piping; submit a CFR.

3.5 Contractor's option for valve renewal. The Contractor may, at no additional cost to the Government, opt to renew valves designated for overhaul if preferable for the Contractor. If the Contractor elects to renew valves designated for overhaul, ensure all new valves are commercial-standard type valves, conforming to the applicable standard listed in Table 1 (Valve Standards). New valves shall be equivalent (including identical material) to the valve being renewed. Visually inspect the piping, flange and mounting arrangements; and submit a CFR detailing any required modifications to accommodate the new valve(s). If the Contractor elects to renew a valve after attempting overhaul, if will be at no additional cost to the Government.

NOTE

This work item requires the Contractor to provide to the Government installed valves meeting the designated test requirements. This work item includes the cost of EITHER overhaul OR renewal of each designated valve.

3.6 Overhaul. The Contractor shall accomplish the following as required for each valve designated for overhaul (not including valves the Contractor has opted to renew) to meet the specified valve testing standard:

3.6.1 Disassemble. The Contractor shall disassemble the valve to the extent necessary to perform the required work.

NOTE
Complete disassembly of some valves may not be necessary to accomplish overhaul.

3.6.2 Clean. The Contractor shall clean all internal surfaces and visually inspect for defects in body and structural material. Inspect the surface finish and condition of seats, disks, parting faces, plugs, and sealing surfaces.

3.6.3 Machine. The Contractor shall conduct all machining necessary, including but not limited to grind, lap and spot-in seat-to-disk, in order to obtain an acceptable leakage rate at or below valve testing standards (see Table I below).

3.6.4 Reassemble. The Contractor shall reassemble the valve using new hardware and software (packing, O-rings, gaskets, seal rings, non-metallic seats, pins, washers, inserts, etc.).

3.6.5 Test. The Contractor shall test the overhauled valves in accordance with the applicable standards listed in Table 1 (Valve Standards). Submit a CFR.

TABLE 1 - VALVE STANDARDS

VALVE TYPE	INDUSTRY STANDARD
Steel Valves	MSS SP-61
Butterfly Valve	MSS SP-67
Ball Valves, Flanged or Butt-Welded Ends	MSS SP-72
Bronze Gate, Globe, Angle and Check Valves	MSS SP-80
All others	ASME B16.34

3.7 Renewal.

3.7.1 Valve renewal. The Contractor shall renew all designated with commercial-standard type valves, conforming to the applicable standard listed in Table 1 (Valve Standards). The Contractor shall replace any Mil-Std valves listed for renewal with equivalent commercial standard valves. The Contractor shall be aware substitution of body material or trim set is not authorized.

3.7.2 Waster piece inspection. The Contractor shall visually inspect all waster pieces associated with the valves specified for overhaul and/or renewal listed in paragraph 1.1 (Intent), as applicable. Evaluate the percentage of remaining material for each waster piece and submit a CFR. Renewal of waster pieces may be the subject of a CR.

3.8 Valve reinstallation/installation. Upon completion of all authorized work, the Contractor shall accomplish the following:

- Remove and dispose of all blank flanges and associated gaskets.
- Reinstall/install all overhauled and new valves with new gaskets.
- Renew all missing or damaged valve label plates.
- Renew all bolting hardware.
- Prepare and coat all new and disturbed surfaces to match existing adjacent surfaces in

accordance with SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs).

3.9 Valve labeling. The Contractor shall install valve label plates on all new valves in accordance with ASTM F992.

3.10 Leak test. After completing all authorized mechanical (i.e. threaded, bolted, etc.) joint repairs, the Contractor shall test the effected seawater system's operation using the system fluid at normal operating pressure. Ensure zero visible leakage from or deformation of mechanical parts by repairing all leaks and discrepancies. Submit a CFR.

3.11 Hydrostatic test. After all authorized repairs, the Contractor shall hydrostatically test all new and disturbed piping and components of the effected seawater system in accordance with SFLC Std Spec 0740, Appendix C, Hydrostatic Test. Ensure zero leakage from or permanent deformation of pressure-containing parts by repairing all leaks, deformations, and discrepancies. Submit a CFR.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 20: Sea Strainers (All Sizes), Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew the following sea strainer(s):

TABLE 1 – STRAINERS

SERVICE	SIZE (INCHES)	TYPE (DUPLEX/SIMPLEX)	QTY	MANUFACTURER
ASW Pump Suction	3	Duplex (Model: 792FB Bronze w/Yoke Cover; Connection Type: 150# Flange)	1	Mueller
ASW Duplex Strainer	1.5	Duplex (Fr 68) 2-68-2	1	Mueller

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175-WLM 256-001, Rev J, Seawater Cooling System Diagram

Coast Guard Drawing 175-WLM 256-003, Rev D, Seawater Cooling System, Fr 61 Fwd Blocks 910, 920, 930

Coast Guard Drawing 175-WLM 256-004, Rev J, Seawater Cooling System A & D, Hull Blks 940-970

Coast Guard Drawing 175-WLM 256-012, Rev B, ASW System Piping Modifications

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

OTHER REFERENCES

ASTM International (ASTM) D1330, 2010, Standard Specification for Rubber Sheet Gaskets

Society of Automotive Engineers (SAE) Aerospace Material Specification (AMS) G-6032, 2014, Grease, Plug Valve, Gasoline and Oil Resistant, NATO Code Number G-363, Metric

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces in the vicinity of the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the below:

- Deck plates and grating
- Associated sea valve and waster pieces.

3.2 Renewal. The Contractor shall renew and test the designated strainers (see paragraph 1.1 (Intent)), shown on Coast Guard Drawings 175-WLM 256-001, 175-WLM 256-003, 175-WLM 256-004, and 175-WLM 256-012. The Contractor shall accomplish the following for each sea strainer in accordance with manufacturer’s recommendations:

3.2.1 Removal. Secure, isolate, tag-out, and remove the designated sea strainers. Install blank flanges and gaskets over the piping system openings and secure with at least two bolts 180-degrees apart to provide a watertight seal. Ensure that the blank flanges are installed immediately after the sea strainers are removed and remain in-place until new strainers are installed. Turn over the removed strainers to the Coast Guard Property Administrator for disposition.

3.2.2 Plug valve testing. Where applicable, lubricate the valves with plug valve grease conforming to AMS-G-6032. Hydrostatically test the plug valves of all duplex strainers for each strainer chamber, at a test pressure of 15 psig. To determine leakage rate, the strainer shall have the outlet blanked and the unpressurized side top cover removed (two tests per duplex strainer). While maintaining the test pressure at the inlet side, the non-pressurized side shall not fill within twenty minutes. Provide a CFR which shall include, but is not limited to, the following information:

- Grease type, including batch number and manufacturer.
- Time elapsed for chamber to fill, if less than twenty minutes.

CAUTION

Ensure that the drain valve for each chamber is closed.

3.3 Installation. After completion and acceptance by the Coast Guard Inspector, the Contractor shall install all new strainers to the original locations, as shown on Coast Guard Drawings 175-WLM 256-001, 175-WLM 256-003, 175-WLM 256-004, and 175-WLM 256-012. Renew all gaskets with material conforming to ASTM D1330 of the same size and configuration as those gaskets removed. Renew all hardware with nickel-copper alloy (Monel) fasteners.

3.4 Notification. The Contractor shall notify the Coast Guard Inspector at least 24 hours prior to installing sea strainers.

3.5 Leak test. After completing all authorized mechanical (i.e. threaded, bolted, etc.) joint repairs, the Contractor shall test the seawater system's operation using the system fluid at normal operating pressure. Ensure zero visible leakage from or deformation of mechanical parts by repairing all leaks and discrepancies. Submit a CFR.

3.6 Surface preservation. The Contractor shall perform 100% preservation in accordance with SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems) on the following interior surfaces:

- Sea strainer surfaces

3.6.1 Preparation method. The Contractor shall prepare interior surfaces using system specified for “Bilges, Cofferdams and Forepeaks, Steel, Option II”

3.6.2 Coating method. The Contractor shall apply finish/top coat color to interior surfaces as follows: match existing adjacent surfaces. Do not paint packing glands, valve stems, threads, and similar working surfaces.

4. NOTES

4.1 Definition. The terms ‘duplex’ and ‘simplex’ as used in this work item refer to the generic strainer type, not a manufacturer’s brand name.

WORK ITEM 21: Sea Strainers - Duplex (All Sizes), Overhaul

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to overhaul the following Duplex Sea Strainer(s).

SERVICE	SIZE (INCHES)	QTY	MANUFACTURER
Sea Bay Inlet	8	2	Kreissl

1.2 Government-furnished property.

A-Team: Please verify that the currently installed strainer is a Mueller Model 3-792FB as listed in the conditional GFP below. Per configuration, this is the strainer that should be installed; however, some have the Kraissl installed against authorized config.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
Y	**3" Duplex Strainer	NSN: 4730-01-643-2221 PN: 3-792FB (Mueller)	1 ea.	4,400.00

*Government-loaned property, which shall be returned to the vessel upon completion of the availability.**New or refurbished equipment that the Government may provide for installation in place of existing equipment.***Government-furnished property, which is to be supplied by either the vessel or the C4IT Service Center.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175-WLM 256-001, Rev J, Seawater Cooling System Diagram

Coast Guard Drawing 175-WLM 256-003, Rev D, Seawater Cooling System, Fr 61 Fwd Blocks 910, 920, 930

Coast Guard Drawing 175-WLM 256-004, Rev J, Seawater Cooling System A & D, Hull Blks 940-970

Coast Guard Drawing 175-WLM 256-012, Rev B, ASW System Piping Modifications

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

OTHER REFERENCES

ASTM International (ASTM) D1330, 2010, Standard Specification for Rubber Sheet Gaskets

Society of Automotive Engineers (SAE) Aerospace Material Specification (AMS) G-6032, 2014 Grease, Plug Valve, Gasoline and Oil Resistant, NATO Code Number G-363, Metric

Naval Sea Systems Command (NAVSEA) Underwater Ship Husbandry Manuals (UWSH) S0600-AA-PRO-160, Jan 2011, Chapter 16, Cofferdams

3. REQUIREMENTS

3.1 General.

3.1.1 CIR. The Contractor shall submit a CIR for the inspections listed in the following paragraph(s):

- 3.2.2 Cleaning and inspection

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the below-listed:

- Deck plates and grating
- Piping and hoses.

3.1.5 Cofferdam repairs. The Contractor shall fabricate and install a cofferdam in accordance with UWSH S0600-AA-PRO-160, and as follows:

3.1.5.1 Prior to cofferdam installation, provide the KO with individual diver certification documentation that each diver is trained and experienced in accordance with UWSH S0600-AA-PRO-160, Appendix E.

3.1.5.2 Maintain double-valve protection (two boundaries) using two of the following:

- Sea chest valve
- Internal blank-off
- External cofferdam, patch or plug

3.1.5.3 For sea valve maintenance, notify the COR at least 24 hours prior to removing the sea valve. Install an external patch and an internal gasketed blank immediately after the sea valve is removed.

3.1.5.4 After all work is complete, turn over fabricated cofferdam(s) to the Coast Guard Property Administrator for disposition.

NOTE

A cofferdam is any device preventing water intrusion during maintenance and/ or repairs; including a plug, patch or containment structure.

3.2 Requirements. The Contractor shall overhaul and test the designated strainers (see paragraph 1.1 (Intent)), shown on Coast Guard Drawings 175-WLM 256-001, 175-WLM 256-003, 175-WLM 256-004, and 175-WLM 256-012. The Contractor shall accomplish the following for each sea strainer in accordance with manufacturer's recommendations:

3.2.1 Remove. Secure, isolate, and remove to a suitable repair facility the designated sea strainers. Install blank flanges and gaskets over the piping system openings and secure with at least two bolts 180-degrees apart to provide a watertight seal. Ensure that the blank flanges are installed immediately after the sea strainers are removed and remain in-place until strainers are reinstalled, removing only for sea valve visual inspection.

3.2.2 Clean and inspect. After removing the sea strainers, visually inspect in-place the exposed sea valves and piping/hoses located adjacent to the strainers. Completely disassemble and thoroughly clean all strainer components to bright metal without damage or deformation to any component. Visually inspect all disassembled components. Submit A CIR.

3.2.3 Reassemble. Reassemble each strainer. Renew the basket, cover and packing gland fasteners; as applicable. Lubricate the valves with plug valve grease conforming to AMS-G-6032.

3.2.4 Plug valve test. Where applicable, lubricate the valves with plug valve grease conforming to AMS-G-6032. Hydrostatically test the plug valves of all duplex strainers for each strainer chamber, at a test pressure of 15 psig. To determine leakage rate the strainer shall have the outlet blanked and the unpressurized side top cover removed (two tests per duplex strainer). While maintaining the test pressure at the inlet side, the non-pressurized side shall not fill within twenty minutes. Provide a CFR which shall include, but is not limited to the following information:

- Grease type, including batch number and manufacturer.
- Time elapsed for chamber to fill, if less than twenty minutes.

CAUTION

Ensure that the drain valve for each chamber is closed.

3.3 Reinstall. After completion and acceptance by the Coast Guard Inspector; the Contractor shall reinstall all overhauled, cleaned and new strainers to their original locations, as shown on Coast Guard Drawings 175-WLM 256-001, 175-WLM 256-003, 175-WLM 256-004, and 175-WLM 256-012. Renew all gaskets with material conforming to ASTM D1330 of the same size and configuration as those gaskets removed. Renew all hardware with nickel-copper alloy fasteners.

3.4 Notification. The Contractor shall notify the Coast Guard Inspector at least 24 hours prior to reinstalling sea strainers.

3.5 Government's right for changing out strainers. The Contractor shall be aware that the Government reserves the right to furnish new sea strainer(s) for installation in place of the existing strainer(s). If the Government exercises this right, the Contractor shall dispose of the old strainer(s) in accordance with all applicable Federal, state, and local regulations.

3.6 Contractor's option for strainer renewal. The Contractor may opt to renew strainers designated for overhaul if preferable for the Contractor, and is at no additional cost to the Government. New strainers shall be equivalent (including identical material) to the strainer being renewed. Visually inspect the piping and mounting arrangements, and submit a CFR detailing any required modifications to accommodate the new strainer(s).

3.7 Leak test. After completing all authorized mechanical (i.e. threaded, bolted, etc.) joint repairs, the Contractor shall test the seawater system's operation using the system fluid at normal operating pressure. Ensure zero visible leakage from or deformation of mechanical parts by repairing all leaks and discrepancies. Submit a CFR.

3.8 Surface preservation, 100% interior. The Contractor shall perform 100% preservation in accordance with SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems) on the following interior surfaces:

- Sea strainer surfaces
- All adjacent structural members.

3.8.1 Preparation method. The Contractor shall prepare interior surfaces using system specified for "Bilges, Cofferdams and Forepeaks, Steel, Option II".

3.8.2 Coating method. The Contractor shall apply finish/top coat color to interior surfaces as follows: match existing adjacent surfaces. Do not paint packing glands, valve stems, threads, and similar working surfaces.

4. NOTES

4.1 Definition. The terms 'duplex' as used in this work item refer to the generic strainer type, not a manufacturer's brand name.

WORK ITEM 22: Sea Bay, Preserve 100%

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to preserve 100% of the interior surfaces of the Sea Bay (See Section 4.1 (Location)).

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 256-004, Rev J, Sheets 5 and 13, Seawater Cooling System A & D, Hull Blocks 940-970

Coast Guard Drawing 175 WLM 256-013, Rev -, Sea Bay Thermometer Installation

Coast Guard Drawing 175 WLM 505-003, Rev A, Sea Connection Arrangements

Coast Guard Drawing 175 WLM 633-001, Rev D, Cathodic Protection

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2014, Temporary Hull Accesses

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures - general. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces in the vicinity of the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the below-listed:

- Seawater piping.
- Chlorinator unit.
- Temperature sensor.

3.1.5 Temporary access openings. With express permission of the KO via submission of a CFR and in accordance with SFLC Std Spec 8636, the Contractor may perform all work required to cut open and close temporary access openings to facilitate accomplishment of the work specified herein.

3.2 Sea Bay and piping preservation. The Contractor shall prepare and coat all interior surfaces of the Sea Bay, including all accessible associated piping, using the coating system specified for "Underwater Water (U/W) Body and Boot-Top (U/W Body and Boot-Top, Icebreaker <235', in Salt Water)", in SFLC STD SPEC 6310, Appendix A (Cutter and Boat Exterior Painting Systems).

3.3 In-process quality control measures. The Contractor shall abide by all the safety, preservation, and quality control requirements specified in SFLC Std Spec 0000, paragraph 3.2.4.2 (In-process QC measures for "critical-coated surfaces).

NOTE
Surfaces being preserved are considered "critical-coated surfaces".

4. NOTES

4.1 Location. The Sea Bay is located centerline in the Engine Room, at Frame 68 – as shown on Coast Guard Drawing 175 WLM 633001, Sheet 3; and has one access - an 18" x 15" manhole on the top; dimensions are approximately 40" longitudinally, 72" transversely, and 33" vertically.

WORK ITEM 23: Thruster Unit (General), Overhaul

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to perform overhaul of the Bow Thruster Unit..

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
N	Seal Kit, Bow Thruster	NSN: 2010-01-555-9048	1 ea.	3,634.00
N	Anode, Zinc	NSN: 5365-01-495-5350	9 ea.	113.75

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175-WLM 568-001, Rev B, Bow Thruster Arrangement & Detail

Coast Guard Drawing 175-WLM 568-002, Rev K, Bow Thruster Detail

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3628, 1/1/1999; Vol 4 of 9, Instruction Manual, Bow Thruster

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 5000 (SFLC Std Spec 5000), 2014, Auxiliary Machine Systems

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep. The Contractor shall provide the services of qualified Tech Rep, who is familiar with the Rolls Royce (formerly Bird Johnson) equipment/system, to accomplish the following tasks – on site:

- Provide manufacturer's proprietary information, software, and tools pertinent to the equipment/system.
- Assist with proper repair methods, and ensure compliance with manufacturer's procedures and standards during disassembly, inspection, repair, modification, calibration, and reassembly of the equipment/system.

3.1.1.1 The Contractor shall ensure that the Tech Rep is a certified representative of Rolls Royce.

3.1.1.2 The Contractor shall submit the Tech Rep's name and résumé to the COR at the Arrival Conference.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.3.1 Hydraulic system. The Contractor shall maintain existing hydraulic system cleanliness and take all necessary precautions to prevent the introduction of contaminants into the hydraulic system. Immediately after disconnecting or removing components from the hydraulic system, seal all openings to the rest of the system using caps for externally threaded connection points, bolt-on blanks, or taped-on discs/covers made of durable plastic or sheet-metal that is no less than 1/16-inch thick.

NOTE

Be aware that plastic bags may be used only when arrangement or configuration prevents the use of the other sealing methods specified above.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the below-listed:

- Grid Cover on port thruster tube.
- Grid Cover on starboard thruster tube.

3.2 Operational test - initial. Prior to commencement of work, the Contractor shall witness Coast Guard Personnel perform an initial operational test of the thruster units, to demonstrate existing operational condition. Submit a CFR.

3.3 Hydraulic fluid sampling and testing. The Contractor shall sample and test the system hydraulic fluid in accordance with SFLC Std Spec 5000, Appendix C, Paragraph C2.1 (Fluids).

3.4 Fluid disposal. The Contractor shall drain and dispose of all oil from the gear case, approximately 60 gallons, in accordance with all applicable Federal, state and local regulations.

3.5 Maintenance. The Contractor shall perform the following maintenance requirements to the thruster units in accordance with TP 3628 and as shown on Coast Guard Drawing 175-WLM 568-001

Coast Guard Drawing 175-WLM 568-002.

3.5.1 Polish each propeller to a 63 RMS surface finish. Visually inspect each propeller for pitting, erosion, and bending. Submit a CFR. Include in the report the condition of the blade roots and tips and any recommendations for repair.

3.5.2 Visually inspect the magnetic plug to the gear box for the presence of any metal particles. Remove all metal particles from the plug. Thoroughly clean each lubrication oil head tank and gear box free of sludge and any other foreign particles. Submit a CFR.

3.5.3 In the presence of the Coast Guard Inspector, renew the system oil in accordance with TP 3628, and SFLC Std Spec 5000, Appendix C, Paragraph C2.1 (Fluids).

3.5.4 Remove and dispose of each existing propeller shaft seal. Clean and visually inspect each shaft surface for excessive wear.

3.5.5 Reassemble and reinstall all removed components, with new Government-furnished propeller shaft seal kit.

3.5.6 Visually check for any excessive wear or damage to the teeth of the gears. Check the wear pattern on the spiral bevel gears to diagnose any problems. Submit a CFR.

3.5.7 Measure the shaft runout to inspect for bends. Take gear backlash readings on each gear set and compare results with the number etched on the back of the gear. Submit a CFR.

3.5.8 Renew the pinion gear seal in accordance with TP 3628.

3.6 Zinc renewal. The Contractor shall renew zincs located on the thruster gearbox with Government-furnished zinc anodes..

3.7 Touch-up preservation, general. The Contractor shall prepare and coat all new and disturbed exterior and interior surfaces, as applicable, to match existing adjacent surfaces in accordance with SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs.)

3.8 Operational test – post repairs. After completion of work, the Contractor shall thoroughly test, in the presence of the Coast Guard Inspector and demonstrate the Thruster Systems to be in satisfactory operating condition. Submit a CFR.

3.8.1 Test both Thrusters at dockside and at sea trials.

3.8.2 Operate thrusters over entire range of RPM in both directions.

NOTE
Coast Guard personnel will operate all shipboard machinery and equipment.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 24: Anchor Windlass, Inspect And Service

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to inspect and service the double wildcat and double gypsy hydraulic anchor windlass assembly.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
N	Anchor Windlass Overhaul kit	NSN: 5430-01-546-4684	1 ea.	12,474.00
N	Ball Valve	NSN: 4820-01-013-3430	1 ea.	87.36
N	Valve, Counterbalance	NSN: 4820-01-F16-4571 PN: CBEH-LKN-BCL Sun Hydraulics Corp	1 ea.	354.00
N	** Motor, Hydraulic	NSN: 4320-01-419-3520	1 ea.	1,811.00
N	** Valve, Linear, Directional Control	NSN: 4810-01-511-3173	1 ea.	983.14
N	Hydraulic Brake	NSN: 2530-01-F14-4033 P/N: 90B3C4G087	1 ea	2000.00

****New or refurbished equipment that the Government may provide for installation in place of existing equipment.**

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 581-001, Rev F, Anchor Handling System

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3631, Section 581-A, Sep 2013, Manufacturer's Instruction Book-SWBS Groups 573-581, Anchor Windlass

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 5000 (SFLC Std Spec 5000), 2014 Auxiliary Machine Systems

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR. The Contractor shall submit a CIR for the inspections listed in Table 1:

- Task# 1
- Task# 2

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the below-listed:

- Port and starboard anchors (remove at the swivel shot).
- Port and starboard anchor chains.

NOTE

Each anchor weighs 2,250 pounds and each chain is 1-1/8 inch Stud-Link, Grade III with a length of 7 shots.

3.2 Inspection and service particulars. The Contractor shall perform the tasks designated in Table 1 below, using Coast Guard Drawing 175 WLM 581-001 as guidance.

TABLE 1 – RECURRING MAINTENANCE REQUIREMENTS

#	TASK TYPE (SFLC STD SPEC 5000 PARA. REF.)	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
1	Operate and Inspect	1	Anchor Windlass Assembly	3.2.1 (Operate and Inspect)	Submit A CIR.
2	Disassemble and Inspect	1	Anchor Windlass Assembly	3.2.3 (Disassemble and inspect)	Disassembly includes, but is not limited to the following: • Hydraulic Motor. • Band Brake Handwheel, Bevel Gear Box, and Linkage Assemblies up the Band Brake Assembly • DCV assembly. • Hydraulic Brake.

#	TASK TYPE (SFLC STD SPEC 5000 PARA. REF.)	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
					• Primary Reducer. • Worm Reducer. • Counterbalance Valve • Band Brake Assembly. • Band Brake Lining. • Wildcat. • Main Gypsy/Capstan Shaft Assembly. Submit A CIR.
3	NDE	1	Anchor windlass assembly and foundation	3.2.5 (NDE)	Weld joints to NDE: all joints attaching winch foundations to deck.
4	Reassemble	1	Anchor Windlass Assembly		Reassemble anchor windlass assembly with provided GFP – see 1.2 (Government-furnished property).
5	Renew	All	Snap Rings, Thrust Buttons, O-Rings, Gaskets, Keys, Shims, Lockwashers, Dowel Pins, Thrust Washers, Cotter Pins, Clamp, Grease Fittings, Foundation Bolts Washers And Nuts .	N/A	Perform all renewals during reassembly and reinstallation, in accordance with TP-3631, Section 581-A.
6	Renew	1	Counterbalance Valve	C2.4 (Valves and manifolds)	GFP.
7	Preserve	1	Anchor windlass assembly and foundation	3.2.4 (Preservation)	
8	Renew	7.75 Gallons	Worm Reducer and Primary Reducer Oil	D2.4 (Open gearing and gear reducers)	See TP-3631, Section 581-A.
9	Groom and Lubricate	1	Anchor Windlass Assembly	3.2.6 (Groom and Lubricate)	
10	Final Op Test	1	Anchor Windlass	B2.5 (Anchor Windlass)	Submit CFR.
11	Fabricate and Install	1	Label plate	B2.9 (Label plate)	System: Anchor Windlass

3.3 Additional maintenance requirements. The Contractor shall perform only the additional tasks (s) marked with an "X" in Table 2 below.

TABLE 2 – ADDITIONAL MAINTENANCE REQUIREMENTS

#	TASK TYPE	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
X	Renew	1	Hydraulic Motor		GFP
X	Renew	1	Directional Control Valve assembly		GFP
X	Renew	All	Hydraulic Hoses		Contractor Provided

4. NOTES

4.1 Overhaul kit contents. Listed below is breakdown for the Anchor Windlass Assembly Overhaul Kit (NSN: 5430-01-546-4684):

Item #	Part #	Description	Qty	UOM
1	J194467	SEAL, SHAFT	1.00	EA
2	J20A1030	SEAL KIT,	1.00	EA
3	J20A0052	BALL BEARING,	1.00	EA
4	J20A0053	NEEDLE BEARING HYD MOTOR, HYDRAULIC	1.00	EA
5	J20A0151	SEAL KIT,HYDRAULIC MOTOR,	1.00	EA
6	J20A0054	SPRING KIT HYD MOTOR, HYDRAULIC MOTOR	1.00	EA
7	J194480	O-RING	1.00	EA
8	J20C0061	SEAL KIT, FOR HYDRAULIC BRAKE,	1.00	EA
9	J194481	GASKET	1.00	EA
10	J20B0027	DISC KIT HYD MOTOR BRAKE, ESKRIDGE BRAKE	1.00	EA
11	J194822	MASTER REPAIR KIT	1.00	EA
12	J20C1046	BEARING, REDUCER,	2.00	EA
13	J20C0057	TAPERED ROLLER BEARING CONE, TAPERED	2.00	EA
14	J20C0006	OIL SEAL,, CONE DRIVE GEAR PART NO:,	1.00	EA
15	J20C0144	BEARING CUP,	2.00	EA
16	J20C0145	BEARING CONE,	2.00	EA
17	J20C0009	OIL SEAL 356W525,	2.00	EA
18	JA2005500	THRUST WASHER, 5.00 OD X 3.25 ID X .25	2.00	EA
19	JA2024300	BUSHING, WILDCAT, 3.75 OD X 3.255 ID X	4.00	EA
20	JA2036700	THRUST WASHER, 1.75 OD X 1.031 ID X 0.25	2.00	EA
21	JA2036601	PIN, BRAKE, 4.50 LG,SST 304, ,	2.00	EA
22	JA2001401	BRAKE NUT, 2.5 DIA X 3.0 LG,BRONZE, 660	2.00	EA
23	JD2002402	LINING, BRAKE NONASBESTOS, 0.38 X 4.00 X	2.00	EA
24	J11C0034	RIVETS, BRASS, SEMI TUBE, .19 DIA X 0.75	104.00	EA
25	J07B1003	VALVE, CARTRIDGE,	1.00	EA
26	J17E0072	SEAL KIT, COUNTERBALANCE VALVE, (PORT A)	1.00	EA
27	J20D0013	HYD CONTROL VALVE SEAL KIT,	1.00	EA

FIGURE 5. OVERHAUL KIT CONTENTS

WORK ITEM 25: Anchor Chain(s) and Ground Tackle, Inspect and Repair

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to perform inspection and repairs to the anchor chain assemblies (port and starboard), including associated ground tackle.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 581-001, Rev F, Anchor Handling System Arrangement

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

OTHER REFERENCES

American Bureau of Shipping (ABS) Approved Chain, Accessory and Bar Manufacturing Facilities List, Oct 2016

Federal Specification (Fed Spec) RR-C-271, Rev E, Mar 2016, Chains and Attachments, Carbon and Alloy Steel

MIL-DTL-23549, Sep 2016, Grease, General Purpose

MIL-C-24633, Oct 2014, Chain, Stud Link, Anchor, Low Alloy Steel, Flash Butt Welded

The Society for Protective Coatings (SSPC)/NACE International (NACE) Joint Surface Preparation Standard SSPC-SP 6/NACE No. 3, 2007, Commercial Blast Cleaning

The Society for Protective Coatings (SSPC) Surface Preparation Specification No. 1 (SSPC-SP 1), 2015, Solvent Cleaning

3. REQUIREMENTS

3.1 General.

3.1.1 CIR. The Contractor shall submit a CIR for the inspections listed in the following paragraph(s):

- 3.2.3 (Inspections).

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the following:

Port and starboard anchors.

3.2 Required work particulars. The Contractor shall use the chain description (see 4.1 (Component characteristics)) and Coast Guard Drawing 175 WLM 581-001 for guidance, for accomplishing the tasks specified below for each anchor chain assembly.

3.2.1 Removal. Disconnect and remove the anchor and anchor chain assembly and fake out the chain on the drydock floor or in a suitable location, to facilitate the performance of the tasks specified herein

NOTE

The use of Coast Guard equipment (e.g. anchor windlass) for off-loading and on-loading of anchors and anchor chain is authorized. Coast Guard personnel will operate all Government equipment.

3.2.2 Pre-inspection surface preparation.

3.2.2.1 Pressure wash the anchor, anchor chain and other components with fresh water and a fire hose to remove any mud, salts, or other contaminants adhering to the chain

3.2.2.2 Prepare the anchor and all shots of chain to a “Commercial Blast” standard, in accordance with SSPC-SP 6.

3.2.3 Inspections. Perform the following inspections and submit a CIR:

3.2.3.1 Visual inspection. Visually inspect the following:

All swivels, outboard swivel shots, pelican hook and shackles, and cats paw (if applicable).

Entire length of Shot 1, Shot 2, Shot n-1, and Shot n.

NOTES

1. For the purpose of reference in this item, the shots will be referred to by numbers. Mark each shot with a removable tag. Moving inboard from the anchor, the shots will be referred to as follows: ANCHOR, Shot 1, Shot 2, Shot 3...Shot n-2, Shot n-1, Shot n, and BITTER END. These shot numbers are designated in order as existing prior to work, and will not change - although the shot order itself will change.

2. Number n in the paragraph above is equal to the number of shots per chain.

3.2.3.2 Measurements – and condemning criteria.

3.2.3.2.1 Determine the suitability for continued service of the anchor chain assembly, by checking wire diameter dimension, using information provided in Table I (Dimensions for Condemning Anchor Chain) as guidance, as applicable. Gage the wire diameter of ten links per shot of chain, ensuring that each link shall be separated by approximately 10% of the shot length.

NOTE

For commercial grade chain, use 90 percent of the link diameter for condemning criteria.

3.2.3.2.2 If a Change Request has been released, perform six-link dimension, as specified in “Note 2” in Table I (Dimensions for Condemning Anchor Chain).

NOTE

Change Request will only be authorized to perform six link inspection only if ship’s force has reported that the anchor chain has been jumping the capstan..

TABLE 1 - DIMENSIONS FOR CONDEMNING ANCHOR CHAIN

SIZE OF CHAIN (INCHES)	90 PERCENT OF LINK DIAMETER(1) (INCHES)	SIX-LINK DIMENSION(2) (INCHES)
1	0.90	26-3/4
1-1/8	1.013	30-1/16
1-1/4	1.125	33-7/16
1-3/8	1.238	36-3/4
1-1/2	1.35	40-1/8
1-5/8	1.463	43-7/16
1-3/4	1.575	46-13/16
1-7/8	1.688	50-1/8
2	1.80	53-1/2
2-1/8	1.913	56-13/16
2-1/4	2.025	60-3/16
2-3/8	2.138	63-1/2
2-1/2	2.25	66-7/8
2-5/8	2.363	70-3/16
2-7/8	2.475	73-9/16
3	2.558	76-7/8

1. Use a micrometer, caliper or GO/NO-GO gage* to check wire diameter dimension. Gage is to be made by Contractor/repair facility in accordance with the dimensions shown in Table 1 above. Check the diameters at right angles to the link. When measuring with a micrometer or caliper take one-half the sum of the two diameters as representing the line diameter.

2. Take six-link measurements with a load applied to the chain in order to take all slack out of the chain. Use a bar gauge to check the six-link dimension. When the gauge will not fit over six links, the chain has been stretched beyond allowable limit. Measure six links for the entire length of each shot, measuring from every third link.

*When using a GO/NO-GO gage, a failed check is to be verified by measuring with a micrometer or caliper. Measure the diameter at right angles and take one-half the sum of the two diameters as representing the link diameter. Take measurements on clean, bare metal.

3.2.4 Detachable link assemblies maintenance.

NOTE

Detachable link components are not interchangeable.

3.2.4.1 Renew all detachable taper pin and link assemblies and associated link plugs.

3.2.4.2 Assemble detachable links, swivels and shackles; and repack with molybdenum disulfide grease (MIL-DTL-23549).

3.2.4.3 Change the relative position of the shots, as designated by the Coast Guard Inspector, to distribute the wear on the chain, ensuring that shot shall be rotated end for end upon reinstallation, as follows: ANCHOR, Shot 3... Shot n-2, Shot n-1, Shot n, Shot 1, Shot 2, BITTER END.

3.2.4.4 Renew shackle at bitter end of chain.

3.2.5 Chain renewal. If a Change Request has been released, renew designated section of chain with material conforming to MIL-C-24633. See Section 4.2 (Supply information) for a list of ABS approved chain manufacturers.

3.2.6 Surface coating. Using the coating system specified for "Anchor/Anchor Chain" in SFLC Std Spec 6310, Appendix A (Cutters and Boats Exterior Painting Systems), do the following:

3.2.6.1 Perform solvent cleaning of all surfaces, specified to be coated (see below), in accordance with SSPC-SP 1.

3.2.6.2 Coat the anchor and all shots of chain Black (17038).

3.2.6.3 Color-coat the following shots:

- Shot n-1: Black (17038).
- Shot n: Black (17038).
- Shot 1: Yellow (13538).
- Shot 2: Red (11105).

3.2.6.4 Color coat/mark all detachable links, adjacent chain links, shackles, and swivels in accordance with Attached Figure "Painting and Markings On Mooring Chain".

3.2.6.4.1 Remove all existing stainless steel wire prior to the installation of new markings.

3.2.6.4.2 Install new stainless steel wiring on each of the detachable links.

3.2.7 Chain restowing. When directed by the Coast Guard Inspector, reassemble the anchor and anchor chain; restow the anchor chain in its chain locker, free for running, with the anchor properly housed and secured with the chain stopper set. Ensure that (1) the bitter ends of the chain are securely fastened in the chain locker with new bitter end shackles, conforming to Fed Spec RR-C-271, Type IV-A, Class 3, Grade A; (2) the ground tackle is kept ready for use, (3) nothing interferes with a readiness to veer or slip the anchors, (4) the detachable links located just inboard of the riding stopper and the detachable link tool set are readily accessible for use in slipping the anchor chains in an emergency, and (5) the anchor has a crown buoy attached, with sufficient length of rope to facilitate indicating the depths of water in which moored. In addition, do the following:

3.2.7.1 Lead the bitter ends down and through the deck bolts in the chain locker and secure to the chain locker pad eye.

3.2.7.2 Back out the chains to ensure the chain stopper is set properly.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.3 Operational test, post repairs. After completion of work, the Contractor shall, in the presence of the Coast Guard Inspector, thoroughly test the anchor chain assembly to prove satisfactory operating condition, by releasing the chain stoppers and lowering both anchors under power to the drydock floor (or waterline, as applicable), letting out one additional shot, and raising again to ensure chains run on the wildcats without binding. Submit a CFR.

3.3.1 Correct any discrepancies, house the anchors and set the anchor chain pelican hooks.

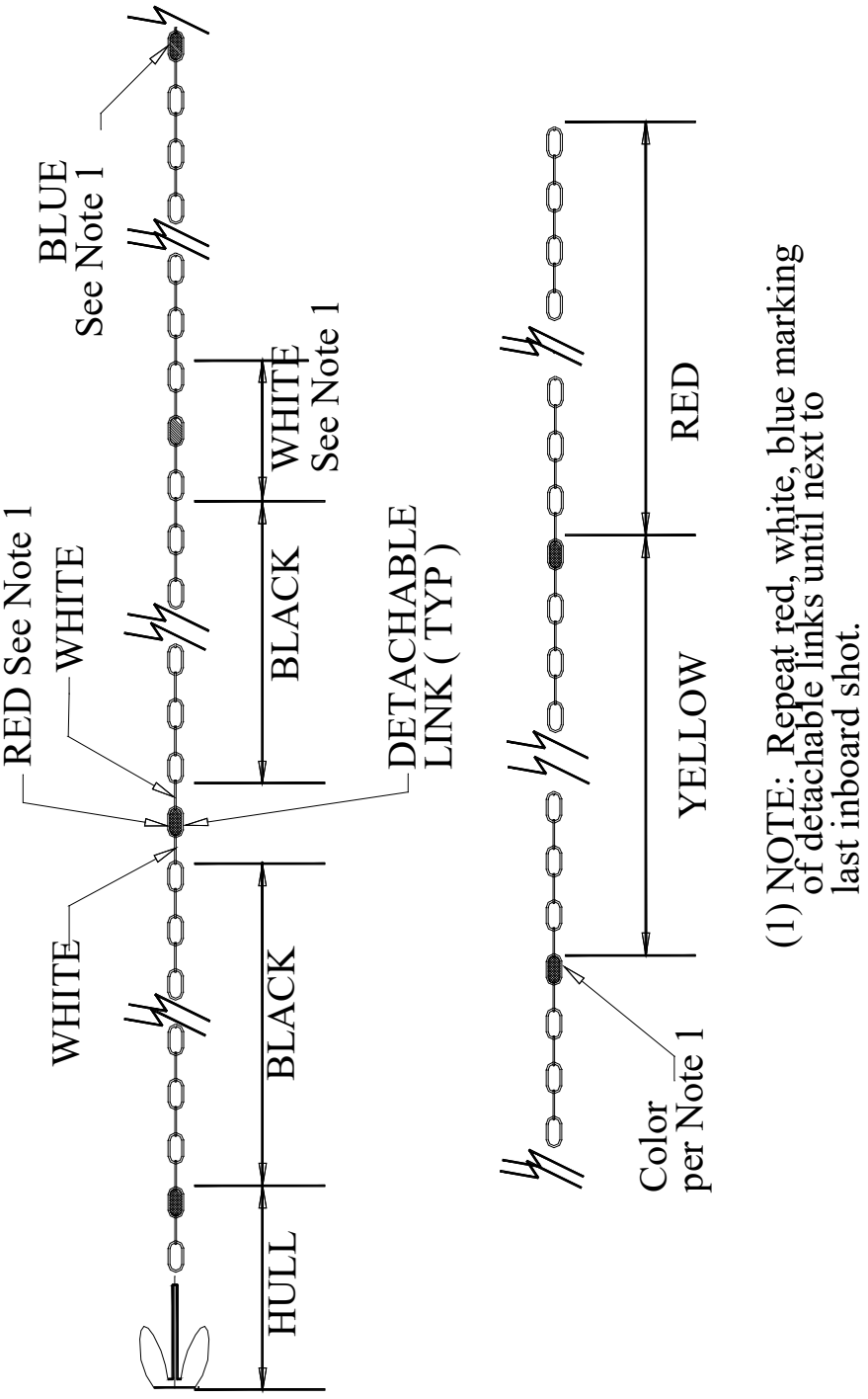
3.3.2 Submit a CFR.

3.4 Touch-up preservation. The Contractor shall prepare and coat all new and disturbed surfaces to match existing adjacent surfaces, in accordance with SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs).

4. NOTES

4.1 Component characteristics. Each anchor weighs 2,250 pounds and each chain is 1-1/8 inch Stud link, with a length of 7 shots. All shots of anchor chain include the corresponding detachable link(s).

PAINTING AND MARKINGS ON MOORING CHAIN



(1) NOTE: Repeat red, white, blue marking of detachable links until next to last inboard shot.

4.2 Supply information. An ABS approved list of chain manufacturers may be found at the following website: http://ww2.eagle.org/en/rules-and-resources/approved-manufacturers-and-products.html

WORK ITEM 26: Anchor Chain and Ground Tackle, Preserve

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to preserve the anchor chain assemblies (port and starboard), including associated ground tackle.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 581-001, Rev F, Anchor Handling System Arrangement

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

OTHER REFERENCES

Federal Specification (Fed Spec) RR-C-271, Rev E, Dec 2010, Chain and Attachments, Welded and Weldless

The Society for Protective Coatings (SSPC) Surface Preparation Specification No. 1 (SSPC-SP 1), 2004, Solvent Cleaning

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the below-listed:

- Port and starboard anchors.

3.2 Required work particulars. The Contractor shall ensure the following using the chain description (see 4.1 (Component characteristics)) and Coast Guard Drawing 175 WLM 581-001 for guidance, for each anchor chain assembly.

3.2.1 Removal. Disconnect and remove the anchor chain assembly and transport from the vessel to a suitable location, to facilitate the performance of the tasks specified herein.

NOTE

The use of Coast Guard equipment (e.g. anchor windlass) for off-loading and on loading of anchors and anchor chain is authorized.

3.2.1.1 The contractor is responsible for operation of the equipment, bears full responsibility for unloading and offloading anchors, and shall not request, direct, or allow cutter personnel to assist in the evolution.

3.2.2 Surface preparation. Prepare the below-listed surfaces to a “Commercial Blast” standard, in accordance with SSPC-SP 6:

- All detachable links (including detachable link interior surfaces), swivels, outboard swivel shots, cats paw, pelican hook and shackles.
- Entire length of Shot 1, Shot 2, Shot n-1, and Shot n.
- 10 links per shot, each 15 links apart, on Shot 3 through Shot n-2 (for the purposes of wire diameter test - see Table I below).

3.2.3 Surface coating.

3.2.3.1 Perform solvent cleaning of all prepared anchor chain surfaces, in accordance with SSPC-SP 1, prior to coating application. Collect all debris from solvent cleaning for proper disposal.

3.2.3.2 Using the coating system specified for “Anchor/Anchor Chain” in SFLC Std Spec 6310, Appendix A (Cutters and Boats Exterior Painting Systems), do the following:

3.2.3.2.1 Coat the following shots:

- Shot n-1 Black
- Shot n Black
- Shot 1 Yellow
- Shot 2 Red

3.2.3.2.2 Prime, color coat, and wire (CRES wire) all detachable links (red, white, and blue), adjacent chain links, shackles, and swivels in accordance with Attached Figure "Painting and Markings On Mooring Chain", using the , and SFLC Std Spec 6310.

3.2.3.2.3 Remove all existing CRES wire prior to the installation of new markings.

3.2.4 Chain restowing. When directed by the Coast Guard Inspector, reassemble the anchor and anchor chain; restow the anchor chain in its chain locker, free for running, with the anchor housed and secured with the chain stopper set. Ensure that (1) the bitter ends of the chain are fastened in the chain locker with new bitter end shackles, conforming to Fed Spec RR-C-271, Type IV-A, Class 3, Grade A; (2) the ground tackle is kept ready for use, (3) nothing interferes with a readiness to veer or slip the anchors, (4) the detachable links located just inboard of the riding stopper and the detachable link tool set are readily accessible for use in slipping the anchor chains in an emergency, and (5) the anchor has a crown buoy attached, with sufficient length of rope to facilitate indicate the depths of water in which moored. In addition, do the following:

- Lead the bitter ends down and through the deck bolts in the chain locker and secure to the chain locker pad eye.
- Back out the chains to ensure the chain stopper is set.

3.3 Operational test – post repairs. After completion of work, the Contractor shall, in the presence of the Coast Guard Inspector, thoroughly test the anchor chain assembly to prove satisfactory operating condition, by releasing the chain stoppers and lower both anchors under power to the drydock floor (or waterline, as applicable), letting out one additional shot, and raising again to ensure chains run on the wildcats without binding.

3.3.1 The Contractor shall correct any discrepancies, house the anchors and set the anchor chain pelican hooks.

3.3.2 The Contractor shall Submit a CFR.

NOTE
Coast Guard personnel will operate all shipboard machinery and equipment

4. NOTES

4.1 Component characteristics. Each anchor weighs 2,250 pounds and each chain is 1-1/8 inch Stud link, with a length of 7 shots., as shown on Coast Guard Drawing 175 WLM 581-001. All shots of anchor chain include the corresponding detachable link(s).

PAINTING AND MARKINGS
ON MOORING CHAIN

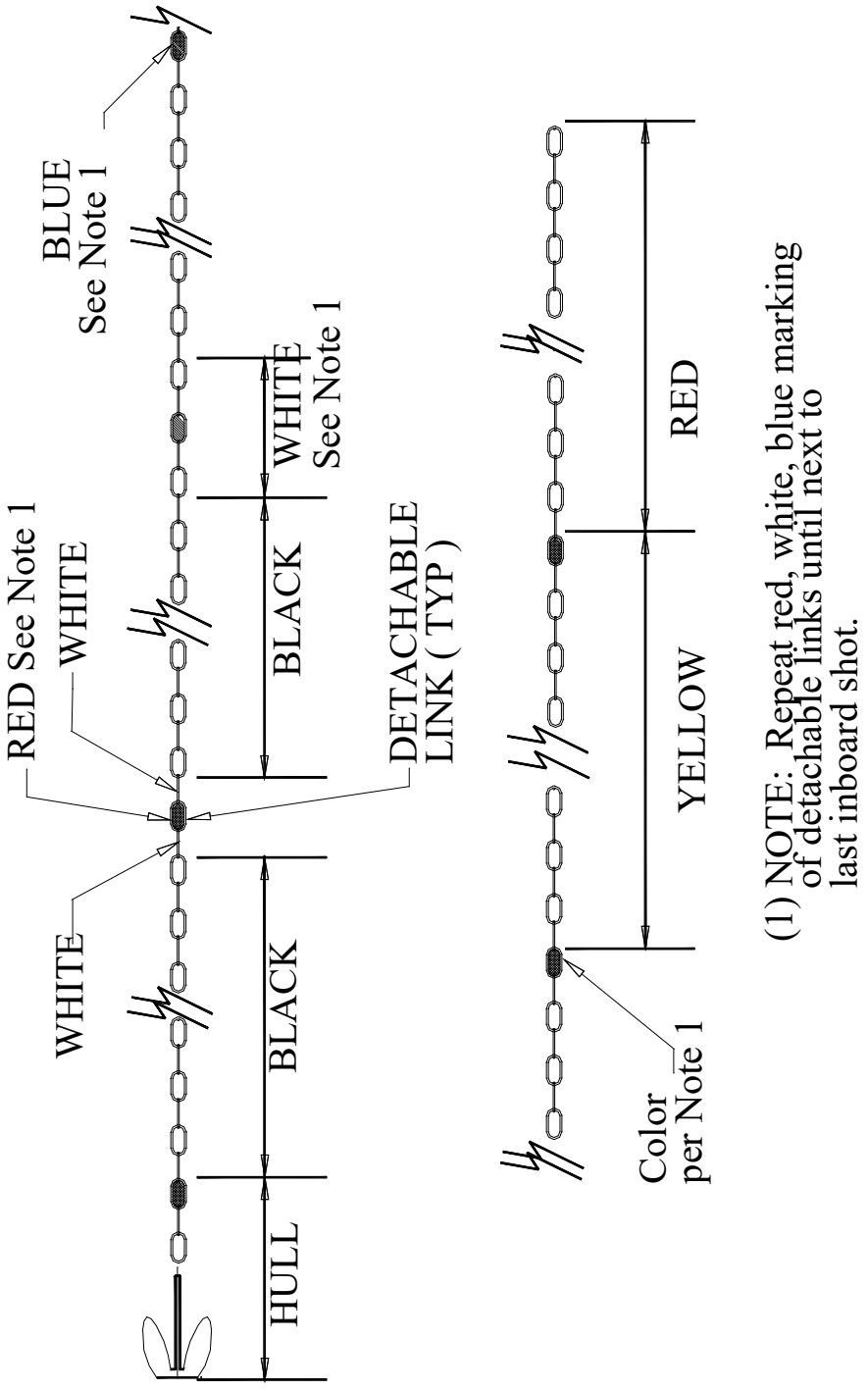


FIGURE 1. PAINTING AND MARKINGS ON MORRING CHAIN

WORK ITEM 27: Anchor(s), Preserve

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to preserve the Port and starboard anchors.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 581-001, Rev F, Anchor Handling System Arrangement

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

OTHER REFERENCES

Federal Specification (Fed Spec) RR-C-271, Rev E, Dec 2010, Chain and Attachments, Welded and Weldless

The Society for Protective Coatings (SSPC) Surface Preparation Specification No. 1 (SSPC-SP 1), 2004, Solvent Cleaning

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the below-listed:

- anchor chain assemblies (port and starboard).

3.2 Required work particulars. The Contractor shall use the description (see 4.1 (Component characteristics)) and Coast Guard Drawing 175 WLM 581-001 for guidance, for accomplishing the tasks specified below for Port and starboard anchors.

3.2.1 Removal. The Contractor shall disconnect and remove the anchor from anchor chain assembly and transport from the vessel to a suitable location, to facilitate the performance of the tasks specified herein.

NOTE

The use of Coast Guard equipment (e.g. anchor windlass) for off-loading and on-loading of anchors and anchor chain is authorized. Coast Guard personnel will operate all Government equipment.

3.2.2 Anchor preservation. The Contractor shall prepare and coat the anchor surfaces with the system specified for “Anchor/Anchor Chain” in SFLC Std Spec 6310, Appendix A (Cutters and Boats Exterior Painting Systems). Select color coat in accordance with paragraph 11.B.1 (Anchors, Anchor Chains) in SFLC Std Spec 6310, Appendix A (Cutters and Boats Exterior Painting Systems).

4. NOTES

4.1 Component characteristics. Each anchor weighs 2,250 pounds and each chain is 1-1/8 inch Stud link, with a length of 7 shots. All shots of anchor chain include the corresponding detachable link(s).

WORK ITEM 28: Hawse Pipes, Preserve

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to preserve the hawse pipes.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 581-001, Rev F, Anchor Handling System Arrangement

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2014, Temporary Hull Accesses

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the below-listed:

- anchor chain assemblies (port and starboard)

3.2 Temporary access openings. Due to limited access to work areas, the Contractor may, with express permission of the KO (via submission of a CFR), cut access holes to facilitate accomplishment of the work specified herein. Perform all work required to open and close the access openings in accordance with Std Spec 8636_STD.

3.3 Surface preservation. The Contractor shall prepare and coat all the port and starboard hawse pipes and chain pipes using the system specified for “Chain Lockers”, in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems). Use Coast Guard Drawing Coast Guard Drawing 175 WLM 581-001 for guidance.

3.4 Inspection. After surface preparation and before paint application, the Contractor shall perform a visual inspection of all prepared surfaces. Submit a CFR.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 29: Tanks (Ballast), Preserve "Partial"

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to prepare and coat part of the surfaces of the following tank(s) up to the percentage indicated, in locations designated by the Coast Guard Inspector:

TABLE 1 – TANKS

TYPE OF STRUCTURE	LOCATION	CAPACITY - 95% (GALLONS)	LOW SUCTION (GALLONS)	% OF TANK COATING REPAIR
Forepeak Ballast Tank	3-0-0-V	3,309	99	33
Ballast Tank	3-35-6-V	7,922	238	33
Ballast Tank	3-35-1-V	7,922	238	33

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 601-003, Rev F, Booklet of General Drawings (552-564)

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2014, Temporary Hull Accesses

OTHER REFERENCES

ASTM International (ASTM) D1330, 2010, Standard Specification for Rubber Sheet Gaskets

3. REQUIREMENTS

3.1 General. The Contractor shall accomplish the work specified herein for all tanks listed in paragraph 1.1 (Intent). The Contractor shall refer to Coast Guard Drawing 175 WLM 601-003 for guidance..

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

3.1.5 Temporary access openings. Due to limited access to work areas, the Contractor may, with express permission of the KO (via submission of a CFR), cut access holes to facilitate accomplishment of the work specified herein. Perform all work required to open and close the access openings in accordance with SFLC Std Spec 8636.

3.1.6 Content removal. The Contractor shall remove and dispose of all fluids and/or residues in accordance with all applicable Federal, state, and local regulations. Plug all inlet and outlet piping in the tank to prevent contaminants from entering the tank. Use plugs with an attached lanyard, ring or other system that will ensure plugs are not lost in the pipe openings. Maintain a plug accountability log outside the tank(s) to prevent any of the installed temporary plugs from being lost inside the tank or forgotten inside at tank closure.

3.2 Surface preservation. The Contractor shall remove and retain the manhole covers for all tanks listed under paragraph 1.1 (Intent); prepare and coat designated interior tank surfaces (see paragraph 1.1 (Intent)) using the system specified in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Paint Systems) for “Tanks and Voids, Ballast Tanks; Option I or II”. Power tool clean all affected surfaces to “bare metal”, in lieu of using abrasive blasting; and feather edges of existing intact coating to the prepared areas in order to provide a smooth transition with the new paint. Select top coat color to match existing adjacent surfaces.

3.3 In-process quality control measures. The Contractor shall abide by all the safety, preservation, and quality control requirements specified in SFLC Std Spec 0000, paragraph 3.2.4.2 (In-process QC measures for "critical-coated surfaces). Surfaces being preserved are considered "critical-coated surfaces".

3.4 Inspection. After surface preparation and before coating application, the Contractor shall visually inspect all interior surfaces and manhole surfaces; including, but not limited to bulkheads, floor and overhead plating, structural members, manhole cover surfaces, fasteners and gasket seating surfaces. Submit a CFR including the following, as applicable:

- Structural condition.
- Inaccessible areas.
- Tank level indicator (TLI) and/or float switch condition.
- Sounding tube and striker plate condition.
- Suction and discharge piping.
- Fastener condition.

3.5 Tank closing. The Contractor shall ensure that the tank(s) remain open for at least 24 hours after completion of the tasks specified above. Notify the COR at least 24 hours prior to closing the tank(s). After satisfactory inspection by the Coast Guard Inspector and after all authorized repairs, accomplish the following:

- Reinspect all TLIs, as applicable, to verify proper operation. Submit CFR.
- Close tank manhole cover(s) with new gasket material conforming to ASTM D1330 and new stud cotton grommets (as applicable).
- Renew up to 10% of missing or damaged nuts and washers.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 30: Chain Locker, Preserve 100%

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to prepare and preserve 100% of the Chain Locker surfaces.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 581-001, Rev E, Anchor Handling System Arrangement

Coast Guard Drawing 175 WLM 601-001, Rev T, General Arrangement Inboard and Outboard Profiles

Coast Guard Drawing 175-WLM-529-002 Rev G Main Drainage System Diagram

Coast Guard Drawing 175-WLM-505-002 Rev F Mechanical Remote Valve Operators Arrangement and Details

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2014, Temporary Hull Accesses

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General. The Contractor shall use Coast Guard Drawing 175 WLM 581-001

175 WLM 601-001 for guidance during the performance of the work specified herein.

3.1.1 CIR.

None.

3.1.2 Tech rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the below-listed:

- Anchors and chains.

3.2 Temporary access openings. Due to limited access to work areas, the Contractor may, with express permission of the KO (via submission of a CFR), cut access holes to facilitate accomplishment of the work specified herein. Perform all work required to open and close the access openings in accordance with SFLC Std Spec 8636.

3.3 Surface preservation. The Contractor shall notify the Coast Guard Inspector 48 hours prior to beginning surface preparation. Remove access cover(s); prepare and coat all chain locker surfaces, including associated structural members, and including the internal surfaces of the access cover(s), using the system specified for “Chain Lockers”, in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems). Select finish/top coat color to match existing adjacent surfaces.

NOTE

High pressure waterjetting is not acceptable for surface preparation on surfaces to be coated with inorganic zinc.

3.4 Inspection. After surface preparation and before paint application, the Contractor shall perform a visual inspection of all prepared surfaces and sounding tubes. Submit a CFR.

3.5 In-process quality control measures. The Contractor shall abide by all the safety, preservation, and quality control requirements specified in SFLC Std Spec 0000, paragraph 3.2.4.2 (In-process QC measures for “critical-coated surfaces). Surfaces being preserved are considered “critical-coated surfaces”.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 31: Tanks (Potable Water), Preserve "100%"

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to prepare and coat 100% of the surfaces of the following tank(s):

TABLE 1 - TANKS

TYPE OF TANK	LOCATION	CAPACITY - 95% (GALLONS)	LOW SUCTION (GALLONS)
Potable Water	1-94-0-W	2,167	68
Potable Water	2-36-1-W	5,172	250

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 601-003, Rev F, Booklet of General Plans

Coast Guard Drawing 175 WLM 533-006, Rev D, Independent Tank Potable Water Hb 950

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2014, Temporary Hull Accesses

OTHER REFERENCES

American National Standards Institute/NSF International (ANSI/NSF) 61, 2008, Drinking Water System Components - Health Effects

American National Standards Institute/American Water Works Association (ANSI/AWWA) C652, 2011, Disinfection of Water-Storage Facilities

3. REQUIREMENTS

3.1 General. The Contractor shall refer to Coast Guard drawings 175 WLM 601-003 and 175 WLM 533-006 for guidance.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

3.1.5 In-process quality control measures. The Contractor shall abide by all the safety, preservation, and quality control requirements specified in SFLC Std Spec 0000, paragraph 3.2.4.2 (In-process QC measures for “critical-coated” surfaces). Surfaces being preserved are considered “critical-coated surfaces”.

3.1.6 Temporary access openings. Due to limited access to work areas, the Contractor may, with express permission of the KO (via submission of a CFR), cut access holes to facilitate accomplishment of the work specified herein. Perform all work required to open and close the access openings in accordance with SFLC Std Spec 8636.

3.2 Tank content removal. The Contractor shall remove and dispose of all tank contents in accordance with all applicable Federal, State, and local regulations. The Contractor shall notify the Dock master prior to filling or draining the potable water tank(s).

3.3 Surface preservation. The Contractor shall accomplish the following tasks for the tanks listed in paragraph 1.1 (Intent):

3.3.1 Remove and retain the tank manhole cover(s).

3.3.2 Prepare and coat all tank interior surfaces (including internal surfaces of manhole cover(s), manhole cover hull ring(s) extending outward to the weld line that ties the hull ring into the tank plating on the tank exterior), using the system specified for "Tanks and Voids (Potable Water Tanks)" in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems). Select finish/top coat color to match existing.

3.3.3 Prepare and coat all manhole cover external surfaces to match existing adjacent surfaces, using the system specified for "Decks, Metal Interior and Non-Skid Areas (Steel and Aluminum Decks - Wet Areas, Food Preparation Areas, Exit Areas, and Areas Subject To Condensation)", in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems). Select finish/top coat color to match existing adjacent surfaces.

3.3.4 Heated air shall be used if necessary to maintain the proper temperature during cure. Ventilation shall be a continuous airflow with a minimum of one complete air change every four (4) hours.

3.3.5 Fully coated tanks shall be cured in accordance with the manufacturer's instructions for NSF/NEHC certification under the same conditions before being filled.

NOTE

Typical curing times are at least 7 days, and range up to 14 days (or longer), depending on the paint selected and environmental conditions.

3.3.6 Curing time shall be based on paint manufacturer's recommendations for the specific application.

CAUTION

Verify application and cure requirements with paint manufacturer prior to paint purchase and application. Lack of attention to environmental conditions can adversely impact paint system cure, cause unnecessary contract time delays, and negatively impact crew health and vessel habitability when tanks are put back into service.

DO NOT assume paint Product Data Sheet to be accurate. Contact paint manufacturer directly to verify, as formulations change and new application information may be available.

3.3.7 Freshly painted potable water tanks shall be rinsed at least twice with freshwater before being disinfected and put into service.

3.4 Inspection. After surface preparation and before coating application, the Contractor shall visually inspect all interior surfaces; including, but not limited to bulkheads, floor and overhead plating, structural members, manhole cover surfaces, fasteners and gasket seating surfaces. Submit a CFR including the following, as applicable:

- Structural condition
- Inaccessible areas

- Tank level indicator (TLI) and/or float switch condition
- Sounding tube and striker plate condition
- Suction and discharge piping.

3.5 Tank closing. The Contractor shall ensure that the tank(s) remain open for at least 24 hours after completion of the tasks specified above. Notify the COR at least 24 hours prior to closing the tank(s). After satisfactory inspection by the Coast Guard Inspector and after all authorized repairs, accomplish the following:

Reinspect all TLIs, as applicable, to verify proper operation. Submit a CFR.

Close tank manhole cover(s) with new gasket material conforming to ANSI/NSF 61 and new stud cotton grommets (where applicable).

3.6 Tank disinfecting. After all other work involving the potable water system and tank closing have been completed, the Contractor shall disinfect and treat the affected potable water tank(s) and associated disturbed piping and components, as necessary, to meet or exceed the requirements of AWWA C652. After tank disinfecting, remove and dispose of all treated water in accordance with all Federal, state and local regulations. Ensure that no one enters the tanks once disinfection is completed.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 32: Decks – Exterior (Buoy or Construction Deck), Preserve 100%

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to preserve the Buoy Deck surfaces, shown on Coast Guard Drawings 175 WLM 573-001 and 175 WLM 601-001 (see 4.1 (Definitions)).

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 130-001, Rev -Mods to Buoy Deck Incidental to Hawser Pipe Cover

Coast Guard Drawing 175 WLM 573-001, Rev T, Buoy Deck Arrangement

Coast Guard Drawing 175 WLM 601-001, Rev L, General Arrangement and Inboard and Outboard Profiles

Coast Guard Drawing 175 WLM 920-001, Rev K, Hull Block 920 Panels

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

Coast Guard Technical Publication (TP) 3498, Section A, Jul 2015, Buoy Chain Winch

OTHER REFERENCES

MIL-A-22262, Mar 1996; Abrasive Blasting Media Ship Hull Blast Cleaning

The Society for Protective Coatings (SSPC)/NACE-International (NACE) Joint Surface Preparation Standard SSPC-SP 10/NACE No. 2, 2007, Near-White Blast Cleaning

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness. Specific areas/equipment/components to be protected include, but are not limited to:

- Buoy crane.
- Adjacent bulkhead surfaces.
- Deck fittings.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the following:

Crossdeck winches.

In-haul winch.

Mechanical chain stoppers.

Hydraulic chain stoppers.

3.2 Preservation particulars. The Contractor shall accomplish the following tasks:

3.2.1 Pre-surface preparation wash. Accomplish low-pressure (less than 5,000 psi) fresh water wash of all affected surfaces, to remove soluble chlorides and other surface contaminants. Capture, contain, and dispose of wash water for proper disposal in accordance with all Federal, state and local regulations.

3.2.2 Surface preparation. Prepare all designated deck surfaces (see 4.1 (Definition) by abrasive-blasting to SSPC-SP10/NACE No. 2, using grit conforming to MIL-A-22262 (1.5 to 2.5 mil anchor profile).

3.2.3 Substrate inspection. After completion surface preparation and before coating application, the Contractor shall perform a visual inspection of the prepared substrate, in the presence of the Coast Guard Inspector. Submit a CFR.

3.2.4 Surface coating. Coat all prepared surfaces with the coating system specified for “Weather Decks (Weather Deck, Buoy Tender Working Deck)”, in SFLC Std Spec 6310, Appendix A (Cutter and Boat Exterior Painting Systems). Select a Gray (36231) inorganic zinc coating.

CAUTION

1. Unless a containment system is used during pier side/dockside preservation, the following must be adhered to:

a) All surface preparation tools/equipment must be vacuum-shrouded or close-looped systems, to contain surface preparation dust and debris.

b) Extreme precaution must be taken while spraying the inorganic zinc coating, to prevent coating application overspray.

2. Organic zinc coating may not be substituted for inorganic zinc for Buoy Deck surfaces.

3.3 In-process quality control measures. The Contractor shall abide by all the safety, preservation, and quality control requirements specified in SFLC Std Spec 0000, paragraph 3.2.4.2 (In-process QC measures for "critical-coated surfaces). Surfaces being preserved are considered "critical-coated surfaces".

APM: Per current CMP, the buoy deck preservation and deck equipment "inspect & service" items are accomplshed "off-cycle". In the event that these work items are included in the spec package, delete the weight test req'ts and the TP since weight testing is included in the "Inspect & Service" work item.

3.4 Weight tests. After reinstallation of inhaul winch and crossdeck winches, the Contractor shall accomplish the following (Coast Guard personnel will operate all equipment):

3.4.1 Inhaul winch. Perform all weight test requirements in accordance with CG TP-3498, Chpt 8, Para 8-6.4 (Static Load Test Weight: 24,750 (+1,238 -0) pounds; Rated Load Test Weight: 16,500 (+0 -825) pounds; and Emergency Brake Release Test Weight: 5,000 (+0 -250) pounds). Submit CFR.

3.4.2 Crossdeck winches. Perform weight tests in accordance with paragraph B2.3 (Winches).of SFLC Std Spec 5000 (Static Load Test Weight: 9,000 (450-0); Rated Load Test Weight: 6,000 (0-300) Pounds). Submit CFR

4. NOTES

4.1 Definitions.

4.1.1 Buoy Deck. The Buoy Deck surfaces are defined as horizontal surfaces, Main Deck, Frame 52 forward; also included are all vertical and horizontal edges on the mating surfaces of the buoy deck cargo hatch, including coaming, channels, channel support plate, and the plates/covers for the auto gripe system; and Hawser pipe cover; as shown on Coast Guard Drawings 175 WLM 130-001, 175 WLM 573-001 and 175 WLM 601-001, and 175 WLM 920-001.

4.1.2 Deck coaming. Coaming is defined as vertical raised sections of deck plating around an opening that provide a frame and/or deflect water, such as around a hatch or gooseneck.

WORK ITEM 33: Hull Plating Freeboard (Buoy Port Areas), Preserve

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to prepare and coat the buoy working areas, shown on Coast Guard Drawing 175 WLM 601-001 (see 4.1 (Definition of Buoy Port)).

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 601-001, Rev P, General Arrangement and Inboard and Outboard Profiles

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures - general. The Contractor shall furnish and install all protective coverings to

seal off and protect all non-affected vessel's components, equipment, and spaces in the vicinity of the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

- Areas where underwater body coating system interfaces with freeboard coating system (unless u/w body surfaces are also being preserved).
- Adjacent deck surfaces and deck fittings.
- Buoy crane.
- Deck machinery.
- Buoy handling equipment.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

3.1.5 Pre-surface preparation wash. Prior to accomplishing surface preparation, the Contractor shall accomplish low-pressure (less than 5,000 psi) fresh water wash of all affected surfaces, to remove soluble chlorides and other surface contaminants.

3.1.5.1 Ensure that the water utilized for the low-pressure wash is of sufficient purity and quality that it does not prevent the surface being preserved from achieving the required degree of surface cleanliness or nonvisible contamination criteria.

3.1.5.2 Capture, contain, and dispose of wash water for proper disposal in accordance with all Federal, state and local regulations.

3.1.6 Substrate inspection. After completion surface preparation and before coating application, the Contractor shall perform a visual inspection of the prepared substrate, and submit a CFR.

3.2 Preservation particulars. The Contractor shall accomplish prepare and coat the designated buoy port surfaces in accordance with SFLC Std Spec 6310, using the system specified for "Freeboard/Superstructure, Steel – Prone to Mechanical Damage or High Wear".

3.2.1 Ensure that all non-affected surfaces adjacent to the designated areas are feathered into the designated area, in accordance with the feathering guidance provided in SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs).

NOTE

Waterjetting may not used as a surface preparation, in view of the fact that the specified coating system includes an Inorganic Zinc coating as the primer coat.

3.2.2 Abide by all the safety, preservation, and quality control requirements specified in SFLC Std Spec 0000, paragraph 3.2.4.2 (In-process QC measures for "critical-coated surfaces).

NOTE

Surfaces being preserved are considered "critical-coated surfaces".

3.3 Repair of un-intended damages. The Contractor shall repair all damages, including overspray,

incurred to surfaces not covered by the scope of this work item, during surface preparation and paint application procedures.

4. NOTES

4.1 Definition of Buoy Port. The Buoy Port areas are defined as freeboard surfaces between Frames 22 and 40, port and starboard, from the deck level down to the top of the boot-topping; and all inboard surfaces of the gunwale.

WORK ITEM 34: Cathodic Protection / Zinc Anodes, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew the following cathodic protection anodes:

QTY	TYPE/DESCRIPTION	SIZE (INCHES)	LOCATION
39	ZHS/23	6” x 12” x 1-1/4”	See referenced drawing
11	ZHS/42	6” x 12” x 2-1/2”	See referenced drawing
10	ZSS/12	3” x 12” x 1-1/4”	See referenced drawing
16	ZTS/5	3” x 9” x 1-3/8”	See referenced drawing

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 633-001, Rev D, Cathodic Protection

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

OTHER REFERENCES

Commercial Item Description (CID) A-A-59313, Nov 2003, Thread Compound; Anti-seize, Zinc Dust-Petrolatum

MIL-A-18001, May 2005, Anodes, Sacrificial Zinc Alloy (Commercially Accepted - ASTM B418)

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

3.2 Renewal particulars. The Contractor shall accomplish the following tasks. Use Coast Guard Drawing 175 WLM 633-001 as guidance

3.2.1 Removals. The Contractor shall remove and dispose of all designated anodes (see Table under paragraph 1.1 (Intent)). Accomplish the following additional tasks, as applicable:

3.2.1.1 Retain all anode mounting hardware (studs, nuts, and washers).

3.2.1.2 Grind flush all residual roughness with the hull or mounting surfaces.

3.2.1.3 Visually inspect all mounting hardware, including studs, washers, and nuts; Verify the quality of the zinc anode stud weldment to the hull by tapping perpendicular on the nutted stud with a rubber hammer and submit a CFR.

3.2.2 New installations. Furnish and install new anodes conforming to MIL-A-18001, in place of the removed.

- Drill holes in each mounting strap, to facilitate stud attachment.

NOTE

All bolt studs may not have the exact same spacing.

- Renew up to 100% of mounting hardware.
- Ensure two star type lockwashers are installed: one between the nut and anode strap, and one between the anode strap and ship structure, to ensure electrical continuity between the anode and the attachment point.
- Apply antisieze compound, conforming to (CID) A-A-59313, to studs before each anode installation.
- Chip, grind, or wire-brush smooth all straps, welds, and mounting studs, as applicable. In addition, ensure that all installed anode surfaces are free of paint.

3.3 Electrical resistance testing. The Contractor shall measure the electrical resistance between each anode surface and an adjacent metal ship structure, utilizing an OHM meter and a scale, to ensure that it is less than 0.1 ohm. Submit a CFR.

3.4 Touch-up preservation. The Contractor shall prepare and coat all new and disturbed surfaces to match existing adjacent surfaces in accordance with SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs.)

- External portions of studs, nuts, washers and straps, if applicable.

3.4.1 Wire brush all anodes within 24 hours before refloating the cutter. Take care not to disturb the U/W body coating system.

3.4.2 Do not paint new anodes.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 35: Drydock

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to drydock the vessel, undock the vessel, and perform various drydocking-related tasks.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
Y	*Transducer Cover Plate	N/A	2 ea.	50.00

***Government-loaned property, which shall be returned to the vessel upon completion of the availability.**

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 801-001, Rev A, Hull Lines

Coast Guard Drawing 175 WLM 801-003, Rev A, Curves of Form

Coast Guard Drawing 175 WLM 801-006, Rev J, Docking Drawing

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 8634 (SFLC Std Spec 8634), 2014, Drydocking

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

- None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the following:

- Anchor assembly
- Load conditions
- U/W body appendages

3.2 Key personnel. The Contractor shall determine key personnel and require their presence during all drydocking phases as required by SFLC Standard Spec 8634. Submit list of key personnel to the COR.

3.3 Docking and undocking. The Contractor shall perform drydock and undock in accordance with SFLC Std Spec 8634, using Coast Guard Drawing 175 WLM 801-001, 175 WLM 801-003, and 175 WLM 801-006 for guidance.

3.4 Cutter conditions. The Contractor shall use the Full Load Condition values listed below all in inches, for purposes of performing Pre-Award calculations as described in Appendix A (Requirements for Calculations) of SFLC Std Spec 8634.

- Displacement (LT SW): 878.473
- VCG (FT ABL): 14.072
- LCG (FT aft FP): 87.469
- LCF (FT aft FP): 91.327
- Trim (FT by bow): 0.274
- MT1” (LT-FT/Inch): 136.75

3.4.1 Blocking. The Contractor shall facilitate docking the vessel in designated block position by arranging keel and side blocks and ensuring minimum block heights as shown on the vessel's docking plan.

TABLE 1 - BLOCKING

Pos. #	BLOCK HEIGHT ABOVE DOCKING FACILITY DECK				Steel Plate	Situation Awareness	Fin Stabilizers	Additional
	Min.	Rudder Removal	Propeller Removal	Shaft Removal				
#3	48"	NA	NA		NA	Sonar. Ensure clearance around sonar(s) at Frames 21-22 and Frames 51-52.	NA	None

NOTE

This vessel has a Z-drive propulsion system.

3.5 Pre-award calculations. The Contractor shall provide to the KO a set of pre-award calculations, as described in SFLC Std Spec 8634 Appendix A.

3.5.1 Provide vertical side/bilge block offsets for any side blocks placed in a location where vertical offsets are not already defined by the docking plan.

3.5.2 Submit an alternate blocking arrangement, as part of the pre-award calculation submission, to compensate for any changes from the docking plan.

3.5.2.1 If the alternate blocking arrangement interferes with U/W hull plate inspection or 100% preservation of U/W body surfaces required under separate work items in this specification package, the Contractor shall include a plan of how inspection/preservation will be accomplished. Plan shall include any modifications necessary to the prescribed docking plan including removing, shifting, repositioning blocks, or fleeting the vessel at no additional cost to the Government.

NOTE

1. The USCG has established several approved alternate docking plans for each vessel-class, to facilitate complete access to the entire U/W body structure, for periodic comprehensive inspection and/or 100% preservation. This inspection and preservation pattern and periodicity is a configuration management concern that is a vital requirement of the contract. Intention to deviate from these plans (fewer blocks, block spacing, additional blocks, etc) is to be identified on pre-award calculations (Paragraph 3.5.2); an alternate docking plan and mitigation strategy will be provided to maintain preservation and inspection configuration.

2. Pre-award calculations may be deemed unsatisfactory - and may adversely affect contract award if they are submitted with the following detrimental factors:

a. No methods have been proposed that meet the requirements for the specified docking plan.

b. Proposed block shifting or fleeting risk-mitigating plan may result in delays in period of performance.

c. Proposed alternate docking plan violates USCG configuration management policies.

3.6 Planned availability, immediate work and routine inspections. The Contractor shall perform designated routine drydocking work, in accordance with SFLC Std Spec 8634, paragraph 3.5.4 (within twenty four hours after docking).

3.6.1 Upon the COR convening the Coast Guard Underwater Hull Inspection Board (UWHIB), the Contractor shall facilitate and participate in the UWHIB inspections of the underwater hull. The Contractor shall provide a designated hull repair supervisor to accompany the UWHIB and mark on the hull proposed repairs areas, as necessary.

NOTES

1. **The COR will convene the UWHIB as soon as possible after the vessel has been dry-docked and the hull has been cleaned. No other work shall take place until the UWHIB completes their inspections.**
2. **The UWHIB will recommend the extent of underwater body coating system preservation required based on the conditions found during the underwater hull survey.**

WARNING

Do not use chemical additives in the freshwater wash. Take extreme care to avoid damaging or removing existing intact underwater body coating.

3.7 Fuel offloading. The Contractor shall be aware that fuel offloading is not mandatory to drydock the vessel.

3.8 Fleeting. Not required.

4. NOTES

4.1 Arrival conditions. The COR will advise the Contractor of the actual tank and draft readings when the vessel arrives, and will discuss with the Contractor any liquid loading changes necessary.

WORK ITEM 36: Temporary Services, Provide - Cutter

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to provide temporary services to the Cutter, during the performance of this availability.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

None

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 8635 (SFLC Std Spec 8635), 2014, Temporary Services

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against

contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

3.2 Temporary service particulars. The Contractor shall provide the below listed temporary services, in accordance with SFLC Std Spec 8635.

TABLE 1 - SERVICE SELECTION

*SUB-PARAGRAPH	TITLE	Y/N
3.3.1	Office space	Y
3.3.2	Telephone and internet access (100 mbs minimum internet)	Y
3.3.3	Parking	Y
3.3.4	Duty section berthing: _3_ male, _2_ female. Duty section berthing shall be provided for {Note: Choose one and delete the rest: (1) The entire duration of the availability,	Y
3.3.5	Electrical power (including all requirements in associated sub-paragraphs)	Y
3.3.6	Hull grounding straps (not applicable when cutter is waterborne)	Y
3.3.7	Compressed air (including all requirements in associated sub-paragraphs)	Y
3.3.8	Hazardous material/hazardous waste disposal (see Tables 2 and 3 below)	Y
3.3.9	Heavy lift equipment: 5_day(s)/or _40_ hour(s)}	Y
3.3.10	Water supply	
3.3.10.1	Potable water: {_500_ gallons per day, at _50_ psig.}	Y
3.3.10.2	Hot-circulating water	N
3.3.10.3	Cooling water	Y
3.3.10.4	Firemain system (including all requirements in associated sub-paragraphs)	Y
3.3.11	Steam (including all requirements in associated sub-paragraphs)	N
3.3.12	Refuse disposal	Y
3.3.13	Sewage and grey water disposal (including all requirements in associated sub-paragraphs)	Y
3.3.14	Storage – General (including all requirements in associated sub-paragraphs):	
3.3.14	Dry stores.	Y
3.3.14	Paint and flammable stores.	Y
3.3.14	Refrigerated stores.	N
3.3.15	Small boat storage (including all requirements in associated sub-paragraphs)	Y

***Each sub-paragraph number relates directly to the identical sub-paragraph number in SFLC Std Spec 8635.**

TABLE 2 - HAZARDOUS WASTE DISPOSAL – LIQUIDS (GALLONS)

PAINT & THINNERS	ENGINE COOLANT	BILGE WATER
40		xx

TABLE 3 - HAZARDOUS WASTE DISPOSAL – SOLIDS

OILY FILTERS	OILY RAGS (LBS)	EMPTY 1-GAL CONTAINER*	EMPTY 5-GAL CONTAINER*	EMPTY 55-GAL CONTAINER*
xx	50	xx	xx	xx

***Previously housed hazardous materials.**

3.2 Extended temporary services. If the performance period of the contract is extended by the KO, the contractor shall continue to provide all temporary services as specified herein for the extension period.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 37: Sea Trial Performance, Support, Provide

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to provide support for the performance of sea trials.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

None

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

3.2 Trial applicability. The Contractor shall provide support to the vessel crew to perform sea trials for all work items that require conducting operational tests while the vessel is waterborne or underway, prior to the item certification as being complete. The Contractor shall be responsible for ensuring all test procedures are prepared, approved, and distributed for the sea trials, and shall be responsible for recording test data and submitting CFRs to the COR.

3.3 Sea trial agenda. The Contractor shall prepare an agenda that details the Contractor's plans for ensuring completion of the required sea trials.

3.3.1 Agenda contents. The Contractor shall ensure the agenda consists of chronological list of administrative events, inspection events and test events. Events shall be arranged to permit expeditious conduct with minimum interference between concurrent events.

NOTE

Mutually compatible events may be scheduled simultaneously.

3.3.1.1 The Contractor shall ensure the agenda identifies installation of any test equipment or component modification that could impact the normal operation of equipment or systems during performance of the trials.

3.3.1.2 The Contractor shall ensure the agenda identifies any operating instructions or special test procedures that could impact the normal operations of equipment or systems.

3.3.1.3 The Contractor shall ensure the agenda includes the full name, title, security clearance, home address, home telephone number and name of next of kin of each Contractor-personnel scheduled to ride the ship during performance of the trials.

3.3.2 Agenda submission requirements. The Contractor shall submit four legible copies of the sea trial agenda to the COR two days prior to the scheduled trials. The Contractor shall coordinate both the planning and conduct of the post-overhaul ship trials with the ship's force (see 4.1 (Equipment operation)).

3.4 Environmental compliance. The Contractor shall abide by the below-listed rules, in addition to all other Federal, state, and local rules governing the overboard discharge of garbage and oil in the water.

3.4.1 Discharge of garbage.

TABLE 1 – GARBAGE RULES

GARBAGE TYPE	RULE
Plastics, including synthetic ropes, fishing nets, and plastic bags	Prohibited in all areas
Floating dunnage, lining and packing materials	Prohibited less than 25 miles from nearest land
Food waste, paper, rags, glass, metal, bottles, crockery and similar refuse	Prohibited less than 12 miles from nearest land
Comminuted or ground food waste, paper, rags, glass, etc…	Prohibited less than 3 miles from nearest land

3.4.2 Discharge of oil. The Contractor shall be aware that the Federal Water Pollution Control Act prohibits the discharge of oil or oily waste upon or into any navigable waters of the U.S. The prohibition includes any discharge that causes a film or discoloration of the surface of the water or causes a sludge or emulsion beneath the surface of the water.

CAUTION

Violators are subject to substantial civil and/or criminal sanctions including fines and imprisonment.

3.5 Dock trials. The Contractor shall conduct dock trials to demonstrate the material readiness of the ship for sea trials. Additionally, all onboard tests conducted after installation and prior to sea trials to prove proper installation and satisfactory operation of equipment shall be conducted in accordance with the requirements specified in the work items designated in paragraph 3.1 (Trial applicability). Ensure that the dock trials are begun no later than 12 hours prior to the scheduled sea trials.

3.5.1 The Contractor shall provide a pier facility (or allow the cutter to move to a Coast Guard pier) in order to support dock trials. Dock trials may not be conducted while the cutter remains floating inside the dry-dock (not touching the blocks).

3.5.2 During dock trials, the Contractor shall ensure the Contractor's personnel observe tests under their cognizance and make such adjustments and repairs, as required.

3.6 Sea trials. As soon as possible after completion of the dock trials, the Contractor shall coordinate performance of the seal trials, based on the operational tests, as required in the applicable work items, for the following purpose:

- Performing tests that could not be performed while the ship was moored.
- Serving as final step in proving the success of the overhaul/repair tasks required in the designated work items, and ensuring that Contractor and COR are both satisfied that the ship is in all respects ready for final acceptance.

3.6.1 The Contractor shall have representatives on board the cutter to observe the trials for the purpose of observing whether or not the repairs are satisfactory.

3.6.2 The Contractor shall ensure the sea trials are be carried out in free route, away from other shipping, as designated by the COR.

3.7 Post-trial examination. After the completion of the sea trial, the Contractor shall perform a careful and thorough examination of parts of the repaired machinery, as designated by the COR. If any part of the ship or its equipment fails to meet contractual requirements during trials, perform additional trials after corrective measures have been taken.

NOTES

1. Examples of dock trials include conducting cold (pre-light off) and hot checks, cycling machinery (rudders, BPU, turning gear, fin stabilizers), and conducting any post-docking shaft alignment verification checks. This time may also be used to on-load fuel, if needed for operations.

2. The conditions of the trials will be determined largely by the character of the work that has been performed in each case, and as designated by the COR. A full power trial should be run at this time unless the COR elects to defer this run until all new machinery parts are run-in or the training status of the crew permits full power operation without undue hazard.

3. This examination may be conducted by the Engineer Officer of the ship, in which case he will report the results of the examination to the COR, fully describing any defects or improper conditions found.

4. Representatives of manufacturers who have furnished ship components may be invited to witness trials subject to approval of the CO or OINC of the ship.

4. NOTES

4.1 Equipment operation. Coast Guard personnel will operate all shipboard machinery and equipment during all tests.

WORK ITEM 38: Cargo Hatch Gasket, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew the gasket for the hydraulic cargo hatch, located on the Buoy Deck.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

None.

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2014, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 5000 (SFLC Std Spec 5000), 2014, Auxiliary Machine Systems

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

Coast Guard Technical Publication (TP) 3610, Section 167-A, July 2002, Power Operated Cargo Hatch, Coastal Buoy Tender, Model No. D-WK-787

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures - general. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces in the vicinity of the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the below-listed:

- Hydraulic hoses.
- Rams.
- Dogs.
- Toggles.

3.1.5 Reference documents. The Contractor shall perform the work described herein in accordance with SFLC Std Spec 5000 and TP-3610.

3.2 Renewal particulars. The Contractor shall accomplish the following tasks:

				ADDITION REQUIREMENTS	
#	**TASK TYPE**	**QTY**	**COMPONENT OR ASSEMBLY**	**APPENDIX AND PARA. FROM 5000_STD**	**OTHER**
1	Renew	1	Cargo Hatch Gasket	N/A	Perform gasket renewal in accordance with See CG TP 3610, Section 167-A., Hydraulic Cargo Hatch Drawing D-WD-787-1, Sheets 1 and 2. Conduct gasket compression test, upon installation. Submit CFR.
2	Preserve	1	Cargo Hatch Gasket Channel	3.2.4 (Preservation)	Perform preservation before installation of new gasket. Use Coating System: “Weather Decks (Weather Deck, Buoy Tender Working Deck)” in accordance with in SFLC Std Spec 6310, Appendix A (Cutter and Boat Exterior Painting Systems). Submit CFR.
3	Water hose Test	1	Cargo Hatch	N/A	Perform a water hose test of all affected boundaries in accordance with SFLC Std Spec 0740, Appendix C. Submit a CFR.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 39: Superstructure Surfaces (Buoy Deck Area), Preserve

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to preserve the following buoy deck area superstructure surfaces:

- Inboard surfaces (all vertical and horizontal surfaces) of port and starboard gunwales, – from frame 15 to 52.
- All deck risers, (vertical & horizontal surfaces) including vent and other piping.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 601-001, Rev P, General Arrangement Inboard and Outboard Profiles

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

OTHER REFERENCES

The Society for Protective Coatings (SSPC) Surface Preparation Specification No.1 (SSPC-SP 1), 2004, Solvent Cleaning

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures - preservation. The Contractor shall protect non-affected vessel's equipment, components, and spaces during surface preparation and coating application procedures, as specified in SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection). Specific areas/equipment/components to be protected include, but are not limited to:

- Buoy deck surfaces.
- Shore tie containment boxes.
- Bitts, chocks, and fair leads.
- Ladders.
- Electrical wiring.
- Pipes.
- Ventilation covers.
- Buoy Deck Machinery.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

3.1.5 Surface preparation optional methods. The Contractor has the option of using either high/ultrahigh pressure water Jetting or abrasive blasting to achieve the required surface preparation, prior to application of the coating system specified in 3.2 (Preservation requirements). The Contractor may add abrasives to the waterjet stream, for one or both of the following reasons:

- Achieving greater productivity.
- Achieving the required surface profile.

NOTE

Waterjetting without abrasive addition does not provide any additional anchor profile to the surface, beyond what was present after the previous surface preparation.

3.1.6 Water used in preparation and washing procedures. The Contractor shall ensure that water used in all surface preparation tasks, including pre-surface preparation wash and water jetting, is of sufficient purity and quality that it does not prevent the surface being cleaned from achieving the required degree of surface cleanliness or non-visible contamination criteria.

3.1.6.1 Ensure that surface preparation water does not contain sediments or other impurities that are destructive to the proper functioning of the cleaning equipment.

3.1.6.2 Ensure that all water used in any surface preparation or cleaning procedures is captured, contained, and all spent water disposed of in accordance with all Federal, state and local regulations.

3.2 Preservation requirements. The Contractor shall accomplish the following tasks:

3.2.1 Pre-surface preparation wash. Accomplish low-pressure (less than 5,000 psi) fresh water wash of all affected surfaces, to remove soluble chlorides and other surface contaminants. Refer to SSPC-SP 1, for guidance.

3.2.2 Surface preparation and coating application. Prepare and coat all surfaces designated in Section1.1 and shown on , shown on Coast Guard Drawing 175 WLM 601-001, using the system specified for "Freeboard/Superstructure/Mast (Freeboard/Superstructure)" in Appendix A (Cutter and Boat Exterior Painting Systems) of SFLC Std Spec 6310. Select the following:

- "Option I" system, for the applicable metal substrate.
- Black .

3.2.3 Post-surface preparation cleaning and inspection. After completion of surface preparation and prior to coating application, accomplish the following tasks. Submit a CFR.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 40: Auxiliary Sea Water System Valves, Overhaul Or Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to overhaul or renew the listed Auxiliary Seawater Systems (ASW) valves as designated in Table 1.

TABLE 1 - AUXILIARY SEA WATER SYSTEM VALVES

SIZE/ TYPE/ VALVE #	LOCATION	MATERIAL	CONNECTION / RATED PRESSURE CLASS #	*O/ R
6"/ Butterfly/ 2-14-4	#1 ASW main	Bronze	Flanged/ 150	O
6"/ Butterfly/ 2-14-3	#2 ASW main	Bronze	Flanged/ 150	O
Gate 1.5” 3-68-2	FR68	Bronze	Flanged	R
Gate 1.5” 3.68-4	FR68	Bronze	Flanged	R
Gate 1.5” 3.35-2	FR65	Bronze	Flanged	R
Gate 1.5” 3-65-4	FR65	Bronze	Flanged	R
Gate 1.5”3-35-4	FR69	Bronze	Flanged	R
Butterfly 2” 3-69-1	FR 69	Bronze	Flanged	R

*** “O” = Overhaul, “R”=Renew**

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

None.

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

OTHER REFERENCES

American Society of Mechanical Engineers (ASME) B16.34, 2004, Valves-Flanged, Threaded, and Welding End

ASTM International (ASTM) F992, 2006, Standard Specification for Valve Label Plates

Manufacturers Standardization Society of the Valve and Fittings Industry (MSS) SP-61, 2003 Edition, Pressure Testing Of Steel Valves

Manufacturers Standardization Society of the Valve and Fittings Industry (MSS) SP-67, 2002 Edition, Butterfly Valves

Manufacturers Standardization Society of the Valve and Fittings Industry (MSS) SP-72, 1999 Edition, Ball Valves with Flanged or Butt-Welding Ends for General Service

Manufacturers' Standardization Society of the Valve and Fittings Industry (MSS) SP-80, 2008 Edition, Bronze Gate, Globe, Angle and Check Valves

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the following:

- Deck plates
- Piping
- Insulation
- Pumps
- Hoses

3.2 Fluid handling. The Contractor shall drain and dispose of all residual fluids in the piping system in accordance with all Federal, state, and local rules and regulations.

3.3 Removal. The Contractor shall remove each valve identified in Table 1 and immediately install blank flanges and gaskets over openings and secure each flange 180 degrees apart with at least two bolts.

3.4 Renewal. The Contractor shall renew all valves identified in Table 1 by an "R" in the "O/ R" column. At no additional cost to the Government, the Contractor may opt to renew valves identified in Table 1 for overhaul by an "O" in the "O/ R" column.

3.4.1 Equivalency. The Contractor shall ensure all renewed valves, including Mil-Std valves, are commercial-standard type valves conforming to the applicable standard listed in Table 1. The Contractor shall ensure each new valve is of identical material and equivalent to the valve it is replacing.

3.4.2 Inspection. The Contractor shall visually inspect the piping and mounting arrangements and submit a CFR detailing any required modifications to accommodate the new valve(s).

3.5 Overhaul. The Contractor shall accomplish the following as required for each valve identified for overhaul, not including valves the Contractor has opted to renew, to meet the specified valve testing standard listed in Table 1.

3.5.1 Disassembly. The Contractor shall disassemble the valve to the extent necessary to perform the required work.

NOTE

Complete disassembly of some valves may not be necessary for overhaul.

3.5.2 Cleaning. The Contractor shall clean all internal surfaces.

3.5.3 Inspection. The Contractor shall visually inspect for defects in body and structural material, surface finish, and the condition of seats, disks, parting faces, plugs, and sealing surfaces.

3.5.4 Machining. As applicable, the Contractor shall machine, grind, lap, and spot-in seat-to-disk to obtain an acceptable leakage rate at or below the valve's industry testing standards identified in Table 1.

3.5.5 Assembly. The Contractor shall assemble the valve using new hardware and software not limited to the following:

- Packing
- O-rings
- Gaskets
- Seal rings
- Non-metallic seats
- Pins
- Washers
- Inserts

3.5.6 Testing. The Contractor shall test each overhauled valve in accordance with the applicable standards listed in Table 1. Submit a CFR.

3.6 Installation. Upon completion of all authorized work, the Contractor shall install all overhauled and renewed valves with renewed gaskets.

3.6.1 Disposal. The Contractor shall remove and dispose of all blank flanges and associated gaskets.

3.6.2 Secure. The Contractor shall secure each valve installation with renewed bolting hardware.

3.6.3 Labeling. The Contractor shall renew all missing and damaged valve label plates, and install new valve label plates on new valves, in accordance with ASTM F992.

3.7 Touch-up preservation. The Contractor shall prepare and coat all new and disturbed surfaces to match existing adjacent surfaces in accordance with SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs.)

3.8 Leak test. After completing all authorized mechanical (i.e. threaded, bolted, etc.) joint repairs, the Contractor shall test the disturbed piping system's operation using the system fluid at normal operating pressure. Ensure zero visible leakage from or deformation of mechanical parts by repairing all leaks and discrepancies. Submit a CFR.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 41: Oily Water Separator, Replace

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to remove the existing oil water separator (OWS) system S1-2T-A and install a new government-furnished Boss® Model 2.2T-107 YM OWS system, including installation of a new overboard discharge.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
N	Boss 2.2 GPM OWS NSN: 4330-01-F13-3461	PN: BOSS 2.2T-107 YM	1 ea.	14,300.00

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 185-001, Rev -, Foundation Incidental to Boss 2.2 GPM OWS Installation

Coast Guard Drawing 175 WLM 202-002, Rev G, MPCMS Wiring Data (COED)

Coast Guard Drawing 175 WLM 256-001, Rev J Seawater Cooling System Diagram

Coast Guard Drawing 175 WLM 262-002, Rev H, Waste Oil System Diagram

Coast Guard Drawing 175 WLM 320-001, Rev AL, Electrical One-Line Diagram

Coast Guard Drawing 175 WLM 320-004, Rev G, Power System Deck Plan ER and Pump Rm Hull Block 920

Coast Guard Drawing 175 WLM 320-012, Rev -, Power System Mods Incidental to OWS Removal/Installation One-Line Diagram

Coast Guard Drawing 175 WLM 593-002, Rev H, Oily Bilge System Diagram

Coast Guard Drawing 175 WLM 593-013, Rev C, BOSS 2.2 GPM OWS Piping Installation

Coast Guard Drawing 175 WLM 593-014, Rev A, OWS System Operating Instructions BOSS 2.2T-107-YM

Coast Guard Drawing 175 WLM 601-001, Rev T, General Arrangement Inboard & Outboard Profiles

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3605A, Nov 2007, MPCMS Operating Manual (Volume 1)
Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements
Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2014, Welding and Allied Processes
Surface Forces Logistics Center Standard Specification 3041 (SFLC Std Spec 3041), 2014, Shipboard Electrical Cable Test
Surface Forces Logistics Center Standard Specification 3042 (SFLC Std Spec 3042), 2014, Shipboard Electrical Cable Removal, Relocation, Splice, Repair, and Installation
Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures
Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2014, Temporary Hull Accesses

OTHER REFERENCES

Recovered Energy, Inc, BOSS 107 Separator System Operation & Maintenance Manual – YM Model

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep. The Contractor shall provide the services of an OEM authorized/ licensed Tech Rep for the Boss® Model 2.2T-107 YM OWS system to accomplish the following on site:

- Provide manufacturer's proprietary system/ equipment information, software, and tools.
- Assist with and ensure compliance with manufacturer's procedures and standards during disassembly, inspection, repair, modification, calibration, and reassembly of the equipment/system.

3.1.2.1 Ensure the Tech Rep is an OEM Certified Representative for the system/equipment stated above.

3.1.2.2 Submit the name of the Tech Rep to the COR at the Arrival Conference.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the following:

- Piping.
- Deck plates.
- Grating.
- Electrical fixtures.

3.1.5 Temporary access openings. With express permission of the KO via submission of a CFR and in accordance with SFLC Std Spec 8636, the Contractor may perform all work required to cut open and close temporary access openings to facilitate accomplishment of the work specified herein.

3.1.6 Electrical work. The Contractor shall accomplish all electrical work in accordance with SFLC Std Spec 3042, and test cables in accordance with SFLC Std Spec 3041. Utilize the existing wire ways for new cable runs as much as possible.

3.1.7 References. The Contractor shall accomplish all work in accordance with the references listed in Section 2 “References”.

3.2 Removals. The Contractor shall accomplish the following:

3.2.1 Disconnect the power cable (3-62-2-1L-M) from the OWS to the power panel (3-62-2, Circuit “M”) and dispose.

3.2.2 Remove reference to the OWS on Circuit “M” of the 120 VAC lighting panel (3-62-2). Furnish and install a new nameplate label titled “SPARE”.

3.2.3 Disconnect the MPCMS alarm cables (K-MPC-R414) and (K-MPC-R442) from the OWS. Tie back existing wires and properly tag/label in support of reconnection.

3.2.4 Cut and cap all existing piping connections to the existing seawater cooling, oily bilge water, OWS discharge, waste oil, and OWS recirculation piping. Refer to Coast Guard Drawing 175 WLM 593-013 for guidance.

3.2.5 Seal all pipe openings using caps for externally threaded connection points, bolt-on blanks, or taped-on discs/covers made of durable plastic or sheet-metal that is no less than 1/16-inch thick.

3.2.6 Remove the existing OWS unit and associated components located in the Engine Room (3-61-0-E). Drain all residual fluids from the OWS and associated piping.

3.2.7 Remove the existing OWS foundation and drip pan. Refer to Coast Guard Drawing 175 WLM 185-001 for guidance.

3.2.8 Dispose of the removed OWS system and associated components in accordance with all applicable Federal, state, and local regulations.

3.3 Inspections. The Contractor shall accomplish the following, submitting a CFR upon completion.

3.3.1 Inspect the exposed hull plating and structural members in the vicinity of the removed OWS for signs of deterioration.

3.3.2 Take a total of 25 UT measurements in accordance with SFLC Std Spec 0740, Appendix C in locations designated by the Coast Guard Inspector.

3.3.3 Inspect all system piping and flanges which interface with the removed OWS for signs of pitting and deterioration.

3.3.4 Inspect the disconnected MPCMS alarm cables for signs of chafing and deterioration.

3.4 Fabrication and installation. The Contractor shall accomplish the following in accordance with Coast Guard Drawings 175 WLM 185-001, 175 WLM 320-012, and 175 WLM 593-013.

3.4.1 Fabricate and install a new OWS foundation.

3.4.2 Fabricate and install a new drip pan.

3.4.3 Modify the grating as necessary to suit the new foundation and OWS.

3.4.4 Install the new government-furnished OWS and associated components.

3.4.5 Install new system piping for the following services:

- Oily water suction piping from the OWS unit inlet oily water connection to the existing oily bilge water system piping.
- Oily water recirculation piping from the OWS unit oily water recirculation connection to the existing oily water recirculation piping system.
- Waste oil piping from the OWS unit dirty oil discharge connection to the existing waste oil system piping.
- Seawater inlet piping from the OWS unit clean water inlet connection to the existing seawater cooling piping.
- Processed water piping from the OWS unit processed water connection to the new overboard discharge connection.
- Dirty oil drain piping from the new drain pan under the OWS unit to the existing waste oil system piping.

3.4.6 Install new LSTNW-4 cable from the 450 VAC power panel (3-62-1) - Circuit “G” existing 15 amp breaker to the OWS.

3.4.7 Locate the disconnected MPCMS cabling and reconnect as follows:

- Cable K-MPC-R414 to voltage free contact, PWR and COM.
- Cable K-MPC-R442 to voltage free contact, PPM ALRM and COM.

3.5 Testing. The Contractor shall accomplish the following:

3.5.1 Hydrostatic test. Hydrostatically test all new piping in accordance with SFLC Std Spec 0740, Appendix C, Hydrostatic Test. Ensure zero leakage from or permanent deformation of pressure containing parts by repairing all leaks, deformations, and discrepancies. Refer to Coast Guard Drawing 175 WLM 593-013 (Sheet 1 – Test Notes). Submit a CFR.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.5.2 Operational test, post installation. After completion of installations and in the presence of the Coast Guard Inspector, thoroughly test and demonstrate the OWS system to be in satisfactory operating condition. Submit a CFR.

- Ensure the OWS can satisfactory operate in recirculation mode.
- Underway testing.
- Ensure zero visible leakage from or deformation of mechanical parts by repairing all leaks and discrepancies.

NOTE

Operational testing shall be performed under direction of the Tech Rep to ensure all system functions are satisfactory.

3.5.2.1 Dry-dock testing.

3.5.2.2 Underway testing.

3.6 Preservation tasks. The Contractor shall accomplish the following:

3.6.1 Foundation preservation, interior. Prepare and coat the interior foundation surfaces in accordance with SFLC Std Spec 6310, using the system specified for "Bulkheads (Bulkheads and Overheads, Uninsulated Metal)": The Contractor shall apply top/ finish coat color as follows: Black.

3.6.2 Piping. Prepare and coat all new and disturbed piping, as applicable, to match existing adjacent surfaces in accordance with SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs).

3.7 Pipe labeling. The Contractor shall label affected piping as follows:

3.7.1 Stencil the following onto the pipe surfaces:

- Name of the piping system service.
- Destination, where feasible.
- Direction of flow, indicated by an arrow three inches long pointing away from the lettering (for reversible flow, point an arrow away from each end of the lettering).

3.7.2 Ensure all lettering and arrow(s) are as follows:

- In general, black color except white for dark-colored piping.
- Applied in conspicuous locations and preferably near control valves.

3.8 Placards. The Contractor shall accomplish the following in accordance with Coast Guard Drawing 175 WLM 593-014.

3.8.1 OWS System Diagram and Operating Instructions. Fabricate and install OWS placards as follows:

- Material: Aluminum per ASTM B209 Alloy 1000 Photosensitive with black lettering

- Size: 8 ½" by 11"
- Quantity: Two placards (One for system diagram, one for operating instructions)
- Text: Refer to Coast Guard Drawing 175 WLM 593-014
- 1st Placard – Sheets 2, 3, & 4
- 2nd Placard – Sheet 5
- Location: Affix in vicinity of OWS using suitable adhesive, as directed by CG Inspector

3.8.2 Overboard Discharge. Fabricate and install an overboard discharge placard as follows (Refer to Figure 1):

- Material: ¼" poly metal (plastic core between two aluminum sheets), red background with 1/8" white lettering
- Size: 5" by 8"
- Quantity: One placard
- Text: Refer to Coast Guard Drawing 175 WLM 593-014, Sheet 2
- Location: Affix in vicinity of newly installed overboard discharge using suitable adhesive, as directed by CG Inspector

NOTE

Existing overboard discharge should have discharge placard installed previously. Notify the CG Inspector if existing placard is missing.

3.9 Redlined drawing deliverable(s). The Contractor shall "red-line" any Coast Guard drawings listed in Section 2 "References" to reflect any work or deviations specified in this work item in accordance SFLC Std Spec 0850.

3.9.1 Preliminary/draft submission. No later than 24 hours after completion of this work item, submit a draft copy of the "red-lined" drawing(s) to the COR for review and approval.

3.9.2 Final submission. No later than 10 calendar days after receiving Coast Guard comments or completion of the availability, whichever occurs first, incorporate all comments and deliver one set of the final red-lined drawing(s) to the COR

4. NOTES

This section is not applicable to this work item.

WORK ITEM 42: Pilothouse Windows, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew listed windows in Pilothouse (02 ½-52-0-C).

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
N	Item 3. 53" W x 72" H Electric Heated Clear Heat Treated Double Pane Window, Hinged Top, Frame 52, 9'-2" off CL, Port	NSN: 2090-01-425-6426	1 ea.	7800.00
N	Item 3. 53" W x 72" H Electric Heated Clear Heat Treated Double Pane Window, Fixed Bottom, Frame 52, 9'-2" off CL Starboard	NSN: 2090-01-425-6426	1 ea.	7800.00
N	Item 5. 61" W x 42" H Electric Heated Clear Heat Treated Window, Top, 5-1/2" Aft Frame 53, 17'-3" off CL Starboard	NSN: 2090-01-425-6462	1 ea.	3250.00
N	Item 10. 60" W x 42" H Electric Heated Clear Heat Treated Window, Hinged, Frame 58, 13'-4" off CL Port	NSN: 2090-01-425-3864	1 ea.	8100.00

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175-WLM-625-001, Rev K, Windows & Port lights Arrangement & Details

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2014, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the following:

- Wiring
- Pilothouse equipment

3.2 Work Location. The concerned work area is the pilothouse (02 ½-52-0-C).with windows as described in the GFP list. See the Coast Guard Drawing 175-WLM-625-001 for guidance and details.

3.3 Window Inspection and Renewal particulars.

3.3.1 Remove the listed windows and framing. Remove and scrap all seals and fasteners as necessary. Remove and retain framing for reinstallation. Dispose of all scrapped components in accordance with all local, state, and federal laws and regulations.

3.3.2 In the presence of the Coast Guard Inspector, inspect window framing and plating around each opening for corrosion and deterioration. Submit a Condition Found Report to the Coast Guard Inspector if additional repairs are required

3.3.3 Windows Installation. Install renewed windows at the previous locations. The Contractor shall fit new windows to frames (may require minor modifications and drilling). Install the windows with a new gasket, new stainless steel mounting hardware, Type 316 and sealing compound in accordance with Coast Guard Drawing 175-WLM-625-001,

3.4_ Touch-up preservation. The Contractor shall prepare and coat all new and disturbed surfaces to match existing adjacent surfaces in accordance with SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs.)

3.5 Acceptance Testing. All acceptance tests shall be performed in the presence of the Coast Guard Inspector. Provide a written report to the Coast Guard Inspector of all test results within one week of test completion.

3.5.1 Water Hose Test. The water hose nozzle shall be no less than ½ inch in diameter and the pressure at the nozzle shall be at least 50 psig.

3.5.2 Prior to testing, conduct a survey to assure that appropriate steps and precautions have been taken to prevent damage caused by spillage or spray of fluids on ship's components and equipment adjacent to the test area. The ship's command duty officer shall be notified of the test and shall also be informed of any personnel accesses or equipment that will be secured during testing. The nozzle man shall be in direct communication with test personnel on the opposite side of the structure under test. Test personnel shall be prepared to contain any fluid leakage that may occur.

3.5.3 Hold the nozzle within 10 feet of the structure under test and direct the water stream in the manner most likely to reveal leakage.

3.5.4 The acceptance criteria for the water hose test shall be no evidence of water on the opposite side of the tested structure.

3.5.5 The ship's command duty officer shall be notified immediately at the conclusion of water hose testing. Ensure that all personnel accesses and equipment secured for testing are returned to the pre-test condition, unless otherwise directed by the duty officer. The Contractor personnel shall not operate ship's machinery.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 43: Vent Space, Deck, Preserve

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to preserve the deck in the following compartments:

TABLE 1

COMPARTMENT NAME	LOCATION	APPROXIMATE SQFT
Vent Space	01-50-0-Q	75

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175-WLM 601-001, Rev T, General Arrangement Inboard and Outboard Profiles

Coast Guard Drawing 175-WLM 516-004, Rev A, HVAC Refrigeration System Piping Arrangement & Details

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2014, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

3.1.1 CIR. The Contractor shall submit a CIR for the inspections listed in the following paragraph(s):

- 3.2 (Substrate ultrasonic thickness (UT) measurement).

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the following:

- Ducting.
- Fans.
- Coolers.

3.2 Ultrasonic thickness (UT) measurement. The Contractor shall take 50 UT measurements in accordance with SFLC Std Spec 0740, Appendix C. Locations shall be designated by the Coast Guard Inspector. Submit a **CIR**.

3.3 Surface preservation. The Contractor shall prepare and coat the vent space deck surfaces using the system specified for “Decks, Metal Interior and Non-Skid Areas (Metal Decks – No Application of Deck Coverings, Steel)” in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems). Select Deck Red (10076) as the topcoat color.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 44: 3rd Level Deck Plate Repair

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to inspect and repair deck plating in the Engine Room (3-61-0-E), Machine Shop (3-42-0-Q) Passageway (3-35-0-L) and Cargo Hold (3-24-0-AA)

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175-WLM 601-01, Rev N, General Arr, Inboard and Outboard Profiles

Coast Guard Drawing 175-WLM 622-01, Rev C, Floor Plates Machy Spaces

Coast Guard Drawing 175-WLM 930-01, Rev K, Hull Block 930 Panels

Coast Guard Drawing 175-WLM 801-15, Rev C, Scantlings, Decks & Platforms

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2014, Welding and Allied Processes.

OTHER REFERENCES

The Society for Protective Coatings (SSPC) Surface Preparation Specification No.11 (SSPC-SP 11), 2012, Power Tool Cleaning to Bare Metal

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep. Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces in the vicinity of the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the below-listed:

- Deck plate fasteners.

3.2 Work location. The concerned work areas are the Engine Room (3-61-0-E), Machine Shop (3-42-0-Q) Passageway (3-35-0-L) and Cargo Hold (3-24-0-AA). See the Coast Guard drawings above for guidance and details.

3.3 Repair particulars. Repair of hinged deck plating in concerned work areas designated in the above paragraph with Stainless Steel hardware.

3.3.1 Plate Inspection. Visually inspect deck plates in the area described in paragraph 3.2 for corrosion and damage, and prepare the cited deck plates in accordance with SSPC-SP 11. The Contractor shall take a total of 20 UT measurements of plating, in locations designated by the Coast Guard Inspector, in accordance with SFLC Std Spec 0740, Appendix C. Use Coast Guard Drawings 175-WLM 622-01 and 175-WLM 930-01 as guidance. Chalk out the boundary of the corroded plating where the remaining thicknesses are less than 75% of the original thickness. Submit a CFR.

3.3.2 Before removing any plating, obtain verification from the Coast Guard Inspector of the chalked out boundary.

3.3.3 Plate renewal. Renew all deck plate hardware / fasteners in Cargo Hold (3-24-0-AA) with stainless steel fasteners and hinges. Total cargo hold deck plating is approximately 45-square feet. Renew 30’sqft of individual deck plates “chalked out area” in accordance with Coast Guard Drawings 175-WLM 801-15, 175-WLM 622-01 and 175-WLM 930-01.

3.3.4 New deck plate shall be of similar material and mechanical properties as the original material. Submit a Condition Found Report to the Coast Guard Inspector if additional repairs are required.

3.4 Preservation. The Contractor shall prepare and coat all new and disturbed interior surfaces to match existing adjacent surfaces, in accordance with SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems) as applicable.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 45: Hydraulic Piping End Fitting, Repair

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to repair the leaking end fitting of the ¾" hydraulic piping using a mechanically attached fitting (MAF).

NOTE

The existing piping is "dead-headed" by a welded end fitting and currently leaking. The intent of this work item is to repair the leak using a MAF to prevent the need for hotwork and gas-freeing. Refer to the figures contained in Section 4 "Notes" for additional information.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175-WLM 556-001, Rev L, Hydraulic System Diagram

Coast Guard Drawing 175-WLM 601-001, Rev L, General Arrangement and Inboard and Outboard Profiles

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

OTHER REFERENCES

ASTM International (ASTM) F1387-99, 2012, Standard Specification for Performance of Piping and Tubing Mechanically Attached Fittings

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the following:

- Hydraulic fluid.

3.1.5 Operational test, initial. Prior to commencement of work, the Contractor shall witness Coast Guard personnel perform an initial operational test of all items or shipboard devices to be disturbed, used, repaired, or altered, to demonstrate existing operational condition. Submit a CFR.

3.2 Fluid handling. The Contractor shall drain and dispose of all residual fluids in the piping system in accordance with all Federal, state, and local rules and regulations.

3.3 Work to be accomplished. The Contractor shall accomplish the following, referring to the references listed in Section 2 “References” and the figures included in Section 4 “Notes”.

3.3.1 Inspection. Inspect the surrounding hydraulic piping for signs of deterioration and corrosion. Submit a CFR.

3.3.2 Repair.

3.3.2.1 Remove the existing welded end T fittings (2ea).

3.3.2.2 Install (2ea) mechanical-attached straight fittings (MAF) conforming to ASTM F1387 in-place of the removed “T” fittings.

3.4 Leak test. After all authorized repairs of mechanical (i.e. threaded, bolted, etc.) joints, the Contractor shall perform an operational test of the system using the system fluid at normal operating pressure. Be aware that no visible leakage or deformation is acceptable. Repair all leaks and discrepancies found. Submit a CFR.

3.5 Touch-up preservation, general. The Contractor shall prepare and coat all new and disturbed piping surfaces, as applicable, to match existing adjacent surfaces in accordance with SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs.)

4. NOTES

4.1 Figures.

FIGURE 1: "T" FITTINGS (2EA) WITH STRAIGHT FITTINGS)

*

WORK ITEM 46: Bilges, Preserve

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to preserve the bilge surfaces (as designated by a CG representative) for the locations and frames identified in Table 1.

TABLE 1 - BILGES

CLASS/HULL #	LOCATION	APPROX SQFT	CG DRAWING(S)	INTERFERENCES
175 WLM	Propulsion Thruster Room (3-88-0-E)	530 sf	175 WLM 601-003; 175 WLM 801-019	Deck plates/grating. Bilge level sensors. Piping. Machinery.
175 WLM	Machine Shop (3-42-0-Q)	287 sf	175 WLM 601-003; 175 WLM 801-019	Deck plates/grating. Bilge level sensors. Piping. Machinery.
175 WLM	Pump Room (3-79-0-E) Include deck and bilges.	800 sf	175 WLM 601-003; 175 WLM 801-019	Deck plates/grating. Bilge level sensors. Piping. Machinery.
175 WLM	Potable Water Equipment Room (3-42-1-L)	150 sf	175 WLM 601-003; 175 WLM 801-019	Deck plates/grating. Bilge level sensors. Piping. Machinery.
175 WLM	Engine Rm (3-61-0-E)	1000 sf	175 WLM 601-003; 175 WLM 801-019	Deck plates/grating. Bilge level sensors. Piping. Machinery.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 601-003, Rev N, Booklet of General Plans

Coast Guard Drawing 175 WLM 801-019, Rev C, Shell Expansion

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2014, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to those listed in Table 1.

3.2 Surface preservation. The Contractor shall clean, prepare, and coat the designated bilge surfaces, including all adjacent structural members, using the system specified for “Bilges, Cofferdams, and Forepeaks, Steel”, in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems). Select the following:

- Option II system.
- Top /finish coat color: Red (20152)

WARNING

Abrasive-blasting is not permissible in a machinery spaces.

3.2.1 Remove and dispose of all bilge contaminants from the identified surfaces in accordance with all federal, state, and local regulations.

3.3 In-process quality control measures. The Contractor shall abide by all the safety, preservation, and quality control requirements specified in SFLC Std Spec 0000, paragraph 3.2.4.2 (In-process QC measures for "critical-coated surfaces).

NOTE
Surfaces being preserved are considered "critical-coated surfaces".

4. NOTES

This section is not applicable to this work item.

WORK ITEM 47: Provide Access to Various Compartments for Ship's Structure and Machinery Evaluation Board (SSMEB) Inspection

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to provide access to various compartments and locations throughout the vessel to allow Coast Guard personnel to conduct a Ship's Structure and Machinery Evaluation Board (SSMEB) Inspection and to restore the removed components to original configurations, after the Coast Guard inspections have been completed.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175-WLM 601-001, Rev T, General Arrangement – Inboard and Outboard Profiles

Coast Guard Drawing 175-WLM 601-003, Rev N, Booklet of General Plans

Coast Guard Drawing 175-WLM 631-001, Rev D, Painting Schedule (551)

Coast Guard Drawing 175-WLM 631-002, Rev E, Painting Schedule (552 ON)

Coast Guard Drawing 175-WLM 635-001, Rev F, Hull Thermal & Acoustic Insulation Schedule

Coast Guard Drawing 175-WLM 801-018, Rev B, Scantling Profile

Coast Guard Drawing 175-WLM 801-019, Rev C, Shell Expansion

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2014, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR. The Contractor shall submit a CIR for the inspections listed in the following paragraph(s):

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

3.2 SSMEB inspection particulars.

3.2.1 SSMEB work scheduling.

3.2.1.1 The Contractor shall be aware that all work specified herein, including the Coast Guard inspections, shall be completed within the first 25% of the original contract period. Consequently, the Contractor shall determine when the SSMEB fits best into the first 25% of the contract period's production schedule, and allot on the planning document the necessary time for the completion of the tasks specified herein.

3.2.1.2 The time allotted shall consider and reflect that the SSMEB inspections may take up to three full days. Notify the COR of the allotted time within 48 hour of contract period. During periods when the SSMEB board is performing inspections of a compartment, the Contractor shall ensure that no other work is ongoing inside or on the boundaries of that compartment.

3.2.2 Joint compartment walkthrough inspection.

3.2.2.1 On the day of the Arrival Conference, the Contractor, accompanied by Coast Guard Inspector, shall conduct a walkthrough inspection of all spaces affected by this work item. This inspection shall identify the specific vessel components to be removed and reinstalled, as specified herein. Additionally, any equipment requiring operational testing prior to removal shall be identified.

3.2.2.2 The Contractor shall document, with photographic equipment or some other method, the locations and configurations of interferences to be removed and reinstalled. The Contractor can expect to remove a total of up to eight joiner panels in compartments above the waterline designated by the Coast Guard Inspector on the exterior bulkheads, i.e., one port side and one stbd side on the main deck, 01 level, and 02 level. In addition, the Contractor can expect to remove up to 25 square feet of insulation, i.e., one square foot at a time as designated by the Coast Guard inspector, in order to gain access and inspect the

steel structure. Further, the Contractor shall inspect all compartments and tanks at and below the waterline.

3.3 SSMEB work requirements. The Contractor shall accomplish the following to facilitate the SSMEB inspections:

3.3.1 Tank entry. Tank entry shall only be completed during a dry-dock availability, not during a dockside availability. Empty, clean, and certify "SAFE FOR WORKERS" all tanks (fuel, potable water, ballast, lube oil, and sewage) and voids on the cutter.

NOTES

1. **The costs associated for accomplishment on tanks and voids opened as a result of separate "Clean and Inspect" work items contained within this specification package shall be included in those base work items.**
1. **Tanks and voids will be available for entry throughout the SSMEB inspection unless closure is authorized by the Coast Guard.**

3.3.2 Interferences. The contractor shall be aware that interferences in the way of work include, but are not limited to the following: shelving, piping, light fixtures, smoke detectors, electrical wiring, junction boxes, electrical receptacles, electrical switches, window frames, window blinds, computer hardware, cabinets, berthing racks, lockers, pumps, strainers, tanks, deck plates, various machinery, various piping, searchlight control assemblies, insulation, electric heaters, ducting, fan coil units, speakers, bench seats, television/VCRs, microwave oven, drawing board, knife storage box, bulletin boards, brackets and desks.

3.3.2.1 Prior to removal of any operating equipment, witness Coast Guard personnel perform an initial operational test of all items or shipboard devices designated for removal, to demonstrate existing operational condition. Submit a CFR.

NOTES

Coast Guard personnel will operate all shipboard machinery and equipment.

3.3.3 Ultrasonic thickness (UT) measurement. Take a total of 200 UT measurements in accordance with SFLC Std Spec 0740, Appendix C in locations designated by the Coast Guard Inspector, using the Coast Guard drawings listed in Section 2 "References" as guidance. Submit a CFR with all UT readings recorded no later than 1 day after completion of SSMEB inspections.

3.3.3.1 In addition to the UT measurements, take a total of 50 pit-depth measurements, using a suitable pit depth gauge.

3.4 Restorations. Upon completion of the SSMEB Inspection, the Contractor shall accomplish the following.

- Reinstall all removed equipment and components.
- Renew all removed insulation in accordance with CG Drawing 175-WLM 635-001.
- Close all tanks, unless required to remain open for accomplishment of other related work items in this specification package.

3.4.1 After reinstallation, witness Coast Guard personnel perform a final operational test of all items or shipboard devices removed as a result of this work item. Submit a CFR.

3.4.2 Prepare and coat any disturbed surfaces to match existing adjacent surfaces in accordance with SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs.)

4. NOTES

4.1 SSMEB objective. The objective of a SSMEB is to determine the condition and estimate the remaining service life of the vessel and its component systems. This is accomplished by close visual inspection of various compartments and locations and use of non-destructive testing. The visual inspections are conducted exclusively by the Coast Guard.

4.2 SSMEB Board-Contractor cooperation. The SSMEB Board Chairman will work closely with the Contractor, dockside COR, and SSMEB COR to ensure successful and timely completion of the work specified herein.

4.3 Unit responsibility. The vessel's crew will remove and reinstall all loose gear in way of work.

4.4 Electrical components. For the purposes of this work item, these may be defined as any item related to the creation, transmission, control, or usage of electrical power onboard, to include but not limited to: electrical cables, cable runs, power outlets, power distribution equipment, motor controllers, junction boxes, and switches.

WORK ITEM 48: Sea Bay, Preserve - Partial

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to perform partial preservation of interior surfaces of the Sea Bay System.

1.2 Government-furnished property.

None

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 256-004, Rev J, Sheets 5 and 13, Seawater Cooling System A & D, Hull Blocks 940-970

Coast Guard Drawing 175 WLM 256-013, Rev -, Sea Bay Thermometer Installation

Coast Guard Drawing 175 WLM 505-003, Rev A, Sea Connection Arrangements

Coast Guard Drawing 175 WLM 633-001, Rev D, Cathodic Protection

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2014, Temporary Hull Accesses

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures - general. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces in the vicinity of the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the below-listed:

- Seawater piping.
- Chlorinator unit.
- Temperature sensor.

3.1.5 Temporary access openings. With express permission of the KO via submission of a CFR and in accordance with SFLC Std Spec 8636, the Contractor may perform all work required to cut open and close temporary access openings to facilitate accomplishment of the work specified herein.

3.2 Sea Bay and piping preservation. The Contractor shall prepare and coat up to 33 % of interior surfacesof the Sea Bay, including all accessible associated piping, using the coating system specified for "Underwater Water (U/W) Body and Boot-Top (U/W Body and Boot-Top, Icebreaker <235', in Salt Water)", in SFLC STD SPEC 6310, Appendix A (Cutter and Boat Exterior Painting Systems). Submit a CFR for preservation additional surfaces up to 33% of the Sea Bay.

3.3 In-process quality control measures. The Contractor shall abide by all the safety, preservation, and quality control requirements specified in SFLC Std Spec 0000, paragraph 3.2.4.2 (In-process QC measures for "critical-coated surfaces).

NOTE
Surfaces being preserved are considered "critical-coated surfaces".

4. NOTES

4.1 Location. The Sea Bay is located centerline in the Engine Room, at Frame 68 – as shown on Coast Guard Drawing 175 WLM 633001, Sheet 3; and has one access - an 18" x 15" manhole on the top; dimensions are approximately 40" longitudinally, 72" transversely, and 33" vertically.

WORK ITEM 49: Sea Bay, Clean and Inspect

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean and inspect the Sea Bay System.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 256-004, Rev J, Sheets 5 and 13, Seawater Cooling System A & D, Hull Blocks 940-970

Coast Guard Drawing 175 WLM 256-013, Rev -, Sea Bay Thermometer Installation

Coast Guard Drawing 175 WLM 505-003, Rev A, Sea Connection Arrangements

Coast Guard Drawing 175 WLM 633-001, Rev D, Cathodic Protection

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2014, Welding and Allied Processes

OTHER REFERENCES

ASTM International (ASTM) D1330, 2004, Standard Specification for Rubber Sheet Gaskets

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

Paragraph 3.2.3 "Inspections".

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures - general. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces in the vicinity of the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the below-listed:

- Seawater piping.
- Chlorinator unit.
- Temperature sensor.

3.1.5 Piping isolation. If this item is scheduled to be accomplished while the cutter is pier side, the Contractor shall submit a piping isolation plan to the COTR, within 24 hours before work is begun, Upon approval of isolation plan, then proceed with isolating the piping system.

NOTE

Piping isolation is required to prevent compartment flooding. Additionally, due to space limitations, it may be necessary to remove/reinstall piping to facilitate access.

3.2 Requirements. The Contractor shall accomplish the following tasks:

3.2.1 Content removal. Remove the manhole cover and drain all fluids within the sea bay and the associated piping. Dispose of all removed fluids in accordance with all applicable Federal, state, and local regulations.

3.2.2 Cleaning.

3.2.2.1 Clean all interior surfaces of the sea bay (including all accessible interior and exterior piping surfaces) to completely remove all visible marine growth, loose rust, loose mill scale, loose coatings, and other foreign materials such as sediment or sludge. Remove all persistent residues, taking care not to damage the coating system.

3.2.2.2 Remove cleaning media and residues continuously from the sea bay during the washing process. Remove all residual wash media and wipe up residual moisture with clean cloths. Collect, contain, and dispose of all wash media, residues, and cleaning materials in accordance with all Federal, state, and local regulations.

3.2.2.3 After cleaning, visually inspect all sea bay and associated piping surfaces; submit a CFR .

3.2.2.4 Renew all disturbed gaskets and seals.

3.2.3 Inspection. Visually inspect all sea bay interior surfaces and manhole cover surfaces for damage and deterioration; and submit a CIR, to include but not be limited to, the following:

- Degree of fouling; quantity of marine growth present.

- Structural condition.
- Condition of manhole cover (to include fasteners and gasket seating surfaces).
- Piping condition.
- Coating system condition.
- Inaccessible areas, if any.
- Percent deterioration of zinc anodes.

3.2.3.1 Ultrasonic thickness (UT) measurement. The Contractor shall take a total of 50 UT measurements in accordance with SFLC Std Spec 0740, Appendix C in locations designated by the Coast Guard Inspector and using Coast Guard Drawing listed in Section 2 “References” as guidance. Submit a CIR.

3.2.3.1.1 In addition to the UT measurements, take a total of 40 pit-depth measurements, using a suitable pit depth gauge

3.3 Sea bay closing. After all authorized repairs, in the presence of the Coast Guard Inspector, the Contractor shall reinstall the sea bay manhole cover with new gasket material conforming to ASTM D1330.

4. NOTES

4.1 Location. The Sea Bay is located centerline in the Engine Room, at Frame 68 – as shown on Coast Guard Drawing 175 WLM 633001, Sheet 3; and has one access - an 18" x 15" manhole on the top; dimensions are approximately 40" longitudinally, 72" transversely, and 33" vertically..

WORK ITEM 50: Tanks (Ballast), Preserve "100%"

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to prepare and coat 100% of the surfaces of the following tank(s):

TABLE 1 - TANKS

TYPE OF STRUCTURE	LOCATION	CAPACITY - 95% (GALLONS)	LOW SUCTION (GALLONS)
Forepeak Ballast Tank	3-0-0-V	3,143	166
Ballast Tank	3-35-6-V	7,525	397
Ballast Tank	3-35-1-V	7,525	397

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 601-003, Rev F, Booklet of General Drawings (552-564)

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2014, Temporary Hull Accesses

OTHER REFERENCES

ASTM International (ASTM) D1330, 2010, Standard Specification for Rubber Sheet Gaskets

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

3.1.5 Temporary access openings. Due to limited access to work areas, the Contractor may, with express permission of the KO (via submission of a CFR), cut access holes to facilitate accomplishment of the work specified herein. Perform all work required to open and close the access openings in accordance with SFLC Std Spec 8636.

NOTE

Any ballast tanks being listed for preservation will have been pumped down to low suction by ship's force prior to arrival at the Contractor facilities.

3.2 Content removal. The Contractor shall remove and dispose of all fluids and/or residues in accordance with all applicable Federal, state, and local regulations. Plug all inlet and outlet piping in the tank to prevent contaminants from entering the tank. Use plugs with an attached lanyard, ring or other system that will ensure plugs are not lost in the pipe openings. Maintain a plug accountability log outside the tank(s) to prevent any of the installed temporary plugs from being lost inside the tank or forgotten inside at tank closure.

3.2.1 Surface preservation. The Contractor shall accomplish the following tasks for the tanks listed in paragraph 1.1 (Intent):

3.2.2 The Contractor shall remove and retain the tank manhole cover(s).

3.2.3 The Contractor shall prepare and coat all tank interior surfaces (including internal surfaces of manhole cover(s), manhole cover hull ring(s) extending outward to the weld line that ties the hull ring into the tank plating on the tank exterior) using the system specified for "Tanks and Voids, Ballast Tanks; Option I or II " in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems). Select finish/top coat color to match existing.

3.2.4 The Contractor shall prepare and coat all manhole cover external surfaces to match existing adjacent surfaces, using the system specified for “Decks, Metal Interior and Non-Skid Areas (Steel and Aluminum Decks - Wet Areas, Food Preparation Areas, Exit Areas, and Areas Subject To Condensation)”, in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems). Select finish/top coat color to match existing adjacent surfaces.

3.3 In-process quality control measures. The Contractor shall abide by all the safety, preservation, and quality control requirements specified in SFLC Std Spec 0000, paragraph 3.2.4.2 (In-process QC measures for “critical-coated surfaces).

NOTE

Surfaces being preserved are considered “critical-coated surfaces”.

3.4 Inspection. After surface preparation and before coating application, the Contractor shall visually inspect all tank interior and manhole cover surfaces; including, but not limited to bulkheads, floor and overhead plating, structural members, fasteners and gasket seating surfaces. Submit a CFR including the following, as applicable:

- Structural condition.
- Inaccessible areas.
- Tank level indicator (TLI) and/or float switch condition.
- Sounding tube and striker plate condition.
- Suction and discharge piping.
- Fastener condition.

3.5 Tank closing. The Contractor shall ensure that the tank(s) remain open for at least 24 hours after completion of the tasks specified above. Notify the COR at least 24 hours prior to closing the tank(s). After satisfactory inspection by the Coast Guard Inspector and after all authorized repairs, accomplish the following:

- Reinspect all TLIs, as applicable, to verify proper operation. Submit CFR.
- Close tank manhole cover(s) with new gasket material conforming to ASTM D1330 and new cotton grommets on all studs (as applicable).

3.5.1 The Contractor shall renew up to 10% of missing or damaged nuts and washers.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 51: Goose Neck Vent Pipes, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew the Goose Neck Vent Pipes on the weather decks.

1.2 Government-furnished property.

None

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175-WLM 506-1, Rev G, Overflows, Air Escapes & Sounding Tubes Diagrams

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2014, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

OTHER REFERENCES

The Society for Protective Coatings (SSPC) Surface Preparation Specification No.11 (SSPC-SP 11), 2004, Power Tool Cleaning to Bare Metal

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Protective measures. The Contractor shall furnish and install suitable covering to seal off and protect all non-affected surfaces/equipment and spaces in the vicinity of the work area against contamination during the performance of work. Upon completion of work, remove protective material

and inspect for the presence of contamination. Clean all equipment and spaces, contaminated due to improper protection, to original condition of cleanliness.

3.1.3 Interferences. The Contractor shall be aware that interferences in way of work include, but are not limited to the below-listed. Handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences):

- Ventilation ducting.
- Piping.
- Deck drains.
- Electrical wiring.

3.2 Goose Neck Vent Pipes Renew. The Contractor shall perform all tasks specified in SFLC Std Spec 074 and herein, to renew the vent in the locations specified in Coast Guard Drawings 175-WLM 506-1 and 175-WLM 506-7.

VENTS	LOCATIONS	COFFERDAM/COAMING	SIZE (INCH)
BOV	Main deck FR.41-40	No cofferdam	2.5
BOV	Main Deck FR 41-40	No Cofferdam	2.5

3.2.1 Where possible, cut all edges along existing seams. Corners shall intersect plating seams at 90 degree angles. Corners that are not formed by designed plating seams shall have a minimum radius of, three inches, or one-eighth of the transverse dimension of the cut, whichever is greater.

3.2.2 Ensure that welding does not warp or cause any distortion to adjacent plating.

3.2.3 Work areas are in location (buoy deck).

3.3 Crop out and retain the vent for used as templates in accordance SFLC Std Spec 0740.

3.4 Crop out and scrap approximately 4’ of each vent and its vent closure in accordance with SFLC Std Spec 0740 and Coast Guard Drawing 175-WLM 506-1 and 175-WLM 506-7.

3.5 Install new vent and vent closure with material type and size in according to Coast Guard Drawing 175-WLM 506-1.

3.6 Weld Joint Inspections

3.6.1 In the presence of the Coast Guard Inspector, visually inspect and perform a magnetic particle test on 10% all new welds in accordance with AWS D1.1. Test acceptance standards shall be in accordance with AWS D1.1. Repair all weld deficiencies and retest.

3.6.2 Upon completion of all welding, perform a liquid film bubble emission test on all water tight boundaries (hull plating welds) in accordance with SFLC Std Spec 000.

3.7 Provide a written report of all nondestructive test findings to the Coast Guard Inspector.

3.8 Surface Preparation – Upon completion of successful nondestructive testing, prepare all new and disturbed exterior areas in accordance with SSPC-SP 10. Prepare all new and disturbed interior areas in accordance with SSPC-SP 11. Feather the surrounding surfaces to obtain a 3-inch wide smoothly tapered boundary from the existing paint to the prepared surface.

NOTE

Where applicable, prepare all affected steel surfaces, including areas designated for UT inspections, to "bare metal" (SSPC-SP 11, with a minimum 1.0 mil anchor profile).

3.8.1 Prior to applying any paint, remove all dust, grease, oil, or other contaminants from all prepared areas in accordance with applicable local, state, and federal laws and regulations.

3.8.2 The Coast Guard Inspector will verify all surface preparation.

3.8.3 Upon verification from the Coast Guard Inspector on all surface preparation, prime and coat all prepared surfaces to match existing adjacent surfaces in accordance with the applicable sections of General Requirements. For surfaces to be covered with insulation, apply primer coats only.

3.9 Coat newly installed insulation in accordance with General Requirements.

3.10 Restore all interferences to their original condition in accordance with the General Requirements.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 52: 175' WLM H2S Gas Detector, Replace.

1.1 Intent. This work item describes the requirements for the Contractor to replace the existing H2S Gas Detection Alarm with the new model (Detcon Model X40-08-N4X) on the 175-Foot WLM Keeper Class.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
N	Model X40-08-N4X, Gas Detection & Alarm Control System	NSN: 6320-01-F19-5650 DETCON PN: 954-X08000-024	1 ea.	1,250.00
N	Electraray® rotating warning light, amber, 120VAC	NSN: 6210-01-454-4748 Federal Signal PN: 225-120A	1 ea.	176.69
N	SONALERT 120VAC 80 – 95dB, D Case Style, Type SC110N	NSN: 6350-01-196-0142 Newark PN: 64F276	1.ea.	48.77

***Government-loaned property, which shall be returned to the vessel upon completion of the availability.**
****New or refurbished equipment that the Government may provide for installation in place of existing equipment.**
*****Government-furnished property, which is to be supplied by either the vessel or the C4IT Service Center.**

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175-WLM-436-004, Rev. F, C02 RELEASE & H2S ALARM SYSTEM BLOCK, ISO & ELEMENTARY WIRING DIAGRAM

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3622, SWBS 436, Section C, Nov. 2, 2018, H2S Alarm System

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

OTHER REFERENCES

IEEE-STD-45, 11 Oct 2002, Recommended Practice for Electrical Installations on Shipboard

Naval Ships Technical Manual (NSTM) Chapter 074 Volume 3, 01 Aug 2011, Gas Free Engineering, Appendix G, PERMISSIBLE EXPOSURE LIMITS (PEL)

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep. Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the following:

- Sheathing
- Bulkhead insulation
- Piping
- Electrical wiring

3.2 Equipment Removal. The Contractor shall:

3.2.1 Remove the Sonalert annunciator from the existing H2S Control System and retain for reinstallation.

3.2.2 Disconnect the cables (K-MPC-R425, C-3AV1, C-3AV2, & C-3AV) from the existing H2S Control System (110A-FB or 140-N4X) that connect to the MPCMS, remote alarm station, the sensor assembly, and the power supply respectively. See CG DWG 175-WLM-436-004, sheet 5. Coil cables back for reuse in replacement X40 Control System.

3.2.3 Remove the nylon stuffing tubes from the existing H2S Control System and retain for reinstallation.

3.2.4 Disconnect, remove and retain the existing H2S Control System.

3.3 Equipment Installation. The Contractor shall:

3.3.1 Drill the required mounting holes in the X40 Control System housing to attach the beacon, Sonalert annunciator and the terminal strip, using the 110A-FB Control System housing as a template.

3.3.2 Drill the required holes for the stuffing tubes (removed in Paragraph 3.2.3) using the existing 110A-FB Control System as a template. The stuffing tube for K-MPC-R425 should be closest to the door hinge. Install stuffing tubes in holes to maintain watertight integrity in accordance with IEEE-STD-45.

3.3.3 After using the obsolete 110A-FB Control System as a template in Paragraphs 3.3.1 and 3.3.2 , dispose of in accordance with SFLC Standard Spec 0000 and local procedures.

3.3.4 Attach the beacon, Sonalert annunciator (from paragraph 3.2.1) and terminal strip to the enclosure. Seal openings to maintain the watertight integrity in accordance with IEEE-STD-45. See Figure 1.

3.3.5 Install the internal wiring in accordance with CG DWG 175-WLM-436-004. See Figure 2.

3.3.6 Mount the X40 Control System in the same location of the obsolete H2S Control System. Mounting dimensions are shown in Figure 3.

3.3.7 Install the cables (disconnected in step 3.2.2) in the bottom of the enclosure thru the stuffing tubes (installed in step 3.3.2). Reconnect the cable wires in accordance with CG DWG 175-WLM-436-004, Rev. F, sheet 5, Model X40-08-N4x Elementary Wiring Diagram and Block Diagram.

3.3.8 Verify that switches SWI-I and SWI-4 on the control board (door of the enclosure) are in the off position. See IEEE-STD-45 paragraph 6.1.

3.3.9 Verify that switch SWI (VAC power) on the motherboard (back of the enclosure) is on, and that switches SW3 (Battery) and SW4 (VDC power) are off. Set switch V-SELECT to appropriate input AC voltage (115 V). See IEEE-STD-45 paragraph 5.

3.3.10 Energize equipment in accordance with SFLC Standard Spec 0000.

3.4 Software Setup. The setup of the controller is critical for proper operation. The Contractor shall refer to the TP 3622_C, Chapter IIA. Model X40-08-N4X, Section 1.8, System Operation and the Menu Flow Chart in Section 1.9, Operator Interface to navigate the program menu setup and make changes.

3.4.1 There are four internal magnetic switches located above the Controller's backlit LCD display necessary to configure the X40 controller :

- PROG,
- Up Arrow,
- Down Arrow
- ENTER (and RESET/ACK from Main Display)

3.4.2 Use a Magnetic Programming Tool (provided with the X40 H2S Controller package) to swipe over the magnetic switches. When the PROG switch is entered from the Main Display, it allows the operator to get into the Main Menu to complete for configuration of the X40 controller.

3.4.3 Operational test. Refer to the Menu Flow Chart specified in Section 3.4 above to run through the Inhibit & Alarm Test and the System Diagnostics procedures.

3.5 Operational test post repairs. The post installation operational test, as directed by SFLC Std Spec 0000, paragraph 3.3.5.1. The Contractor shall witness an operational test post repairs (by Coast Guard personnel) to prove the operating condition of the new X40 H2S Alarm and Detection Control System is satisfactorily functioning. Submit CFR.

FIGURE 1. H2S SENSOR INSTALLED IN THE WLM ENGIN

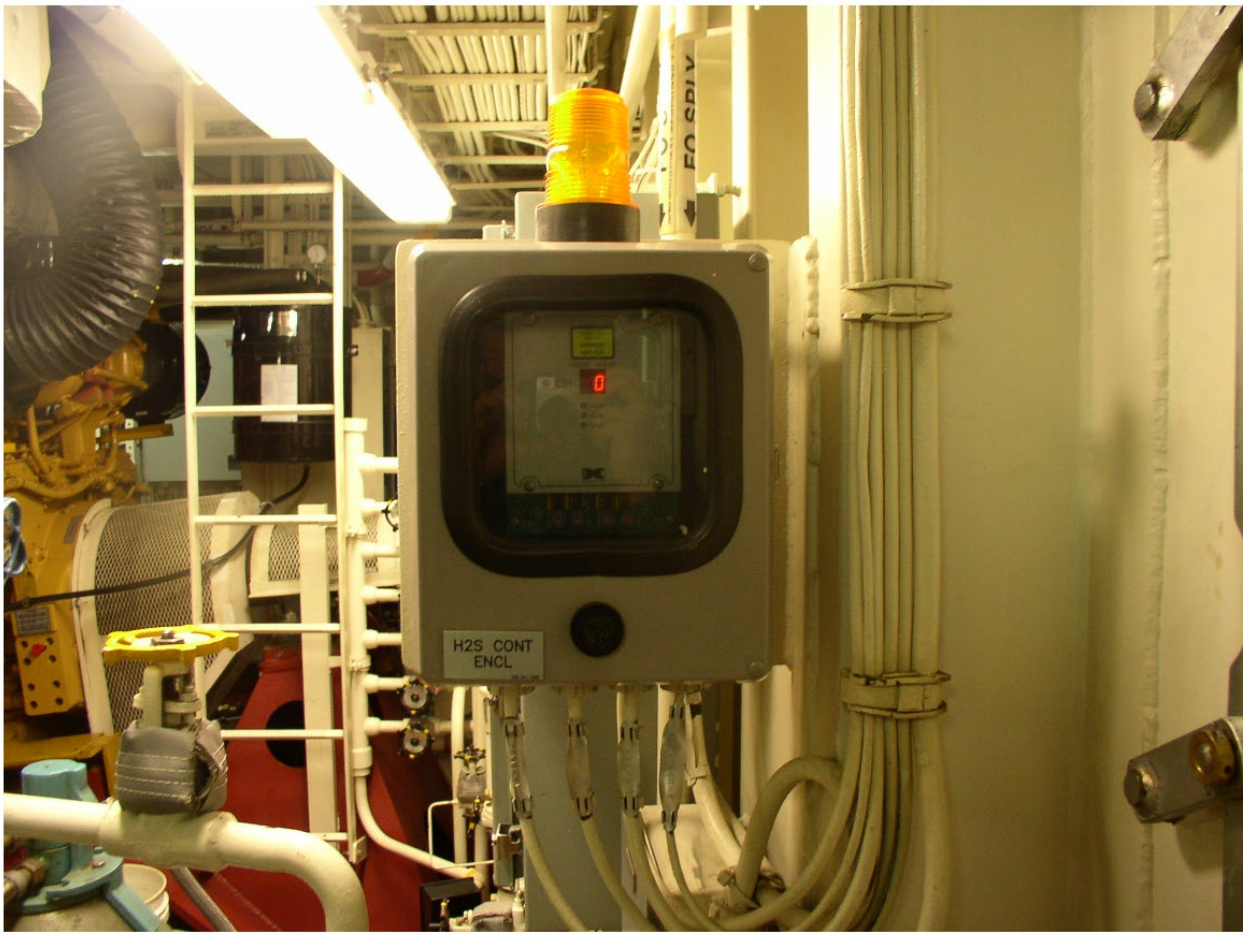


FIGURE 1. E ROOM

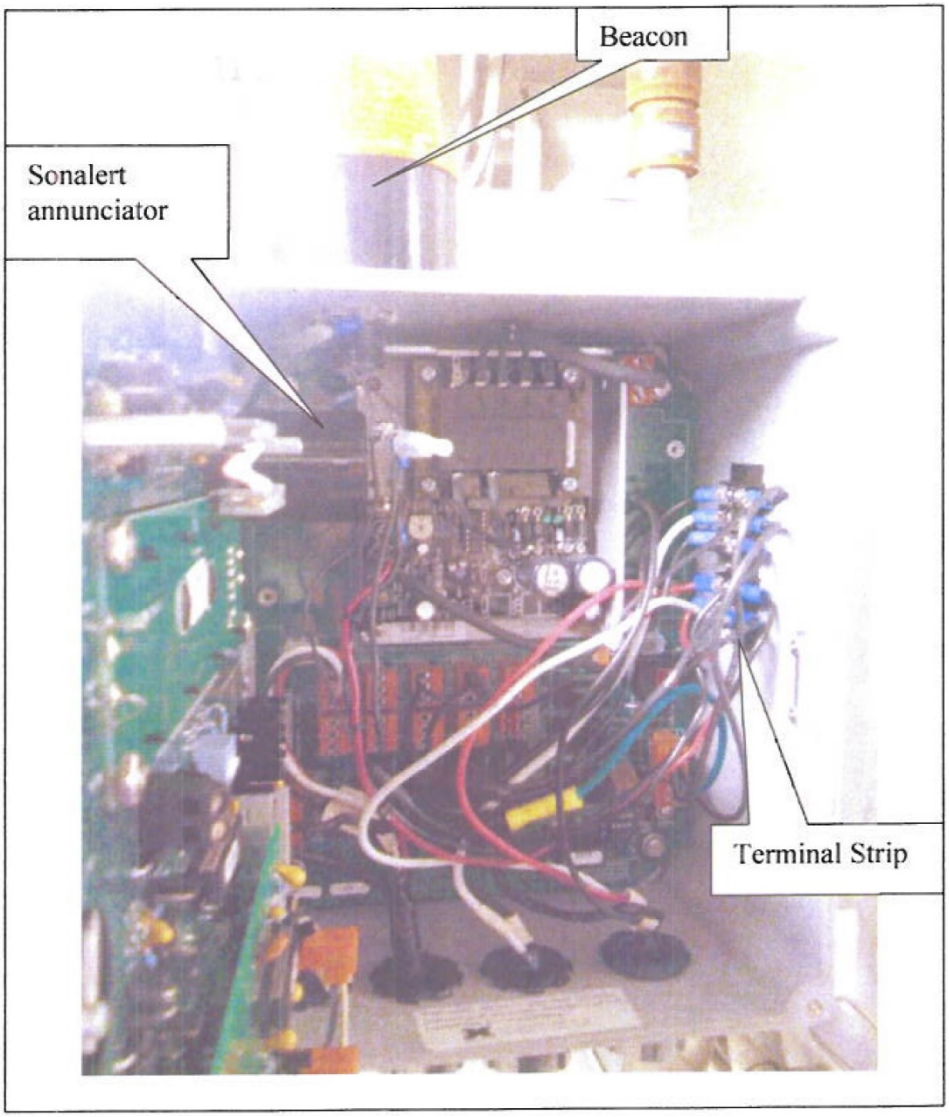


FIGURE 2. COMPONENT ARRANGEMENT

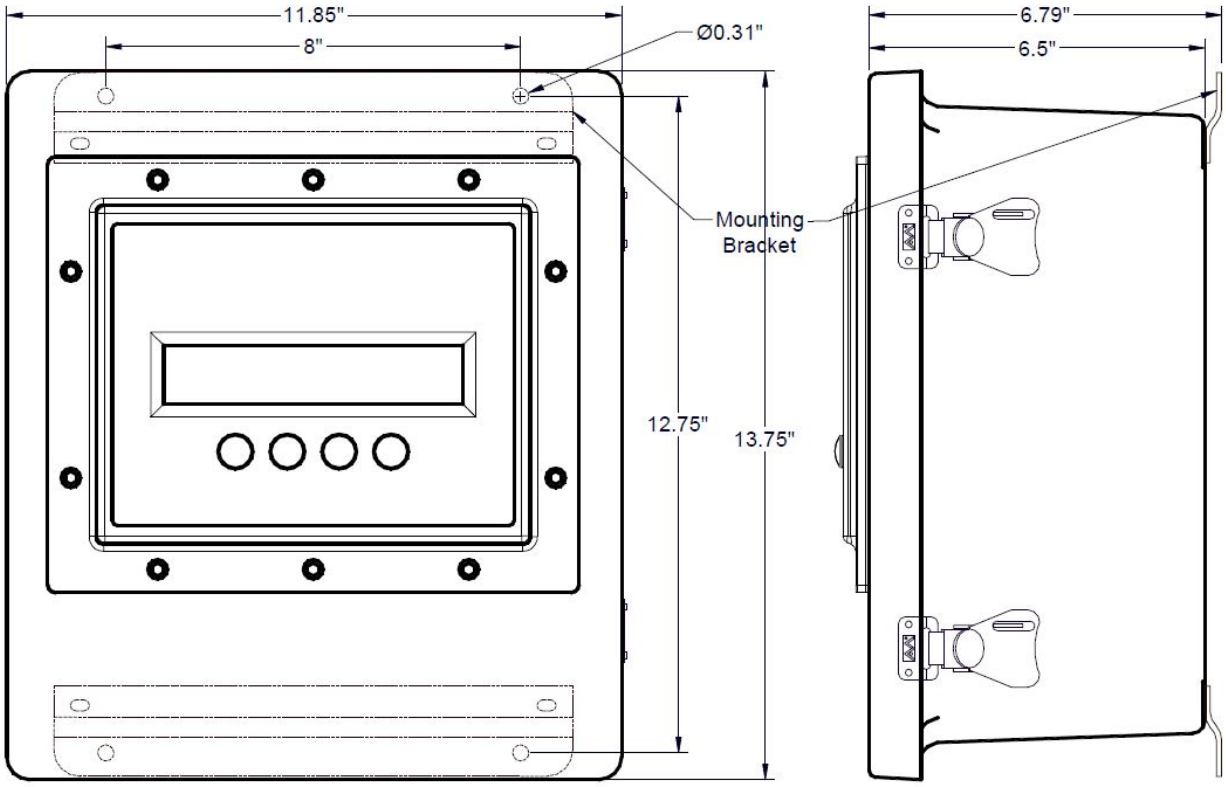


FIGURE 3. X40-08-N4X MOUNTING AND DIMENSIONS

4. NOTES

This section is not applicable to this work item.

WORK ITEM 53: Tanks (Mp Fuel Stowage And Overflow), Clean And Inspect

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean and inspect the following tank(s):

TYPE OF TANK	LOCATION	CAPACITY - 95% (GALLONS)	LOW SUCTION (GALLONS)
Diesel Storage	3-24-2-F	6,247	200

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 541-001, Rev H, Fuel Oil System Diagram

Coast Guard Drawing 175 WLM 541-006, Rev C, Independent Tanks, Emergency Generator Day Tank IIP:7-1

Coast Guard Drawing 175 WLM 601-003, Rev F, Booklet of General Drawings 552-564

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2014, Welding and Allied Processes

OTHER REFERENCES

Federal Specification (Fed Spec) QQ-N-281, Oct 1985, Nickel-Copper Alloy Bar, Rod, Plate, Sheet, Strip, Wire, Forgings, and Structural and Special Shaped Sections

Society of Automotive Engineers (SAE) Aerospace Material Specification (AMS) C6183, 2007, Cork and Rubber Composition Sheet; For Aromatic Fuel And Oil Resistant Gaskets

3. REQUIREMENTS

3.1 General.

3.1.1 CIR. The Contractor shall submit a CIR for the inspections listed in the following paragraph(s):

- 3.7 (Ultrasonic thickness (UT) measurement).

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the below-listed:

- Fuel
- Piping
- Tank access cover

3.1.4.1 Remove up to a total of 5,000 gallons of diesel fuel. Document a complete chain of custody record of the removed tank contents from the vessel to the point of final destination or delivery. Submit document to the COR upon completion of work.

3.1.4.2 Dispose of removed fluids in accordance with all applicable Federal, state, and local regulations.

3.1.4.3 Provide the following to support Coast Guard personnel to refuel equipment:

- boom around cutter
- tagout crane way equipment
- Oil transfer supervisor.

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NOTE

Vessel may come in with less tank fluid contents than specified above.

NOTE

Initial and post repair operational tests apply only to tanks that possess TLIs.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.1.5 Operational test - initial. Prior to commencement of work, the Contractor shall witness Coast Guard personnel test TLIs for tanks listed in paragraph 1.1 (Intent) to demonstrate existing operational condition. Submit a CFR.

3.1.6 Plug log. The Contractor shall keep a written record of all plugs put in any tank vents. A separate list shall be kept for each tank being entered.

3.1.6.1 Ensure that all plugs are removed from each tank upon completion of work in the tank.

3.1.6.2 The plug log shall be available to the Coast Guard Inspector when the inspector is performing his close-out inspection on each tank.

3.2 Cleaning requirements. The Contractor shall refer to Coast Guard Drawings 175 WLM 541-001, 175 WLM 541-006 and 175 WLM 601-003 for guidance. The Contractor shall remove tank cover(s) and clean tank interior surfaces free of all foreign materials, such as residual fuel or water, sediment, sludge, rust, or biological growth, taking care not to damage the coating system (if applicable). Remove cleaning media and residues continuously during the washing process. Remove any residual wash media; and wipe up residual moisture with clean lint-free cloths.

3.3 Tank content and waste disposal. The Contractor shall dispose of residual tank contents and any cleaning fluids in compliance with all applicable Federal, state, and local laws, ordinances and regulations. Document a complete chain of custody record of the removed tank contents and generated wastes, from the vessel to the point of final destination or delivery. Submit document to the COR upon completion of work.

3.4 Inspection. The Contractor shall visually inspect all tank interior surfaces, including, but not limited to bulkheads, floor and overhead plating, structural members, manhole cover surfaces, fasteners and gasket seating surfaces. Submit a CFR including the following, as applicable:

- Tank structural condition.
- Inaccessible areas.
- Condition of tank coating, including; measurements taken, percentage, location, and type of coating failure (if tank interior surfaces are coated).
- Tank level indicator (TLI) and/or float switch condition, as applicable.
- Sounding/vent tube and striker plate condition (including vent check valve and waster piece).
- Suction and discharge piping condition.
- Fastener material and condition (correct fastener material is stainless steel).

3.4.2 Measure up to 10 “pits” within each tank as designated by the Coast Guard Inspector using a Contractor supplied ‘Pit Gauge’. Include pit measurement results in CFR specified above, showing where pit measurements were taken and the depth of the pit.

3.5 Tank closing. The Contractor shall ensure that the tank(s) remain open for at least 24 hours after completion of any KO-authorized repair and preservation procedures. Notify the COR at least 24 hours prior to closing the tank(s). After satisfactory inspection by the Coast Guard Inspector and completion of all authorized repairs, close tank manhole cover(s) with new gasket material conforming to AMS-C-6183. Chase threads on studs to ensure even installation of the access covers. Renew any damaged nuts.

3.5.1 The Contractor shall renew up to 10% of missing or damaged nuts and washers.

3.6 Operational test – post repairs. After completion of work, the Contractor shall witness Coast Guard personnel test all designated tank TLIs and vent check valves to prove satisfactory operating condition. Submit a CFR.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.7 Ultrasonic thickness (UT) measurement. The Contractor shall take a total of 50 UT measurements of tank plating, in locations designated by the Coast Guard Inspector, in accordance with SFLC Std Spec 0740, Appendix C. Submit a CFR.

4. NOTES

4.1. Coast Guard personnel. Coast Guard personnel will operate all shipboard machinery and equipment.

4.2 Tank content removal. The Ship's force will pump down the tanks to the maximum extent possible with the installed pumping system.

4.3 Tank inspection. The Coast Guard Inspector will visually inspect the tank interior immediately prior to closing.

4.4 Tank content restoration. The Ship's force will procure new fluids and refill all tanks at the appropriate time.

WORK ITEM 54: Sw Heat Exchangers; Clean, Inspect And Hydro

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean and inspect the following heat exchanger(s):

TABLE 1 – HEAT EXCHANGERS

DESCRIPTION	LOCATION	QTY
MDE Lube Oil Coolers	Engine Room, 3-61-0-E	2
MDE Jacket Water Coolers	Engine Room, 3-61-0-E	2
SSDG Lube Oil Coolers	Engine Room, 3-61-0-E	3
SSDG Jacket Water Coolers	Engine Room, 3-61-0-E	3
Main Hydraulic System Fluid Cooler	HPU Room, 3-15-0-E	1
Z-Drive Hyd. Fluid Cooler	Prop. Thrust Room, 3-88-0-E	2
Z-Drive Lube Oil Cooler *	Prop. Thrust Room, 3-88-0-E	2

* Gasket part numbers 5330-01-449-2451 and 5330-01-449-2479, 2 each. All other coolers, see Coast Guard drawings for gasket requirements.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
Y	**Z-Drive Lube Oil Cooler	NSN: 4420-01-505-9267	2 ea.	7,725.00
N	Heat Exchanger, Gasket	NSN: 5330-01-449-2451	2 ea.	22.53
N	Heat Exchanger, Gasket	NSN: 5330-01-449-2479	2 ea.	18.66

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 201-001, Rev C, Machinery Spaces Arrangement

Coast Guard Drawing 175 WLM 256-001, Rev J, Seawater Cooling System Diagram

Coast Guard Drawing 175 WLM 256-003, Rev D, Seawater Cooling System FR 61 Forward

Coast Guard Drawing 175 WLM 256-004, Rev J, Seawater Cooling System Arrangements and Details

Coast Guard Drawing 175 WLM 256-005, Rev -, Z-Drive Lube Oil Heat Exchanger Tube Bundle, Replacement and Piping Mods

Coast Guard Drawing 175 WLM 256-012, Rev B, Auxiliary Seawater System Piping Mods

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 5000 (SFLC Std Spec 5000), 2014, Auxiliary Machine Systems

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2014, Temporary Hull Accesses

OTHER REFERENCES

Commercial Item Description (CID) A-A-59588, 2013, Rubber Silicone

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.3.1 Install blanks on the open ends of piping to prevent any contamination or foreign debris from entering the affected systems. Ensure that all cleaning equipment or media used in the cleaning process do not cause any damage to cooler components.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the below-listed:

- Piping and hoses
- Filters
- Deck plating and associated framing
- Electrical cables
- Thermal insulation.

3.1.5 Temporary access openings. Due to limited access to work areas, the Contractor may, with express permission of the KO (via submission of a CFR), cut access holes to facilitate accomplishment of the work specified herein. Perform all work required to open and close the access openings in accordance with SFLC Std Spec 8636.

3.2 Environmental compliance. The Contractor shall dispose of all waste fluids in accordance with all Federal, state and local regulations. Document a complete chain of custody record of the removed tank contents and generated wastes, from the vessel to the point of final destination or delivery. Submit document to the COR upon completion of work.

3.3 Disassemble. The Contractor shall drain and disassemble the designated heat exchangers (see paragraph 1.1 (Intent)) to the extent necessary to perform all work specified herein. Refer to Coast Guard Drawings 175 WLM 201-001, 175 WLM 256-001, 175 WLM 256-003, 175 WLM 256-004, 175 WLM 256-005, and 175 WLM 256-012 for guidance.

3.3.1 Perform all disassembly and reassembly in accordance with manufacturer-recommended procedures using manufacturer-recommended tooling to ensure parts are reinstalled in proper sequence and configuration.

3.4 Inspection. Before cleaning is begun, the Contractor shall visually inspect all heat exchanger surfaces for excessive deterioration and any other defects. Submit a CFR.

3.5 Cleaning requirements. The Contractor shall clean all interior and exterior heat transfer surfaces to a state free of all debris, scale and surface contaminants in accordance with the heat exchanger manufacturer’s recommendations, and in compliance with all Federal, state, and local environmental regulations.

3.5.1 Ensure that chemical cleaners do not damage the environment, heat exchanger or the vessel.

NOTE

Historically, chemical cleaning has been necessary to thoroughly clean most heat exchanger tubes.

3.6 Reassembly. After authorized repairs, if any, the Contractor shall reassemble each heat exchanger.

3.6.1 Renew all software (seals, gaskets, O-rings, lantern rings).

3.6.2 Renew isolation fittings/mounts and fasteners if disturbed. Apply silicone rubber sealant conforming to CID A-A-59588 around all fasteners, nozzles or gaskets that penetrate the hull.

3.6.3 Renew all hoses, thermostats and anodes as applicable.

3.6.4 Refill all heat exchanger fluid levels in accordance with manufacturer and vessel specifications. Prior to recirculation through the engines, the Contractor shall test the jacket water for chloride and nitrite concentrations in accordance with manufacturer recommendations in the presence of the Coast Guard Inspector. Submit a CFR.

3.7 Reinstallation. After completion of testing and all authorized repairs, if any, the Contractor shall reinstall each cooler (if previously removed). Where applicable, renew all zinc electrode plates, gaskets, and recessed hex-head bolts in accordance with the manufacturer's specifications. Apply a copper-based anti-seize compound on all bolts, and torque in accordance with manufacturer's specifications.

3.8 Touch-up preservation, general. The Contractor shall prepare and coat all new and disturbed exterior and interior surfaces, as applicable, to match existing adjacent surfaces in accordance with SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs.)

3.9 Cleanliness requirement. The Contractor shall ensure that all cleaned surfaces are one hundred percent free of debris and surface contaminants. Submit a CFR.

CAUTION

Extreme precaution must be taken to not exceed manufacturer's recommended test pressure during hydrostatic testing.

3.10 Pressure test. After all authorized work is complete and prior to reconnecting the heat exchanger(s), the Contractor shall pressure test each heat exchanger to the manufacturer's recommended test pressure in accordance with the applicable Coast Guard drawing listed under Section 2 (References). In the absence of a specified test pressure noted in the Coast Guard drawing, the Contractor shall pressure test each heat exchanger in accordance with paragraph C2.7 (Heat exchangers and fluid coolers) of SFLC Std Spec 5000. Ensure zero leakage from or permanent deformation of pressure-containing parts by repairing all leaks, deformations, and discrepancies. Submit a CFR.

3.11 Label plates. The Contractor shall attach an anodized aluminum test data plate to each heat exchanger using epoxy resin cement. Ensure that each plate is engraved with ¼-inch high letters, stating the following:

- Test pressure.
- Test date.
- Testing facility.

NOTE

If the heat exchanger design makes mounting a test data plate impractical, the Government reserves the right to request written documentation of the above-listed testing data in lieu of a test data plate, at no additional cost to the Government.

3.12 Leak test. After reconnecting the heat exchanger(s) on the vessel (and post undocking, if applicable), the Contractor shall perform an operational test of the heat exchanger and associated system piping for one hour using the system fluid at normal operating pressure. Ensure zero visible leakage from or deformation of mechanical parts by repairing all leaks and discrepancies. Submit a CFR.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 55: Fathometer Transducer, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew the transducer(s).

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
N	***Fathometer Transducer, Shallow Water, 50-200 kHz (Airmar Technology SS505)	NSN: 5845-01-470-2500	1 ea.	343.63

***Government-furnished property, which is to be supplied by either the vessel or the C4IT Service Center.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 184-001, Rev-, CRP-V850 Transducer Adapter Ring

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2014, Welding and Allied Processes

OTHER REFERENCES

Federal Specification (Fed Spec) HH-P-151, Mar 1991, Packing; Rubber-Sheet, Cloth-Insert

None.

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.3.1 Transducer and lines. Protect all exposed ends of transmission lines, control lines, connectors, and cables from weather, moisture, and physical damage while they are disconnected from the transducer. Take all necessary measures to protect transducer from damage during the performance of work. Inform the COR, in writing, of all damage, if any, that is incurred by the transducer.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

3.2 Transducer renewal particulars. The Contractor shall accomplish the following tasks using Coast Guard Drawing 175 WLM 184-001 for guidance:

3.2.1 Transducer removal. Disconnect and remove the existing fathometer transducers. Retain the mounting hardware for reinstallation. Dispose of the removed transducers.

NOTE

Do not discard any hull ring adapter(s). They are to be reused with the new transducer(s).

3.2.2 New transducer installation. Install new Government-furnished transducer(s), in place of the removed. Reinstall each hull ring adapter and transducer in accordance with the applicable drawing listed in Section 2 (References) using new gaskets, mold release coating, and adhesive sealants. Apply mold release aerosol coating to both adaptor orifice and transducer to facilitate future removal of the transducer from the adaptor ring.

NOTE

A piece of neoprene or a washer may need to be placed at the bottom of the hull ring adaptor to facilitate transducer and bottom of hull ring flushness.

3.2.2.1 Using chocking compound as transducer bedding material, install transducer into hull ring adaptor. After the chocking compound has cured, paint the bottom half of the hull ring adaptor and transducer in accordance with drawing notes.

3.2.2.2 Renew the transducer head to hull ring gasket with new gasket conforming to HH-P-151, Class 4. Using appropriate thickness gasket, place gasket on adaptor plate of transducer; apply ½" bead of marine adhesive on adaptor plate along the inside edge of the gasket. Install transducer flush with hull.

3.2.2.3 Reconnect each transducer cable to its terminal board in the adjacent connection box. Renew all stuffing tube packing and seals. Inspect the connection in the presence of the Coast Guard Inspector. Submit a CFR. If cable renewal is authorized via approved Change Request, cut the transducer cable to length leaving 2-foot service loop in the cable. Ensure cables are installed in a manner to prevent any chaffing which may require new cable way clamps and stuffing tubes.

3.2.2.4 Following completion of transducer installation, fabricate a ¾" × 3" × ¼" aluminum label plate, engraved with ¼-inch high numbers stating the installation date. Affix a label plate, using suitable epoxy cement. Ensure that the label plate is visible and legible, without the need to move equipment or cables.

3.2.2.5 Thoroughly clean the transducer radiating surfaces with a strong solution of household detergent to remove any oil, dirt, and all other surface contaminants.

3.3 Transducer seal. If not waterborne, the Contractor shall inspect the transducer to ensure that its outer circumference is installed flush to the hull ring and the transducer cover plate forms a tight seal with the hull ring. Submit CFR.

3.4 Post installation tests. After completion of work, the Contractor shall accomplish the following tasks, in the presence of the Coast Guard Inspector:

3.4.1 Preliminary leak test. If not waterborne, inspect and perform a water hose test of all affected boundaries in accordance with SFLC Std Spec 0740, Appendix C. If waterborne, slowly back off the emergency cover plate bolts and allow seawater to flood the transducer well. No leakage allowed. Submit a CFR.

3.4.2 Not waterborne. Replace the hull ring set screws with new Monel fasteners, coating the threads with anti-seize compound. Recess the set screws ⅛" and cover with beeswax tallow.

3.4.3 Waterborne. Using a diver, remove and retain the hull ring set screws. Install an emergency cover plate and gasket over the transducer to be renewed. If available, the vessel's emergency cover plate may be used; otherwise a new cover plate shall be fabricated and turned over to the vessel at the completion of the work.

3.4.3.1 Slowly back off the fasteners that normally maintain the transducer pressure boundary to sea. Ensure that any leakage through the emergency cover plate pressure boundary is minor prior to proceeding with transducer removal.

3.4.3.2 Upon completion of work and preliminary leak testing, completely remove the emergency cover plate. Clean all vacated tapped holes of anti-seize compound and beeswax tallow. Chase all threads. Install new Monel set screws in each hull ring, coating the threads with anti-seize compound. Recess the set screws ⅛" and cover with beeswax tallow.

3. 5 Leak repairs. The Contractor shall observe each transducer for leaks during the vessel re-floating process (if dry docked) or emergency cover plate removal (if waterborne). Repair all leaks detected. Submit a CFR.

3.6 Operational test – post repairs. After completion of work, the Contractor shall thoroughly test and prove the transducer(s) to be in satisfactory operating condition. Submit a CFR.

4. NOTES

4.1 Operation of equipment. Coast Guard personnel will operate all shipboard machinery and equipment.

WORK ITEM 56: Potable Water Pneumatic Tank(s), Clean and Inspect

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean and inspect the following potable water pneumatic tank(s):

TABLE 1 – TANKS

SERVICE	LOCATION	CAPACITY (GALLONS)	PRESSURE (PSIG)
Hydro-Pneumatic	3-42-1-E	100	40-65

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 533-001, Rev G, Potable Water System Diagram

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2014, Welding and Allied Processes

OTHER REFERENCES

ASTM International (ASTM) D1330, 2010, Standard Specification for Rubber Sheet Gaskets

American National Standards Institute/American Water Works Association (ANSI/AWWA) C652, 2011, Disinfection of Water-Storage Facilities

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the below-listed:

- Piping.

3.2 Preparation. The Contractor shall depressurize and drain the designated tank(s) (see paragraph 1.1 (Intent)) before performing any work on them. Dispose of all fluids in accordance with all applicable Federal, state, and local environmental regulations. Do not drain any fluids (including fresh water) into any space, bilge or exterior location.

3.3 Tanks. The Contractor shall, using Coast Guard Drawing 175 WLM 533-001 for guidance, accomplish the following for all designated tank(s) (see paragraph 1.1 (Intent)):

3.3.1 Visual inspection. Clean and visually inspect the internal and external surfaces of each tank for signs of corrosion, pitting, and other damage. If required by the pneumatic tank's construction, the Contractor shall provide and use a borescope during the visual inspection. Submit a CFR.

3.3.2 Surface preservation. If a Change Request has been authorized and released, the Contractor shall prepare and coat each tank's interior surfaces using the system specified for "Tanks and Voids (Potable Water Tanks)" in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems). If preservation is for less than 100 percent of tank interior surfaces, power tool clean all affected surfaces to "bare metal" in lieu of using abrasive blasting, and feather edges of existing intact coating to the prepared areas in order to provide a smooth transition with the new paint.

3.3.3 Hydrostatic test. After any authorized repairs, The Contractor shall hydrostatically test the designated tank(s) in accordance with SFLC Std Spec 0740, Appendix C, "Hydrostatic Test". Ensure zero leakage from or permanent deformation of pressure-containing parts by repairing all leaks, deformations, and discrepancies. Submit a CFR. The potable water system (other than pressure tank) and compressed air system shall be excluded from hydrostatic pressure test.

3.3.4 Reinstallation. After all authorized repairs, The Contractor shall reinstall the tank(s) to the original configuration with new rubber gaskets conforming to ASTM D1330. Renew all fasteners with stainless steel.

3.4 Written certification. The Contractor shall, after completion of testing (and after any authorized repairs), submit written documentation listing each tank tested, the date of test, and testing facility to the COR.

3.5 Data Plates. The Contractor shall affix to each tank an anodized aluminum test data plate using epoxy resin cement. Engrave the data plate with ¼-inch high letters stating the following:

- Tank name/number (as applicable).
- Hydrostatic test pressure.
- Date of inspection and test.
- Testing facility.

3.6 Tank disinfecting. After all other work involving the potable water system and tank closing have been completed, the Contractor shall disinfect and treat the affected potable water tank(s), as necessary to meet or exceed the requirements of AWWA C652. After tank disinfecting, remove and dispose of all treated water in accordance with all Federal, state and local regulations. Ensure that no one enters the tanks once disinfection is completed.

3.7 Operational test – post repairs. After completion of work, the Contractor shall thoroughly test, in the presence of the Coast Guard Inspector and demonstrate the designated potable water tank(s) and associated piping to be in satisfactory operating condition. Submit a CFR.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 57: Potable Water System Relief Valve, Overhaul or Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to overhaul or renew the following potable water system relief valve(s):

TABLE 1 - TANKS

SERVICE	QTY	SIZE (inches)	LOCATION	SET PRESSURE (psig)
Hydro-Pneumatic Tank	1	2 1/2	3-42-1-E	85
Potable Water System Fill	1	1/2	Buoy Deck - Potable Water Fill and Delivery Station	8
Hot Water Tank	1	1	3-42-1-E	Thermostatic/ pressure relief valve; set at 100 psig or 210oF

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 533-001, Rev G, Potable Water System Diagram

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

OTHER REFERENCES

American Society for Testing and Materials (ASTM), F1508, 2010, Standard Specification for Angle Style, Pressure Relief Valves for Steam, Gas, and Liquid Services

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the below-listed:

- Piping.

3.2 Preparation. The Contractor shall depressurize and secure the potable water system before performing any work. Dispose of all fluids in accordance with Federal, state, and local environmental regulations, as necessary.

3.3 Relief valves. The Contractor shall accomplish the following for all designated relief valves (see paragraph 1.1 (Intent)), using Coast Guard Drawing 175 WLM 533-001 as guidance.

3.3.1 Visual inspection. Clean and visually inspect all parts for defects and deterioration. Submit a CFR. If a Change Request has been authorized and released, renew designated relief valves with MSS commercial-standard type valves. New valves shall be equivalent (including identical material) to the valve being renewed.

3.3.2 Lifting pressure test (shop). Remove and test (shop set) each relief valve to the correct lifting pressure as designated on the system drawing using ASTM F1508 as guidance. Ensure that each valve seats cleanly after pressure relief, without simmering, and with no allowable leakage. Accomplish the test using clean, fresh water. Adjust the relief pressure as necessary to obtain the lifting pressure. After adjustment, perform a final test to confirm each relief valve's lifting pressure with the Coast Guard Inspector present. Submit a written CFR. After successful testing, install the relief valves. Renew all software.

NOTE

For valve renewals, a separate lifting pressure test is not required provided the valve is supplied with all necessary documentation showing evidence of testing (shop set records from the manufacturer) at the correct lifting pressure.

3.4 Documentation. The Contractor shall accomplish the following:

3.4.1 Written certification. After completion of testing (and after any authorized repairs), submit written documentation listing each relief valve tested, the date of test, and testing facility to the COR.

3.4.2 Data Plates. Affix to relief valve body an anodized aluminum test data plate using lock wire to lanyard to the valve body. Engrave the data plate with ¼-inch high letters stating the following:

- Valve number.
- Lifting pressure.
- Date of test and set.
- Name of testing facility.

3.5 Leak test. After all authorized repairs of mechanical (i.e. threaded, bolted, etc.) joints, the Contractor shall perform an operational test of the potable water system using the system fluid at normal operating pressure. Ensure zero visible leakage from or deformation of mechanical parts by repairing all leaks and discrepancies. Submit a CFR.

4. NOTES

This section is not applicable to this work item. (TEST-IGNORE)

WORK ITEM 58: Crane Winch DCV, Replace

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to remove obsolete crane winch directional control valve assembly YMD-6859 and replace with YMD-12866 to complete TCTO.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	PN	QTY	ESTIMATED COST ($/UNIT)
N	HDRAULIC CONTROL VALVE ASSEMBLY PARTS KIT	PN: AMD-2633 ACN 4810-01-F18-5588	1	15,061.00

****New or refurbished equipment that the Government may provide for installation in place of existing equipment.**

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175-WLM 556-1, Rev J, Hydraulic System Diagram

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3630, 07-JAN-97, Manufacturers Instruction Book-SWBS Group(s) 573

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 3041 (SFLC Std Spec 3041), 2014, Shipboard Electrical Cable Test

Surface Forces Logistics Center Standard Specification 3042 (SFLC Std Spec 3042), 2014, Shipboard Electrical Cable Removal, Relocation, Splice, Repair, And Installation

Surface Forces Logistics Center Standard Specification 5000 (SFLC Std Spec 5000), 2014, Auxiliary Machine Systems

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

OTHER REFERENCES

Appleton Marine Control Valve Retrofit Manual 20793

3. REQUIREMENTS

3.1 General.

3.1.1 CIR. The Contractor shall submit a CIR for the inspections listed in the following locations:

- 3.2 Table 1 - Tasks

3.1.2 Tech Rep. The Contractor shall provide the services of an Appleton Marine authorized/ licensed Tech Rep for the Crane model SB230-42 to accomplish the following on site:

- Provide manufacturer's proprietary system/ equipment information, software, and tools.
- Assist with and ensure compliance with manufacturer's procedures and standards during disassembly, inspection, repair, modification, calibration, and reassembly of the equipment/system.

3.1.2.1 Ensure the Tech Rep is an Appleton Marine Certified Representative for the system/equipment stated above and demonstrated on their résumé.

3.1.2.2 Submit the name and résumé of the Tech Rep to the COR at the Arrival Conference.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.3.1 Protective measures, hydraulic system(s). Maintain existing hydraulic system cleanliness and take all necessary precautions to prevent the introduction of contaminants into the hydraulic system. Immediately after disconnecting or removing components from the hydraulic system, seal all openings to the rest of the system using caps for externally threaded connection points, bolt-on blanks, or taped-on discs/covers made of durable plastic or sheet-metal that is no less than 1/16-inch thick.

NOTE

Be aware that plastic bags may be used only when arrangement or configuration prevents the use of the other sealing methods specified above.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the following:

- Piping
- Hydraulic Hoses
- Foundation
- Electrical wiring
- Hydraulic Oil

3.2 Tasks to be accomplished. The Contractor shall perform the tasks designated in Table 1 below in accordance with all the sighted references TP-3630, SFLC Std Spec 3041, SFLC Std Spec 3042, SFLC Std Spec 0000, SFLC Std Spec 5000, and CG Dwg 175-WLM 556-1. Install all GFPs.

TABLE 1- TASKS

#	TASK TYPE (SFLC STD SPEC 5000 PARA. REF.)	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
1	Operate and Inspect	1	Buoy Crane	3.2.1 (Operate and Inspect)	Submit A CIR.
2	Unbolt and remove	1	Winch DCV Assembly		Clean, inspect and preserve DCV foundation area to install the new DCV. Submit a CFR.
3	Cleaning	All	Hydraulic components	3.1.7 (Cleaning of hydraulic system components at assembly).	GFP, Submit CFR.
4	Install replacement DCV	1	Winch New DCV Assembly, YMD-12866	C2.4 (Valves and manifolds)	GFP, New DCV assembly orientation is not the same as existing DCV assembly. Fill in existing bolt holes. Use the new template Refer to Notes section to mark, drill and tap the new mounting holes. Submit CFR.
5	Install	All	Tubing	C2.3 (Piping and tubing)	The Contractor shall furnish tubing. Using TP-3630, dwg AMD-1111. Submit CFR.
6	Install	All	Hydraulic hoses	C2.2 (Hose assemblies)	Four hoses are GFP, Clean and reuse hoses as necessary. Using TP-3630, dwg CMD-424 Submit CFR
7	Install	All	Electrical wiring		GFP, Install per (SFLC Std Spec 3041) and (SFLC Std Spec 3042). Using TP-3630, dwg CMD-425.
8	Preserve	All	New installation	3.2.4 (Preservation)	
9	Groom and Lubricate	1	Buoy Handling Crane	3.2.6 (Groom and Lubricate)	Coordinate with Crane Spec.
10	Operational and Weight Test		Buoy Handling Crane	3.2.8 (Operational and weight test) B2.4 (Boom and crane)	Coordinate with Crane Spec Submit CFR.
11	Fabricate and Install}	1	Label Plate	B2.9 (Label Plates)	

3.3 Special requirements for various components. If a Change Request has been authorized for additional work on any of the components listed in Table 3 below, the Contractor shall refer to the corresponding Appendix or paragraph of SFLC Std Spec 5000.

TABLE 3 - COMPONENTS

COMPONENT	APPENDIX & PARAGRAPH IN SFLC STD SPEC 5000
Fluids	C2.1
Hose assemblies	C2.2
Piping and tubing	C2.3
Valves and manifolds	C2.4
Gages	C2.5
Gas charged accumulators	C2.6
Heat exchangers and fluid coolers	C2.7
Systems	C2.8
Fastener assemblies	D2.1
Wire rope assemblies	D2.2
Brakes and clutches	D2.3
Open gearing and gear reducers	D2.4

4. NOTES

4.1 (AMD-2633) Control Valve Assembly Parts Kit Inventory.

ITEM DESCRIPTION	PN	QTY
HYDRAULIC CONTROL VALVE	YMD-12866	1
MOUNTING PLATE	MMD-6516	1
SPLIT FLANGE KIT, 1-1/4" CODE 61	20SFO	1
UNION BRANCH SWIVEL TEE	6600-06-06-06-SS	1
STR. THREAD O-RING CONNECTOR	6400-06-06-0-SS	1
45 STRAIGHT THREAD TO JIC	6802-16-16-NOW-SS	2
45 DEG. STR.THD. O-RING ELBOW	6802-12-12-NOW-SS	2
FHCS: M10 X 20 MM LG		4
LOCK WASHER: ½ DIA		3
HHCS: ½-13NC X 1.0 LG		3
HOSE ASSEMBLY (S.S) 1.0 ID X 165.5 LG.	YMD-8529	1
HOSE ASSEMBLY (S.S) 1.0 ID X 170 LG	YMD-8529	1
HOSE ASSEMBLY (S.S) 0.75 ID X 160 LG	YMD-9932	1
HOSE ASSEMBLY (S.S) 0.75 ID X 145 LG	YMD-9932	1
ELECTRIC CABLE: 1 PAIR, #18 AWG		75 FT
ELECTRIC CONNECTOR	YMD-8093	5
RUBBER CAP	YMD-8372	5
O-RING ADAPTER	BRANNEN 6410-12-16-O-SS	2
O-RING PLUG	BRANNEN 6408-06-O-SS	1

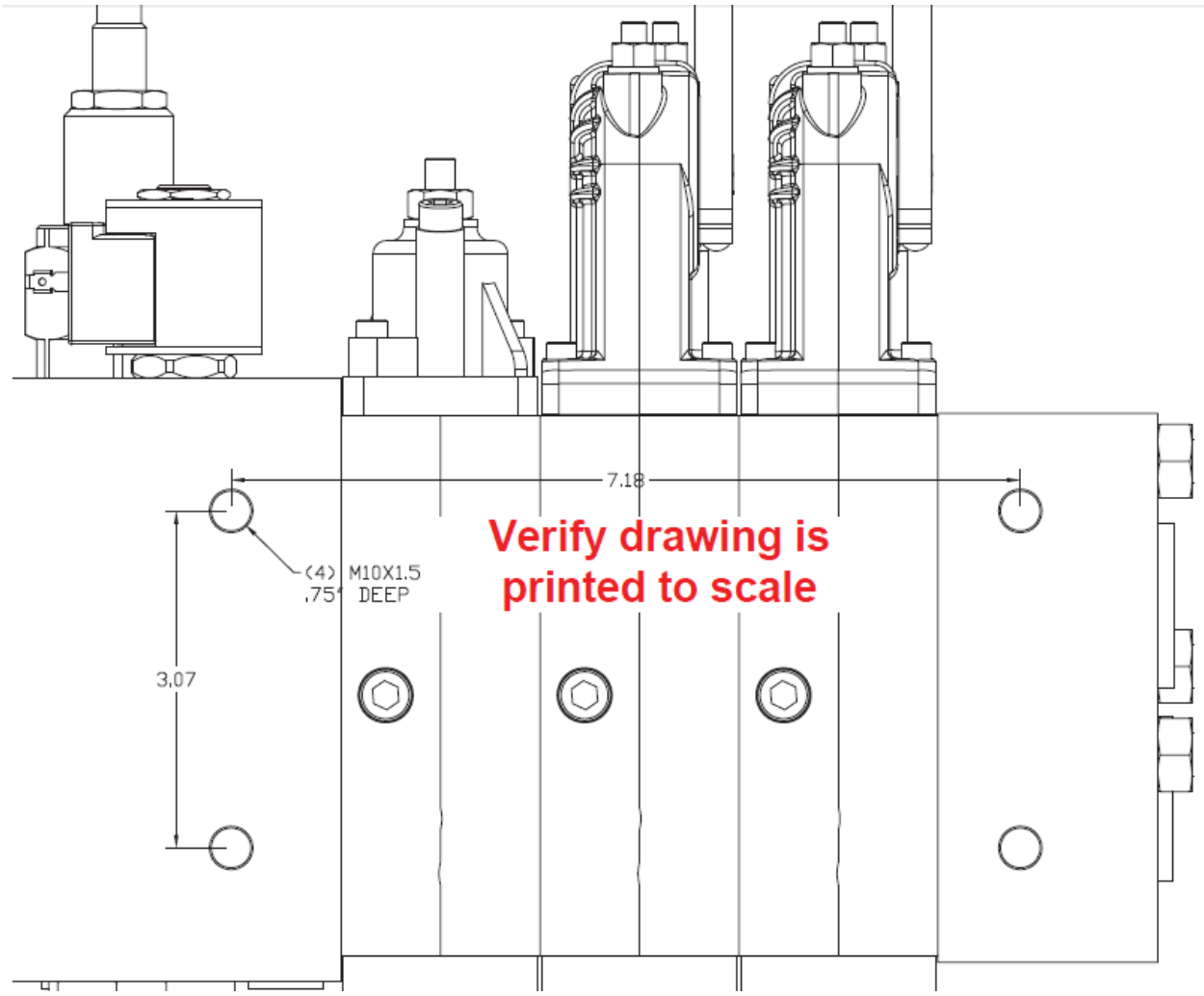

FIGURE 6. YMD-12866 HYDRAULIC CONTROL VALVE TEMPLATE

WORK ITEM 59: Single Point Davit Winch, Replace

1. SCOPE

1.1 Intent. The intent of this item is to replace Allied Single Point Davit (SPD) Winch P/N 42323 with Allied SPD winch PN 49396. The Allied SPD winch P/N 42323 has been declared obsolete.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
Y	Winch, Boat Davit	NSN: 2030-01-505-1581 PN: 49396	1 ea	$22,366.77
N	Wire Rope Assembly, 75ft, 5/8in, 6x37, IWRC, EIPS	NSN: 4010-01-602-8365	1 ea	600.00

****New or refurbished equipment that the Government may provide for installation in place of existing equipment.**

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175-WLM 549-1, Rev C, Onboard Lubrication Requirements

Coast Guard Drawing 175-WLM 601-1, Rev G, General Arrangement, Inboard and Outboard Profiles

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3632, 07-JAN-97, Manufacturers Instruction Book-SWBS Group(s) 582-583

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 5000 (SFLC Std Spec 5000), 2014, Auxiliary Machine Systems

3. REQUIREMENTS

3.1 General.

3.1.1 CIR. The Contractor shall submit a CIR for the inspections listed in the following locations:

- Table 1 Task 1

3.1.2 Tech Rep. The Contractor shall provide the services of a qualified Tech Rep who is familiar with the Allied SPD model D6000FCT to do the following, on site:

- Advise on manufacturer's proprietary information pertinent to the system.
- Assist with proper installation, calibration, and operation.
- Ensure compliance with manufacturer's procedures and standards during winch installation and operation.

3.1.2.2 Ensure the Tech Rep has a résumé of demonstrated experience with the system/equipment stated above.

3.1.2.3 Submit a copy of the Tech Rep's résumé and a list of references to the COR at the Arrival Conference.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.3.1 Protective measures – hydraulic system(s). The Contractor shall maintain existing hydraulic system cleanliness and take all necessary precautions to prevent the introduction of contaminants into the hydraulic system. Immediately after disconnecting or removing components from the hydraulic system, the Contractor shall completely seal all openings to the rest of the system using caps for externally threaded connection points, bolt-on blanks, or taped-on discs/covers made of durable plastic or sheet-metal that is no less than 1/16-inch thick.

NOTE

Plastic bags may be used only when arrangement or configuration prevents the use of the other sealing methods specified above.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the below-listed:

- Piping
- Electrical wiring
- Small Boat

3.2 Tasks to be accomplished. The Contractor shall perform the tasks designated in Table 1 below in accordance with SFLC Std Spec 5000, TP-3632, CG Dwgs 175-WLM 549-1, and 175-WLM 601-1.

TABLE 1- TASKS

#	TASK TYPE (SFLC STD SPEC 5000 PARA. REF.)	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
1	Operate and Inspect	1	SPD Assembly	3.2.1 (Operate and Inspect)	Submit a CIR.
2	Remove	1	Wire Rope Assembly 4010-01-602-8365		Remove wire rope and discard as scrap.
3	Remove	All	Winch Hard Piping		Remove all winch piping and discard as scrap.
4	Disconnect, remove, clean, and inspect	1	SPD Winch Assembly component		Remove the downstop control mechanism from the winch, clean and inspect for reuse. Submit CFR.
5	Unbolt, remove, and turn-in Installed Winch	1	SPD Winch PN 42323	3.1.6 (Turn-in)	Turn-in to the CG inspector for disposition.
6	Clean, and Inspect	1	SPD Winch foundation plate		Submit CFR.
7	Enlarge Holes	4	SPD Winch mounting holes/foundation		Drill mounting holes in the davit winch base plate to 0.810 inch to accept ¾ inch winch mounting bolts. Ensure that fleet angle will not change.
8	Check	1	SPD Winch P/N: 49396		Check Oil Levels
9	Partially preserve	1	SPD Winch foundation plate	3.2.4.2 (Partially Preserve)	
10	Install Replacement Winch	1	SPD Winch PN 49396		GFP. Provide all fasteners in accordance with TP 3632. Torque each mounting bolt to 340 ft-lb, dry.
11	Install	1	SPD Winch Assembly component		Downstop Control Mechanism
12	Renew	5	Hydraulic Hose Assembly	C2.2 (Hose assemblies)	Fabricate and install all hoses in accordance with Std Spec 5000.
13	Hydrostatic test	5	Hydraulic Hose Assembly		Hydrostatically test to 200% of working pressure.
14	Fabricate and Install	5	Hose Label Plate		Hose label plate in accordance with Std Spec 5000.
15	Partially preserve	1	SPD Assembly	3.2.4.2 (Partially Preserve)	Disturbed area.
16	Install Wire Rope	1	Wire Rope Assembly 4010-01-602-8365		GFP
17	Groom and Lubricate	1	SPD Assembly	3.2.6 (Groom and Lubricate)	
18	Operational test and Weight Test	1	SPD Assembly	B2.7 (Davit)	No-load operational test. Static Load Test Weight: 6,000 (+300, -0) pounds

#	TASK TYPE (SFLC STD SPEC 5000 PARA. REF.)	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
					Dynamic Load Test Weight: 5,000 (+250, -0) pounds Rated Load Test Weight: 4000 (+0, -200) pounds Submit CFR.)
19	Fabricate and Install	1	Label Plate	B2.9 (Label Plates)	
20	Weatherize	5	Hose fittings	C2.2.1.2.2 (Weatherization)	

4. NOTES

4.1 Retention of wire rope manufacturer's test certification and serial number. Ship's crew will retain the wire rope manufacturer's test certification and serial number. This certification MUST be produced during the BHS visits, in order to allow crane to be operated.

WORK ITEM 60: Thruster Quick Disconnects (QDs), Install

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to install Quick Disconnect (QD) fittings associated with TCTO TM4010 permitting Cutter's portable filter cart to access and filter thruster system lube oil.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175 WLM 262-001, Rev J, Lube Oil System Diagram

Coast Guard Drawing 175 WLM 262-005, Rev G, Lube Oil System A/D – Hull Blocks 910, 930, 940, & 970

Coast Guard Drawing 175 WLM 568-2, Rev M, Bow Thruster Assembly (Model 125 Fixed Pitch)

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3628, SWBS 568, Section A, March 2017, Bow Thruster – (Bird-Johnson Company)

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2014, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

OTHER REFERENCES

ASTM International (ASTM) A106, 2015, Standard Specification for Seamless Carbon Steel Pipe, for High-Temperature Service

ASTM International (ASTM) F992, 2017, Standard Specification for Valve Label Plates

Manufacturers Standardization Society of the Valve and Fittings Industry (MSS), SP-58, 2009, Pipe Hangers and Supports – Materials, Design, Manufacture, Selection, Application and Installation

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the following:

- Foundations
- Piping
- Tank
- Lube oil

3.2 Fluid handling. The Contractor shall remove and dispose of removed fluids from the affected piping system modification, in accordance with all applicable Federal, state, and local regulations.

WARNING

Do not drain ANY fluids, including fresh water, into any space, bilge, or exterior location.

3.3 Piping installation. The Contractor shall accomplish the following tasks, using Coast Guard Drawings 175 WLM 262-001, 175 WLM 262-005, 175 WLM 568-2, Coast Guard Technical Publication 3628, SWBS 568, Section A, SFLC Std Spec 0740 (when applicable) and Figures1 through 4 for guidance:

- Install contractor-supplied pipe nipples as needed to facilitate coupling of filter cart female quick disconnect (QD) fitting on hose assembly to Thruster piping. Pipe nipples and piping fittings, when needed, shall be of same material and size of that adjacent piping specified on Coast Guard Drawing 175 WLM 262-005 and 175 WLM 568-2 (e.g., bushing steel IAW ASTM 106). When necessary, welding of pipe nipples and piping shall be in accordance with SFLC Std Spec 0740.

NOTE

Length of pipe nipple shall be no less than 6". However, length can be extended, as needed, to permit coupling of filter cart hose to thruster piping.

- Install Contractor furnished bushings in four places (two places each thruster, i.e., bow & stern thrusters), as needed, to facilitate QD installation. Refer to Table 1.
- Install Contractor furnished QDs in four places (two places each –bow thruster & stern

thruster). Refer to Table 1.

NOTE

Shipboard requirements of SFLC Std Spec 0740 to gas free affected shipboard spaces, maybe avoided by removing portable shipboard piping to shore side in fabrication shop for preforming hot work.

3.3.1 Pipe hangers. Contractor shall furnish, fit, and install new pipe hangers for newly installed piping in accordance with MSS SP-58, as needed to satisfy CG drawings 175 WLM 262-001 & 175 WLM 262-005 pipe support requirements.

3.3.2 Pipe labeling. The Contractor shall stencil the following onto the pipe surfaces:

- Name of the piping system service.
- Destination, where feasible.
- Direction of flow, indicated by an arrow three inches long pointing away from the lettering (for reversible flow, point an arrow away from each end of the lettering – Applicable to all QD piping.).

3.3.2.1 Ensure all lettering and arrow(s) are as follows:

- In general, black color except white for dark-colored piping.
- Applied in conspicuous locations and preferably near control valves.

3.3.3 Valve labeling. The Contractor shall renew all missing and damaged valve label plates, and install new valve label plates on new valves, in accordance with ASTM F992.

3.3.4 System flushing. Upon completion of piping fabrication, Contractor shall accomplish the following tasks:

3.3.4.1 Flush all new and disturbed piping with clean fresh water for five minutes. Direct flushing fluid to move scale and foreign debris away from installed machinery.

3.3.4.2 Dispose of flushing fluid in accordance with all applicable Federal, state, and local regulations.

3.3.4.3 Dry all water from thruster piping with warm dry, low-pressure air.

WARNING

Do not drain ANY Fluids (including fresh water) into any space, bilge, or exterior location.

3.4 Testing. Following fabrication and installation, Contractor shall, in the presence of the Coast Guard Inspector, accomplish the following tasks and submit a CFR:

3.4.1 Hydrostatic test. Contractor shall hydrostatically test all new and disturbed piping and components of the effected system in accordance with SFLC Std Spec 0740, Appendix C, “Hydrostatic Test”. No leakage or permanent deformation of pressure-containing parts permitted. Repair all leaks and discrepancies found. Submit CFR.

3.4.2 Leak test. Contractor shall after reassembling all disturbed mechanical joints (i.e. threaded, bolted, etc.), tightness test joints with system fluid at normal operating pressure. Ensure zero visible leakage. Repair all leaks. Submit a CFR.

3.4.3 NDE. If applicable, Contractor shall perform NDE of all of watertight deck and/or bulkhead penetration sleeve welds in accordance with SFLC Std Spec 0740, Appendix C.

3.4.4 Post-repair operational test. Contractor shall thoroughly test and prove the piping system to be in satisfactory operating condition.

3.5 Touch-up preservation, general. The Contractor shall prepare and coat all new and disturbed exterior and interior surfaces, as applicable, to match existing adjacent surfaces in accordance with SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs).

4. NOTES

TABLE 1. CONTRACTOR FURNISHED FITTINGS (MIN NUMBER OF KNOWN FITTINGS)

ITEM DESCRIPTION	PART NUMBER	QTY
Coupling Assembly, Quick Disconnect (QD)*	P/N 10642320-1, Cage 56161	4 ea.
Bushing , Pipe*	P/N 4464K276 Cage 39428	4 ea.

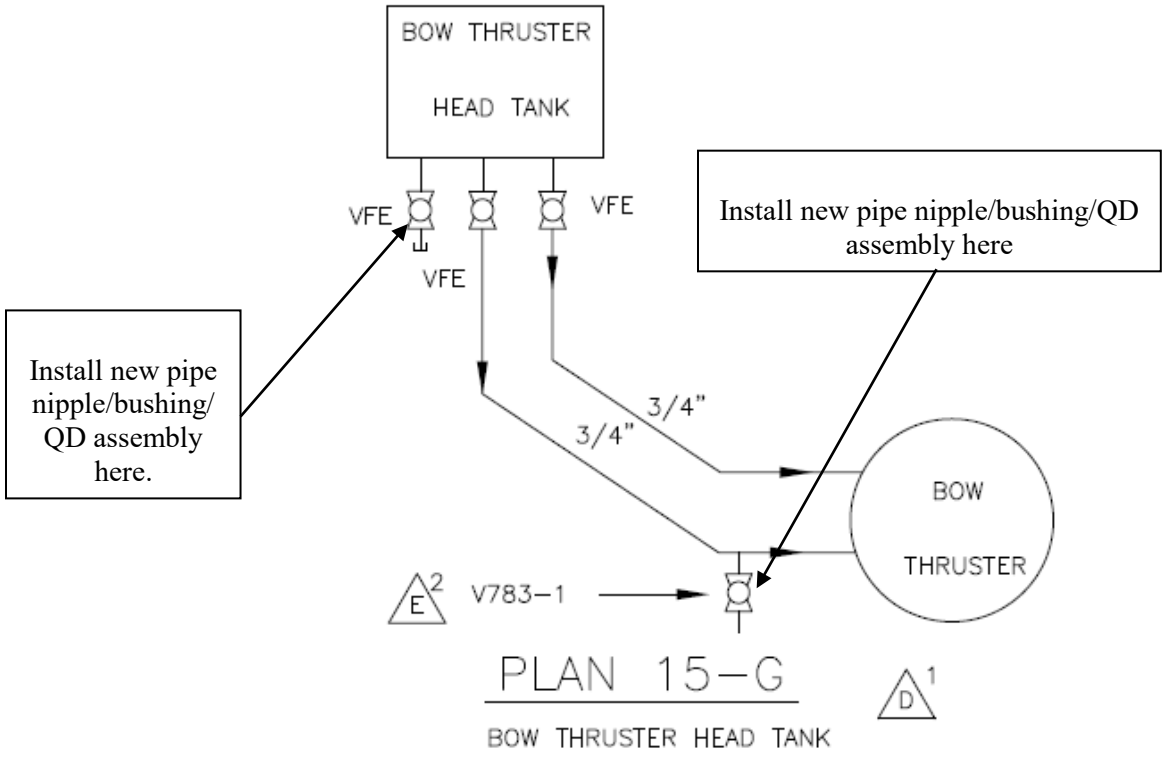

FIGURE 1. EXCERPT FROM CG DWG 175 WLM 262-001, SHT 2

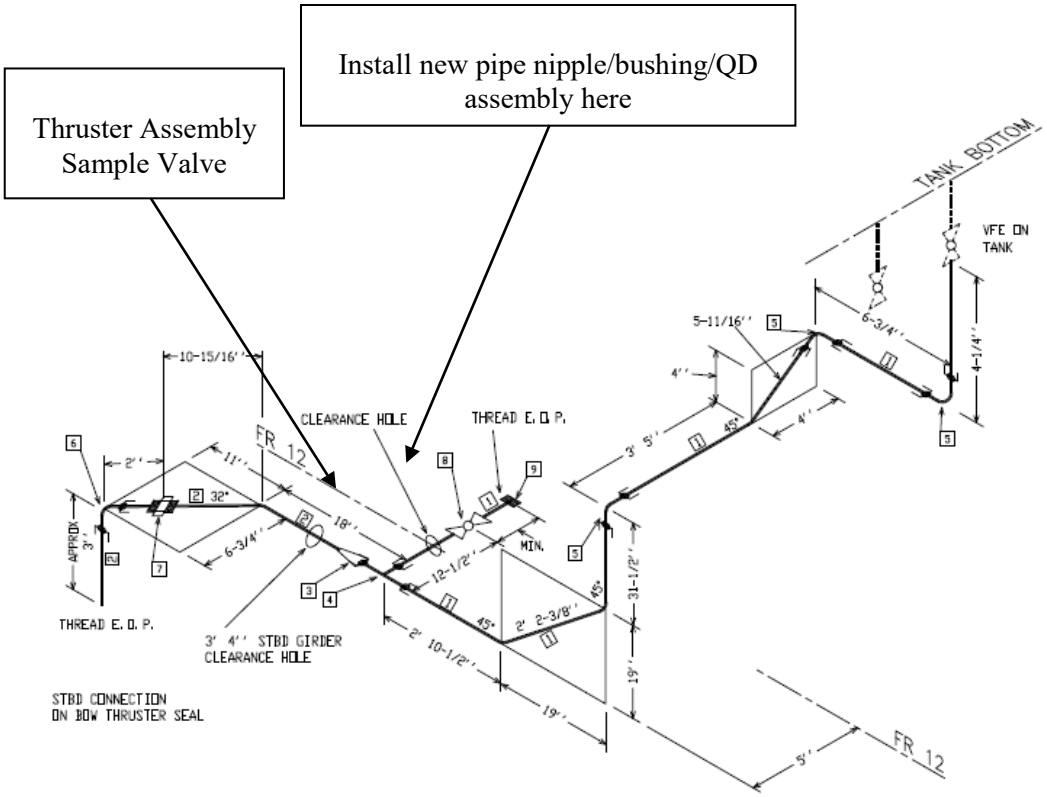

FIGURE 2. EXCERPT FROM CG DWG 175 WLM 262-005, SHT 63A (BOW THRUSTER)

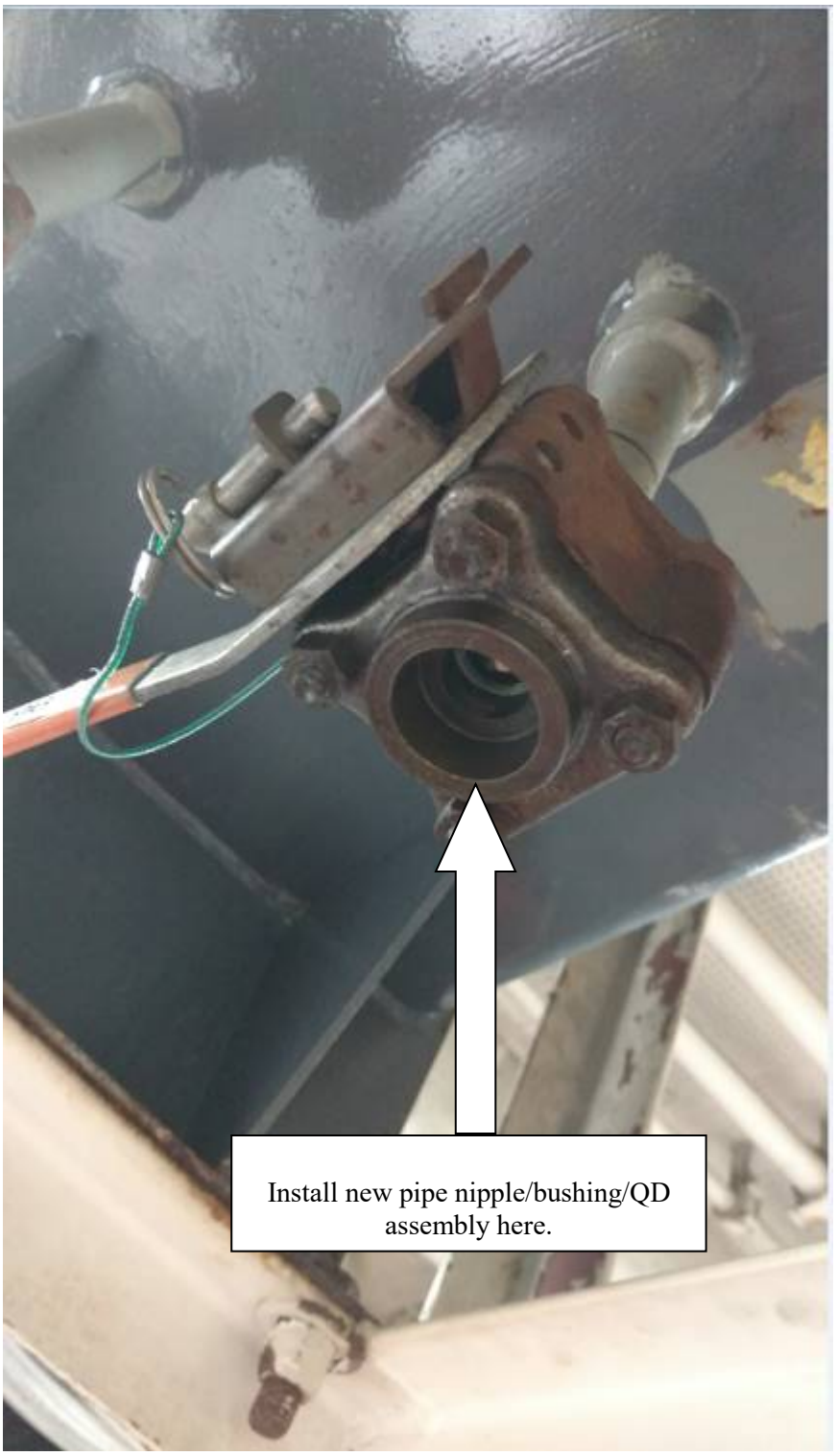

FIGURE 3. PHOTO - TYPICAL HEAD TANK DRAIN VALVE

FIGURE 4. PHOTO - TYPICAL SAMPLE VALVE

30302_0516_FLT
REC_30302_175' WLM
Keeper Class (0812)

WORK ITEM 61: Power Circuit Breakers, Inspect, Maintain & Test

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to inspect, maintain, and test power circuit breakers located on the Ship Service and Emergency Switchboards that were designed and tested to UL 1066 standards.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175-WLM 320-1, Rev AL, Electrical One-Line Diagram

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification (SFLC Std Spec) 0000, 2014, General Requirements

Surface Forces Logistics Center Standard Specification (SFLC Std Spec) 3042, 2014, Shipboard Electrical Cable Removal, Relocation, Splice, Repair, and Installation

Coast Guard Technical Publication (TP) 3619, Mar 2001 Switchboard, Ship Service & Emergency

OTHER REFERENCES

American National Standards Institute/National Electrical Manufacturers Association (ANSI/NEMA) AB 4, Mar 2011, Guidelines for Inspection and Preventive Maintenance of Molded Case Circuit Breakers Used in Commercial and Industrial Applications

Underwriters Laboratories Inc. (UL) 1066, Low-Voltage AC and DC Power Circuit Breakers Used in Enclosures, Apr 2012

3. REQUIREMENTS

3.1 General.

3.1.1 CIR. Submit a CIR for the inspections and test listed in the following paragraph(s):

- 3.2 (Operational assessment).
- 3.4.1 (Inspection).
- 3.4.2 (Testing).

3.1.2 Tech Rep. Technicians performing shipboard assessments and inspection, maintenance, and testing ashore shall be employed by the original equipment manufacturer or a firm accredited by the InterNational Electrical Testing Association (NETA). An accredited firm shall use only NETA certified technicians (http://www.netaworld.org/) with calibrated test equipment during the performance of this work item.

3.1.3 Protective measures. Furnish and install suitable covering to seal off and protect all non-affected surfaces/equipment and spaces in the vicinity of the work area against contamination during the performance of work. Upon completion of work, remove protective material and inspect for the presence of contamination. Clean all equipment and spaces, contaminated due to improper protection, to original condition of cleanliness.

3.1.4 Interferences. Handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences).

3.1.5 Notify the Coast Guard Inspector 48 hours prior to starting work on this item.

3.1.6 Outages. Coordinate the disconnection and removal of the circuit breakers listed in the Table 1 below with the Coast Guard Inspector to ensure orderly shutdown of equipment. Providing temporary circuit breakers or temporarily relocating circuit breakers from non-essential circuits to essential circuits (same frame size and trip settings) are acceptable strategies to minimize outage durations. When power interruption is expected to exceed 15 minutes, secure uninterruptable power supplies and supported loads.

3.1.7 Essential circuits. Unless actively being serviced by other work items, minimize the interruption of power to the following circuits:

3.1.7.1 Ship service lighting (unless temporary lighting is installed).

3.1.7.2 Fire (circuits F and SM), flooding (circuit FD), and general (circuit G) alarms.

3.1.7.3 Main announcing (circuit 1MC) and dial telephone (circuit J) systems.

3.1.7.4 Galley, scullery, potable water heater, HVAC, and sewage systems (unless cutter crew is not living on board).

3.1.7.5 Electric fire pump (unless temporary firefighting water supply is connected).

3.2 Operational assessment. Perform an operational assessment of each circuit breaker listed in the table below prior to removal from the switchboard. Submit an operational assessment report via CFR.

3.2.1 General.

3.2.1.1 Ship's Force shall operate all equipment, as well as remove and reinstall control power fuses.

3.2.1.2 For cutters with stationary mounted circuit breakers or draw-out type with no TEST position, Ship's Force shall run generators or operate shore power, as necessary, to establish safe plant conditions for the operational assessment and provide circuit breaker control power. Ensure that water cooled prime movers are furnished with adequate normal or temporary raw water supplies and that required auxiliaries such as batteries, exhaust, ventilation, start air, fuel oil, jacket water, and lube oil are available.

3.2.1.3 When practicable, operate draw-out type circuit breakers in the TEST position such that the primary contacts (stabs) are disconnected from the switchboard bus but all secondary (control) contacts are still connected to switchboard circuits. For generator circuit breakers, remove the control power transformer secondary winding fuses. Taking appropriate electrical safety precautions, connect a Contractor-furnished temporary control power supply, fused to an ampacity no greater than the normal control power supply, to the vacated load side fuse clips.

3.2.1.4 For a circuit breaker that is locked out and/or tagged out (caution or danger tag), typically in support of another work item, complete the tasking requiring the isolation or shift the work isolation boundary so that the lock and/or tags may be cleared. When shifting the isolation boundary is the only feasible option, such is typically accomplished by opening a local disconnect switch or temporarily disconnecting the feeder cable in accordance with SFLC Std Spec 3042. Ensure that a new lock and/or tag are installed at the new isolation boundary prior to clearing those from the circuit breaker to be removed.

3.2.2 Initial conditions. The circuit breaker to be operationally assessed is assumed to be open with the closing spring charged and control power available.

3.2.3 Manual operation. For a circuit breaker with mechanical closing and opening controls on the frame, perform the following:

3.2.3.1 Manually close the circuit breaker. Verify that the mechanical flag for circuit breaker position, if installed, changes state satisfactorily. Confirm that circuit breaker position indicating lights and machinery control system display, if applicable, also toggle. If installed, verify that the spring charging motor recompresses the closing spring and automatically drops out shortly after the spring is fully charged. If no spring charging motor is installed or it fails to operate, manually recompress the closing spring.

3.2.3.2 Manually trip the circuit breaker. Verify that the mechanical flag for circuit breaker position, if installed, changes state satisfactorily. Confirm that circuit breaker position indicating lights and machinery control system display, if applicable, also toggle.

3.2.3.3 If the circuit breaker is equipped with a mechanical or electrical lockout, activate each lockout device one at a time and verify that the circuit breaker cannot be closed manually.

3.2.3.4 If the circuit breaker is equipped with an undervoltage release coil, secure power to the coil by removing a secondary control power fuse or securing the temporary control power supply. Attempt to manually close the circuit breaker. Observe indicators and flags to ensure that the main contacts do not close (even momentarily). Discharge of the closing spring is acceptable. Reenergize the undervoltage release coil.

3.2.3.5 For circuit breakers without an undervoltage release coil or for those where the closing spring did not discharge while testing the undervoltage release closing interlock, secure control power to the spring charging motor, ensuring that the undervoltage release coil, if installed, remains energized. Some circuit breaker designs have an internal spring charging motor switch for this purpose; otherwise a control power lead to the motor must be temporarily disconnected at the secondary terminal block. Manually close the circuit breaker and then manually open it to discharge the closing spring.

3.2.3.6 Verify that the mechanical flag for closing spring status, if installed, changes state during this step. Manually charge the closing spring, observing the ratchet mechanism and pawls for signs of damage, such as binding or excessive wear.

3.2.3.7 Reenergize any circuit breaker control circuits that were deenergized in paragraph 3.2.3.5 above.

3.2.4 Electrical operation. For a circuit breaker with electrical closing and opening controls on the switchboard, perform the following:

3.2.4.1 Electrically close the circuit breaker. Verify that the mechanical flag for circuit breaker position and closing spring status, if installed, change state satisfactorily. Confirm that circuit breaker position indicating lights and machinery control system display, if applicable, also toggle. If installed, verify that the spring charging motor recompresses the closing spring and automatically drops out shortly after the spring is fully charged. If no spring charging motor is installed or it fails to operate, manually recompress the closing spring.

3.2.4.2 Electrically trip the circuit breaker. Verify that the mechanical flag for circuit breaker position, if installed, changes state satisfactorily and that the shunt trip coil remains deenergized while the control switch is held in the TRIP position. Confirm that circuit breaker position indicating lights and machinery control system display, if applicable, also toggle.

3.2.4.3 If the circuit breaker is equipped with a mechanical or electrical lockout, activate each lockout device one at a time and verify that the circuit breaker cannot be closed electrically.

3.2.4.4 If the circuit breaker is equipped with an undervoltage release coil, secure power to it by temporarily disconnecting the associated lead at the secondary terminal block; ensure that power to the closing coil and position indicating circuit remains available. Attempt to electrically close the circuit breaker and observe indicators and flags to ensure that the main contacts do not close (even momentarily). Discharge of the closing spring is acceptable.

3.2.4.5 Reenergize any circuit breaker control circuits that were deenergized in paragraph 3.2.4.4 above.

3.2.4.6 If the circuit breaker is equipped with an anti-pump mechanism, electrically close the circuit breaker and continue to hold the control switch in the CLOSE position. If practicable, trip the circuit breaker on fault by simulating an overcurrent condition at the trip unit; otherwise defer this test until the circuit breaker arrives at the maintenance facility. Verify that the circuit breaker does not reclose until the control switch is released and another closing operation is attempted. Open the circuit breaker.

3.2.5 Bell alarm switch. For a circuit breaker with a bell alarm switch, perform the following:

3.2.5.1 Close the circuit breaker using mechanical or electrical control.

3.2.5.2 If practicable, automatically trip the circuit breaker by simulating an overcurrent condition at the trip unit or by momentarily deenergizing control power to activate the undervoltage release; otherwise defer this test until the circuit breaker arrives at the maintenance facility. Verify that the bell alarm switch contacts are in the tripped state.

3.2.5.3 Manually reset the tripped circuit breaker using mechanical or electrical control. Verify that the bell alarm switch contacts are in the normal state.

3.2.6 Draw-out interlock. For a circuit breaker with a draw-out interlock, perform the following:

3.2.6.1 De-energize both sets of primary contacts (stabs) in the switchboard.

3.2.6.2 If the circuit breaker is equipped with an undervoltage release or can only be operated electrically and temporary control power is not already installed:

3.2.6.2.1 Remove the control power transformer secondary winding fuses.

3.2.6.2.2 Taking appropriate electrical safety precautions, connect a Contractor-furnished temporary control power supply, fused to an ampacity no greater than the normal control power supply, to the vacated load side fuse clips.

3.2.6.3 Ensure that the circuit breaker is withdrawn to the TEST position such that the primary contacts (stabs) are disconnected from the switchboard bus but all secondary (control) contacts are still connected to switchboard circuits.

3.2.6.4 Close the circuit breaker using mechanical or electrical control.

3.2.6.5 Attempt to rack in the closed circuit breaker to the CONNECTED position. Verify that such an operation is physically impossible or confirm that the circuit breaker automatically trips before the stabs reach the primary contacts in the switchboard.

3.2.6.6 If not already tripped, open the circuit breaker using mechanical or electrical control and fully insert it to the CONNECTED position.

3.2.6.7 Close the circuit breaker using mechanical or electrical control.

3.2.6.8 Attempt to rack out the closed circuit breaker to the TEST or DISCONNECTED position. Verify that such an operation is physically impossible or confirm that the circuit breaker automatically trips before the stabs separate from the primary contacts in the switchboard.

3.2.6.9 If not already tripped, open the circuit breaker using mechanical or electrical control.

3.2.7 Spring discharge interlock. For a circuit breaker with a spring discharge interlock, perform the following:

3.2.7.1 If not already compressed, charge the closing spring.

3.2.7.2 Rack out the open circuit breaker to the DISCONNECTED position. Verify that such an operation is physically impossible or confirm that the closing spring automatically discharges between the TEST and DISCONNECTED positions.

3.2.8 Restoration.

3.2.8.1 Ensure that the circuit breaker is open.

3.2.8.2 If not already accomplished, remove the circuit breaker control power transformer secondary winding fuses and disconnect any temporary control power supply.

3.2.8.3 If compressed, discharge the closing spring.

3.3 Removal.

3.3.1 Prior to the removal of each circuit breaker listed in the table below, record location (position or circuit identifier), wiring information, and if adjustable, as found pickup and time delay settings. Retain all mounting and connecting hardware for later reuse. Submit a CFR with all recorded data to the Coast Guard Inspector.

3.3.2 Disconnect and remove the circuit breakers listed in the table below.

3.3.3 Inspect the primary and secondary disconnects in the switchboard for wear and erosion. Check the torques of all primary disconnect studs to the bus work or power cable lugs. Inspect for broken control wiring lugs and check the tightness of wiring at the secondary disconnect terminal blocks. Renew any broken lugs and tighten any loose connections to wiring or bus.

3.3.4 Temporarily cover or insulate switchboard openings created by the removal of circuit breakers to prevent personnel contact with energized conductors and to block the entry of debris from other ongoing industrial activities.

3.4 Shop Work.

3.4.1 Inspection. Perform the inspections and take the measurements described below. Report all results, including any adjustments made, on a CFR.

3.4.1.1 Remove and inspect the arc chutes. Note if an arc chute is severely burned, cracked, or excessively eroded.

3.4.1.2 Visually inspect all primary intermediate (if installed), main, and arcing contacts for erosion and evidence of overheating. Inspect associated insulators for cracks and degradation. Determine whether the condition of one or more contacts or insulators meets the criteria for renewal in accordance with manufacturer's guidelines.

3.4.1.3 Set up the circuit breaker for maintenance or slow closing. Check alignment and measure the contact force, spring tension, air gap, and wipe on each contact in accordance with manufacturer's instructions and make adjustments, as necessary, to set these values within specification.

3.4.1.4 Check contact closure sequencing to ensure that the differences in the making of the arcing contacts on the same pole and between poles is within manufacturer's tolerances. Also verify that the opening sequencing is satisfactory in the same manner.

3.4.1.5 Reinstall the arc chutes and torque all fasteners in accordance with manufacturer's instructions.

3.4.1.6 Inspect the primary and secondary disconnects (stabs) for wear and erosion. For a circuit breaker with finger type primary disconnects, check that the proper force is applied when a dummy bar, representative of the mating stationary disconnect, is inserted.

3.4.1.7 Inspect mechanical linkages, bearings, pawls, gears, cams, rollers, rods, and shafts for excessive wear and damage. Identify incorrectly assembled components. Note all missing and improperly installed fasteners.

3.4.1.8 Inspect electrical switches, solenoids, relays, wiring, and motors for excessive wear and damage. Perform an insulation resistance check of all control wiring using a 500 VDC test voltage. Isolate and identify any wiring or component with insulation resistance of less than 1 MΩ to ground.

3.4.1.9 For a circuit breaker equipped with a spring charging motor, verify that the motor cutoff switch is aligned in accordance with manufacturer's instructions.

3.4.2 Testing. After satisfactory visual inspection and completion of any authorized repair work, test each circuit breaker listed in the table below as directed in this section.

3.4.2.1 Perform the following tests of ANSI/NEMA AB 4, Section 6:

- Mechanical operation
- Insulation resistance
- Individual pole resistance (millivolts drop)
- Inverse-time overcurrent trip (not applicable to non-automatic switches)
- Instantaneous overcurrent trip
- Rated hold-in current

3.4.2.2 Short-time overcurrent trip. This test is applicable only if the circuit breaker is equipped with a short-time delay trip. The operation of the short-time delay unit should be within 90% and 125% of the overcurrent setting of the circuit breaker as shown on the manufacturer's time-current curves.

3.4.2.3 Ground fault trip. The circuit breaker should not be equipped with a ground fault trip. If such is installed, submit a CFR noting the discrepancy.

3.4.2.4 Dielectric test. Perform a dielectric test on each 480 or 600 volt rated circuit breaker where the case was opened for repair or the circuit breaker was obtained through non-OEM authorized supply channels. The dielectric test should be conducted at an AC test voltage of 1568 (480 volt rating) or 1760 volts (600 volt rating) or at 2500 volts DC for 1 minute withstand. Conduct the dielectric test for each of the following conditions:

- Each pole (line to load terminal) with the circuit breaker open
- Each pair of line to line terminals with the circuit breaker closed
- Each line terminal to ground with the circuit breaker open
- Each pole to ground with the circuit breaker closed

3.4.2.5 For each circuit breaker accessory, perform the applicable tests of ANSI/NEMA AB 4, Section 7. Review the Table 1 configuration below for each circuit breaker and submit a CFR for model number discrepancies as well as any missing or extra accessory. When performing ANSI/NEMA AB 4, Section 7.3, use a variable voltage control power source and voltmeter to measure dropout and pickup voltages of

the undervoltage release coil. Dropout voltage shall be between 15% and 60% of the coil voltage rating; pickup shall occur between 30% and 85%.

3.4.2.6 Record the following data for each circuit breaker that was tested:

- Circuit breaker model and serial number
- Circuit identifier or position
- Test data and results
- Test technician name and date of test
- Name and address of testing laboratory

3.4.2.7 Update the label on the circuit breaker case, as necessary, so that it accurately describes the circuit breaker configuration and installed accessories. Apply a sticker showing the name of the testing laboratory along with the date of the test.

3.5 Reinstallation.

3.5.1 Vacuum out the circuit breaker enclosure and completely remove any foreign material.

3.5.2 Lubricate primary and secondary disconnects in accordance with manufacturer's instructions.

3.5.3 Reinstall and reconnect each circuit breaker using information retained in paragraph 3.2.1 above.

3.5.4 Perform an energized operational test of all affected circuit breakers in the presence of the Coast Guard Inspector. Verify that all accessory devices are functioning. For circuit breakers supplying three phase motor loads, either directly or indirectly through intermediate panel boards, perform a phase rotation check if any power wiring was disconnected.

3.5.5 When isolation is no longer required, reconnect all cables disconnected per paragraph 3.2.1.4 above per SFLC Std Spec 3042.

4. NOTES

4.1 Inspection periodicity. Circuit breakers are normally maintained, tested, and lubricated at 48 month intervals; however, such should also be performed when the following number of open-close cycles with main contact current flow are exceeded since the last inspection:

4.1.1 800 ampere frame and below – 2800 cycles

4.1.2 900-2500 ampere frame – 800 cycles

4.1.3 3000 ampere frame and above – 400 cycles

4.2 High current fault. When a circuit breaker interrupts a high current fault, perform the arc chute and primary contact inspections before returning the device to operation. Also inspect the associated switchboard bus work for deformation and possible derangement.

TABLE 1 – CIRCUIT BREAKER LIST (WLM)

Accessories	**Draw-Out with TEST Position**	X	X	X	X	X
	Undervoltage Release	Time delay	Time delay	Time delay	Time delay	Time delay
	Shunt Trip Coil	X	X	X	X	X
	Lockout Device, Mech or Elec					
	Closing Coil, Anti-Pump	CC & AP	CC & AP	CC & AP	CC & AP	CC & AP
	Spring Charging Method(s)	Man/Auto	Man/Auto	Man/Auto	Man/Auto	Man/Auto
	Auxiliary Switch	3NO/3NC	3NO/3NC	3NO/3NC	3NO/3NC	3NO/3NC
	Bell Alarm Switch					
Settings	**Instantaneous Pickup (A [×I_r])**	4.0x	12.0x	12.0x	15.0x	12.0x
	Short Time Delay	0.08 sec	0.22 sec	0.22 sec	.008 sec	0.22 sec
	Short Time Pickup (A) [×I_L]	8.0x	2.0x	2.0x	3.0x	2.0x
	Long Time Delay	3.5 sec	30 sec	30 sec	3.5 sec	30 sec
	Long Time Pickup I_L (A) [×I_r]	400 [1.0]	380 [0.95]	510 [0.85]	510 [0.85]	510 [0.85]
Withdrawal Interlock		X	X	X	X	X
Spring Discharge Interlock		X	X	X	X	X
Rating Plug or Sensor I_r (A)		400	400	600	600	600
Part Number		Siemens RL-AS8EAEXBA06DU4 with Static Trip III	Siemens RL-AS8EAEXBA06DU4 with Static Trip III	Siemens RL-AS8EAFXBA06DU4 with Static Trip III	Siemens RL-AS8EAFXBA06DU4 with Static Trip III	Siemens RL-AS8EAFXBA06DU4 with Static Trip III
Frame (A)		800	800	800	800	800
Circuit		1EG-4EP-1E	1S-4P-1E	1SG-4P-1S	2SG-4P-2S	3SG-4P-3S

Function & Location	Emergency Diesel Generator (1E Switchboard)	1E-1S Bus Tie (1E Switchboard)	No. 1 Ship Service Diesel Generator (1S Switchboard)	No. 2 Ship Service Diesel Generator (2S Switchboard)	No. 3 Ship Service Diesel Generator (3S Switchboard)
Accessories					
Draw-Out with TEST Position	X	X	X	X	
Undervoltage Release			Time delay		
Shunt Trip Coil	X	X	X	X	
Lockout Device, Mech or Elec					
Closing Coil, Anti-Pump	CC & AP	CC & AP	CC & AP	CC & AP	
Spring Charging Method(s)	Man/Auto	Man/Auto	Man/Auto	Man/Auto	
Auxiliary Switch	3NO/3NC	3NO/3NC	3NO/3NC	3NO/3NC	
Bell Alarm Switch					
Settings					
Instantaneous Pickup (A [×I_r])	—	—	15.0x	15.0x	
Short Time Delay	—	—	0.22 sec	0.08 sec	
Short Time Pickup (A) [×I_L]	—	—	5.0x	2.0x	
Long Time Delay	—	—	30 sec	3.5 sec	
Long Time Pickup I_L (A) [×I_r]	—	—	400 [1.0]	680 [0.85]	
Withdrawal Interlock	X	X	X	X	
Spring Discharge Interlock	X	X	X	X	
Rating Plug or Sensor I_r (A)	—	—	400	800	
Part Number	Siemens RL-AS8EXXXBXXXE Non-automatic switch	Siemens RL-AS8EXXXBXXXE Non-automatic switch	Siemens RL-AS8EAEXBA06DU4 with Static Trip III	Siemens RL-AS8EAGXBA06E with Static Trip III	
Frame (A)	800	800	800	800	

Circuit	1S-4P-2S	2S-4P-3S	PS -4P-1S	3S-4P-A	
Function & Location	1S-2S Bus Tie (1S Switchboard)	2S-3S Bus Tie (2S Switchboard)	Shore Power (1S Switchboard)	Bow Thruster SCR Drive (3S Switchboard)	

WORK ITEM 62: Lube Oil Transfer System Piping, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to overhaul or renew Lube Oil Transfer System piping.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 175-WLM 262-1, Rev H, Lube Oil System Diagram

Coast Guard Drawing 175-WLM 262-5, Rev F, Lube Oil System a & D, Hull Blocks 930, 940 & 970

Coast Guard Drawing 175-WLM 505-1, Rev C, General Requirements for Piping Systems

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification (SFLC Std Spec) 0000, 2014, General Requirements

Surface Forces Logistics Center Standard Specification (SFLC Std Spec) 0740, 2014, Welding and Allied Processes

OTHER REFERENCES

The Society for Protective Coatings (SSPC) Surface Preparation Specification No.3 (SSPC-SP 3), 2004, Power Tool Cleaning

American Society of Mechanical Engineers (ASME) B16.34, 2004, Valves-Flanged, Threaded, and Welding End

ASTM International (ASTM) F992, 2006, Standard Specification for Valve Label Plates

3. REQUIREMENTS

3.1 Interferences. The Contractor shall be aware that interferences in way of work include, but are not limited to the below-listed. Handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences):

- Deck plates.

- Other piping.
- Insulation.
- Valve flanges.

3.2 General description. The concerned work area is in the aft buoy deck. For estimate purpose, 15 feet of piping are to be renewed.

3.2.1 Cutter personnel will assist in locating all items required to be secured or isolated, and tagged for work under this item.

3.2.2 Fluid handling. The Contractor shall drain and dispose of all residual fluids in the piping system in accordance with all Federal, state, and local rules and regulations.

3.2.2.1 The Contractor shall remove up to a total of 100 gallons of lube oil from the lube oil storage tank 2-77-1-F and gas free for hot work. The Contractor shall document a complete chain of custody record of the removed tank contents from the vessel to the point of final destination or delivery. Submit document to the COR upon completion of work.

3.2.2.2 The Contractor shall stow the lube oil in suitable stowage facility, immediately after removal, and re-stow all tank contents, upon completion of work. Contractor shall ensure lube oil quality is maintained throughout all stages of the process

3.3 Piping renewal particulars. Using Coast Guard Drawings 175-WLM 262-1 and 5 as guidance, the Contractor shall crop and renew the exiting piping in 3 difference places. Length of piping needed to repair is estimated 15 size 2" and 4 fittings.

3.3.1 Valves Using Coast Guard Drawings 175-WLM -262-1 and 5 as guidance, the Contractor shall crop out and renew the exiting cut out valves on the lube oil piping tree.

3.4 Surface preservation.

3.4.1 New piping. Prepare and coat new pipe surfaces, to match existing adjacent areas. Power tool clean all affected surfaces to "bare metal", in lieu of using abrasive blasting; and feather edges of existing intact coating to the prepared areas, in order to provide a smooth transition with the new paint. Select finish/top coat color to match existing adjacent surfaces.

3.4.2 The Contractor has the option to retain removed piping as template for fabrication, and discard afterwards.

3.5 Valve labeling. The Contractor shall install valve label plates on all new valves in accordance with ASTM F992.

3.6 Hydrostatic test. After all authorized repairs of welded joints, the Contractor shall hydrostatically test all new and disturbed piping and components of the system in accordance with SFLC Std Spec 0740, Appendix C, "Hydrostatic Test". Be aware that no leakage or permanent deformation of pressure-containing parts is permissible. Repair all leaks and discrepancies found. Submit a CFR.

3.7 Leak test. After all authorized repairs of mechanical (i.e. threaded, bolted, etc.) joints, the Contractor shall perform an operational test of the system using the system fluid at normal operating pressure. Be

aware that no visible leakage or deformation is acceptable. Repair all leaks and discrepancies found. Submit a CFR.

4. NOTES: