USCGC TIGER SHARK (WPB 87359)

SPECIFICATION FOR DRYDOCK REPAIRS

FY2027

Developed By: Aries T Knoll

(Rev-0, 3 April 2026)

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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

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

Coast Guard Drawing 87 WPB 085-001, Rev -, Tank Capacity Curves

Coast Guard Drawing 87 WPB 085-011, Rev D, Lifting Slings

Coast Guard Drawing 87 WPB 085-012, Rev A, Lifting Cradle

Coast Guard Drawing 87 WPB 085-013, Rev B, Docking Plan

Coast Guard Drawing 87 WPB 111-001, Rev H, Shell Expansion

Coast Guard Drawing 87 WPB 111-050, Rev A, Updates to DWG 87-WPB-111-001 Exhaust Port Insert Plate Installation and Details

Coast Guard Drawing 87 WPB 113-001, Rev G, Platform Plating & Framing

Coast Guard Drawing 87 WPB 116-001, Rev -, Longitudinal Girders & BHD's

Coast Guard Drawing 87 WPB 117-001, Rev G, Transverse Sections

Coast Guard Drawing 87 WPB 122-001, Rev C, Watertight Bulkheads

Coast Guard Drawing 87 WPB 131-001, Rev J, Deck Construction Plan

Coast Guard Drawing 87 WPB 151-001, Rev M, Superstructure Details

Coast Guard Drawing 87 WPB 163-001, Rev H, Sea Chest Details

Coast Guard Drawing 87 WPB 165-001, Rev F, Transducer Details

Coast Guard Drawing 87 WPB 167-002, Rev C, CG Schedule of Doors, Manholes, Windows & Hatches

Coast Guard Drawing 87 WPB 167-003, Rev -, Weather Tight Door for Fuel Station Access

Coast Guard Drawing 87 WPB 167-004, Rev H, W.T. Doors and Hatches

Coast Guard Drawing 87 WPB 171-001, Rev Y, Mast Details

Coast Guard Drawing 87 WPB 182-001, Rev C, Main Engine & Generator Foundations

Coast Guard Drawing 87 WPB 184-002, Rev A, Foundation Mods Incidental to LED Floodlight Install

Coast Guard Drawing 87 WPB 185-001, Rev AP, Auxiliary Foundation Booklet

Coast Guard Drawing 87 WPB 243-003, Rev -, Propulsion Shaft Details

Coast Guard Drawing 87 WPB 245-003, Rev A, Propeller Details

Coast Guard Drawing 87 WPB 256-001, Rev AC, Seawater Cooling Piping

Coast Guard Drawing 87 WPB 302-001, Rev AF, Misc. Controls Wiring Diagram

Coast Guard Drawing 87 WPB 310-001, Rev J, Ship's Service One-Line Diagram

Coast Guard Drawing 87 WPB 310-007, Rev A, Unmanned Spaces Ventilation modification Electrical

Coast Guard Drawing 87 WPB 313-001, Rev R, DC System

Coast Guard Drawing 87 WPB 321-001, Rev L, Power System Deck Plan
Coast Guard Drawing 87 WPB 321-002, Rev AV, Power & Lighting Circuit Details & V.D. Calculations
Coast Guard Drawing 87 WPB 330-002, Rev -, Pilothouse LED Floodlight Modifications Electrical
Coast Guard Drawing 87 WPB 331-001, Rev R, Lighting System Deck Plan
Coast Guard Drawing 87 WPB 423-001, Rev Y, Speed Log & Depth Sounder System
Coast Guard Drawing 87 WPB 433-001, Rev M, General Announcing & Alarm Sys Wiring Diagram
Coast Guard Drawing 87 WPB 436-001, Rev H, Fire Detection System
Coast Guard Drawing 87 WPB 514-001, Rev M, HVAC Duct & Piping System
Coast Guard Drawing 87 WPB 514-005, Rev E, Ventilation Mods to Unmanned Spaces
Coast Guard Drawing 87 WPB 521-002, Rev -, Fire Main Bleed Line Mod
Coast Guard Drawing 87 WPB 526-001, Rev J, Scuppers & Deck Drains Piping
Coast Guard Drawing 87 WPB 561-001, Rev M, Steering System Details
Coast Guard Drawing 87 WPB 562-001, Rev A, Rudder Details
Coast Guard Drawing 87 WPB 582-001, Rev J, Mooring and Towing
Coast Guard Drawing 87 WPB 583-001, Rev Y, RIB Deployment Structure
Coast Guard Drawing 87 WPB 593-001, Rev L, Sewage Piping
Coast Guard Drawing 87 WPB 593-005, Rev -, Air Compressor, Removal
Coast Guard Drawing 87 WPB 601-001, Rev R, Outboard Profile & General Arrangements
Coast Guard Drawing 87 WPB 602-001, Rev F, Visual ID and Draft Mark Plan
Coast Guard Drawing 87 WPB 621-001, Rev K, Joiner Work Details
Coast Guard Drawing 87 WPB 631-001, Rev P, Ship's Painting Schedule
Coast Guard Drawing 87 WPB 633-001, Rev A, Cathodic Protection
Coast Guard Drawing 87 WPB 634-001, Rev G, Deck Covering and Details
Coast Guard Drawing 87 WPB 635-001, Rev C, Linings and Insulation
Coast Guard Drawing 87 WPB 640-001, Rev P, Interior Furnishings
Coast Guard Drawing 87 WPB 995-001, Rev -, Jigs and Fixtures for Shaft Installation
Coast Guard Drawing 87WPB 431-001, Rev U, IC Panel Board Wiring Diagram
Coast Guard Drawing 87WPB 432-001, Rev L, Dial Telephone Wiring Diagram
Coast Guard Drawing 87WPB 436-002, Rev C, Intrusion Detection System, Replace
Coast Guard Fleet Drawing FL 2804-12, Rev -, U.S.C.G. Emblem
Coast Guard Fleet Drawing FL 2804-22, Rev B, Consolidated Visual ID for Cutters

COAST GUARD PUBLICATIONS

Coast Guard Commandant Instruction (COMDTINST) M10360.3D, Coatings and Color Manual
Coast Guard Commandant Instruction (COMDTINST) M5530.1C, Physical Security and Force Protection Program
Coast Guard Technical Publication (TP) 4499, Jun 2018, SWBS 243, Stern Tube Seal-Model 442C
Coast Guard Technical Publication (TP) 4500, Sep 2017, SWBS 233, Engine Change-Out Guide - Waterborne Main Diesel
Coast Guard Technical Publication (TP) 4506, Wartsila TM-EL-68839, Issue A, Mar 2005, Rudderstock Seal Type EL
Coast Guard Technical Publication (TP) 4511, SWBS 430, Jun 2019, Alarm Panel & Tank Level Indication (TLI) System

Coast Guard Technical Publication (TP) 4525, SWBS 202, 2003, Main Diesel Engine Control System Schematics

Coast Guard Technical Publication (TP) 4533, SWBS 233, 2002, Propulsion Internal Combustion Engines, Maintenance Manual

Coast Guard Technical Publication (TP) 4559, SWBS 513, Oct 2019, Ventilation System, Engine Room

Coast Guard Technical Publication (TP) 4564A, Electronic Steering System

Coast Guard Technical Publication (TP) E-424-013, SWBS 424, July 2007, CDOH-EML500 Speedlog User's Manual

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2022, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 3041 (SFLC Std Spec 3041), 2022, Shipboard Electrical Cable Test

Surface Forces Logistics Center Standard Specification 3042 (SFLC Std Spec 3042), 2022, Shipboard Electrical Cable Removal, Relocation, Splice, Repair, and Installation

Surface Forces Logistics Center Standard Specification 5100 (SFLC Std Spec 5100), 2022, Clean Shipboard Ventilation Systems

Surface Forces Logistics Center Standard Specification 5550 (SFLC Std Spec 5550), 2022, Fire Prevention and Response

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, Requirements for Preservation of Ship Structures

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std. Spec 6310), 2022, Requirements for Preservation of Ship Structures

Surface Forces Logistics Center Standard Specification 6341 (SFLC Std Spec 6341), 2022, Install Interior Deck Covering Systems

Surface Forces Logistics Center Standard Specification 8634 (SFLC Std Spec 8634), 2022, Drydocking

Surface Forces Logistics Center Standard Specification 8635 (SFLC Std Spec 8635), 2022, Temporary Services

OTHER REFERENCES

American Society for Nondestructive Testing (ASNT) SNT-TC-1A, 2016, Recommended Practice for Personal Qualification and Certification in Nondestructive Testing

American Society for Nondestructive Testing, SNT-TC-1A: Personnel Qualification and Certification in Nondestructive Testing, 2016

AN/SPS-73V Surface Search Radar (SSR), Sep 1998, Operation, Maintenance, and Installation Manual

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

ASTM International (ASTM) D1330, 2015, Standard Specification for Rubber Sheet Gaskets

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

Code of Federal Regulations (CFR) Title 29, Part 1915, Occupational Safety and Health Standards for Shipyard Employment

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

Commercial Item Descriptions (CID) A-A-59316, Nov 2016 Abrasive Materials for Blasting

Federal Standard (FED-STD) 595, 2008, Colors Used in Government Procurement

MIL-A-18001, Dec 2015, Anodes, Sacrificial Zinc Alloy (Commercially Accepted - ASTM B418)

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

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

MIL-A-46106b, Jun 1992, Adhesive-Sealants, Silicone, RTV, One-Component

MIL-D-16791, Jan 1993, Detergents, General Purpose (Liquid, Non-ionic)

MIL-HDBK-299, Oct 1991, Cable Comparison Handbook – Data Pertaining to Electric Shipboard Cable

MIL-PRF-24139, Mar 1987, Grease, Multipurpose, Water Resistant.

MIL-PRF-24613A, Nov 2007, Deck Covering Materials, Interior, Cosmetic Polymeric

MIL-PRF-24635, 2009, Coating Systems, Weather-Resistant, Exterior Use

MIL-PRF-24647, Jan 2018, Paint System, Anticorrosive and Antifouling, Ship Hull

MIL-STD-2003, Sep 2009, Electrical Plant Installation Standard Methods for Surface Ships & Submarines

Raytheon Marine Company, Jan 1992, Technical Manual, Radar Set Model R40X/R41X, AN/SPS-69, RMC Document Number G261404

Society of Automotive Engineers (SAE) Aerospace Material Specification (AMS) C6183, 2013, Cork and Rubber Composition Sheet; for Aromatic Fuel and Oil Resistant Gaskets

Society of Automotive Engineers (SAE) Aerospace Material Specification (AMS) C6183, 2019, Cork and Rubber Composition Sheet; for Aromatic Fuel and Oil Resistant Gaskets

The Society for Protective Coatings (SSPC) Surface Preparation Specification No.1 (SSPC-SP 1), 2016, Solvent Cleaning

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)/NACE International (NACE) Joint Surface Preparation Standard SSPC-SP 12/NACE No.5, 2002, Surface Preparation and Cleaning of Metals by Waterjetting Prior to Recoating

The Society for Protective Coatings (SSPC)/NACE International (NACE) Joint Surface Preparation Standard SSPC-SP WJ-2/NACE WJ-2, 2012, Waterjet Cleaning of Metals – Very Thorough 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

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

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)
8	N	Slip Resistant Sheets	NSN: 7220-01-F11-2238	1 KT	5,352.24
13	Y	*Alignment jig	N/A	1 ea.	----
14	N	Thordon bearing, Grade Orange (5.5" OD x 4" ID x 7.87" (200mm) LG)	PN: F54615-02-8-1 NSN: 3120-21-914-2012	2 ea.	525.03
15	N	Thordon bearing, Grade Orange (5.5" OD x 4" ID x 11.41" (290mm) LG)	PN: F54615-02-8-0 NSN: 3120-21-914-2011	2 ea.	558.05
16	N	**Intermediate bearing carrier	NSN: 3130-01-F11-2388 P/N: 87 WPB 243-001, Item 17	2 ea.	591.86
17	N	**Aft bearing carrier	NSN: 3130-01-F11-2200 PN: 87 WPB 243-001, Item 14	2 ea.	1931.31
18	Y	Propeller Shaft	NSN: 2010-01-458-9175	2 ea.	10,195.95
18	N	Seal Assembly, Shaft	NSN: 4320-01-670-5724 PN: 388725	2 ea.	6801.00
18	N	Kit Rebuild, Inflatable Seal	NSN: 5330-01-F18-5385 PN: 390831	2 ea.	1381.00
18	Y	*Alignment Kit	N/A	1 set	5000.00
20	Y	Starboard Propeller (RH)	PN: 706-3351.00 RH NSN: 2010-01-457-0573	1 ea.	9153.07
20	Y	Port Propeller (LH)	PN: 706-3350.00 LH NSN: 2010-01-459-0421	1 ea.	9542.05
20	N	*Propeller Nut Wrench	N/A	1 ea.	200.00
20	N	Propeller Nut	PN: 5317350 NSN: 2010-01-458-9217	2 ea.	322.07
20	N	Propeller Nut, Locking	PN: 5317355 NSN: 5310-01-458-9125	2 ea.	285.10
20	N	Anode, Propeller Nut	PN: 87WPB243001ITEM39 NSN: 5342-01-481-8403	2 ea.	153.06
22	N	Transducer, sonar	PN: A80214 NSN: 5845-01-668-2181	1 ea.	328.72
23	N	3" Ball Valve	NSN: 4810-01-517-8110 PN: LV071A	1 ea.	5625.00
23	N	**Doppler Speed Log Measurement Rod	NSN: 6605-01-470-1266	1 ea.	4984.63
24	N	**Fan, Tube Axial	NSN: 4140-01-598-0425	1 ea.	2,223.72
24	N	**Fan, Tube Axial	NSN: 4140-01-598-1549	1 ea.	3,091.15
26	N	Iron body/ Stainless steel stem/ bronze disk (flanged) 8 inch	PN: J022929-512431A NSN: 4820-01-613-5021	2 ea.	563.25

26	N	Iron body/ Stainless steel stem/ bronze disk (wafer) 8 inch	PN: 22929-112431A NSN: 4820-01-615-9571	2 ea.	521.46
26	N	Iron body/ Stainless steel stem/ bronze disk (flanged) 3 inch	PN: 22925-5124 NSN: 4820-01-650-0975	2 ea.	226.51
26	N	Iron body/ Stainless steel stem/ bronze disk (wafer) 3 inch	PN: 22925-1124316 NSN: 4820-01-332-6811	2 ea.	214.14
27	Y	Rudder Assembly, port	NSN: 2040-01-461-1944	1 ea.	6113.36
27	Y	Rudder Assembly, starboard	NSN: 2040-01-461-1943	1 ea.	5971.93
27	N	Upper Roller Bearing	NSN: 3110-01-512-5534	2 ea.	287.43
27	N	Wartsila EL Seals Kit	PN: H75492-01 NSN: 2040-01-565-9776	2 ea.	7243.42
27	N	Lower Bearing	PN: TBF113090 NSN: 3120-20-000-7677	2 ea.	405.81
28	N	**Valve, Counterbalance	PN: CBCA-LAN/AP NSN: 4820-01-687-1295	4 ea.	291.50
28	N	**Manifold, Valve	PN: YVY NSN: 4730-01-687-2581	2 ea.	134.30
33	N	Anode, corrosion preventive	PN: 899Y105 NSN: 5342-00-813-6058	15 ea	57.37
33	N	Anode, corrosion preventive	PN: Z0220205F3REV1 NSN: 5340-01-644-5457	2 ea	111.95
34	Y	*Transducer Cover Plate	N/A	2 ea.	50.00
42	N	Phoenix SturdiLED White	NSN: 6230-01-696-1316	2 ea.	$784.33
42	N	Phoenix SturdiLED Red	NSN: 6210-01-696-0472	2 ea.	$784.33
43	N	Panel Bridge 24 V	NSN: 6110-01-F18-5605	1 ea.	2,548.00
43	N	Alternator	NSN: 6125-01-020-2950	2 ea.	14,668.79
43	N	Regulator Voltage	NSN: 5963-01-623-3549	2 ea.	350.00
43	N	Resistor Thermal	NSN: 5905-01-662-5504	2 ea.	35.00
43	N	Harness, Wiring	NSN: 5995-01-661-5659	2 ea.	75.00
43	N	Seal Plain	NSN: 5330-12-314-3403	2 ea.	56.32
43	N	Coupling Half	NSN: 4730-12-408-7920	2 ea.	1,572.87
43	N	Coupling, Flex	NSN: 3010-01-255-4200	2 ea.	480.44
43	N	Insert, Flexible Coupling	NSN: 3010-12-332-3557	2 ea.	830.23
43	N	Screw Machine	NSN: 5305-01-384-3454	12 ea.	3.71
43	N	Washer, Spring Tension	NSN: 5310-12-125-7798	12 ea.	2.44
43	N	Nut, Plain Hexagon	NSN: 5310-12-156-4982	12 ea.	2.33
43	N	Guard Plate	NSN: 2920-12-408-7817	2 ea.	941.45
43	N	Plate, Mounting	NSN: 5340-12-333-7085	2 ea.	75.00
43	N	Screw, Cap, Hexagon	NSN: 5305-01-240-1274	14 ea.	4.53
43	N	Washer, Spring	NSN: 5310-01-195-9000	14 ea.	1.81

		Tension			
43	N	Screw Cap Hexagon	NSN: 5305-12-142-8243	4 ea.	7.92
43	N	Screw, Cap	NSN: 5305-12-142-8236	4 ea.	3.64
43	N	Washer, Flat	NSN: 5310-12-149-4352	8 ea.	2.35
43	N	Bracket	NSN: 2815-12-408-5547	4 ea.	130.18
44	N	Sensaphone Eapress II	ACN: 6320-01-F21-6407	1	$1300
44	N	IDS Relay Panel	ACN: 6320-01-F21-6406	1	$1400
44	N	Switch, 3 position, Key Lock,	ACN: 6320-01-F21-6408	1	$13.00
44	N	Holder, switch	ACN: 6320-01-F21-6409	1	$2.00
44	N	Contact Block, NC	ACN: 6320-01-F21-6410	2	$5.00
44	N	Sensor, Optical	ACN: 6320-01-F21-6411	6	$44.00
44	N	Mounting Bracket, 90 deg	ACN: 5340-01-F21-6412	2	$7.00
44	N	Mounting Bracket, straight	ACN: 5340-01-F21-6413	4	$7.00

***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
3	U/W Body, Preserve, 100 percent
18	Propulsion Shafts, Renew
26	Sea Water System, Perform Maintenance
27	Rudder Assemblies, Renew
28	Stern Launch Door, Remove, Inspect and Reinstall
34	Drydock
39	Critical Coated Surface(s), Preserve

PRINCIPAL CHARACTERISTICS

87' WPB	
PHYSICAL	
Length overall	87'
Length between perpendiculars	81' 7"
Depth	10' 11"
Maximum beam	19.4'
Draft, mean to design waterline	5' 9"
Height of highest projection	50.2'
Full load displacement	93.5 long tons
Minimum operating displacement	83.9 long tons
Displacement, light ship	77.9 long tons
Framing	Longitudinal
Bulkheads	Four watertight bulkheads located below the Main Deck
Anchor	40 lb Fortress with 480 ft. 3 strand 5/8" dia. Line stayset
HULL	
Hull/main weatherdeck material	ABS Grade AH 36
Superstructure	5086 Aluminum
MACHINERY	
Main propulsion	Two MTU 8V396TE94, sequential turbo-charged diesels
Reduction gears	Two ZF Type BW 255
Propulsion shaft	Two AQUAMET 22, 101.6mm
Shaft diameter	4"
Shaft seal	Two John Crane mechanical seals
Shaft bearing, intermediate	Thordon Elastomeric Bearing
Shaft bearing, aft	Thordon Elastomeric Bearing
Number of propellers	2
Number of blades	5
Diameter of propeller	1040mm
Pitch	1230 mm fixed
Shaft RPM	828
Rudders	Two 316L Stainless Steel
Ship's service generators	Two Man Model D08241F01 diesel with Stanford 60KW Generator
TANK CAPACITIES	
3-9-1-f (fuel oil)	1402 gal
3-9-2-f (fuel oil)	1402 gal
3-12-2-f (waste oil)	86 gal
3-12-1-f (oily water)	86 gal
3-7-0-q (sewage collection)	352 gal
3-7-1-q (grey water)	52 gal
3-12-1-w (fresh water)	200 gal
3-12-2-w (fresh water)	200 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 (COMDTINST) M10360.3D, Coatings and Color Manual

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2022, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 5550 (SFLC Std Spec 5550), 2022, Fire Prevention and Response

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, Requirements for Preservation of Ship Structures

OTHER REFERENCES

Code of Federal Regulations (CFR) Title 29, Part 1915, Occupational Safety and Health Standards for Shipyard Employment

3. REQUIREMENTS

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

the scope of this contract, whether explicitly stated in all following work items or not, and to all other work subsequently authorized by changes, modifications, or extensions to the contract.

3.1.1 The Contractor must conform to all requirements specified in SFLC Std Spec 5550 and in the Fire Protection and Response work item, as applicable, during the performance of this availability.

3.1.1.1 Fire Safety Plan submission. The Contractor must submit a copy of the CFR 1915, Subpart P, Fire Safety Plan with the Contractor's bid when work will be conducted in a Contractor–owned facility. Include any MOA(s) with local firefighting facilities.

3.1.1.2 Fire Plan submission. The Contractor must submit a copy of the developed availability specific fire plan as requested in the Fire Protection and Response work item, with the Contractor's bid.

NOTE

NAVSEA drawings listed will be available FOR INSPECTION ONLY from the Coast Guard Port Engineer post-award. SFLC will not redistribute NAVSEA documents. Contractors can apply to NAVSEA headquarters directly for copies.

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

3.3 Preservation requirements. The Contractor must 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. The Contractor must obtain a written KO authorization to deviate from any coatings required in SFLC Std Spec 6310 Appendix C before work.

3.3.3 In-process quality control measures. The Contractor must 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").

3.3.3.1 Quality control requirements. The Contractor must abide by the following when performing preservation related inspections. The following measurements must be randomly spaced throughout for the purposes of providing a representation of the entire prepared or coated surface.

3.3.3.1.1 Surface profile measurements. One surface profile measurement must be taken for every 200 square feet for the first 1000 square feet; for each additional 500 square feet or less, one profile measurement must be taken. Profile measurements must be taken in accordance with SFLC Std Spec 6310, paragraph 3.1.8.3 (Surface profile measurements). A "measurement" for surface profile is defined as follows:

- ASTM D4417, Method B: One profile measurement is the average (mean) of 10 individual readings.
- ASTM D4417, Method C: One profile measurement is the average (mean) of 2 individual readings.

3.3.3.1.2 Soluble salt conductivity measurements. 5 conductivity measurements must be taken every 1000 square feet. For submerged (immersed) applications conductivity measurements must not exceed 30 microsiemens/cm. For non-submerged (non-immersed) applications conductivity measurements must not exceed 70

microsiemens/cm. If a conductivity check fails, clean the surface in accordance with SFLC Std Spec 6310, paragraph 3.1.8.5 (Soluble salt removal).

3.3.3.1.3 Coating thickness measurements. Three area measurements must be taken for the first 1000 square feet; for each additional 1000 square feet, perform an additional area measurement. A "measurement" for coating thickness is defined as follows:

- SSPC-PA 2 defines an area measurement as 5 separate spot measurements randomly spaced throughout a 100 square foot area.
- SSPC-PA 2 defines a spot measurement as 3 gage readings and each new gage reading the probe must be moved to a new location within a 1.5-inch diameter circle defining the spot.

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

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

3.5.3 Regulatory notifications. The Contractor is 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 must 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 must 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 must appoint in writing an Environmental Manager for the project, who is responsible for coordinating Contractor compliance with Federal, State, local, and station environmental requirements. The Environmental Manager must 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 must 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. The Contractor must refer to site (e.g., Base) Regulations and Instructions for details regarding local policies (e.g., crane services, parking, or facility usage).

3.7 SFLC Standard Specification approved changes. Approved updates to the 2022 SFLC Standard Specifications will appear here.

3.7.1 SFLC Standard Specification 5550: Replace paragraph 3.11.3 to state, “Material supporting imminent work shall be brought on the cutter and stored where the work is being performed. Material that appreciably contributes to fire load shall be removed at the end of each work shift when personnel are not present. Trash, debris, and packaging materials shall be promptly removed from the vessel at the end of each work shift and not allowed to accumulate.” Advance the paragraph numbering of the Fire Prevention and Safety Inspection form to 3.11.4.

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.

USCGC TIGER SHARK (WPB-87) DRYDOCK AVAILABILITY FY2027

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 mfg.
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 mfg.
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/AMPP INSPECTOR	SIGNATURE	CERT. #	DATE / TIME
NAME OF CG REPRESENTATIVE	**SIGNATURE**	**UNIT**	**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/AMPP INSPECTOR	SIGNATURE	CERT. #	DATE / TIME
NAME OF CG REPRESENTATIVE	**SIGNATURE**	**UNIT**	**DATE/TIME**

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 (FRAME REFERENCES)			**AREA (SQFT)**

SURFACE PREPARATION METHOD		PROFILE ACHIEVED (MILS)		
		MIN	MAX	MEAN
SSPC-SP-10/AMPP No. 2	☐			
SSPC-SP WJ-2/AMPP WJ-2	☐			
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/AMPP INSPECTOR	SIGNATURE	CERT. #	DATE / TIME
NAME OF CG REPRESENTATIVE	**SIGNATURE**	**UNIT**	**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/AMPP No. 2	☐			
SSPC-SP WJ-2/AMPP WJ-2	☐			
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 Mils Reading (IAW ASTM D4417-Method B for above 10 readings (by column):					
Mean Reading (mils)					

NAME OF QP-1/AMPP INSPECTOR	SIGNATURE	CERT. #	DATE / TIME
NAME OF CG REPRESENTATIVE	**SIGNATURE**	**UNIT**	**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/AMPP INSPECTOR	SIGNATURE	CERT. #	DATE / TIME
NAME OF CG REPRESENTATIVE	SIGNATURE	UNIT	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/AMPP INSPECTOR	SIGNATURE	CERT. #	DATE / TIME
NAME OF CG REPRESENTATIVE	SIGNATURE	UNIT	DATE/TIME

4.2 Tank and Void Assessment form.

SFLC-ESD-25	TANK AND VOID ASSESSMENT FORM
PRINT RESET	

GENERAL DATA	Note: Use SFLC-ESD-29 for Compartments other than Tanks & Voids.		
Inspector's Name:	Organization:	Contact Info:	
Cutter Name:	Cutter Class:	Hull:	
Tank:	Service:	Tank Area:	Gallons:
Solid Balast:	Access Compt:	Date:	Assessment Reason:

ACCESS DATA	
Manhole and cover condition:	Tank Penetration Condition:

VENT OVERFLOW DATA		
Present: ◯Yes ◯ No	Check Valve Installed:◯Yes ◯No	Check Valve Operates Properly:◯Yes ◯No

LADDER DATA		
NR of Ladder(s) Present: ◯Yes ◯No	Ladder Damaged:◯Yes ◯No	Ladder Material:

TANK LEVEL INDICATOR (TLI) DATA		
TLI Present in Tank: ◯Yes ◯No	TLI Damaged: ◯Yes ◯No	TLI Type:

SOUNDING TUBE DATA	
Sounding Tube Present in Tank: ◯Yes ◯No	Sounding Tube Damaged: ◯Yes ◯No
Striker Plate Damaged (>50%): ◯Yes ◯No	

CATHODIC PROTECTION DATA		
Cathodic Protection in Tank:◯Yes ◯No	Total Zincs:	Number of Zincs > 50% Depleted:

	1-6		Cleanliness & Housekeeping
Clean to light layer or residue		1-2 (G)	Comments:
Loose accumulation scale		3-4 (Y)	
Impending residue and sediments		5-6 (R)	

	%	1-6		Coating Systems
All Painted Surfaces			1-2 (G)	Comments:
			3-4 (Y)	
			5-6 (R)	

	%	1-6		Structural
Corrosion			1-2 (G)	Comments:
			3-4 (Y)	
			5-6 (R)	
Pitting & Grooving			1-2 (G)	Comments:
			3-4 (Y)	
			5-6 (R)	

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SFLC-ESD-25	TANK AND VOID ASSESSMENT SHEET
PRINT	

Structural Integrity Data						
Estimated Total Linear Feet of Structure Requiring Repair:			Estimated Total Square Feet of Plating Requiring Repair:			
Cracks/ Fractures Present:	Yes	No	Buckling/Deflections/ Distortions Present:	Yes	No
Holes Present:	Yes	No	Material Wastage Present:	Yes	No
All Welds Intact:	Yes	No	Structural Evaluation Recommended:	Yes	No

PHOTOGRAPHS

Pictures Taken (enter quantity):

Note: To add pictures to this form, Work Station must have Adobe Acrobat (not Reader) installed.
Add all photos and photo comments to a word document and save file. Open this form and click "Combine Files". Add the document with photos you've just saved and save as a new combined .pdf files.

Additional Comments:

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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 the underwater (u/w) body and freeboard by ultrasonic side scan method.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 085-013, Rev B, Docking Plan

Coast Guard Drawing 87 WPB 111-001, Rev H, Shell Expansion

Coast Guard Drawing 87 WPB 111-050, Rev A, Updates to DWG 87-WPB-111-001 Exhaust Port Insert Plate Installation and Details

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

OTHER REFERENCES

American Society for Nondestructive Testing (ASNT) SNT-TC-1A, 2016, Recommended Practice for Personal Qualification and Certification in Nondestructive Testing

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must 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 must plan all specified vessel work detailed in this specification package to ensure the side scan survey does not necessitate a work stoppage. The Contractor must abide by the following guidance, to facilitate the ultrasonic survey:

- Ensure that all freeboard and u/w body surface preparation and primer coat application tasks are completed within ten days of lifting the vessel.
- Prior to side-scan survey, inspect interior and bilge plating for the presence of bubbles of rusted metal. Break up and remove all rust bubbles to ensure accurate survey results.
- 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 hull surface inspection areas that are five feet above ground level.
- After completion of the hull survey, and authorized hull repairs, resume/complete freeboard and u/w body preservation process.
- Pay close attention to manufacturer's recommended practices in regard to paint system overcoat time limitations and required degree of surface cleanliness prior to resuming coating operations.

3.3 Side scan requirements and procedures. The Contractor must ensure the following referring to Coast Guard Drawings 87 WPB 085-13, 87 WPB 111-001, and 87 WPB 111-050 as guidance during the performance of the tasks specified below.

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 freeboard and 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 ASNT Level III Analyst is on site, to oversee the project and evaluate the collected data.
- An ASNT 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 inspections.

3.3.2 Coast Guard notification.

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 must be set to 0.5” x 0.5”
- Plates where scan data indicating wastage greater than or equal to 25% nominal plate thickness must 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 must be highlighted in “YELLOW”.
- Plates where scan data indicating wastage greater than or equal to 10% to 14% of nominal plate thickness must be highlighted in DARK GREEN.
- Hand held UT readings must be taken to verify bad metal areas found with the side scan equipment. All readings must 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 must be scanned with a hand-held meter at a resolution of 2” x 2”. Any repair areas found during the hand scan must 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 must 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 plating, but must 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, anodes, stern tubes, and docking blocks.
- Any areas blocked by immovable scaffolding or shipyard activity.

3.4 Side scan reports. The Contractor must submit a CFR containing the final report within three working days after the side scan inspection is completed. A copy of all repair areas must 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 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 87 WPB 111-001.

NOTE

Where hull repairs are required in the vicinity of the exhaust teardrops, use Coast Guard Drawing 87 WPB 111-050 for guidance on location of stainless steel hull inserts and when planning for plating renewal.

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

3.5 Touch-up preservation. The Contractor must prepare and coat all disturbed interior bilge 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 2: Ultrasonic Thickness Measurements, Perform

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to perform up to 250 thickness measurements (UT shots) of hull plating and frames, by ultrasonic methods.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 085-013, Rev B, Docking Plan

Coast Guard Drawing 87 WPB 111-001, Rev H, Shell Expansion

Coast Guard Drawing 87 WPB 111-050, Rev A, Updates to DWG 87-WPB-111-001 Exhaust Port Insert Plate Installation and Details

Coast Guard Drawing 87 WPB 163-001, Rev H, Sea Chest Details

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2022, Welding and Allied Processes

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 must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must 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 grates
- Tight interior spaces

3.2 UT measurements. Using Coast Guard Drawings 87 WPB 085-013, 87 WPB 111-001, and 87 WPB 111-050 as guidance, the Contractor must perform up to 250 UT measurements in locations designated by the Coast Guard Inspector in accordance with SFLC Std Spec 0740, Appendix C. Submit a CFR.

3.2.1 The Contractor must conduct 50 of the 250 UT shots over the 1/4" sea chest plating in both sea chests beneath the sea chest grates as shown on Coast Guard Drawing 87 WPB 163-001.

3.2.2 The Contractor must create a sketch to show all locations selected for measurement and record all measurements in Table 1 (UT Measurements Summary Sheet - Port/Stbd Shell) provided at the end of this item. Submit CFR itemizing all areas requiring repairs along with repair recommendations, including complete work scope proposal, for each area.

NOTE

Where hull repairs are required in the vicinity of the exhaust teardrops, use Coast Guard Drawing 87 WPB 111-050 for guidance on location of stainless steel hull inserts and when planning for plating renewal.

4. NOTES

This section is not applicable to this work item.

TABLE 1 - UT MEASUREMENTS SUMMARY SHEET PORT/STBD SHELL

SHOT #	STRAKE # PLATE #	FWD/MID/AFT TOP/MID/BOT	ORIG PL THICKNESS	MEASURED PL THICKNESS	PERCENT WASTAGE

WORK ITEM 3: U/W Body, Preserve, 100 percent

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 87 WPB 583-001, Rev Y, RIB Deployment Structure

Coast Guard Drawing 87 WPB 601-001, Rev R, Outboard Profile & General Arrangements

Coast Guard Drawing 87 WPB 602-001, Rev F, Visual ID and Draft Mark Plan

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, Requirements for Preservation of Ship Structures

OTHER REFERENCES

The Society for Protective Coatings (SSPC) Surface Preparation Specification No.1 (SSPC-SP 1), 2016, Solvent Cleaning

3. REQUIREMENTS

3.1 General.

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

- 3.1.5.1 Fairing Inspection
- 3.2.3 Post-surface preparation cleaning and inspection

3.1.2 Tech Rep. The Contractor must 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 must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection) to the following components, spaces and equipment:

- 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.
- Propellers.
- Zinc anodes (unless anodes are being renewed).

3.1.4 Interferences. The Contractor must 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.
- Hydraulic stern door rams.
- Hydraulic hoses and piping.
- Stern door gaskets.
- High density molecular weight plastic pads in the boat ramp.

NOTE

The capastic fairing is not to be removed simply as an interference for 100% near white blasting unless it is found to be failing.

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

3.1.5.1 Fairing inspection. Prior to preservation preparation, inspect the capastic fairing condition. Submit A CIR.

3.1.6 Water used in preparation and washing procedures. The Contractor must 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. Whenever fleeting is required for any reason, if the U/W Body has not yet been fully preserved, the areas adjacent to all docking blocks must be fully preserved at least 2 feet in each direction prior to refloating the vessel. If the vessel will be placed onto a different blocking position, the areas in way of the new blocking position must be fully preserved.

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

3.2.1 Pre-surface preparation wash. Accomplish low-pressure (less than 5,000 psi) freshwater 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.

3.2.2.1 Perform a visual inspection of the pad studs in the RHIB notch, making note if there are any missing or damaged. Submit a CFR.

3.2.2.2 U/W body and appendages.

3.2.2.2.1 Prepare the U/W body, appendage surfaces, and RHIB notch wet deck, using the system specified for "Underwater Water (U/W) Body and Boot-Top (U/W Body and Boot-Top, Steel Hulls (Up to 12 Years), in Salt Water", in SFLC STD SPEC 6310, Appendix A (Cutter and Boat Exterior Painting Systems".

3.2.2.2.2 Prior to coating application, accomplish surface inspections in accordance with Paragraph 3.2.3.

3.2.2.2.3 Coat the U/W body and appendage surfaces as specified below, and otherwise in accordance SFLC Std Spec 6310, Appendix A (Cutter and Boat Exterior Painting Systems):

3.2.2.2.3.1 First coat, MIL-PRF-24647 Anticorrosive Epoxy, Grade A or B (Red) at 5-6 mils, DFT.

3.2.2.2.3.2 Second coat, MIL-PRF-24647 Anticorrosive Epoxy, Grade A or B (Gray) at 5-6 mils, DFT.

3.2.2.2.3.3 Third coat, MIL-PRF-24647 Non-copper Ablative, Type I, Class 2, Applications 1 & 4 (Red) at 5-6 mils, DFT (while epoxy beneath is still tacky).

3.2.2.2.3.4 Fourth coat, MIL-PRF-24647 Non-copper Ablative, Type I, Class 2, Applications 1 & 4 (Black) at 5-6 mils, DFT.

3.2.2.2.3.5 Fifth coat, MIL-PRF-24647 Non-copper Ablative, Type I, Class 2, Applications 1 & 4 (Red) at 5-6 mils, DFT.

3.2.2.2.3.6 Boot-top area only, apply an additional coat - MIL-PRF-24647 Non-copper Ablative, Type I, Class 2, Applications 1 & 4 (Black) at 5-6 mils, DFT.

3.2.2.3 Stern door surfaces.

3.2.2.3.1 Prepare the designated aluminum stern door external and internal surfaces (in the boot-top area), using the system specified for “Underwater (U/W) Body/Boot Top, Aluminum Hull," in SFLC Std Spec 6310 (series), Appendix A.

3.2.2.3.2 Coat the stern door U/W body surface using the system specified under 3.2.2.2.3 Top coat surfaces with scheme as shown in Coast Guard Drawing 87 WPB 602-001 (black boot top and red u/w body beneath the boot top).

3.2.2.4 Stern ladder surfaces.

3.2.2.4.1 Prepare the aluminum stern ladder surfaces using the system specified for “Freeboard/Superstructure /Mast (Freeboard/Superstructure, Aluminum, Option I)” in SFLC STD SPEC 6310, Appendix A (Cutter and Boat Exterior Painting Systems).

3.2.2.4.2 Coat the ladder using the system specified under 3.2.2.2.3. Match the adjacent hull colors and scheme.

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..

NOTE

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

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..

3.3 Draft mark painting. The Contractor must 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. The Contractor must 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 Stern door removal. The Contractor may elect to remove the aluminum stern door, at no additional cost to the Government, to facilitate door preservation. DO NOT place or store stern door on its arms.

3.6 Precautionary measures. The Contractor must ensure that no aluminum surfaces come in contact with copper coating, due to copper’s corrosive effect on aluminum surfaces.

3.7 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 must 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 87 WPB 601-001, including rudders, transducer hull rings, sea chests (including the sea chest inlet up to the final connection with the flange face at the sea chest isolation valve(s)), sea chest riser pipes, bilge keels, struts, skegs, gratings, and rope guards. Also included are the underwater body (boot top) area that extends into the RHIB wet notch deck, shown on Coast Guard Drawing 87 WPB 583-001 (normally submerged and painted black) and portion of aluminum stern door external and internal surfaces (in the boot-top area) that are normally submerged and painted black.

WORK ITEM 4: Hull Plating Freeboard, Preserve, 100 Percent

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 87 WPB 583-001, Rev Y, RIB Deployment Structure

Coast Guard Drawing 87 WPB 601-001, Rev R, Outboard Profile & General Arrangements

Coast Guard Drawing 87 WPB 602-001, Rev F, Visual ID and Draft Mark Plan

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

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

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, Requirements for Preservation of Ship Structures

OTHER REFERENCES

MIL-PRF-24635, 2009, Coating Systems, Weather-Resistant, Exterior Use

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection) and to the following specific 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.
- Exhaust ports (port and starboard).
- Deck equipment.

3.1.4 Interferences. The Contractor must 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:

- Limit switches.
- Vertical rub rails.
- Stern door gaskets.

3.2 Initial inspection. Prior to removing the existing coating system, the Contractor must 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 Pre-surface preparation wash. The Contractor must 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.

3.4 Surface preparation optional methods. The Contractor must 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.

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

3.6 Preservation requirements. The Contractor must 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.
- White (17925), as the top/finish coat color..

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

3.6.2.1 Decals. The contractor must furnish and install the following decals in accordance with Coast Guard Drawing 87 WPB 602-001: 1. Coast Guard Emblem: 2 ea. 2. US Coast Guard Legend: 2 ea. 3. Vessel Name: 1 ea. 4. Vessel Hull Number: 2 ea.

3.6.2.2 Painted markings. Paint all remaining, non-decal visual identification markings, including the Coast Guard diagonal stripes 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

CAUTION

Do not place or store stern door on its arms. The Contractor may elect to remove the aluminum stern door at no additional cost to the Government.

3.6.3 Tear drop. Prepare and coat "Tear Drop" around through hull exhaust ports with the system specified for "Freeboard/Superstructure/Mast (Freeboard/Superstructure)" in SFLC Std Spec 6310. Select Option 1 system for the applicable metal substrate. Select Black (17038) as the top/finish color.

3.7 In-process quality control measures. The Contractor must 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 main deck edge, as shown on Coast Guard Drawing 87 WPB 601-001, Sheet 1. Also included are the following:

aluminum stanchions and taffrails

all steel horizontal, angled, and vertical surfaces of the RHIB notch , shown on Coast Guard Drawing 87 WPB 583-001 (normally painted white) up to and including the main deck edge

inboard and outboard surfaces of the aluminum stern door that are not normally submerged (painted white).

WORK ITEM 5: Tank, Dirty Oil, Clean and Inspect

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean the tank identified in Table 1:

TABLE 1 - TANK CLEANING AND INSPECTION

TANK	LOCATION	CAPACITY - 95% (GALLONS)
Dirty Oil	2-13-2-F	85

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 085-001, Rev -, Tank Capacity Curves

Coast Guard Drawing 87 WPB 601-001, Rev R, Outboard Profile & General Arrangements

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

OTHER REFERENCES

Society of Automotive Engineers (SAE) Aerospace Material Specification (AMS) C6183, 2013, Cork and Rubber Composition Sheet; for Aromatic Fuel and Oil Resistant 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 must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

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

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

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

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

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.2 Operational test, initial. Prior to commencement of work, the Contractor must 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.

3.3 Cleaning requirements. The Contractor must remove tank cover(s) and clean tank interior surfaces free of all foreign materials, such as sediment or sludge, 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.

3.4 Tank content and waste disposal. The Contractor must dispose of tank contents and all 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.

3.5 Inspection. The Contractor must 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.
- Dirty oil tank - Tank Level Indicator (TLI) and/or float switch condition
- Sounding tube and striker plate condition
- Suction and discharge piping condition
- Fastener material and condition (correct fastener material is stainless steel)
- Strainers – verify that strainers are not touching the hull or tank bulkheads.

3.6 Tank closing. The Contractor must adhere to the following procedures for tank closing:

3.6.1 Chase threads on access cover studs to ensure even installation of the access covers. Renew any damaged or missing fasteners. Existing undamaged fasteners may be reused. For purpose of bid, assume 10% of existing fasteners will require renewal. Renew all nylon insert/nylock nuts.

3.6.2 Ensure that the tank(s) remain open for at least 24 hours after completion of all 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.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.7 Operational test, post repairs. After completion of work, the Contractor must 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.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 6: Tank, Oily Water, Clean and Inspect

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean the following tank:

TANK	LOCATION	CAPACITY - 95% (GALLONS)
Oily Water	2-13-1-F	85

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 085-001, Rev -, Tank Capacity Curves

Coast Guard Drawing 87 WPB 601-001, Rev R, Outboard Profile & General Arrangements

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

OTHER REFERENCES

Society of Automotive Engineers (SAE) Aerospace Material Specification (AMS) C6183, 2013, Cork and Rubber Composition Sheet; for Aromatic Fuel and Oil Resistant 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 must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

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

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

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

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

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.2 Operational test, initial. Prior to commencement of work, the Contractor must witness Coast Guard personnel perform an initial operational test of the equipment listed below to demonstrate existing operational condition. Submit a CFR.

- Tank level indicator (TLI)

3.3 Cleaning. The Contractor must remove tank cover(s) and clean tank interior surfaces free of all foreign materials, such as sediment or sludge, 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.

3.4 Tank content and waste disposal. The Contractor must dispose of tank contents and all 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.

3.5 Inspection. The Contractor must 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.
- Oily water tank - Tank Level Indicator (TLI) and/or float switch condition.
- Sounding tube and striker plate condition.
- Suction and discharge piping condition.
- Fastener material and condition (correct fastener material is stainless steel).
- Strainers – verify that strainers are not touching the hull or tank bulkheads.

3.6 Tank closing. The Contractor must adhere to the following procedures for tank closing:

3.6.1 Chase threads on access cover studs to ensure even installation of the access covers. Renew any damaged or missing fasteners. Existing undamaged fasteners may be reused. For purpose of bid, assume 10% of existing fasteners will require renewal. Renew all Nylock Nuts.

3.6.2 Ensure that the tank(s) remain open for at least 24 hours after completion of all 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.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.7 Operational test, post repairs. After completion of work and in the presence of the Coast Guard Inspector, the Contractor must thoroughly test and demonstrate the equipment listed below to be in satisfactory operating condition. Submit a CFR.

- Tank level indicator (TLI)

4. NOTES

This section is not applicable to this work item.

WORK ITEM 7: Tanks, MP Fuel Service, 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 - FUEL SERVICE TANKS

TYPE OF TANK	LOCATION	CAPACITY - 95% (GALLONS)	LOW SUCTION (GALLONS)
Diesel Fuel	3-9-1-F	1450	40
Diesel Fuel	3-9-2-F	1450	40

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 111-001, Rev H, Shell Expansion
Coast Guard Drawing 87 WPB 113-001, Rev G, Platform Plating & Framing
Coast Guard Drawing 87 WPB 116-001, Rev -, Longitudinal Girders & BHD's
Coast Guard Drawing 87 WPB 122-001, Rev C, Watertight Bulkheads
Coast Guard Drawing 87 WPB 601-001, Rev R, Outboard Profile & General Arrangements

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements
Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2022, Welding and Allied Processes

OTHER REFERENCES

Society of Automotive Engineers (SAE) Aerospace Material Specification (AMS) C6183, 2019, Cork and Rubber Composition Sheet; for Aromatic Fuel and Oil Resistant 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 must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must 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 The Contractor must remove diesel fuel in accordance with Dry Dock Work Item. 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 (see 4.2 (Tank content restoration)).

NOTE

Vessel may come in with less tank fluid contents than specified above.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.2 Operational test, initial. Prior to commencement of work, the Contractor must witness Coast Guard Personnel perform an initial operational test of the equipment listed below to demonstrate existing operational condition. Submit a CFR.

- Designated tank TLIs

3.3 Plug log. The Contractor must keep a written record of all plugs put in any tanks vents. A separate list must 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 Ensure the plug log is available to the Coast Guard inspector when the inspector is performing his close-out inspection on each tank.

NOTE

Initial and post repair operational tests apply only to tanks that possess TLIs.

3.4 Cleaning requirements. The Contractor must 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. The Contractor must refer to Coast Guard Drawings 87 WPB 111-001, 87 WPB 113-001, 87 WPB 116-001, 87 WPB 122-001, and 87 WPB 601-001 for guidance.

3.5 Tank content and waste disposal. The Contractor must 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.

3.6 Inspection. The Contractor must accomplish the following tasks:

3.6.1 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. Complete the "Tank and Void Assessment Form" (found in the Work Item titled "General Requirements") and submit via CFR. Electronic PDF version of this form will be furnished by the COR upon request. Include 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.
- Suction and discharge piping condition.
- Fastener material and condition (correct fastener material is stainless steel).

3.7 Tank closing. The Contractor must accomplish the following after completion of all KO-authorized repairs and/or preservation procedures:

3.7.1 For unpainted fuel tank(s) that are not ballasted, apply a heavy coat of lube oil to the entire tank interior(s).

3.7.2 Ensure that the tank(s) remain open for at least 24 hours. Notify the COR at least 24 hours prior to closing the tank(s) and ensure tank closure is accomplished in the presence of the Coast Guard Inspector.

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 or missing fasteners. Existing undamaged fasteners may be reused. For purpose of bid, assume 10% of existing fasteners will require renewal. Renew all Nylock hex nuts.

NOTES

For cutters with unpainted fuel tanks, the 24 hour tank opening period begins after completing the lube oil coating.

Coast Guard personnel will operate all shipboard machinery and equipment.

3.8 Operational test, post repairs. After completion of work and in the presence of the Coast Guard Inspector, the Contractor must thoroughly test and demonstrate the equipment listed below to be in satisfactory operating condition. Submit a CFR.

- Designated tank TLIs
- Vent check valves

3.9 Ultrasonic thickness (UT) measurement. The Contractor must 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. Use Coast Guard Drawings in Section 2 as guidance. Submit a CFR.

3.9.1 In addition to the UT measurements, take up to 10 pit-depth measurements within each tank, using a suitable pit depth gauge.

4. NOTES

4.1 Tank content restoration. The Ship's force will procure new fluids and refill all tanks at the appropriate time.

WORK ITEM 8: Decks, Exterior (Main Deck), Preserve

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to prepare and preserve the main deck surfaces. Prepare and coat the following areas:

- All main deck portions and walkways up to bottom of deta couple.
- Life raft, P-100 foundations.
- Ammo locker mount.
- Fuel station deck.
- Boat fueling station deck.
- Stern door A-frame foundations (36 sq-ft each x 2)
- Bitts on main deck (12 bitts total, 10” dia. X 12” tall each)
- Chocks on main deck (2” dia. X 14” length each)
- Winch foundation (6 sq-ft)
- Gun mounts (.50 Cal) – 4 total (4 sq-ft each)
- 01 deck Aft Pilot house (exterior)
- Engine room ventilation (fan) space decks (1-15-1-Q, 1-15-2-Q)

NOTE

Recent changes to this work item include the addition of the following to the scope of repairs.

- Engine room ventilation (fan) space decks (1-15-1-Q, 1-15-2-Q)

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
N	Slip Resistant Sheets	NSN: 7220-01-F11-2238	1 KT	5,352.24

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 631-001, Rev P, Ship’s Painting Schedule

Coast Guard Drawing 87 WPB 634-001, Rev G, Deck Covering and Details

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, Requirements for Preservation of Ship Structures

OTHER REFERENCES

Commercial Item Descriptions (CID) A-A-59316, Nov 2016 Abrasive Materials for Blasting

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

The Society for Protective Coatings (SSPC)/NACE International (NACE) Joint Surface Preparation Standard SSPC-SP WJ-2/NACE WJ-2, 2012, Waterjet Cleaning of Metals – Very Thorough 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 must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must 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:

- P-100 pump
- P-6 pump
- Ladder
- Life rafts
- Hydraulic line brackets
- Wiring
- Navigation lights
- Ammunition locker
- Anchor windlass
- Anchor line and chain
- Anchor

- Anchor pad
- Soft patch bolts
- Engine room ventilation fans and dampers

3.2 Removals. The Contractor must remove and dispose of all existing slip resistant sheets.

NOTE

Soft patches aft of superstructure are aluminum.

3.3 Surface preparation. The Contractor must prepare the designated deck surfaces to a SSPC-SP WJ-2/NACE WJ-2/L standard, or by one or a combination of the following surface preparation methods, as applicable.

STEEL SURFACES	ALUMINUM SURFACES
Abrasive-blasting to SSPC-SP10/NACE No. 2, using grit conforming to MIL-A-22262 (to produce a 1.5 to 2.5 mil anchor profile).	Brush blasting with clean, fine aluminum oxide, garnet or equivalent inert material conforming CID A-A-59316, Type I & IV, to remove all existing coatings and rust spots, down to bare metal (and produce a 1.0-1.5 mil anchor profile). -or- Mechanical cleaning, using power sanders and abrasive sandpaper with no metallic contents, to remove all existing coatings and rust spots, down to bare metal.

3.4 Substrate inspection. After completion of surface preparation and before non-skid pad application, the Contractor must perform a visual inspection of the prepared substrate. Submit CFR.

CAUTION

DO NOT preserve aluminum surfaces (e.g. soft patches) with zinc primer.

DO NOT coat soft patch fasteners. Properly mask soft patch fasteners prior to coating.

3.5 Coating application. The Contractor must preserve all surfaces specified in paragraph 1.1 as follows:

3.5.1 For exterior steel surfaces, preserve using the system specified for “Weather Deck Slip Resistant Sheets, Option II, Steel” in SFLC Std Spec 6310, Appendix A (Cutter and Boat Exterior Paint Systems).

3.5.2 For exterior aluminum surfaces (e.g. soft patches), preserve using the system specified for “Weather Deck Slip Resistant Sheets, Aluminum” in SFLC Std Spec 6310, Appendix A (Cutter and Boat Exterior Paint Systems).

3.5.3 For interior steel surfaces (e.g. fuel station, fan spaces), preserve using the system specified for “Metal Decks – No Application of Deck Coverings” in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems).

CAUTION

1. Unless a containment system is used to contain surface preparation dust and debris and coating application overspray during pier side/dockside preservation, the following must be adhered to:

a. All surface preparation tools/equipment must be vacuum-shrouded.

b. Coatings must be applied by brushing or rolling.

2. List of authorized suppliers for all coating and slip-resistant sheet materials is provided in SFLC Std Spec 6310, Appendix C (Authorized Coatings for Use on Cutters and Boats).

3.6 Slip-resistant sheet installation. The Contractor must install Government-furnished slip resistant sheets; seal per the arrangement shown on Coast Guard Drawing 87 WPB 634-001 as specified for "Weather Deck Slip Resistant Sheets, Option I, Steel" in SFLC Std Spec 6310, Appendix A (Cutter and Boat Exterior Paint Systems).

3.6.1 Slip resistant sheet kit NSN: 01-F11-2238 may no longer include edge sealant. The Contractor must be responsible for procuring sealant as needed to install slip resistant sheets.

3.7 Touch-up preservation. The Contractor must 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 not applicable to this work item.

WORK ITEM 9: Superstructure, Preserve, 100%

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to preserve the aluminum surfaces.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 601-001, Rev R, Outboard Profile & General Arrangements

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, Requirements for Preservation of Ship Structures

OTHER REFERENCES

Federal Standard (FED-STD) 595, 2008, Colors Used in Government Procurement

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

None.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.3.1 Equipment/components to be protected include, but are not limited to:

- Life lines.
- Bulkheads.
- Windows.
- Deck surfaces.

3.1.4 Interferences. The Contractor must 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:

- Electrical/electronic equipment.
- Junction boxes.
- Fire stations.

NOTE

Existing coating system on the Superstructure surfaces may have a nominal thickness in excess of that which was originally installed, as a result of "patch-coats" applied during past availabilities.

3.2 Substrate inspection. After completion surface preparation and before coating application, the Contractor must perform a visual inspection of the prepared substrate, and submit a CFR.

3.3 Pre-surface preparation wash. The Contractor must 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.

3.4 General preservation requirements. The Contractor must prepare and coat the superstructure surfaces, using the system specified for "Freeboard/Superstructure/Mast (Freeboard/Superstructure), in SFLC Std Spec 6310, Appendix A (Cutter and Boat Painting Systems).

3.4.1 The Contractor must select "Option I" system, for the applicable metal substrate.

3.4.2 The Contractor must select White (17925) as the finish/top coating color.

3.4.3 The Contractor must color coat all miscellaneous details and fittings in accordance with the Table 1 below, as applicable.

TABLE 1 - COLORS FOR MISCELLANEOUS DETAILS

COMPONENT	*TOP COLOR COAT
Awning Ridgepoles	White (17925)
Bitts, towing	Spar (10371) except where line lays and runs; do not paint.
Chocks, brass/bronze	Uncoated
Chocks, bulwark	Match bulwark color
Chocks, except bulwark and roller type	Spar (10371)
Chocks, Roller	Black (17038)
Handrails and Lifeline Stanchions	White (17925)
Hatch coamings	Spar (10371) or Blue Grey (16099) if deck mounted

Knife edges on watertight doors and hatches	Do not paint.
Name Plates	No coating.
Spray shield on bridge, inboard	White (17925) or Blue Gray (16099); Commanding Officer prerogative.
Ventilators, all types, including gooseneck pipe vents, not attached or immediately adjacent to the superstructure.	Spar (10371)
Fire fittings, valves, stations, etc.	Red (11105)

***Numbers indicated are FED-STD-595 colors.**

3.5 In-process quality control measures. The Contractor must 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

4.1 Definition of superstructure. For the purposes of this item, superstructure surfaces are defined as vertical and horizontal surfaces (excluding deck, mast, and stack surfaces) from the main deck Level up including, but not limited to the following: top of the pilot house, exterior shell, bulkheads and all attachments secured or bracketed to bulkheads, doors, ladders, metallic rails, stanchions, stand-offs, brackets, piping, stuffing tubes, vent ducting, structural tees, angles, and gussets. The six-inch dado where the superstructure joins the deck is not included in the definition of superstructure; it is normally preserved with the deck surfaces.

4.2 Unit's responsibility. Unit crew will install new superstructure DC decals, compartment check-off holders, and name plates, after the completion of work.

WORK ITEM 10: Capastic Fairing, Depth Sounder, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew the transducer fairing.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 165-001, Rev F, Transducer Details

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, 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 must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

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

3.2 Fairing renewal particulars. The Contractor must accomplish the following tasks, using Coast Guard Drawing 87 WPB 165-001 as guidance:

3.2.1 Removal. Remove all existing fairing compound, using suitable mechanical tools, to expose the steel U/W hull; exercise extreme care not to damage the hull. Dispose of removed fairing debris.

3.2.2 New installation. Prepare all expose surfaces and apply new transducer fairing compound, using the system specified for "Metal Repair and Hull Smoothing" in SFLC Std Spec 6310, Appendix A (Cutter and Boat Exterior Painting Systems).

3.2.2.1 Application techniques. Ensure that the fairing compound is applied in accordance with the manufacturer's instructions; and has a smooth and uniform finish when cured, with no porosity.

3.2.2.2 Surface preservation. Prepare and coat the new fairing compound surfaces, using the system specified for "Underwater Water (U/W) Body and Boot-Top, Steel Hulls (up to 12 years), in Salt Water" in SFLC Std Spec 6310, Appendix A (Cutter and Boat Exterior Painting Systems). Select finish/top coat color to match existing adjacent surfaces.

3.3 In-process quality control measures. The Contractor must 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 Example of proper fairing. (See below)

FIGURE 1. TITLE EXAMPLE

WORK ITEM 11: Watertight Closures, Assess

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to perform a condition assessment of all installed watertight closures.

TABLE 1 - 87' WPB WATERTIGHT CLOSURES

LOCATION	DESIGNATION	DESCRIPTION
Pilot House Access	01-15-0	54" x 24" Clear Opening w/ 4-Dog Weathertight Door w/2 Windows (Hulls 87301-87309)
Pilot House Access	01-15-0	54" x 24" Clear Opening, Quick-Acting Heavy Duty Style w/ Window, Weathertight (Hulls 87310 on)
Forepeak Access	1-1-2	18" Clear Opening Round Al. Cast Hatch, SST Deck Ring w/ Integral Topside Handle
Fwd Crew Quarters Access	1-2-0	24"x24" Clear Opening 4-Dog Quick Action WTRTT Raised Hatch
Deck Locker Access	1-6-0	52" x 26" Clear Opening 6-Dog, Quick Acting WTRTT Door
Fuel Station Access	1-6-2	26" x 28" Clear Opening, 8-Dog, Weathertight, Individually-Dogged
Main Deck Access	1-15-0	54" x 26" Clear Opening, 6-Dog, Quick Acting WTRTT Door
Engine Room Access	1-21-1	24" x 24" Clear Opening 4-Dog Quick Acting WTRTT Raised Hatch
Lazaret Access (Stbd)	1-22-1	24" x 24" Clear Opening 4-Dog Quick Acting WTRTT Raised Hatch
Lazaret Access (Port)	1-22-2	24" x 24" Clear Opening 4-Dog Quick Acting WTRTT Flush Hatch
Fwd Passageway Access	2-9-0	54" x 26" Clear Opening 6-Dog, Quick Acting WTRTT Door
Engine Room Access	2-14-0	54" x 26" Clear Opening 6-Dog, Quick Acting WTRTT Door

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 167-002, Rev C, CG Schedule of Doors, Manholes, Windows & Hatches

Coast Guard Drawing 87 WPB 167-003, Rev -, Weather Tight Door for Fuel Station Access

Coast Guard Drawing 87 WPB 167-004, Rev H, W.T. Doors and Hatches

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2022, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, 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 must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

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

3.2. Watertight closure assessment. Using Coast Guard Drawings 87 WPB 167-002, 87 WPB 167-003, and 87 WPB 167-004 as reference, the Contractor must perform an assessment of all watertight closures listed in Table 1 as follows. Submit CFR with results of inspections including recommendations for repair or renewal:

3.2.1 Inspect all watertight closures for loose, missing or damaged parts; wear of hinge pins and striker plates; and clogged drain lines where applicable.

3.2.2 Operate closures through complete dogging cycle, checking for binding and/or difficult operation.

3.2.3 Inspect closure gasket for the following:

3.2.3.1 Paint/foreign matter, cracks, or deterioration.

3.2.3.2 Uneven or excessive depression (greater than 1/8”).

3.2.3.3 Gaps greater than 1/16” where ends meet, or any ends that meet in a radius (except for round closures).

3.2.4 Apply grease to all intact grease fittings. Note any missing or broken fittings.

3.2.5 Inspect closure knife edge for nicks and gouges. Repair minor gouges by filing smooth.

NOTE

If the nick or gouge has a gap greater than 1/16", the knife edge may require weld buildup prior to filing smooth in order to keep the knife edge fair.

3.2.6 Chalk test. Perform a chalk test of all inspected closures in accordance with SFLC Std Spec 0740, Appendix C.

3.2.7 Water hose test. Perform a water hose test of all watertight closure boundaries in accordance with SFLC Std Spec 0740, Appendix C.

3.2.8 String test. Perform a string test of all inspected closures to identify any twisting and/or warpage of knife edge. Measure and report gap at the intersection of the two strings both when pulled taught across corners and when pulled taut across the midpoints of the sides. See Figure 1 for guidance.

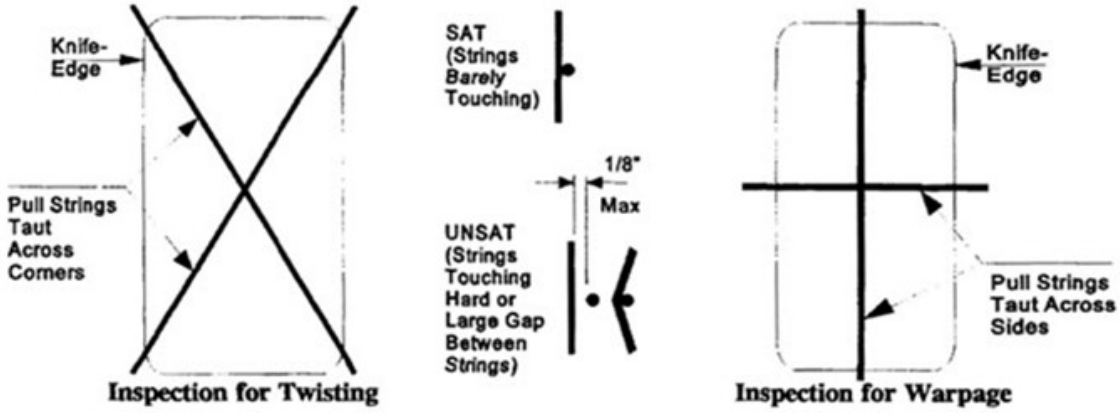


FIGURE 1. KNIFE EDGE STRING TEST

3.3 Repair change request authorization. If a Change Request has been authorized and released by the Contracting Officer (KO), the Contractor must execute minor repairs as identified by CFR to return closure(s) to operable condition and/or restore watertight integrity.

NOTE

Examples of minor repairs include, but are not limited to, parts renewals and weld repairs such as hinge bracket renewal/relocation and knife edge repairs.

3.4 Operational test, post repairs. After completion of work, the Contractor must thoroughly test in the presence of the Coast Guard Inspector and demonstrate all items or shipboard devices that have been repaired are in satisfactory operating condition.

3.5 Personnel training. While conducting assessments, the Contractor must provide training on maintenance and repair of watertight closures to Ship's Force personnel designated by cutter Engineering Petty Officer (EPO). The Contractor must allow designated personnel to shadow the Contractor while conducting assessments in order to learn assessment and repair techniques used by Contractor.

3.6 Final report. Within seven (7) days after the completion of the assessment and follow-on repairs, the Contractor must submit a final report to the cutter EO with copy to the COR. The final reports must include:

- Complete list of watertight closures assessed
- List of closures not assessed and the reasons for non-assessment
- Condition found on all assessed closures
- List of repairs accomplished
- List of additional recommended repairs

3.7 Touch-up preservation. The Contractor must 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 This section does not apply to this WI.

WORK ITEM 12: Mast, Preserve ("100%") – Contractor Interference Removal

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to 100% preserve the mast.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 171-001, Rev Y, Mast Details

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, Requirements for Preservation of Ship Structures

OTHER REFERENCES

Raytheon Marine Company, Jan 1992, Technical Manual, Radar Set Model R40X/R41X, AN/SPS-69, RMC Document Number G261404

AN/SPS-73V Surface Search Radar (SSR), Sep 1998, Operation, Maintenance, and Installation Manual

MIL-A-46106b, Jun 1992, Adhesive-Sealants, Silicone, RTV, One-Component

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.3.1 Coil up electrical cabling down to associated deck/bulkhead penetrations.

3.1.3.2 Mark, seal, and cover all coiled cabling.

CAUTION

Do not bend any electrical cable to a radius less than 20 times their diameter.
Do not hoist a radar pedestal using its array.

3.1.4 Interferences. The Contractor must 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:

- Electronics.
- Navigation lights.
- Cable and wire ways.
- Antennas and mounts.
- Satellite television dome.
- Speaker(s).

3.2 Component inspection. Perform visual inspection of the mast, electrical and electronic cables, connectors, equipment, and hardware. Submit a CFR.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.3 Operational test, initial. Prior to commencement of work, the Contractor must 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.

3.4 Mast particulars. The Contractor must accomplish all work herein while referring to Coast Guard Drawing 87 WPB 171-001 for guidance.

3.4.1 Preservation requirements. The Contractor must prepare and coat the aluminum mast, using the system specified SFLC Std Spec 6310 for "Freeboard/Superstructure/Mast (Freeboard/Superstructure, Aluminum or Galvanized Aluminum), Option I", Appendix A (Cutters and Boats Painting Systems). Select Spar (10371) as the top/finish color.

3.4.2 Post prep, pre-coating inspection. After surface preparation and before the coating application, the Contractor must perform a visual inspection of all cleaned mast surfaces, including electrical and electronic cables hangers, standoffs, hardware, antenna mounts and safety rail hardware. Submit a CFR.

3.5 In-process quality control measures. The Contractor must abide by all the safety, preservation, and quality control requirements specified in SFLC Std Spec 0000, paragraph titled "Preservation requirements – general”.

NOTE

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

3.6 Weather proofing of connections and reinstallation. The Contractor must verify that final electrical re-connections of all removed equipment are weather tight. At a minimum, perform the following.

3.6.1 Weather proofing of coaxial cable connectors. Clean the entire plug. Apply a commercially available dielectric compound (e.g. Dow Corning #4 or equivalent) to the interior and exterior including the insulation portion and the threads. Do not fill the air space in the plug with dielectric compound as this will change the impedance and cause a mismatch. Assemble the plug finger tight and tightly wrap a single layer of a commercially available ¾" wide synthetic resin tape with a 50% overlay over the entire plug and for a distance of two inches on each side. Then apply a layer of friction tape and at least 3 coats of a commercially available sealing compound (e.g. 3M™ Scotchkote™ Electrical Coating or equivalent).

3.6.2 Weather proofing of Non coaxial electrical or electronic connectors. Apply a commercially available dielectric compound (e.g. Dow Corning #4 or equivalent) to the interior portion of the connector threads. Encapsulate the connector termination and at least 3 inches of the interconnecting cable and/or MS series panel mount connector with a commercially available plastic electrical insulating adhesive tape. Seal this transition with a commercially available multi-purpose silicone sealing compound (e.g. Dow Corning 732 Multi-Purpose silicone sealing compound or equivalent) that conforms to MIL-A-46106. Do not apply silicone sealing compound directly to the metal connector surfaces as a slight corrosion will occur.

3.7 Operational test, post repairs. After completion of work, the Contractor must 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.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 13: Main Engine/Reduction Gear, Realign

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to realign a designated main diesel engine and its corresponding reduction gear assembly to the propeller shaft.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
Y	*Alignment jig	N/A	1 ea.	----

***Government-loaned property, which must be returned to the vessel upon completion of the availability.**

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 182-001, Rev C, Main Engine & Generator Foundations

Coast Guard Drawing 87 WPB 243-003, Rev -, Propulsion Shaft Details

Coast Guard Drawing 87 WPB 995-001, Rev -, Jigs and Fixtures for Shaft Installation

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 4500, Sep 2017, SWBS 233, Engine Change-Out Guide - Waterborne Main Diesel

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, 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 must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

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

3.2 Personnel qualification. The Contractor must ensure that the shaft alignment is performed under the direct supervision of personnel experienced in and regularly engaged in shaft and engine alignment. Personnel performing alignment work must be:

- familiar with manufacturer's alignment techniques and be able to assist with proper bearing and shaft alignment;
- able to comply with engine/reduction gear manufacturer's installation standards.

3.2.1 Personnel engaged in the supervision of the alignment work must possess a résumé of demonstrated experience with engine and reduction gear systems.

3.2.2 Submit a copy of the supervisor's résumé and any applicable references to the COR at the Arrival Conference.

3.3 Alignment particulars. Using the references listed under Section 2, the Contractor must accomplish the following:

3.3.1 Alignment preparation. Prior to shaft realignment, the Contractor must ensure the following conditions are met for at least 24 hours before the alignment check:

- The vessel is waterborne with fuel and water filled to normal operating levels, a minimum of three-quarters capacity.
- All major equipment and machinery weighing over 1,000 pounds (450 kilograms) are either installed or simulated by equivalent weights appropriately located.

3.3.2 Pre-alignment shaft torque measurement. After the couplings are detached but prior to aligning, using a torque wrench, measure the torque required to turn each shaft. Submit a CFR.

3.3.3 Realignment. The Contractor must accomplish the following for shaft-to-MDE/reduction gear realignment using Coast Guard Drawings 87 WPB 182-001, 87 WPB 243-003, and TP 4500 as guidance.

NOTES

The following torque values apply:

Chock mounts – Consult chock manufacturer for values.

Shim mounts - torque foot to foundation fasteners to 369 ft-lbs (500 N-m).

Coupling bolts – torque coupling bolts to 317 ft-lbs (430 N-m).

3.3.3.1 Alignment adjustment. Correct any misalignment by repositioning the propulsion engine/reduction gear; secure the mounts to the foundations.

NOTES

Epoxy-resin chocking must be used for gaps greater than 3/8" between the bottoms of the mounting feet and tops of the foundation rails.

Use stainless steel shims for gaps less than or equal to 3/8".

CAUTION

Under any individual mounting foot, a combination of both chocking and shim(s) is prohibited!

3.3.3.2 Final readings. Recheck all the final alignment readings as follows and record on the forms under Paragraph 4.2:

- parallel measurements between shaft coupling and reduction gear coupling ODs (concentricity);
- angular measurements between shaft coupling and reduction gear coupling faces;
- shaft coupling to reduction gear coupling gap.

3.4 Operational test. After completion of work, the Contractor mist thoroughly test during sea trials, in the presence of the Coast Guard Inspector, and demonstrate the propeller shaft to be in satisfactory operating condition and operates without binding. Inspect and correct any abnormal noise and vibration generated from the shaft or bearings (see 4.1, Equipment operation). Submit CFR.

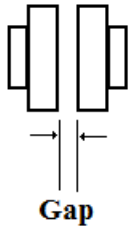
4. NOTES

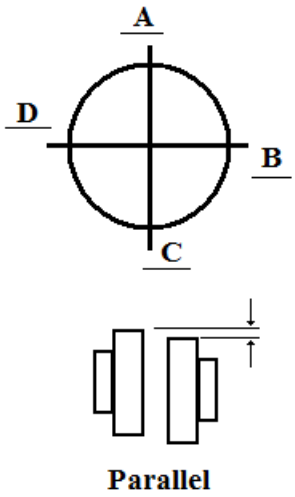
4.1 Equipment operation. Coast Guard personnel will operate all shipboard machinery and equipment during all tests.

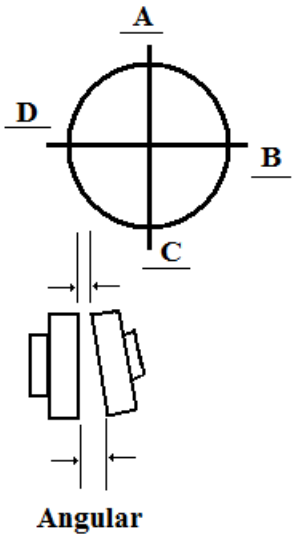
4.2 Alignment inspection form. See below.

CIRCLE ONE: PORT STARBOARD - HUB ALIGNMENT MEASUREMENT FORM

VESSEL NAME AND HULL NUMBER: _____







ALL MEASUREMENTS IN INCHES	SHAFT INITIAL POSITION	SHAFT ROTATED 90°	SHAFT ROTATED 180°	SHAFT ROTATED 270°
Gap				
Parallel A				
Parallel B				
Parallel C				
Parallel D				
Angular A				
Angular B				
Angular C				
Angular D				

Inspection Facility: _____ Date and Time:_____

Inspector Signature: _____

WORK ITEM 14: Intermediate Water-Lubricated Propulsion Shaft Bearings, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew the intermediate water-lubricated bearings.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
N	Thordon bearing, Grade Orange (5.5" OD x 4" ID x 7.87" (200mm) LG)	PN: F54615-02-8-1 NSN: 3120-21-914-2012	2 ea.	525.03

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 243-003, Rev -, Propulsion Shaft Details

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, 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 must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

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

3.2 Renewal particulars. Using Coast Guard Drawing 87 WBP 243-003 as guidance, the Contractor must accomplish all work herein.

3.3 Removal. The Contractor must remove and perform the following:

3.3.1 Inspect the removed bearings for excessive wear and/or other abnormal conditions and submit a CFR.

3.3.2 Inspect intermediate carriers for damage.

3.3.3 Dispose of the removed bearings and submit a CFR for the above inspections.

3.4 Fitting. The Contractor must skim machine and fit the new Government-furnished bearings to suit carrier and shaft dimensions as specified on Coast Guard Drawing 87 WPB 243-003 and perform the following:

3.4.1 Cut the bearings to maintain interference fit tolerance between bearings and carriers, and maintain clearance tolerance between shafts and bearings.

3.4.2 Measure and record the final bearing dimensions.

3.4.3 Submit a CFR.

3.5 Installation. The Contractor must install the new Government-furnished bearings and renew all disturbed fasteners.

3.6 Operational test, post repairs. After completion of work, the Contractor must 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.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 15: Aft Water-Lubricated Propulsion Shaft Bearings, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew the aft water-lubricated bearings.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
N	Thordon bearing, Grade Orange (5.5" OD x 4" ID x 11.41" (290mm) LG)	PN: F54615-02-8-0 NSN: 3120-21-914-2011	2 ea.	558.05

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 243-003, Rev -, Propulsion Shaft Details

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, 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 must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

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

3.2 Renewal particulars. While using Coast Guard Drawing 87 WPB 243-003 as guidance, the Contractor must accomplish all work herein.

3.3 Removal. The Contractor must remove the existing bearings and perform the following:

3.3.1 Inspect the removed bearings for excessive wear and/or other abnormal conditions.

3.3.2 Inspect aft bearing carriers for damage.

3.3.3 Dispose of the removed bearings and submit a CFR for the above inspections.

3.4 Fitting. The Contractor must machine and fit the new Government-furnished bearings, as required, to suit carrier and shaft dimensions as specified on Coast Guard Drawing 87 WPB 243-003 and perform the following:

3.4.1 Cut the bearings to maintain interference fit tolerance between bearing and carrier, and maintain clearance tolerance between shafts and bearings.

3.4.2 Measure and record the final bearing dimensions.

3.4.3 Submit a CFR.

3.5 Installation. The Contractor must install the new Government-furnished bearings and renew all disturbed fasteners.

3.6 Operational test, post repairs. After completion of work, the Contractor must 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.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 16: Intermediate Bearing Carriers, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew the port and starboard intermediate bearing carriers.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
N	**Intermediate bearing carrier	NSN: 3130-01-F11-2388 P/N: 87 WPB 243-001, Item 17	2 ea.	591.86

****New or refurbished equipment that the Government may provide for installation in place of existing equipment.**

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 243-003, Rev -, Propulsion Shaft Details

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, 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 must furnish and install all protective measures in accordance

with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

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

3.2 Carrier renewal. Using Coast Guard Drawing 87 WPB 243-003 as guidance, the Contractor must accomplish the following:

3.2.1 Removal. Remove and dispose of the existing bearing carrier and chock-fast bed.

CAUTION

Do not cut into the skeg while performing this work.

3.2.2 Renewal. Renew the removed carrier with the Government-furnished stainless steel bearing carrier. Measure and record all final dimensions of the new bearing carrier and submit a CFR.

3.2.3 Alignment. Align and install the new Government-furnished bearing carrier to the propulsion system and renew the chocking material bed. After the chocking material has set, verify the carrier alignment is correct. Minimize thermal effects by performing the alignment late in the evening or before sunrise. Submit a CFR.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 17: Aft Bearing Carriers, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew the port and starboard aft bearing carriers.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
N	**Aft bearing carrier	NSN: 3130-01-F11-2200 PN: 87 WPB 243-001, Item 14	2 ea.	1931.31

****New or refurbished equipment that the Government may provide for installation in place of existing equipment.**

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 243-003, Rev -, Propulsion Shaft Details

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, 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 must furnish and install all protective measures in accordance

with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

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

3.2 Carrier renewal. Using Coast Guard Drawing 87 WPB 243-003 as guidance, the Contractor must accomplish the following:

3.2.1 Removal. Remove and dispose of the existing bearing carrier and chock-fast bed.

CAUTION

Do not cut into the skeg while performing this work.

3.2.2 Renewal. Renew the removed carrier with the Government-furnished stainless steel bearing carrier. Measure and record all final dimensions of the new bearing carrier and submit a CFR.

3.2.3 Alignment. Align and install the new Government-furnished bearing carrier to the propulsion system and renew the chocking material bed. Minimize thermal effects by performing the alignment late in the evening or before sunrise. After the chocking material has set, verify the carrier alignment is correct. Submit a CFR.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 18: Propulsion Shafts, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew the port and starboard propulsion shafts.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
Y	Propeller Shaft	NSN: 2010-01-458-9175	2 ea.	10,195.95
N	Seal Assembly, Shaft	NSN: 4320-01-670-5724 PN: 388725	2 ea.	6801.00
N	Kit Rebuild, Inflatable Seal	NSN: 5330-01-F18-5385 PN: 390831	2 ea.	1381.00
Y	*Alignment Kit	N/A	1 set	5000.00

***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.**

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 243-003, Rev -, Propulsion Shaft Details

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2022, Welding and Allied Processes

Coast Guard Technical Publication (TP) 4499, Jun 2018, SWBS 243, Stern Tube Seal-Model 442C

Coast Guard Technical Publication (TP) 4500, Sep 2017, SWBS 233, Engine Change-Out Guide - Waterborne Main Diesel

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

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

- 3.2.1 Waterborne coupling hub alignment check.
- 3.2.2 Mount measurements.
- 3.4.1 Shaft seal assembly inspections.
- 3.5.2 Alignment survey.
- 3.5.3 Stern tube/shaft seal interface inspection.
- 3.6.1 Shaft measurements.

3.1.2 Tech rep. The Contractor must provide the services of a qualified OEM Tech Rep, who is certified on the Chesterton seal system, to do the following, on site:

- Advise on manufacturer's proprietary information pertinent to the system.
- Assist with proper disassembly, reassembly, and installation of the seal.

3.1.2.1 Ensure that the Tech Rep has a résumé of demonstrated experience with the system/equipment stated above.

3.1.2.2 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 must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must 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.
- Deck plate framing.
- Stern tube mid bearing access hatch.
- Stern tube aft bearing access hatch.
- Stern tube forward access hatch.
- Propellers.
- Rudders.

3.1.5 Tolerances. Unless otherwise specified, all measurements must be accurate to within the nearest 0.001 inch.

3.1.6 Main Diesel Engine (MDE)/Reduction gear (RG) coupling alignment checks. When the MDE/RG coupling alignment checks are required herein, the Contractor must accomplish the following prior to taking and recording measurements:

3.1.6.1 Notify and have onsite the Coast Guard Inspector to witness all measurements and readings.

3.1.6.2 Use Coast Guard Tech Pub 4500, Enclosure 3 as guidance for conducting proper measurements.

3.1.6.3 Using the Government-provided shaft support for alignment, center the shaft in the seal body when installed or the stern tube flange when the seal is removed.

NOTES

If the alignment kit is not provided, the Contractor must propose an alternate means of centering the shaft to the KO for review and approval.

The shaft support is to be located in the bilge, ~254 mm (10") forward of frame 19.

3.1.6.4 Separate the MDE coupling and RG coupling such that they are not touching nor bolts are installed, establishing ~0.25" gap between the two coupling halves.

NOTE

The following methods for obtaining coupling hub alignment measurements are acceptable:

1) Dial indicator to obtain total indicator run-out;

2) Straight-edge in conjunction with feeler gauges.

3.2 Pre-docking measurements. The Contractor must perform the following tasks:

3.2.1 Waterborne coupling hub alignment check. Prior to docking and after meeting the requirements per paragraph 3.1.6 and follow-on paragraphs, measure and record the following and submit A CIR:

- parallel measurements between shaft coupling and reduction gear coupling ODs (concentricity);
- angular measurements between shaft coupling and reduction gear coupling faces;
- shaft coupling to reduction gear coupling gap.

3.2.2 Mount measurements. Measure and record the thickness of shims beneath each engine mount. Submit CIR. Determine if major MDE-related structural components (stern tube, engine foundation) are severely misaligned; evaluate and include recommendations for corrective measures, if any, in the CIR. Major structural misalignment **MAY** exist if any of the following conditions exist:

- Shims or chocks beneath engine/red-gear foundation(s) exceed 0.750 inch.
- Gap between raw water suction inlet and outlet pipe flanges (for expansion joints) exceeds 6-1/2 inches or is less than 5-5/8 inches.

NOTES

Where gaps between the mounting feet bottoms and foundation rail tops are greater than 3/8", epoxy resin chocking must be used.

Where the aforementioned gaps are equal to or less than 3/8", stainless steel shims must be used (brass shim stock is prohibited). The thickness of laminated shim stock installed between engine mounts and engine foundation must not exceed 0.250 inches. If more than 0.250 inches of shim are required, then stainless steel liners must be fabricated and installed to limit the amount of laminated shim stock used.

If machined liners are fabricated and installed, they must be tack welded in place after final installation.

3.3 Initial docked measurements.

3.3.1 Coupling-to-coupling alignment check. Immediately following docking and after meeting the requirements per paragraph 3.1.6 and follow-on paragraphs, measure and record the following:

- parallel measurements between shaft coupling and reduction gear coupling ODs (concentricity);
- angular measurements between shaft coupling and reduction gear coupling faces;
- shaft coupling and reduction gear coupling gap;
- Submit CFR (including form titled "Hub Alignment Measurement Form").

3.4 Remove shafts. Using Coast Guard Drawing 87 WPB 243-003 and TP 4499 as guidance, the Contractor must remove each shaft seal, propulsion shaft coupling, and propulsion shaft. Protect all removed components from damage during removal, storage, and reinstallation.

3.4.1 Shaft support while lifting. When lifting, suspend the shaft from at least 2 supports spaced approximately 7 feet apart and from each end. Lift each shaft with a spreader bar, or similar device, to minimize bending stress on the shaft.

3.4.2 Shaft wear inspection. Visually inspect the shaft for wear in the bearing and seal areas. Note the maximum diametrical wear and location(s) in each journal area. Submit a CFR.

3.4.3 Mandatory turn-in shaft repackaging. In the presence of the Coast Guard Inspector, the Contractor must repackage the MTI propulsion shafts, using the existing propulsion shaft containers and wood braces in the same method the new GFP propulsion shafts were received.

3.5 Stern tube and bearing inspections. Within 72 hours after shaft removal, the Contractor must inspect each stern tube assembly (i.e. stern tube, bearings, shaft seal flange). The Contractor must perform the following and submit reports (CIRs and CFRs) as described; in the reports, include descriptions of methods used to obtain the measurements:

3.5.1 Visual inspection and bearing ID check. Visually inspect both stern tube assemblies for damage, corrosion, unusual bearing (and/or seal) wear patterns, and all other symptoms that indicate that repairs are required. Note all discernible bearing wear patterns. Submit CFR.

3.5.2 Alignment survey. In the presence of the Coast Guard Inspector and while using Coast Guard Drawing 87 WPB 243-003 as guidance, the Contractor must conduct the following and submit a CIR. Submit the applicable portions of the alignment survey forms at the end of this work item as part of the CIR.

NOTES

Piano wire may NOT be used unless done in conjunction with either the optical or laser method.

Alignment measurements must be conducted to 0.001".

3.5.2.1 Conduct the alignment check via optical or laser methods. Minimize thermal effects by performing the following late in the evening or before sunrise.

3.5.2.2 Establish reference lines using the two stern tube "Target Points" as labeled on Coast Guard Drawing 87 WPB 243-003 (centers of the aft-most end of the stern tube and forward-most stern tube/seal flange.

NOTES

Shaft seal adaptor plate inner diameters have been reported to be deteriorated and oblong, hindering the ability to find the center for the forward target. The shaft seal "ISS" body can be installed to establish the forward reference line target. By installing the ISS when conducting the survey, the Contractor may identify potential risk(s) to the mechanical seal installation, i.e., out-of-tolerance shaft-to-seal parameters.

3.5.2.3 Measure and record each of the vertical and athwartship bearing positions (fore and aft targets for each stern tube bearing carrier), stern tube/seal flange position, and reduction gear center position, relative to the established reference line.

3.5.2.4 Provide recommendations, **if any**, (i.e., movement magnitude/direction) for alignment correction.

NOTE

Ensure the final, corrected orientation of machinery will not negatively/prohibitively impact mounting (i.e., engine footing hanging off of foundation rails, etc.), or system interfaces (i.e., exhaust connection point alignment or raw water connections).

3.5.3 Shaft seal – mechanical and inflatable - rebuild. Under the guidance of TP 4499, the Contractor must accomplish the following:

3.5.3.1 Disassemble and inspect all shaft seal mechanical and inflatable shaft seal parts for failure. Subnit a CFR.

3.5.3.2 Using the Government-furnished rebuild kits, rebuild each mechanical and inflatable shaft seal with the provided components.

3.5.4 Post-repair alignment survey. In the presence of the Coast Guard Inspector and while using Coast Guard Drawing 87 WPB 243-003 as guidance, the Contractor must conduct the following, and submit a CFR. Submit the applicable portions of the alignment survey forms at the end of this work item as part of the CFR.

3.5.4.1 With new bearings in place, conduct an alignment survey via optical or laser methods. Minimize thermal effects by performing the following late in the evening or before sunrise.

3.5.4.2 Establish reference lines using the "Target Points" as described in paragraph 3.5.2.2 above.

3.5.4.3 Measure and record the vertical and athwartship bearing positions (fore and aft targets for each stern tube bearing) and seal flange offsets.

3.6 GFP shaft assembly inspections and installation. The Contractor must inspect and measure the Government-furnished shafts as follows:

3.6.1 Shaft measurements.

3.6.1.1 The shaft must only be supported by two precision rollers (24" from each end) or on lathe centers - no additional supports (i.e., intermediary rollers, etc.) must be used. Prior to measuring shaft machined surfaces, eliminate all non-permanent bending/sagging from handling and storage: spin each shaft on the lathe for approximately two hours at a slow speed (with no accessories attached to the shaft). For inspections and measurements, place the shaft on two precision rollers 24 inches from each end of the shaft or on lathe centers. Measure and record shaft dimensions as described below and Submit A CIR:

3.6.1.2 Measure and record the shaft key, keyway, and journal dimensions described on the forms provided at the end of this work item.

3.6.1.3 Conduct complete propulsion shaft run-out readings via dial indicator survey at the small and large ends of each taper, the fore and aft ends of each bearing position, three equally spaced locations between the bearings, and three equally spaced locations between the intermediate bearing and coupling taper, to determine straightness or any bend including magnitude and location. Each station must be marked at the position of the maximum run-out on the periphery of the shaft. Record the run-out survey on the form (titled "Shaft Run-out Measurement Form") at the end of this work item as part of the CIR.

3.6.2 Shaft coupling hub fit check. Prior to reinstalling shafts, the Contractor must blue check the shaft-to-coupling-hub taper fit. With the key in place, perform hand-stoning of the coupling hub ID, as required, to achieve a minimum of 80 percent uniform contact. After all bluing/fitting, and with hub installed, measure and record coupling OD radial run-out, coupling face run-out, and counter bore run-out; using TP 4500, Enclosure 3 as guidance, verify all measurements are in tolerance. Submit CFR.

3.6.3 Install both shaft assemblies.

3.6.4 Bearing clearance checks. Verify shaft OD to bearing ID diametrical clearances (min .033" and max 0.120" allowed) for each shaft and bearing. Submit CFR.

3.7 Post-work shaft rotation check. Once waterborne and laden for 24 hours, using mechanical means as necessary, rotate each shaft to ensure it turns in a consistent manner. Submit a CFR.

3.8 Final waterborne measurements.

3.8.1 Coupling-to-coupling alignment check. After undocking and liquid laden for 24 hours (minimum), to assess final MDE/RG to shaft alignment and to ensure the shaft seal installation requirements are met, the following must be accomplished:

3.8.1.1 Meet the requirements per paragraph 3.1.6 and follow-on paragraphs.

3.8.1.2 Measure and record the following:

- parallel measurements between shaft coupling and reduction gear coupling ODs (concentricity);
- angular measurements between shaft coupling and reduction gear coupling faces;
- shaft coupling to reduction gear coupling gap.

3.8.1.3 Conduct the measurements in Tech Pub 4499, Section 4.1 and compare against the required parameters of that section.

3.8.1.4 Submit a CFR with the results from 3.8.1.2 and 3.8.1.3 and provide assessments and recommendations for alignment and shaft seal installation.

3.8.1.5 If corrective action is required for realignment and/or shaft reorientation for seal installation, submit a Change Request to the KO for review and approval.

3.8.1.6 If the Change Request is authorized by the KO, conduct the corrective action required, redo the measurements required in 3.8.1.2 and 3.8.1.3, and submit a CFR.

3.9 Shaft seal test. Under the supervision of the tech rep, test the shaft seals (mechanical and inflatable) prior to undocking and during sea trials.

NOTE
The shaft seals must only be installed after achieving satisfactory results under section 3.8.1 above.

3.10 Operational test, post repairs. After completion of work, the Contractor must 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.

4. NOTES

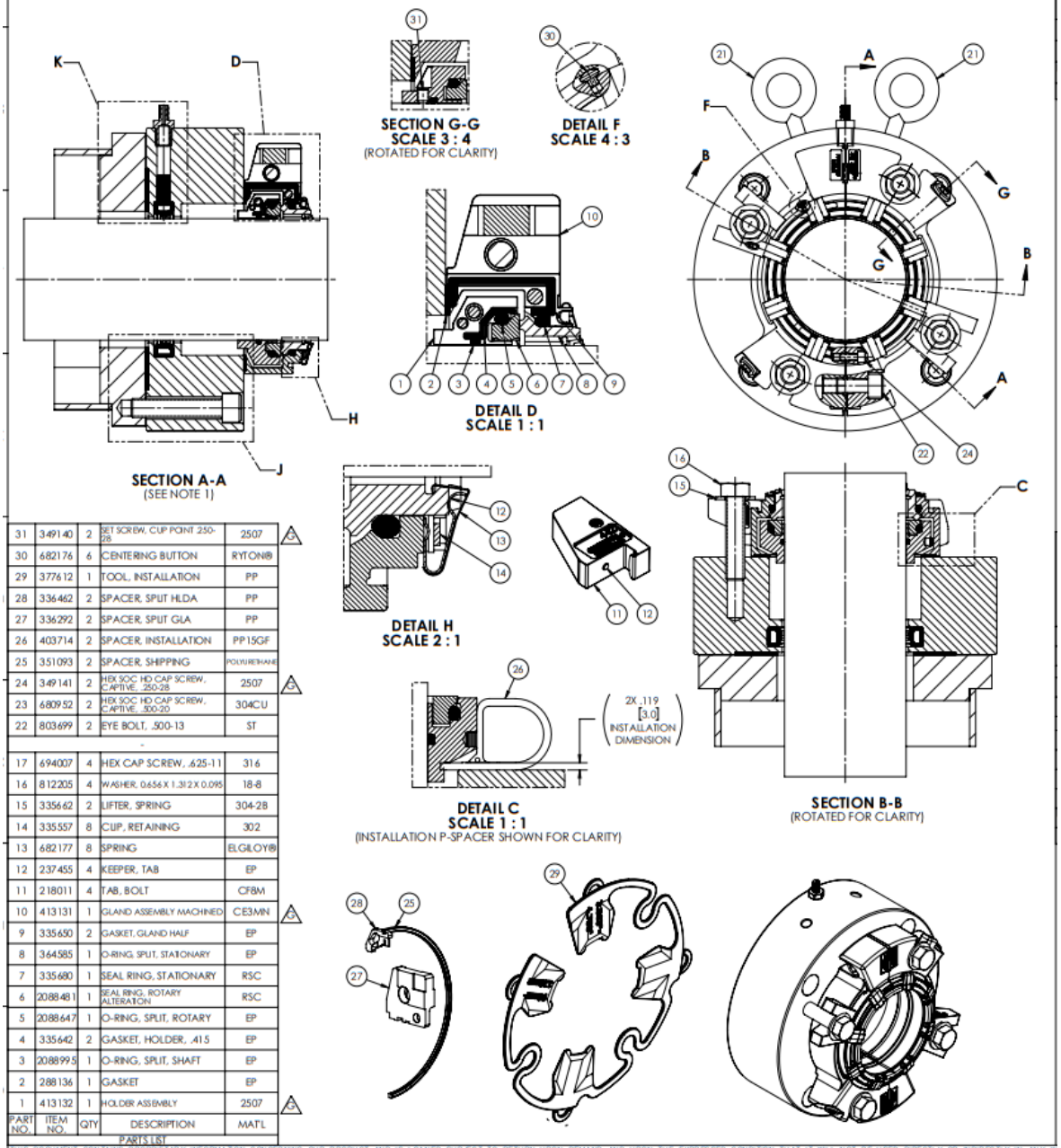
4.1 Rebuild kit breakdowns.

SEAL ASSEMBLY, SHAFT (NSN: 4320-01-670-5724, PN: 388725)

GROUP 1
MECHANICAL SEAL: PART DETAILS

RE-ODER NUMBER FOR BOM SHOWN:
MECHANICAL SEAL ASSEMBLY ONLY
388725

442C SEAL INSTALLATION
REFER TO "442C CARTRIDGE SPLIT MECHANICAL SEAL"
INSTALLATION INSTRUCTIONS
(Form No. EN 14068)



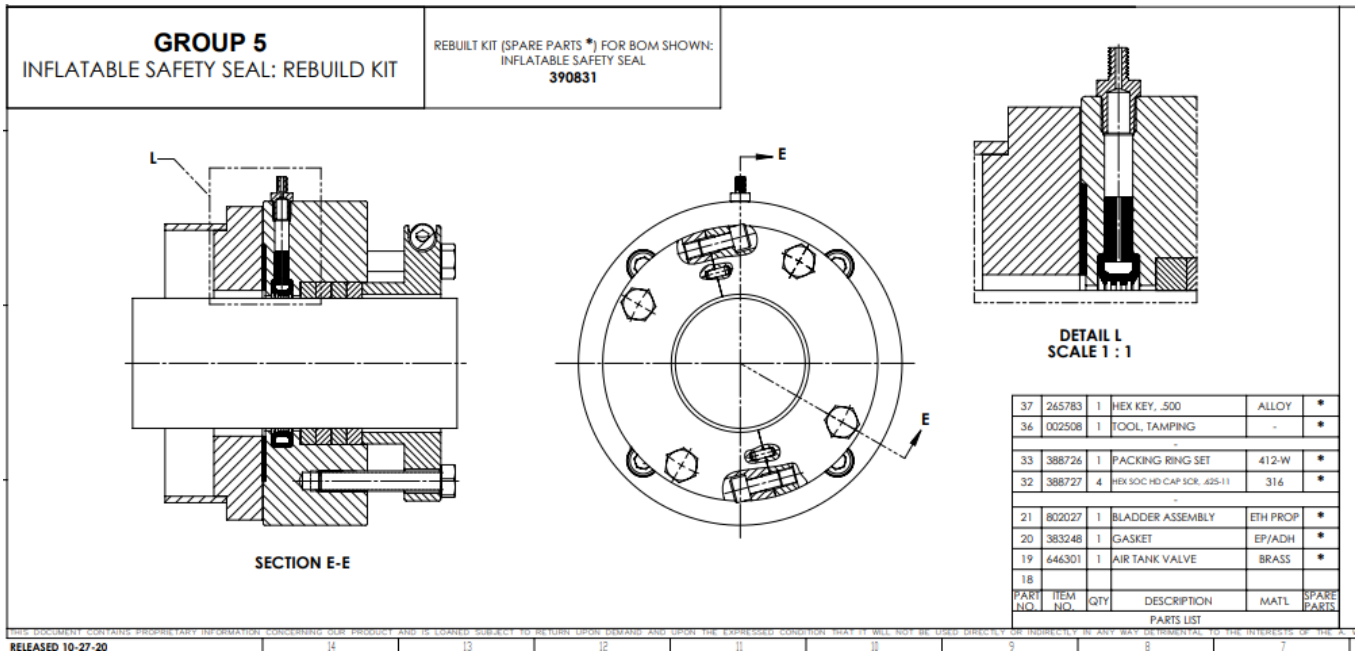
PART NO.	ITEM NO.	QTY	DESCRIPTION	MAT'L
31	349140	2	SET SCREW, CUP POINT .250-28	2507
30	682176	6	CENTERING BUTTON	RYTON®
29	377612	1	TOOL, INSTALLATION	PP
28	336462	2	SPACER, SPLIT HLDA	PP
27	336292	2	SPACER, SPLIT GLA	PP
26	403714	2	SPACER, INSTALLATION	PP15GF
25	351093	2	SPACER, SHIPPING	POLYURETHANE
24	349141	2	HEX SOC HD CAP SCREW, CAPTIVE, .250-28	2507
23	680952	2	HEX SOC HD CAP SCREW, CAPTIVE, .500-20	304CU
22	803699	2	EYE BOLT, .500-13	ST
			-	
17	694007	4	HEX CAP SCREW, .625-11	316
16	812205	4	WASHER, 0.656 X 1.312 X 0.095	18-8
15	335662	2	LIFTER, SPRING	304-28
14	335557	8	CLIP, RETAINING	302
13	682177	8	SPRING	ELGILOY®
12	237455	4	KEEPER, TAB	EP
11	218011	4	TAB, BOLT	CF8M
10	413131	1	GLAND ASSEMBLY MACHINED	CE3MN
9	335650	2	GASKET, GLAND HALF	EP
8	364585	1	O-RING, SPLIT, STATIONARY	EP
7	335680	1	SEAL RING, STATIONARY	RSC
6	2088481	1	SEAL RING, ROTARY ALTERATION	RSC
5	2088647	1	O-RING, SPLIT, ROTARY	EP
4	335642	2	GASKET, HOLDER, .415	EP
3	2088995	1	O-RING, SPLIT, SHAFT	EP
2	288136	1	GASKET	EP
1	413132	1	HOLDER ASSEMBLY	2507

PARTS LIST

THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION CONCERNING OUR PRODUCT AND IS LOANED SUBJECT TO RETURN UPON DEMAND AND UPON THE EXPRESSED CONDITION THAT IT WILL NOT BE USED DIRECTLY OR INDIRECTLY IN ANY W

RELEASED 10-27-20

KIT REBUILD, INFLATABLE SEAL (NSN: 5330-01-F18-5385, PN: 390831)

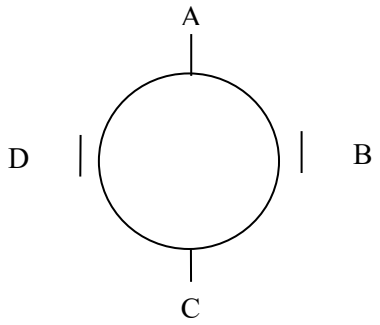


4.2 Equipment operation. Coast Guard personnel will operate all shipboard machinery and equipment during all operational tests.

4.3 INSPECTION FORMS. SEE BELOW.

CIRCLE ONE: PORT STARBOARD - SHAFT RUN-OUT MEASUREMENT FORM

VESSEL NAME AND HULL NUMBER: _____



POINTS ALONG LENGTH	A	B	C	D	TOTAL INDICATED RUN-OUT (TIR)
Aft Taper (small end)					
Aft Taper (large end)					
Aft Bearing Journal (aft end)					
Aft Bearing Journal (fwd end)					
Aft-Int Brg Journal Location 1					
Aft-Int Brg Journal Location 2					
Aft-Int Brg Fwd Journal Location 3					
Int Bearing Journal (aft end)					
Int Bearing Journal (fwd end)					
Int Journal-Taper Location 1					
Int Journal-Taper Location 2					
Int Journal-Taper Location 3					
Shaft Seal					
Fwd Taper (large end)					
Fwd Taper (small end)					

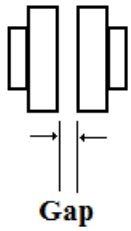
Inspection Facility:_____Date and Time:_____

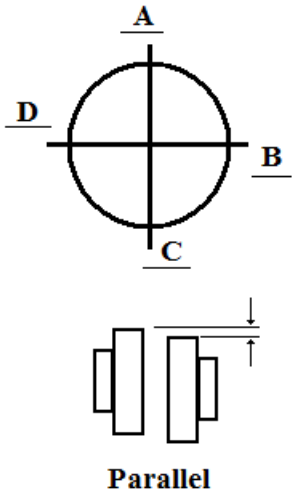
Inspector Signature:_____

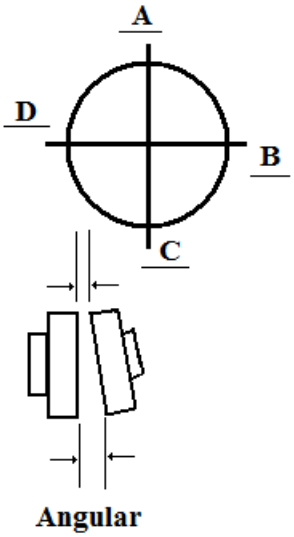
CIRCLE ONE: PORT STARBOARD - HUB ALIGNMENT MEASUREMENT FORM

VESSEL NAME AND HULL NUMBER: _____

CIRCLE ONE: PRE-DOCKING DOCKED UNDOCKED



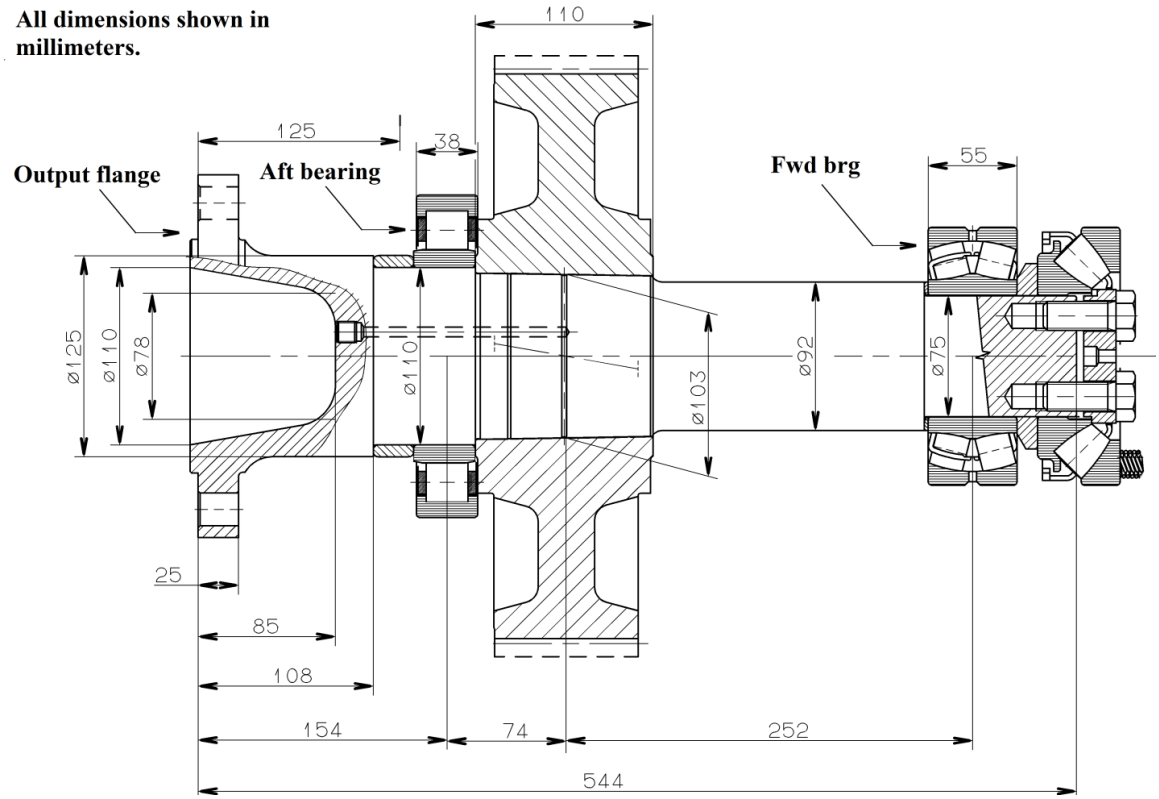




ALL MEASUREMENTS IN INCHES	SHAFT INITIAL POSITION	SHAFT ROTATED 90°	SHAFT ROTATED 180°	SHAFT ROTATED 270°
Gap				
Parallel A				
Parallel B				
Parallel C				
Parallel D				
Angular A				
Angular B				
Angular C				
Angular D				

Inspection Facility: _____ Date and Time:_____

Inspector Signature:_____

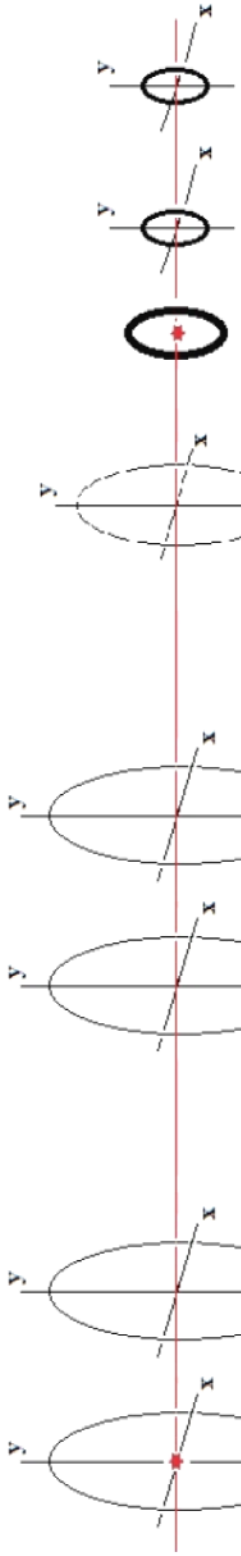


REDUCTION GEAR OUTPUT SHAFT/FLANGE/BEARINGS

ALIGNMENT SURVEY FORMS (PRE AND POST-REPAIR)

Cutter: _____ **Circle one: PORT STARBOARD**

Date/Time: _____/_____ **Measurement method:** _____



✱ **Target points**

Offsets measured:
1. **Aft end of aft bearing**
2. **Fwd end of aft bearing**
3. **Aft end of intermediate bearing**
4. **Fwd end of intermediate bearing**
5. **Shaft seal mounting ring**
6. **Reduction gear flange**

Offsets calculated:
7. **Aft gear bearing**
8. **Fwd gear bearing**

Sheet ____ of ____

ALIGNMENT OFFSETS AND BEARING REACTIONS FORMS

NOTE

Negative bearing reactions are prohibited.

INITIAL ASSESSMENT - PORT		
Location	**X offset** (negative, outboard)	**Y offset** (negative, below target x axis)
1		
2		
3		
4		
5		
6		
7		
8		

RECOMMENDED CORRECTIONS (IF ANY) - PORT			
Location	**X offset** (negative, outboard)	**Y offset** (negative, below target x axis)	**Expected bearing reactions at bearing axial centers**
			$\mathbf{R}_{resultant}$ (bearing resultant force)
1			
2			
3			
4			
5			
6			
7			
8			

FINAL VERIFICATION - PORT		
Location	**X offset** (negative, outboard)	**Y offset** (negative, below target x axis)
1		
2		
3		
4		
5		
6		
7		
8		

INITIAL ASSESSMENT - STARBOARD		
Location	**X offset** (negative, outboard)	**Y offset** (negative, below target x axis)
1		
2		
3		
4		
5		
6		
7		
8		

RECOMMENDED CORRECTIONS (IF ANY) - STARBOARD			
Location	**X offset** (negative, outboard)	**Y offset** (negative, below target x axis)	**Expected bearing reactions at bearing axial centers**
			$R_{resultant}$ (bearing resultant force)
1			
2			
3			
4			
5			
6			
7			
8			

FINAL VERIFICATION - STARBOARD		
Location	**X offset** (negative, outboard)	**Y offset** (negative, below target x axis)
1		
2		
3		
4		
5		
6		
7		
8		

WORK ITEM 19: Stern Tube Interior Surfaces, Preserve, 100 Percent

WORK ITEM 1: SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to preserve stern tube interior surfaces.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 243-003, Rev -, Propulsion Shaft Details

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, Requirements for Preservation of Ship Structures

OTHER REFERENCES

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

MIL-PRF-24647, Jan 2018, Paint System, Anticorrosive and Antifouling, Ship Hull

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

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)/NACE International (NACE) Joint Surface Preparation Standard SSPC-SP 12/NACE No.5, 2002, Surface Preparation and Cleaning of Metals by Waterjetting Prior to Recoating

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection) and to the following specific components, spaces and equipment:

- Stern tube flange surfaces.
- Engine Room.
- Bearings and bearing housings.

3.1.4 Interferences. The Contractor must 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.
- Deck plate framing.
- Stern tube mid bearing access hatch.
- Stern tube aft bearing access hatch.
- Stern tube forward access hatch.

3.2 Preservation requirements. Using Coast Guard Drawing 87 WPB 243-003 as guidance, the Contractor must preserve 100% of the interior tube surfaces as follows:

3.2.1 The Contractor must not prepare or coat waterborne bearing contact areas inside the stern tube. This includes bearing lands, areas in contact with bearing shell, areas in contact with Cutless type bearings, etc. These areas must remain uncoated to provide required fits.

3.2.2 Surface preparation. The Contractor must prepare surfaces by waterjetting to a SSPC-SP 12/NACE No. 5, WJ-2/L standard, or by one or a combination of the surface preparation methods described in Table 1:

TABLE 1 – SURFACE PREPARATION

ABRASIVE BLASTING	MECHANICAL CLEANING

Abrasive-blasting to SSPC-SP10/NACE No. 2, using grit conforming to MIL-A-22262 (1.5 to 2.5 mil anchor profile). Used reference MIL-A-22262, Mar 1996, Abrasive Blasting Media Ship Hull Blast Cleaning for guidence	Power tool cleaning to a SSPC-SP 11 (1.0 mil anchor profile).

3.3 Inspection. After surface preparation and before coating application, the Contractor must perform a visual inspection of the prepared stern tube surfaces, and submit a CFR.

3.4 Surface coating. The Contractor must prime and coat the prepared surfaces with two coats of a "High Turbulence Coating", at 5.0-6.0 mils DFT each. Used reference MIL-PRF-24647, Jan 2018, Paint System, Anticorrosive and Antifouling, Ship Hull for guidance.

NOTE

List of authorized suppliers for "High Turbulence Coatings" is provided in SFLC Std Spec 6310, Appendix C (Authorized Coatings for Use on Cutters and Boats).

3.5 In-process quality control. The Contractor must 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 20: Propellers, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew both propellers.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
Y	Starboard Propeller (RH)	PN: 706-3351.00 RH NSN: 2010-01-457-0573	1 ea.	9153.07
Y	Port Propeller (LH)	PN: 706-3350.00 LH NSN: 2010-01-459-0421	1 ea.	9542.05
N	*Propeller Nut Wrench	N/A	1 ea.	200.00
N	Propeller Nut	PN: 5317350 NSN: 2010-01-458-9217	2 ea.	322.07
N	Propeller Nut, Locking	PN: 5317355 NSN: 5310-01-458-9125	2 ea.	285.10
N	Anode, Propeller Nut	PN: 87WPB243001ITEM39 NSN: 5342-01-481-8403	2 ea.	153.06

***Government-loaned property, which must be returned to the vessel upon completion of the availability.**

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 243-003, Rev -, Propulsion Shaft Details

Coast Guard Drawing 87 WPB 245-003, Rev A, Propeller Details

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, 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 must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must 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:

- Fairing plate.
- Rudder.

3.1.5 Propeller handling. Propellers must not be lifted by a single blade at any time and must be lifted as close to the blade roots as physically possible.

CAUTION

Incidental propeller impact by any object, and/or blade contact with the ground, is strictly prohibited. Report any instances to the Coast Guard Inspector immediately via CFR.

3.2 Renewal particulars. The Contractor must renew port and starboard propellers as follows while using Coast Guard Drawings 87 WPB 243-003 and 87 WPB 245-003 as guidance:

3.2.1 Government-furnished propeller and crate inspections. The Contractor must accomplish the following:

3.2.1.1 Upon receipt of the crate Government-furnished propellers, conduct crate inspections and report any notable crate damage. Submit a CFR.

3.2.1.2 When removing the propellers from the crates, conduct a visual inspection of the propeller protection and strippable compound. Immediately report all discrepancies (i.e., damaged and/or missing strippable compound, damaged edge guards, missing accessories, etc.) to the Coast Guard Inspector. Submit a CFR.

CAUTION

Do not remove any propeller protection without KO permission prior to blue fitting and installation.

When blue fitting, remove only a minimum amount of protection to facilitate fitting.

3.2.2 Existing propeller removals.

3.2.2.1 The Contractor must scribe-mark the position of the existing propellers to facilitate installation of the new propellers. Remove the existing propellers.

3.2.2.2 The Contractor must repackage the MTI propellers using the existing propeller containers, mounting plate, edge guards, and hardware, with exception of the strippable compound, in the same manner the new GFP propellers were received.

3.2.3 Propeller installation. The Contractor must abide by and accomplish the following:

WARNING

Do not machine the shaft tapers.

Do not lift the propellers unless completely detached from the shipping containers. The propellers are fastened to steel plates at the bottom of the containers.

Do not use grease, oil, or other substances on the taper to help drive the propellers.

3.2.3.1 Hand clean the new propeller hub bores and shaft tapers to remove all foreign particles for a clean metal-to-metal fit.

3.2.3.2 Verify hub fits in the presence of the COR and with the keys in place, carefully check the fits of the propeller hub bores to the shaft tapers by applying Prussian blue, 0.0002” to 0.0004” thick, to the shaft tapers. Submit a CFR.

3.2.3.2.1 80 percent contact over the taper area, with a slightly heavier fit on the larger end, is required. Do not heat the shaft tapers to compensate for a poor fit.

3.2.3.2.2 If the fit is less than 80 percent, hand stone the propeller hub bores, as required, to achieve 80 percent contact over taper surfaces.

WARNING

Do not machine the shaft taper.

3.2.3.3 Install the new propellers onto the propulsion shafts in accordance with Coast Guard Drawing 87 WPB 243-003. After the propellers are installed on the tapers, install the propeller nuts using the Government-furnished propeller nut wrench.

NOTE

Some propeller nuts in stock inventory are known to not fit inside the propeller nut wrench. Should this be encountered, the corrective measure to be taken, after obtaining KO authorization, is to machine the outer dimensions of the propeller nut to fit inside the propeller wrench.

3.2.3.4 Lock each propeller nut in place with new Contractor-furnished, stainless steel 3/8” x 6” cotter pins.

3.2.3.5 Reinstall the fairing plates as shown on Coast Guard Drawing 87 WPB 243-003.

3.2.3.6 Renew the propeller nut anodes with the Government-furnished propeller nut anodes.

3.3 Testing. During sea trials, verify that there is neither abnormal vibration nor problems with making rated speed. Submit CFR.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 21: Electrical Power Distribution System, Thermographic Inspection, 450 VAC And Below

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to perform a thermographic inspection on the vessel's Electrical Power Distribution System.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 302-001, Rev AF, Misc. Controls Wiring Diagram

Coast Guard Drawing 87 WPB 310-001, Rev J, Ship's Service One-Line Diagram

Coast Guard Drawing 87 WPB 321-001, Rev L, Power System Deck Plan

Coast Guard Drawing 87 WPB 321-002, Rev AV, Power & Lighting Circuit Details & V.D. Calculations

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

OTHER REFERENCES

American Society for Nondestructive Testing, SNT-TC-1A: Personnel Qualification and Certification in Nondestructive Testing, 2016

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must 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
- Distribution panel covers
- Controller panel covers
- Switchboard panel covers
- Electrical wiring

3.2 Thermal imaging survey. The Contractor must use the Coast Guard Drawings and Publications listed in Section 2 as guidance. The electrical equipment to be surveyed must be limited to the list below:

TABLE 1: EQUIPMENT LIST

NOMENCLATURE	SPECIFICATIONS	LOCATION
SHIP SERVICE DIESEL GENERATOR STBD #1	60KW, 450VAC, 60HZ, 3PHASE	2-14-0-E
SHIP SERVICE DIESEL GENERATOR PORT #2	60KW, 450VAC, 60HZ, 3PHASE	2-14-0-E
SHIP SERVICE SWITCHBOARD	450VAC, 60HZ, 3PHASE	2-14-0-E
SHIP SERVICE DISTRIBUTION SWITCHBOARD SECTION 1	450VAC, 60HZ, 3PHASE	2-14-0-E
SHIP SERVICE DISTRIBUTION SWITCHBOARD SECTION 2	450VAC, 60HZ, 3PHASE	2-14-0-E
GALLEY/VENT POWER PANEL	450VAC, 3PHASE, 60HZ, 225AMP	2-13-2
ENGINE ROOM LIGHTING PANEL #1	120VAC, 3 PHASE, 60HZ, 225AMP	2-14-0
GALLEY LIGHTING PANEL	120VAC, 3 PHASE, 60HZ, 125AMP	2-12-1
FORWARD QUARTERS LIGHTING PANEL	120VAC, 3 PHASE, 60HZ, 125AMP	2-8-2
OFFICERS LIGHTING PANEL	120VAC, 3 PHASE, 60HZ, 125AMP	1-11-2
PILOTHOUSE LIGHTING PANEL	120VAC, 3 PHASE, 60HZ, 100AMP	01-11-4
PILOTHOUSE ELECTRONICS PANEL	120VAC, 3 PHASE, 60HZ, 100AMP	01-11-2
ENGINE ROOM LIGHTING PANEL #2	120VAC, 3 PHASE, 60HZ, 225AMP	2-14-2
MOTOR CONTROLLER, STEERING PUMP #1	450VAC, 3 PHASE, 60HZ, NEMA SIZE 1	2-14-0-E
MOTOR CONTROLLER, STEERING PUMP #2	450VAC, 3 PHASE, 60HZ, NEMA SIZE 1	2-14-0-E
MOTOR CONTROLLER, FIRE/BILGE PUMP (PORT)	450VAC, 3 PHASE, 60HZ, NEMA SIZE 2	2-14-0-E
MOTOR CONTROLLER, FIRE/BILGE PUMP (STBD)	450VAC, 3 PHASE, 60HZ, NEMA SIZE 2	2-14-0-E
MOTOR CONTROLLER, POTABLE WATER PUMP	450VAC, 3 PHASE, 60HZ, NEMA SIZE 1	2-9-1-Q
MOTOR CONTROLLER, FLOCS PUMP	450VAC, 3 PHASE, 60HZ, NEMA SIZE 00	2-14-0-E
MOTOR CONTROLLER, HVAC CLG PUMP	450VAC, 3 PHASE, 60HZ, NEMA SIZE 00	2-14-0-E

MOTOR CONTROLLER, HYDRAULIC POWER UNIT (ANCHOR WINDLASS/RIB)	450VAC, 3 PHASE, 60HZ, NEMA SIZE 2	2-22-0-E
MOTOR CONTROLLER, DIRTY OIL PUMP	450VAC, 3 PHASE, 60HZ, NEMA SIZE 00	2-14-0-E
MOTOR CONTROLLER, FUEL OIL TRANSFER PUMP	450VAC, 3 PHASE, 60HZ, NEMA SIZE 1	2-14-0-E
MOTOR CONTROLLER, SEWAGE TRANSFER PUMP	450VAC, 3 PHASE, 60HZ, NEMA SIZE 1	3-2-0-V
MOTOR CONTROLLER, GREY WATER PUMP	450VAC, 3 PHASE, 60HZ, NEMA SIZE 1	3-2-0-V
VARIABLE SPEED DRIVE, ENGINE RM EXHAUST FAN	450 VAC, 3PHASE, 60HZ	2-14-0-E
VARIABLE SPEED DRIVE, ENGINE RM SUPPLY FAN	450 VAC. 3PHASE, 60HZ	2-14-0-E
TRANSFORMER	7.5KVA, 450/120VAC 60HZ	2-14-0-E
TRANSFORMER	2KVA, 450/120VAC 60HZ	01-10-0-C

NOTE

Electric equipment must be defined herein as equipment which is used to convert, control, or utilize electrical power, such as: switchboards, power panels, load centers, motor controllers, and bus transfer switches.

3.3 Equipment loading. The Contractor must perform the thermal imaging survey while the electrical distribution system is fully loaded and energized and only after the vessel's equipment has been energized and under load for at least 30 minutes prior to the inspection.

NOTE

Coast Guard personnel will perform start up and operational test of all shipboard machinery and equipment requiring to be energized and running for thermal imaging inspections.

3.4 Operational test, initial. Prior to commencement of any work, the Contractor must 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.

WARNING

Take all necessary precautions to prevent injury due to electric shock and potential arc-flash. Only necessary personnel (contracted or Ship's Force) must be present in the compartment while energized panels are open. Only authorized personnel, and no Coast Guard personnel, must break the plane of the arc flash boundary.

3.5 Thermal imaging inspections. Prior to opening an electrical enclosure, the Contractor shall establish an arc flash boundary of at least four (4) feet from the electrical plane of the equipment. Clearly mark and erect a barrier to prevent the access of unauthorized personnel. Establish visible safety boundary at all entrances to the space where work is being performed using red danger tape or signage. Maintain this safety boundary until all thermal inspections are completed and all electrical covers are reinstalled within the space.

3.6 Infrared thermal imaging system (IRTIS) equipment. The Contractor must use Infrared Thermal Image System (IRTIS) equipment/camera in performance of this survey that meets or exceeds the following performance criteria:

- Accuracy: +/- 1.5% or 1.5°C (2.7°F)
- Object temperature range: 4 to +380°C (40 to +716°F)
- Display Type: Color
- Digital Image Type: Color and Grayscale
- Color Palettes: Hot Iron, Rainbow, Grayscale

3.7 Test equipment calibration and operational checks. The Contractor must ensure the IRTIS equipment is calibrated and certified per manufacturer. The IRTIS equipment must be adjusted each time equipment is energized. Initially and when the IRTIS test equipment is operated continuously for long periods of time, a grey scale check must be made in accordance with the IRTIS manufacturer's instructions.

3.8 Operator thermal imaging certification. Possession of a current ANSI/ASNT LEVEL I certification (or higher) meeting SNT-TC-1A: Personnel Qualification and Certification in Nondestructive Testing criteria is preferred. Otherwise, the Contractor shall describe all relevant thermal imaging skills and experience, as directed elsewhere in the solicitation.

3.9 Scan procedure. The Contractor must perform detailed thermal imaging scan of all wiring, connections, bus work and all current carrying components that are accessible without breaking the electrical plane of the electrical equipment being surveyed while observing the monitor for hot or cold spots. When a potential hot or cold spot is found, the contractor must determine the temperature difference between the hot or cold spot and surrounding equipment reference temperature.

NOTE

Fahrenheit (F) = Celsius (C)*(9/5) + 32, and C = (5/9)*(F-32)

Hot spot: A hot spot is a relative temperature related to the equipment which is surveyed. A general rule of thumb considers a 'hot spot' 18°F / 10°C or more above the equipment reference temperature.

Cold spot: A cold spot is any area of the equipment which is surveyed where the temperature is satisfactory, but exhibits an open connection, component fault, or some other similar problem.

3.9.1 Scan spot criteria. When detecting a hot or cold spot the Contractor must determine the temperature difference between the hot and cold spot in accordance with the IR test equipment OEM procedures manual. For a temperature difference of 70 degrees Celsius and above (Severity Code IV), imminent failure is expected, and must be reported immediately to the ship's Engineering Officer and Contracting Officers Representative (COR.) Contractor must follow all criteria and all reporting actions on Table 2 excluding making repairs.

TABLE 2 – REFERENCE TEMPERATURES & SEVERITY CODE DETERMINATION

TEMPERATURE RISE OR ΔT*	OPERATIONAL ASSESSMENT	SEVERITY CODE	ACTION

70°C and above	Failure Imminent	IV	Equipment should be secured immediately and ships Engineering Officer notified. Do not operate until repairs are complete.
40°C to less than 70°C	Failure Almost Certain	III	Equipment should be secured if operating conditions permit otherwise monitored until corrective action can be taken.
20°C to less than 40°C	Failure Possible	II	Corrective action should be taken as soon as feasible.
5°C to less than 20°C	Performance Degraded	I	Corrective action should be taken at next scheduled routine maintenance period or as schedule permits.
Less than 5°C	N/A	N/A	No corrective action required; note for future reference.

***The temperature rises or ΔT's indicated above are the temperature differentials between the thermal anomaly (i.e., faulty connection or component) and the reference temperature. The reference temperature is normally a similar, normal operating connection, component, or phase.**

3.9.2 Scan images. Provide, at a minimum, one color and one gray scale IR thermograph image of each faulty component or connection found, showing isothermal level scale on the images.

3.9.3 Scan photos. Provide, at a minimum, one digital non-infrared color photographic image of each faulty component or connection found from the same angle and perspective as used for the IR thermograph image, and identify the location of fault with arrow on the images.

3.9.4 Scan data. Save in electronic jpeg format, all thermal images and digital photographs, keeping a record of the images that are being saved. Record all pertinent data associated with each image regarding the piece of equipment, location, specific component or connection and the severity code (I, II, III or IV based on Table 2 criteria above).

3.10 Thermal inspection report. The Contractor must submit two electronic copies of the thermal image survey report to the COR within five days of the thermographic inspection. The report must contain one (1) individual full page per fault/condition found including, at a minimum, the following required content:

- Date and time of inspection
- Location of equipment (id tag on gear) and name of faulty component within the equipment
- IR thermograph and non-IR digital images
- Ambient air temperature of ship space
- Temperature of faulty component
- Reference component temperature
- Temperature rise (Δ T)
- Descriptive technical fault assessment based on temperature rise
- Severity code from Table 2
- Probable cause and recommended action to correction

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.11 Operational test – post repairs. After completion of work, the Contractor must 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.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 22: Fathometer Transducer, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew the fathometer transducer.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
N	Transducer, sonar	PN: A80214 NSN: 5845-01-668-2181	1 ea.	328.72

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 165-001, Rev F, Transducer Details

Coast Guard Drawing 87 WPB 423-001, Rev Y, Speed Log & Depth Sounder System

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2022, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, 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 must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

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 by the transducer.

3.1.4 Interferences. The Contractor must 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 must 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.

3.3 Transducer renewal particulars. The Contractor must accomplish the following tasks using Coast Guard Drawings 87-WPB 165-001 and 87-WPB 423-001 for guidance:

3.3.1 Transducer removal. Disconnect and remove the existing fathometer transducer and hull ring adapter. Retain the mounting hardware for reinstallation. Dispose of the removed transducer.

NOTE

Do not discard any hull ring adapter. It is to be reused with the new transducer.

3.3.2 New transducer installation. Fit and install new Government-furnished transducer, in place of the removed. Reinstall the hull ring adapter and transducer in accordance with the applicable drawing and the below using new gaskets, mold release coating, and adhesive sealants. See Figure 4-1 for installed assembly.

NOTE

Ensure to apply suitable adhesive sealant (3M 4200 or equal) to the transducer body and let cure to act as a bonded gasket in accordance with drawing 87 WPB 165-001 instructions to prevent water intrusion.

3.3.2.1 Ensure that the horizontal major axis of each transducer is oriented properly with respect to the vessel's centerline. Reuse retained mounting hardware, coating all bolt threads with anti-seize compound.

3.3.2.2 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.

3.3.2.3 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 a suitable epoxy cement. Ensure that the label plate is visible and legible, without the need to move equipment or cables.

3.4 Transducer seal. 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.

3.5 Post installation tests. After completion of work, accomplish the following tasks, in the presence of the Coast Guard Inspector:

3.5.1 Boundary test, water hose. The Contractor must inspect and perform a water hose test of all affected boundaries in accordance with SFLC Std Spec 0740, Appendix C. Submit a CFR.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.5.2 Operational test, post repairs. After completion of work, the Contractor must 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.

3.6 Touch-up preservation. The Contractor must 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

FIGURE 4-1 – INSTALLED TRANSDUCER ASSEMBLY (INTERIOR)

WORK ITEM 23: Speed Log, Skin Valve, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew the speed log skin valve assembly.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
N	3" Ball Valve	NSN: 4810-01-517-8110 PN: LV071A	1 ea.	5625.00
N	**Doppler Speed Log Measurement Rod	NSN: 6605-01-470-1266	1 ea.	4984.63

****New or refurbished equipment that the Government may provide for installation in place of existing equipment.**

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 165-001, Rev F, Transducer Details

Coast Guard Drawing 87 WPB 423-001, Rev Y, Speed Log & Depth Sounder System

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2022, Welding and Allied Processes

Coast Guard Technical Publication (TP) E-424-013, SWBS 424, July 2007, CDOH-EML500 Speedlog User's Manual

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 must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

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

3.1.5 Cable protection. Protect the transducer from damage and protect all disassembled and disturbed cable ends from weather, moisture and physical damage.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.2 Operational test, initial. Prior to commencement of work, the Contractor must 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.

3.3 Work particulars. Using Coast Guard Drawings 87 WPB 165-001, 87 WPB 423-001 and TP- E-424-0230, the Contractor must accomplish the following:

3.3.1 Inspection. Inspect speed log assembly waterborne prior to docking the cutter. Verify assembly operates properly and does not leak. Determine and record all required repairs. Submit CFR.

3.3.2 Rod removal. Disconnect and remove transducer/sensor rod. Clean all marine growth and corrosion from ball valve passage, spool piece interior, and other all associated accessible surfaces exposed to seawater. Turn transducer/sensor rod over to COR.

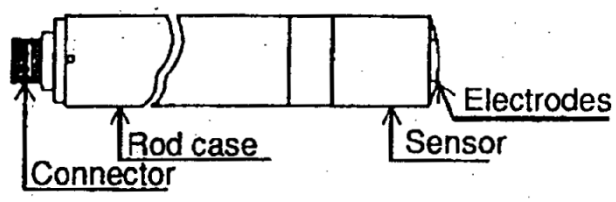


FIGURE 1. ASSEMBLY DIAGRAM

CAUTION

Growth on transducer rod may prevent removal; do not damage transducer rod during disassembly/reassembly. Break flanges to expose rod. Carefully remove growth that may be preventing rod removal with a soft tool (e.g. wooden scraper, etc.). prior to removing rod from housing, as required.

3.3.3 Valve renewal. The Contractor must renew the speed log skin valve with Government-furnished property listed. Refer to Coast Guard Drawing 87 WPB 165-001 and 87 WPB 423-001 for guidance.

NOTE

Ensure rod is properly oriented within body of valve prior to bolting down valve.

3.3.4 Reassembly. The Contractor must reassemble all disassembled parts/components. Renew all disturbed software (e.g. seals, gaskets, o-rings, etc.). Renew all disturbed fasteners; material shall be Nickel Copper. Obtain the transducer/sensor rod from the COR, reinstall and reconnect; lubricate transducer/sensor rod in accordance with TP- E-424-0230. Extend and retract rod, simulating in-service operation, verify proper operation with no binding or excessive friction. Verify cable will not chafe during operation. Verify sensor is aligned with ship's heading/bow (dot on sensor). Submit CFR documenting satisfactory installation. Leave transducer/sensor rod in properly stowed position.

3.4 Government's right for changing out the Doppler Speed Log Measurement Rod. The Contractor must be aware that the Government reserves the right to furnish a new Doppler Speed Log Measurement Rod for installation in place of existing. If the Government exercises this right, the Contractor shall dispose of old rod in accordance with all federal, state, and local regulations.

3.5 Boundary test, water hose. The Contractor must inspect and perform a water hose test of all affected boundaries in accordance with SFLC Std Spec 0740, Appendix C. Submit a CFR.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.6 Operational test, post repairs. After completion of work, the Contractor must 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.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 24: Ventilation System, Engine Room Supply and Exhaust Fan Assemblies, Clean and Inspect

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean and inspect the engine room supply and exhaust fan assemblies.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
N	**Fan, Tube Axial	NSN: 4140-01-598-0425	1 ea.	2,223.72
N	**Fan, Tube Axial	NSN: 4140-01-598-1549	1 ea.	3,091.15

****New or refurbished equipment that the Government may provide for installation in place of existing equipment.**

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 185-001, Rev AP, Auxiliary Foundation Booklet

Coast Guard Drawing 87 WPB 601-001, Rev R, Outboard Profile & General Arrangements

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 4559, SWBS 513, Oct 2019, Ventilation System, Engine Room

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, 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 must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must 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:

- Louver screens
- Engine room diverter plate/scoop

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.1.5 Operational test, initial. Prior to commencement of work, the Contractor must 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 Work particulars. Using Coast Guard Technical Publication (TP) 4559 and Coast Guard Drawings 87 WPB 185-001 and 87 WPB 601-001 as guidance, the Contractor must accomplish the following. Submit CFR with results of inspections and any repair recommendations.

3.2.1 Remove the louver screens from the intake and exhaust vent trunks (aft side of superstructure, FR 16, main deck, port and stbd side) to gain access to supply and exhaust vent fans.

3.2.2 Disassemble, clean, and inspect duct and fan housing assemblies.

3.2.3 Unbolt aluminum rings (fan assembly foundations) from main deck and inspect.

3.2.4 Inspect both electric motors and measure the insulation resistance of the motor windings.

3.2.5 Inspect turning vane adapter (mounted directly underneath main deck on starboard side) for corrosion or wear.

3.2.6 At reassembly, renew all disturbed fasteners.

3.3 Operational test, post repairs. After completion of work, the Contractor must 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.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.4 Touch-up preservation. The Contractor must 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 Government's right for change out. The Contractor must be aware that the Government reserves the right to furnish a new port and/or starboard fan assembly for installation in place of the existing. If the Government exercises this right, the Contractor must dispose of the removed fan assemblies in accordance with all applicable Federal, state, and local regulations.

NOTE

New GFE fan assemblies received under NIIN 01-598-1549 or 01-598-0425 may be approximately 1" taller (flange-to-flange) than the removed assembly. This is due to a change in motor housing by the manufacturer.

3.5.1 Where new GFE fan assembly is received with larger flange-to-flange height dimension than the removed, the Contractor must submit CFR with any necessary or recommended modifications to mounting components to facilitate installation.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 25: Ducting, HVAC System, Clean

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean the shipboard HVAC ducting system.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 514-001, Rev M, HVAC Duct & Piping System

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 5100 (SFLC Std Spec 5100), 2022, Clean Shipboard Ventilation Systems

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, 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 must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must 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:

- Vent system intake and exhaust screens
- Vent system access covers
- Electric preheaters
- Overhead sheathing and panels

3.1.5 Operational test, initial. Prior to commencement of work, the Contractor must witness an operational pre-test (by Coast Guard personnel) of the ventilation systems included in this work item, to demonstrate existing operational condition. Submit a CFR.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.2 Cleaning particulars. Using Coast Guard Drawing 87 WPB 514-001 as reference, the Contractor must clean all supply and exhaust portions of the HVAC system (all ducting leading to and from the air handler unit) in accordance with SFLC Std Spec 5100.

3.2.1 Mark the positions of all diverter, balance, and splitter dampers prior to disassembly and restore to original configuration at reassembly.

3.3 Operational test, post repairs. In the presence of the Coast Guard Inspector, the Contractor must thoroughly test and prove the disturbed ventilation systems to be in satisfactory operating condition. Repair all leaks. Submit CFR.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.4 Touch-up preservation. The Contractor must 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 26: Sea Water System, Perform Maintenance

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to accomplish the following:

- renew the valves designated below in Table 1;
- concurrently inspect 8" SCH 80 steel riser pipes supplying port and starboard MDE sea water systems and 3" SCH 80 steel riser pipes supplying port and starboard SSDG sea water systems;
- clean and inspect associated strainer assemblies and the HVAC system strainer as designated below in Table 2.

TABLE 1 – VALVES DESIGNATED FOR RENEWAL

SIZE (INCHES)	MATERIAL	DESCRIPTION	FRAME LOCATION/ VALVE NO.	CONNECTION	RATED PRESSURE CLASS (#)
8	Iron body/ Stainless steel stem/ bronze disk	Main Sea Chest Strainer Cutoff	2-14-1	Flanged	200
8	Iron body/ Stainless steel stem/ bronze disk	Main Sea Chest Strainer Cutoff	2-14-2	Flanged	200
8	Iron body/ Stainless steel stem/ bronze disk	Main Sea Chest Shutoff	2-14-4	Wafer	200
8	Iron body/ Stainless steel stem/ bronze disk	Main Sea Chest Shutoff	2-14-5	Wafer	200
3	Iron body/ Stainless steel stem/ bronze disk	Aux Sea Chest Shutoff	2-20-4	Flanged	200
3	Iron body/ Stainless steel stem/ bronze disk	Aux Sea Chest Shutoff	2-20-5	Flanged	200
3	Iron body/ Stainless steel stem/ bronze disk	Aux Sea Chest Strainer Shutoff	2-20-1	Wafer	200
3	Iron body/ Stainless steel stem/ bronze disk	Aux Sea Chest Strainer Shutoff	2-20-2	Wafer	200

TABLE 2 – STRAINERS DESIGNATED FOR DISASSEMBLY, CLEANING AND INSPECTION

SERVICE	SIZE (INCHES)	QUANTITY
SSDG	3”	2
MDE	8’	2
HVAC	3”	1

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
N	Iron body/ Stainless steel stem/ bronze disk (flanged) 8 inch	PN: J022929-512431A NSN: 4820-01-613-5021	2 ea.	563.25
N	Iron body/ Stainless steel stem/ bronze disk (wafer) 8 inch	PN: 22929-112431A NSN: 4820-01-615-9571	2 ea.	521.46
N	Iron body/ Stainless steel stem/ bronze disk (flanged) 3 inch	PN: 22925-5124 NSN: 4820-01-650-0975	2 ea.	226.51
N	Iron body/ Stainless steel stem/ bronze disk (wafer) 3 inch	PN: 22925-1124316 NSN: 4820-01-332-6811	2 ea.	214.14

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 163-001, Rev H, Sea Chest Details

Coast Guard Drawing 87 WPB 256-001, Rev AC, Seawater Cooling Piping

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, Requirements for Preservation of Ship Structures

OTHER REFERENCES

ASTM International (ASTM) D1330, 2015, Standard Specification for Rubber Sheet Gaskets

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

3. REQUIREMENTS

3.1 General.

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

- 3.3 Pipe and strainer assembly inspection.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must 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
- Copper anode wiring
- Hoses

3.2 Valve renew. The Contractor must renew all valves listed in Table 1 with the Government-furnished valves. Refer to Coast Guard Drawing 87 WPB 256-001 for guidance.

3.2.1 Valve types and miscellaneous requirements. The Contractor must install all valves with new gaskets. Renew all valve label plates on all valves in accordance with ASTM F992. Renew all bolting hardware.

NOTE

Significant marine growth may be present in piping adjacent to and downstream of the strainers. Include in the requested CIR, below, a description of any visible marine growth in adjacent piping.

3.3 Pipe and strainer assembly inspection. In conjunction with valve renewal, the Contractor must completely clean each associated steel pipe (outboard side of strainer, including flange areas) free of all debris and corrosion; inspect all associated pipe, flanges, flange faces, and welded joint surfaces. Then disassemble, clean, and inspect the strainers listed in Table 2 above. Submit a CIR. Specifically report on each flange sealing area condition and the amount of marine growth and debris in the adjacent 8” header/manifold. After completion of all authorized repair work, reassemble all disassembled components. Renew all associated fasteners (material must be Nickel Copper alloy). Renew all gaskets with material conforming to ASTM D1330 of the same size and configuration as those gaskets removed.

3.3.1 Government’s right for changing out strainers. The Contractor must be aware that the Government reserves the right to furnish new sea strainer(s) for installation in place of the existing strainer(s), at no additional cost to the Government. If the Government exercises this right, the Contractor must dispose of the old strainer(s) in accordance with all applicable Federal, state, and local regulations.

3.4 Leak test. After completing all authorized mechanical (i.e. threaded, bolted, etc.) joint repairs, the Contractor must test the disturbed systems' 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.

3.5 Touch-up preservation. The Contractor must 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.)

3.5.1 Prepare and touch-up the bilge area beneath strainers 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 27: Rudder Assemblies, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew the port and starboard rudder assemblies.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
Y	Rudder Assembly, port	NSN: 2040-01-461-1944	1 ea.	6113.36
Y	Rudder Assembly, starboard	NSN: 2040-01-461-1943	1 ea.	5971.93
N	Upper Roller Bearing	NSN: 3110-01-512-5534	2 ea.	287.43
N	Wartsila EL Seals Kit	PN: H75492-01 NSN: 2040-01-565-9776	2 ea.	7243.42
N	Lower Bearing	PN: TBF113090 NSN: 3120-20-000-7677	2 ea.	405.81

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 561-001, Rev M, Steering System Details

Coast Guard Drawing 87 WPB 562-001, Rev A, Rudder Details

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 4506, Wartsila TM-EL-68839, Issue A, Mar 2005, Rudderstock Seal Type EL

Coast Guard Technical Publication (TP) 4564A, Electronic Steering System

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2022, Welding and Allied Processes

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

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

- 3.3 Measurements.

3.1.2 Tech Rep. The Contractor must provide the services of a Qualified Technical Representative who is familiar with the rudder seal system to accomplish the following on site:

- Advise on manufacturer's proprietary system information.
- Assist with the proper installation of the seal.
- Ensure compliance with manufacturer's procedures and standards during system disassembly, inspection, and reassembly as applicable.

3.1.2.1 Ensure the Tech Rep has experience with 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 must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

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:

- Provide suitable covering to protect all exposed rudder and vessel components against contamination during the performance of the work specified herein.
- Ensure that rudder stock/shaft surfaces are supported in a minimum of two locations, at all times, until reinstallation.

3.1.4 Interferences. The Contractor must 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:

- Steering rams.
- Autopilot potentiometer.
- Autopilot belt.
- Steering feedback units.
- Cabinets and shelving.
- Wiring.
- Steering repeat-back linkages.
- Lighting.

3.2 Renewal particulars. The Contractor must accomplish all work using Coast Guard Drawings 87 WPB 561-001 and 87 WPB 562-001, and TP 4506 as guidance:

3.2.1 Prior to removal of port steering arm, with the steering arm at 0 degrees (amidships), mark autopilot potentiometer base and wheel with an alignment mark for reinstallation. Disconnect and remove the rudder assembly.

NOTE

Coast Guard personnel will disassemble and install the autopilot belt.

CAUTION

Ensure a clearance of 5 feet below the vessel when removing the rudder assembly.

Ensure the rudder stock/shaft surfaces are supported in a minimum of two locations at all times until reinstallation.

3.2.2 Remove each EL-type rudder seal.

3.3 Measurements. The Contractor must measure the alignment between the lower (three places) and upper bearing housings using the taut wire or optical method. Submit a CIR. Record data on the inspection form under 4.2.2 as part of the CIR.

3.4 Bearing renewal. The Contractor must renew all rudder bearings.

3.5 Reassembly. Upon completion of all authorized repairs, the Contractor must reassemble and install the Government-furnished port and starboard rudder assemblies by accomplishing the following:

3.5.1 Polishing. Polish the rudder stock journal of upper bearing and seal areas to remove burrs and raised metal to 32 micro-inches finish.

3.5.2 Renew parts provided as Government-furnished property.

3.5.3 Renew all lockwashers, seals, and grease fittings.

3.5.4 Lubricate all seals.

3.5.5 Lubricate the upper bearing in accordance with the “General Notes” in Coast Guard Drawing 87 WPB 561-001.

3.6 Alignment. Upon completion of reinstallation, the Contractor must check the rudder alignment with the pilothouse rudder angle indicator. Ensure that alignment is adjusted to within plus or minus 1/2 degree.

3.7 Steering system groom. Using TP 4564A, Section 3.5, Chapter 5, paragraph 5.2 as guidance, the Contractor must conduct an electronic steering system groom prior to operational testing.

3.8 Operational test, post repairs. After completion of work, the Contractor must 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.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

During operational testing the steering system is to be operated in all modes of control to test the functionality of the system and the autopilot to ensure the steering feedback system is functioning properly.

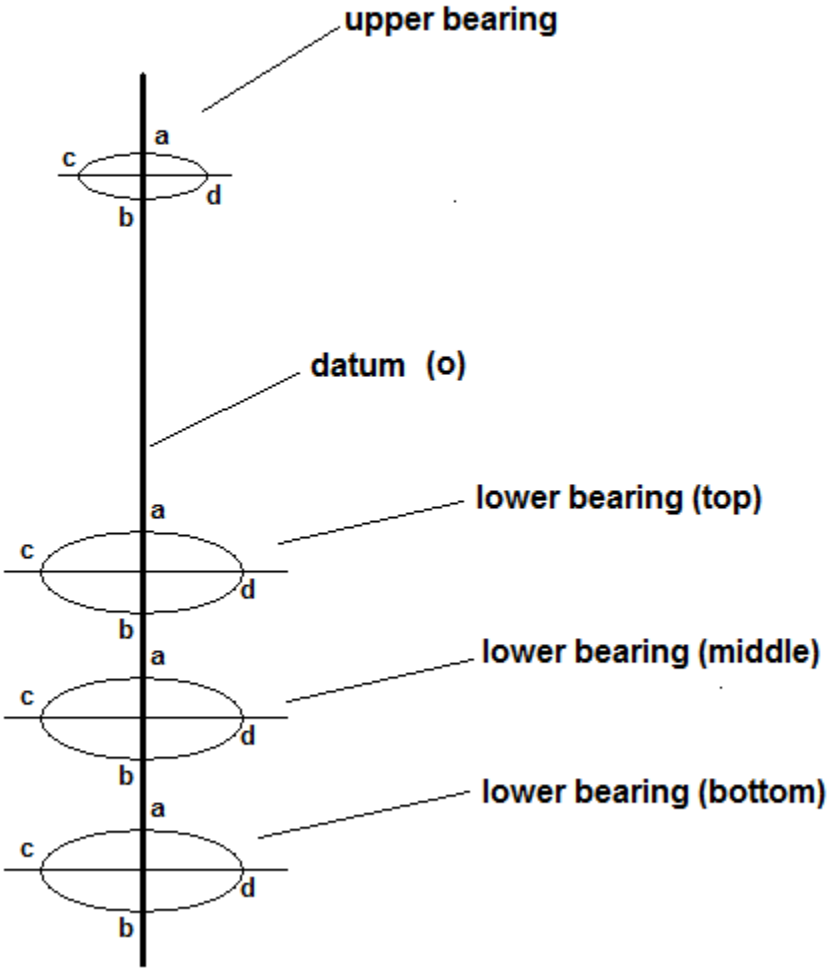
4. NOTES

4.1 Fitting information.

ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
Relief Fittings	P/N: 1093K21	1 ea.	7.57
SS Grease Fittings	P/N: 1293K32	3 ea.	4.16

4.2 Alignment survey form. Refer to next page.

CIRCLE ONE: PORT STARBOARD



LOCATION	DISTANCES FROM DATUM TO LETTERED POINT			
	A TO O	B TO O	C TO O	D TO O
Upper bearing housing				
Lower bearing housing (top)				
Lower bearing housing (middle)				
Lower bearing housing (bottom)				

WORK ITEM 28: Stern Launch Door, Remove, Inspect and Reinstall

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to remove, inspect and reinstall the stern launch door, and to inspect the pivot pins, bushings, hydraulic actuators, and washers.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
N	**Valve, Counterbalance	PN: CBCA-LAN/AP NSN: 4820-01-687-1295	4 ea.	291.50
N	**Manifold, Valve	PN: YVY NSN: 4730-01-687-2581	2 ea.	134.30

****New or refurbished equipment that the Government may provide for installation in place of existing equipment.**

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 583-001, Rev Y, RIB Deployment Structure

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, Requirements for Preservation of Ship Structures

OTHER REFERENCES

MIL-PRF-24139, Mar 1987, Grease, Multipurpose, Water Resistant.

3. REQUIREMENTS

3.1 General.

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

- 3.4.1 Removal performance period.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.3.1 Protective measures, hydraulic system. Maintain existing hydraulic system cleanliness and take all necessary precautions to prevent the introduction of contaminants into the hydraulic system.

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

- Hydraulic cylinders
- Limit switches
- Hydraulic lines
- Hydraulic cylinder pins
- Taffrail
- Pivot pins
- Pivot pin retaining plates
- Pivot pin plugs
- Washers

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.2 Operational test, initial. Prior to commencement of work, the Contractor must 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.

3.3 Work particulars. Using Coast Guard Drawing 87 WPB 583-001 as guidance, the Contractor must accomplish all work herein.

3.4 Visual inspection – closed position. With the stern launch door in the closed position, the Contractor must check clearances around all bottom and side edges. Look for signs of rubbing or misalignment. Submit CFR.

3.5 Removal. The Contractor must remove the stern launch door and accomplish the following:

3.5.1 Removal performance period. The Contractor must perform the following (door removal) within the first 25% of the contract performance period. Submit a CIR.

CAUTION

Adequately support the door at all times. Door may warp/bend/distort if not supported properly.

CAUTION

If weld repairs are required, prevent distortion by minimizing heat transferred to door.

WARNING

Stern door arms are compressed at installation. Brace stern door arms prior to disassembly to prevent unexpected/inadvertent springing.

WARNING

Do not place or store stern door on its arms.

3.5.2 Bracing installation. The Contractor must temporarily install bracing support(s) between the port and starboard stern door arms to prevent the designed, built-in tension between the arms from relieving, and to protect the door from moving and/or distorting during removal, storage, and reinstallation.

3.5.3 Door storage. The Contractor must move and store the stern launch door in a safe location.

3.6 Inspections. The Contractor must accomplish the following and submit a CFR after each inspection.

3.6.1 Visual - stern launch door. Visually inspect stern launch door for corrosion, cracks, dents, or bends. Particular attention must be given to the stern launch door arms, emergency stops, and pivot interfaces.

3.6.2 Visual - hydraulic cylinder inspection. Visually inspect the hydraulic cylinders for leaks, nicks or burrs. Visually inspect the hydraulic hoses for chafing or cuts.

3.6.3 Visual – counterbalance valve assemblies. Visually inspect the counterbalance valve and manifold assemblies attached to each hydraulic cylinder for corrosion or damage.

3.6.3.1 Government's right for change out. The Contractor must be aware that the Government reserves the right to furnish a new counterbalance valve assembly for installation in place of the existing. If the Government exercises this right, the Contractor must dispose of the removed manifold assembly in accordance with all applicable Federal, state, and local regulations.

3.6.4 Tolerances - Pins, bushings, and washers. Inspect the tolerances on the pivot pins, bushings, and washers as shown on Coast Guard Drawing 87 WPB 583-001.

3.7 Reinstallation. The Contractor must reinstall the stern launch door to the original configuration in accordance with Coast Guard Drawing 87 WPB 583-001 and accomplish the following:

3.7.1 Gasket renewal. Renew the stern door gasket (part 6 as shown on Coast Guard Drawing 583-001, Sheet 1).

3.7.2 Bushing lubrication. Lubricate stern door bushings with grease conforming to MIL-PRF-24139.

3.7.3 Bracing removal. Remove the support bracing and all material used to attach the supports upon final installation of the stern launch door.

3.8 Touch-up preservation. The Contractor must 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).

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.9 Operational test, post repairs. After completion of work, the Contractor must 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.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 29: Grey Water Holding Tanks, 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 TANK	LOCATION	CAPACITY - 95% (gallons)
Grey Water (stainless steel, uncoated)	Below Hold Deck between Frames 8 and 9, 3-7-1-W	55

1.2 Government-furnished property.

None.

1. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 601-001, Rev R, Outboard Profile & General Arrangements

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

OTHER REFERENCES

ASTM International (ASTM) D1330, 2015, 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 must furnish and install all protective measures in accordance with SFLC Std Spec 0000, (Vessel component, space, and equipment protection).

3.1.3.1 Plug all inlet and outlet piping in the tank(s) to prevent contaminants from entering. Use plugs with an attached lanyard, ring or other system that will ensure plugs are not lost in the pipe openings.

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

- Piping.
- Pump(s).
- Stateroom berthing locker.
- Toilet (to be removed by CG personnel).
- Speed log.

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

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

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

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.3 Operational test, initial. Prior to commencement of work, the Contractor must 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.

3.4 Service disruption. When grey water is disrupted due to Contractor repairs, the Contractor must refer to SFLC Standard Spec 0000 par 3.2.11 to provide required temporary facilities.

3.5 Cleaning. The Contractor must accomplish the following for the tank(s) listed. The Contractor must refer to Coast Guard Drawing 87 WPB 601-001 for guidance.

3.5.1 Content removal. Remove and dispose of all contents, fluids, and/or residues in accordance with all applicable Federal, state, and local regulations

3.5.2 Cleaning requirements. Remove manhole cover(s). Clean all tank structure's interior surfaces free of all foreign materials, sediment, and sludge. Remove all persistent residues, taking care not to damage the tank coating system. Remove cleaning media and residues continuously from the tank 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. Clean all tank vent lines. Remove and clean the eductors and level switches inside of the tank(s). Reinstall the eductors and level switches upon completion of tank cleaning. Use new gaskets and o-rings to install/reinstall all removed/disturbed components.

3.6 Inspection. The Contractor must 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 the "Tank and Void Assessment Form" via CFR (see paragraph 4.2 of the Work Item titled "General Requirements"). Electronic PDF version of this form will be furnished by the COR upon request. Include the following, as applicable:

- Tank structural condition.
- Inaccessible areas.
- Condition of tank coating, including measurements taken, percentage, location, and type of coating failure (not applicable for stainless steel tanks).
- Tank level indicator (TLI), vacuum and/or float switch condition.
- Suction and discharge piping and vent line condition.
- Fastener material (stainless steel) and condition.
- Zinc anode condition (remaining percentage).

3.7 Control panel assembly. The Contractor must open and vacuum clean the control panel assembly. Inspect the control panel assembly for any indications of overheating or loose wiring or connections. Submit a CFR

3.8 Closing. The Contractor must notify the COR at least 24 hours prior to closing the tank(s) and ensure tank closure is accomplished in the presence of the Coast Guard Inspector. 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.

3.8.1 Renew 100% of nylon insert/nylock nuts and washers.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.9 Operational test, post repairs. After completion of work, the Contractor must 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.

3.9.1 The Contractor must adjust the set point on each of the vacuum pressure switches (as applicable) to the set points noted previously.

3.9.2 The Contractor must verify operation of the low and high level switches/alarms and that the pumps cycle from lead to lag status during operation. Demonstrate proper operation of tank TLIs to prove satisfactory operating condition.

3.9.3 Upon completion of testing and, in the presence of the Coast Guard Inspector, the Contractor must pump tank(s) to the limit of the ship's installed pumps.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 30: Sewage Holding Tanks, 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 TANK	LOCATION	CAPACITY - 95% (gallons)
Sewage (stainless steel, uncoated)	Hold Deck between Frames 6 and 8, 3-7-0-W	363

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 601-001, Rev R, Outboard Profile & General Arrangements

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

OTHER REFERENCES

ASTM International (ASTM) D1330, 2015, 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 must furnish and install all protective measures in accordance with SFLC Std Spec 0000, (Vessel component, space, and equipment protection).

3.1.3.1 Plug all inlet and outlet piping in the tank(s) to prevent contaminants from entering. Use plugs with an attached lanyard, ring or other system that will ensure plugs are not lost in the pipe openings.

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

- Piping.
- Pump(s).
- Stateroom berthing locker.
- Toilet (to be removed by CG personnel).
- Speed log.

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

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

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

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.3 Operational test - initial. Prior to commencement of work, the Contractor must 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.

3.4 Service disruption. When sewage collection service is disrupted due to contractor repairs, the Contractor must refer to SFLC Standard Spec 0000 par 3.2.11 to provide required temporary facilities.

3.5 Cleaning and inspection requirements. The Contractor must accomplish the following for the tank(s) listed in paragraph 1.1 (Intent), referring to Coast Guard Drawing 87 WPB 601-001 for guidance:

3.5.1 Content removal. Remove and dispose of all contents, fluids, and/or residues in accordance with all applicable Federal, state, and local regulations

3.5.2 Cleaning requirements. Remove manhole cover(s). Clean all tank structure's interior surfaces free of all foreign materials, sediment, and sludge. Remove all persistent residues, taking care not to damage the tank coating system. Remove cleaning media and residues continuously from the tank 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. Clean all tank vent lines. Remove and clean the eductors and level

switches inside of the tank(s). Reinstall the eductors and level switches upon completion of tank cleaning. Use new gaskets and o-rings to install/reinstall all removed/disturbed components.

3.5.3 Inspection. 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 the "Tank and Void Assessment Form" via CFR (see paragraph 4.2 of the Work Item titled "General Requirements"). Electronic PDF version of this form will be furnished by the COR upon request. Include the following, as applicable:

- Tank structural condition.
- Inaccessible areas.
- Condition of tank coating, including measurements, percentage, location, and type of coating failure (not applicable for stainless steel tanks).
- Tank level indicator (TLI), vacuum and/or float switch condition.
- Suction and discharge piping and vent line condition.
- Fastener material (stainless steel) and condition.
- Zinc anode condition (remaining percentage).

3.5.4 Control panel assembly. Open and vacuum clean the control panel assembly. Inspect the control panel assembly for any indications of overheating or loose wiring or connections. Submit a CFR

3.6 Closing. The Contractor must notify the COR at least 24 hours prior to closing the tank(s) and ensure tank closure is accomplished in the presence of the Coast Guard Inspector. 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.

3.6.1 Chase threads on studs to ensure even installation of the access covers. Renew any damaged or missing fasteners. Existing undamaged fasteners may be reused. For purpose of bid, assume 10% of existing fasteners will require renewal. Renew all nylon insert nuts.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.7 Operational test, post repairs. After completion of work, the Contractor must accomplish the following in the presence of the Coast Guard Inspector, and submit a CFR:

3.7.1 Adjust the set point on each of the vacuum pressure switches (as applicable) to the set points noted previously.

3.7.2 Verify operation of the low and high level switches/alarms and that the pumps cycle from lead to lag status during operation. Demonstrate proper operation of tank TLIs to prove satisfactory operating condition.

3.7.3 Upon completion of testing and, in the presence of the Coast Guard Inspector, pump tank(s) to the limit of the ship's installed pumps.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 31: Grey Water Piping, Clean and Flush

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean the grey water piping system.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 526-001, Rev J, Scuppers & Deck Drains Piping
Coast Guard Drawing 87 WPB 593-001, Rev L, Sewage Piping

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, 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 must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

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

- Grey water pumps
- Valves

3.2 Contamination prevention. The Contractor must take all precautions to prevent contamination of personnel and spaces in accordance with all applicable Federal, state, and local regulations.

3.3 Personnel qualification. The Contractor must ensure that personnel accomplishing this work are qualified and experienced in operating the pressurized water system and handling the chemicals. For each operator/cleaning technician, submit documentation of applicable experience and training obtained within the last twelve months along with the Cleaning Plan (see paragraph 3.5.6.2).

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.4 Operational test, initial. Prior to commencement of work, the Contractor must 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.

3.5 Piping hydrojet cleaning. The Contractor must perform the following work:

3.5.1 The Contractor must clean and flush the entire grey water piping system (including condensate drain lines), shown on Coast Guard Drawing 87 WPB 526-001 and 87 WPB 593-001.

3.5.2 Prior to commencing work, coordinate with the Coast Guard Inspector. Determine required down times for affected piping system. Determine the feasibility/need for the piping system to be split to minimize system down time.

3.5.3 With the aid of ship's force, split the plumbing drain system fore and aft by closing isolation valves in the drainage system. Work on only one section of the plumbing drain system at a time to allow use of toilet and shower facilities in the other section of the system by the ship's duty section.

3.5.4 Using the referenced Coast Guard drawings as guidance, hydro blast the internal surfaces of all of the plumbing drain piping. Hydro blast pressure must be at least 2500 psig at the discharge nozzle in all piping to ensure removal of all salts and scale from piping internal surfaces.

NOTE

Ship's force will provide an assistant to the Contractor to show the Contractor the location of clean-out connections within the plumbing drain system.

3.5.4.1 Open each of the clean out connections as required to clean and hydro blast all of the internal piping within the system. Catch any fluid that drains from the clean out connections when it is opened and clean up any spills using bleach to disinfect the spill after cleaning.

3.5.4.2 It may be necessary for the Contractor to install additional clean-out connections to access all portions of the plumbing drain system. If additional clean-out connections are needed, a separate

specification item in this specification package must be authorized to install additional clean-out connections.

3.5.4.3 Empty and clean all connected grease traps, and dispose of waste in accordance with all Federal laws and regulations.

3.5.4.4 Hydro blast cleaning water may be collected in the ship's sewage system and disposed of via the ship's sewage shore tie connections.

3.5.5 Clean until all of the following conditions are met:

- All visible calcium carbonate deposits, solid deposits, grease and build-up are removed from pipe walls.
- Discharge water from the piping being cleaned is free of all visible scale and deposits.

3.5.5.1 Inspect the piping interior using a borescope in the presence of the COR, to verify that all solid deposits visible to the unmagnified eye have been removed. Continue the cleaning process until all visible solid deposits are removed from the pipe walls.

3.5.6 In the event that hydroblasting alone does not clean piping to required conditions, Contractor must use chemical cleaning methods.

3.5.6.1 Ensure that chemical cleaners do not damage the environment, heat exchanger or the vessel.

3.5.6.2 Submit the written plan for chemical cleaning to the COR for approval 96 hours before work is to commence. The procedure must include products to be used, safety precautions, disposal requirements, sequence of events, etc. Submit a MSDS to the COR for all chemicals proposed for use. Changes to the chemical cleaning plan as written, need to be approved by the COR (and Facilities).

3.5.6.3 Chemical cleaning waste water disposal. Dispose of all cleaning fluids and debris in accordance with all applicable Federal, state, and local regulations. Remove all unused chemicals from USCG property immediately upon completion of work item. Do not drain any fluids (including fresh water) into any space, bilge, or exterior location.

- Sequence of each location that ensures all piping sections will be cleaned and all foreign debris removed.
- Flush twice the volume of the system cleaned with water to include 3 repeated pH tests between 6 and 8. The flushing water shall be collected and disposed by the Contractor.

3.6 Pumps and valves. The Contractor must replace system tank valve(s) with temporary spool piece(s). Visually inspect system pumps and valve(s); and submit a CFR. Upon completion of work, reinstall the removed tank valve(s) with new gaskets.

3.7 Gasket renewal. The Contractor must reinstall all removed valves and fittings with new gasket material conforming to applicable referenced drawings.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.8 Operational test, post repairs. After completion of work, the Contractor must 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.

3.8.1 Leak test. After all system components are reinstalled, the Contractor must test all disturbed piping for leaks, as follows, and submit a CFR:

- Plug all system openings (except the highest) and fill system with water to the point of overflow. Ensure that the water level does not go down (without adding any water) for sufficient time to inspect the entire system (no less than 15 minutes).
- Closely monitor the system for leaks. Repair all leaks detected.
- Repeat test and inspection until no leaks are detected.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 32: Sewage Piping, Clean and Flush

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean the sewage piping system.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 526-001, Rev J, Scuppers & Deck Drains Piping

Coast Guard Drawing 87 WPB 593-001, Rev L, Sewage Piping

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

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 must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

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

- Sewage pumps
- Toilets
- Valves

3.2 Contamination prevention. The Contractor must take all precautions to prevent contamination of personnel and spaces in accordance with all applicable Federal, state, and local regulations.

3.3 Personnel qualification. The Contractor must ensure that personnel accomplishing this work are qualified and experienced in operating the pressurized water system and handling the chemicals. For each operator/cleaning technician, submit documentation of applicable experience and training obtained within the last twelve months along with the Cleaning Plan.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.4 Operational test - initial. Prior to commencement of work, the Contractor must 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.

3.5 Cleaning plan. Submit the written plan for chemical cleaning to the COR before work is to commence. The procedure must include products to be used, safety precautions, disposal requirements, sequence of events, etc. Submit a MSDS to the COR for all chemicals proposed for use. Changes to the chemical cleaning plan as written, need to be approved by the COR (and Facilities).

CAUTION

Although the Coast Guard prefers pressurized water as the cleaning fluid, the Contractor may propose chemical cleaning as an alternative, providing that the proposed chemical cleaning agent is environmentally safe, suitable for use in marine sewage piping application, and pre-approved by the COR.

The chemicals used in the cleaning (including cleaning chemicals, neutralizing compounds, and defoaming chemicals) must not cause any significant detrimental effects to the sewage piping system or any other system components Due to the fact that system piping has historically been difficult to clean by pressure washing only, chemical cleaning is usually required to successfully complete the cleaning process.

3.5.1 Procedure requirements. The Contractor must ensure that the procedure includes the following:

- Methods of cleaning.
- All safety precautions required during cleaning operations.
- List of qualified personnel who will operate machinery or handle chemicals (see paragraph 3.3 (Personnel qualification) herein).
- Locations in the sewage piping where cleaning will take place, and any additional fittings

necessary.

- Sequence of each location that ensures all piping sections will be cleaned and all foreign debris removed.

3.5.2 Plan submittal. The Contractor must submit the written plan to the COR for approval at least 96 hours prior to commencing cleaning operations. Changes to the chemical cleaning plan as written, need to be approved by the COR (and local Facilities).

3.6 Clean and flush. The Contractor must clean and flush the entire sewage system piping, shown on Coast Guard Drawings 87 WPB 526-001 and 87 WPB 593-001.

3.6.1 Pumps and valves. Replace system tank valve(s) with temporary spool piece(s) before cleaning. Visually inspect system pumps and valve(s); and submit a CFR. Upon completion of work, reinstall the removed tank valve(s) with new gaskets.

3.6.2 Cleaning. Continue cleaning until all of the following conditions are met:

- All visible calcium carbonate deposits, solid deposits and build-up are removed from pipe walls.
- Discharge water from the piping being cleaned is free of all visible scale and deposits.

3.6.3 Inspect the piping interior using a borescope in the presence of the COR, to verify that all solid deposits visible to the unmagnified eye have been removed. Continue the cleaning process until all visible solid deposits are removed from the pipe walls.

3.6.4 Flush twice the volume of the system cleaned with water to include 3 repeated pH tests between 6 and 8. The flushing water shall be collected and disposed by the Contractor.

3.7 Waste disposal. The Contractor must dispose of all cleaning fluids and debris in accordance with all applicable Federal, state, and local regulations. Remove all unused chemicals from USCG property immediately upon completion of work item. Do not drain any fluids (including fresh water) into any space, bilge, or exterior location.

3.8 Gasket renewal. The Contractor must reinstall all removed valves and fittings with new gasket material conforming to ASTM D1330.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.9 Operational test – post repairs. After completion of work, the Contractor must 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.

3.9.1 Leak test. After all system components are reinstalled, the Contractor must test all disturbed piping for leaks, as follows, and submit a CFR:

- Plug all system openings (except the highest) and fill system with water to the point of overflow. Ensure that the water level does not go down (without adding any water) for sufficient time to inspect the entire system (no less than 15 minutes).

- Closely monitor the system for leaks. Repair all leaks detected.
- Repeat test and inspection until no leaks are detected.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 33: Cathodic Protection/Zinc Anodes, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew the cathodic protection anodes listed in Table 1:

TABLE 1 - ANODES

QTY	TYPE/DESCRIPTION	SIZE	LOCATION
15	ZHC-23.5 Hull Bolt On Zinc 23.5# – provided as GFP. (ZHC-23)	1-1/4" x 6" x 12"	12 Hull U/W Body 3 Transom
4	Slotted ZTS Teardrop Zinc Anode W-6 (DONOVAN 323600)	6-lbs	Sea chests
1	Slotted ZTS Teardrop Zinc Anode W-6 (DONOVAN 323600)	6-lbs	Stern Door
8	Screw In Pencil Anode (CANADA METAL)	1" DIA x 2-1/2" LG	Stern Tube (3 fwd, 1 aft on each stern tube)
10	2.8# Rectangular Zinc Alloy Anode (GALVOTEC ALLOY INC)	7/8" x 7-7/8" x 1-7/8" x 2.8#	Attached to stern tube access plates. 1 fwd and 1 aft of intermediate bearing 1 port and 1 stbd side of strut, just fwd of aft bearing.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
N	Anode, corrosion preventive	PN: 899Y105 NSN: 5342-00-813-6058	15 ea	57.37
N	Anode, corrosion preventive	PN: Z0220205F3REV1 NSN: 5340-01-644-5457	2 ea	111.95

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 633-001, Rev A, Cathodic Protection

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, Requirements for Preservation of Ship Structures

OTHER REFERENCES

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

MIL-A-18001, Dec 2015, 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 must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

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

NOTE

TCTO TL1010.0 removes the bilge zinc anodes near frames 14 and 22.

3.2 Renewal particulars. The Contractor must accomplish all work herein while using Coast Guard Drawing 87 WPB 633-001 as guidance:

3.2.1 Removals. Remove and dispose of all designated anodes listed in Table 1. Accomplish the following additional tasks, as applicable:

3.2.1.1 Inspect all studs and ensure bolt-on configuration compatible. If the cutter is received in the weld-on zinc configuration, the contractor must convert all zincs to bolt-on configuration via Change Request (approved and authorized by the KO).

3.2.1.2 Renew all anode mounting hardware (nuts and washers).

3.3 Electrical resistance testing. The Contractor must 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.

CAUTION

Do not paint new anodes.

3.4 Touch-up preservation. The Contractor must 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). Additionally, the following touch-ups are required:

- External portions of studs, nuts, and washers.
- Hull surfaces in way of removed anodes.
- Anode straps.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 34: 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 must 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 87 WPB 085-011, Rev D, Lifting Slings

Coast Guard Drawing 87 WPB 085-012, Rev A, Lifting Cradle

Coast Guard Drawing 87 WPB 085-013, Rev B, Docking Plan

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 8634 (SFLC Std Spec 8634), 2022, Drydocking

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

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

- 3.10.1 Inaccessible voids.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must 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 must 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 must perform drydock and undock in accordance with SFLC Std Spec 8634, using Coast Guard Drawings 87 WPB 085-011, 87 WPB 085-012, and 87 WPB 085-013 for guidance.

3.4 Cutter conditions. The Contractor must 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): 90.39.
- VCG (FT ABL): 7.62.
- LCG (FT aft of Frame Zero): 51.96.
- Length (Molded) (FT): 86.92.
- Length of supported keel (FT): 61.05 (Position 1)
- Length of supported keel (FT): 50.88 (Position 2)

3.4.1 Blocking. The Contractor must 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. Contractor's use of a cradle, built to Coast Guard Drawing 87 WPB 085-12, must require the fitting of keel blocks with soft wood wedges, based on the docking positions noted in Coast Guard Drawing 87 WPB 085-013, after lifting.

TABLE 1 – BLOCKING

POS. #	BLOCK HEIGHT ABOVE DOCKING FACILITY DECK	STEEL PLATE	SITUATION AWARENESS	FIN STABILIZERS	ADDITIONAL

	MIN.	RUDDER REMOVAL	PROPELLER REMOVAL	SHAFT REMOVAL				
2	48"	NA	NA		NA	NA	NA	None

3.4.2 Cable, sling, or strap tension calculation. If the Contractor plans to use a vertical lift, crane, or travel/mobile lift to haul out the vessel, the Contractor must submit the cable, sling, or strap tension calculation specified in Table A1 and paragraph A2.7.2.7 of SFLC Std Spec 8634 with the Pre-Award calculations, using the loading condition specified in paragraph 3.4.

3.5 Pre-award calculations. The Contractor must 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 must include a plan of how inspection/preservation will be accomplished. Plan must 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 must 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 must facilitate and participate in the UWHIB inspections of the underwater hull. The Contractor must provide a designated hull repair supervisor to accompany the UWHIB and mark on the hull proposed repairs areas, as necessary.

3.6.2 The Contractor must assist the UWHIB in completing the Drydocking and Underwater Body Inspection Work Sheet (CG-2926) and the Underwater Body Paint Report (CG-4815). Obtain forms from COR.

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 must 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 must remove and dispose of up to 1,500 gallons of fuel from the vessel.

3.8 Fleeting. Not required.

3.9 Fluid removal and disposal.

3.9.1 The Contractor must drydock the cutter with all tanks empty.

3.9.2 The Contractor must empty all tanks in order to fulfill the drydock requirements, shown on Coast Guard Drawing 87 WPB 085-013. Dispose of all fluids in accordance with Federal, State, and local regulations.

3.9.2.1 Dirty oil and oily water. The Contractor must remove and dispose of up to 85 gallons of dirty oil and up to 85 gallons of oily water from the vessel.

3.9.2.2 Sewage and grey water. The Contractor must remove and dispose of up to 363 gallons of sewage and up to 55 gallons of grey water from the vessel.

3.10 Inaccessible voids.

3.10.1 Inaccessible void inspections. In the presence of the Coast Guard Inspector, the contractor must accomplish the following tasks for all non-accessible voids and submit a CIR:

3.10.1.1 Remove and dispose of the existing drain plugs.

3.10.1.2 Submit a CIR noting any liquids draining from any of the voids – indicating the presence of a leak.

3.10.1.3 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 wastecategory.

3.10.2 Plug renewal and interior coating. Upon completion of all work on appendages, the Contractor must accomplish the following:

3.10.2.1 Chase the hull inserts threads of all plugs.

3.10.2.2 Install new stainless steel, Type 316, or Monel drain plugs, in place of original plugs.

3.10.2.3 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.

3.10.2.4 Apply rust preventative compound conforming to MIL-PRF-16173, Class II, Grade 3, to each void and appendage using the fill and drain method. Collect and dispose of all excess compound in accordance with all federal, state, and local regulations. Ensure coated surfaces are left exposed to the atmosphere for 24 hours minimum to allow for adequate drying

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.

4.2 Tanks. The tanks identified in Table 1 below require fluid offload.

TABLE 1 – TANK INFORMATION

TYPE OF TANK	LOCATION	MAX CAPACITY (GALLONS)
Diesel fuel	Stbd Centerline	1,450
Diesel fuel	Port Centerline	1,450
Dirty Oil	Port Centerline	85
Oily Water	Stbd Centerline	85
Sewage	Hold Deck between Frames 6 and 8, 3-7-0-W	363
Grey Water	Below Hold Deck between Frames 8 and 9, 3-7-1-W	55

4.3 Potable water pumping. Ship's Force will pump the potable water overboard prior to drydocking in lieu of requiring the Contractor offload the potable water.

4.4 Cutters normally operate at a minimum 75% fuel capacity during hurricane season and 50% off season.

4.5 UWHIB forms. Drydocking and Underwater Body Inspection Work Sheet (CG-2926) and the Underwater Body Paint Report (CG-4815) may be obtained from the following links.

CG_2926.PDF

CG_4815.PDF

WORK ITEM 35: 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), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 8635 (SFLC Std Spec 8635), 2022, 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 must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

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

3.2 Temporary service particulars. The Contractor must 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	Y
3.3.3	Parking	Y
3.3.4	Duty section berthing: 1 male, 0 female. Duty section berthing must be provided for up to seven days.	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: 3 days.	Y
3.3.10	Water supply	
3.3.10.1	Potable water: unlimited gallons per day, at 35 psig.	Y
3.3.10.2	Hot-circulating water	Y
3.3.10.3	Cooling water	N
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
5	50	55

TABLE 3 - HAZARDOUS WASTE DISPOSAL – SOLIDS

OILY FILTERS	OILY RAGS (LBS)	EMPTY 1-GAL CONTAINER*	EMPTY 5-GAL CONTAINER*	EMPTY 55-GAL CONTAINER*
6	25	5	3	1

***Previously housed hazardous materials.**

3.2 Extended temporary services. If the performance period of the contract is extended by the KO, the contractor must 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 36: 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), 2022, 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 must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

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

3.2 Trial applicability. The Contractor must 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 must be responsible for ensuring all test procedures are prepared, approved, and distributed for the sea trials, and must be responsible for recording test data and submitting CFRs to the COR.

3.3 Sea trial agenda. The Contractor must prepare an agenda that details the Contractor's plans for ensuring completion of the required sea trials.

3.3.1 Agenda contents. The Contractor must ensure the agenda consists of chronological list of administrative events, inspection events and test events. Events must 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 must 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 must 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 must 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 must submit four legible copies of the sea trial agenda to the COR two days prior to the scheduled trials. The Contractor must 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 must 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 must 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 must 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 must 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 must 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 must 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 must 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 must 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 must 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 must 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 37: Auxiliary Foundation(s), Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew the following auxiliary foundations:

- STBD E/R Fan Foundation (1-15-1-Q)

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 131-001, Rev J, Deck Construction Plan

Coast Guard Drawing 87 WPB 185-001, Rev AP, Auxiliary Foundation Booklet

Coast Guard Drawing 87 WPB 601-001, Rev R, Outboard Profile & General Arrangements

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2022, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, Requirements for Preservation of Ship Structures

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

None.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must 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:

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.2 Operational test, initial. Prior to commencement of work, the Contractor must 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.

3.3 Renewal particulars. Using Coast Guard Drawings listed in Section 2 as reference, the Contractor must crop and renew the STBD E/R fan space foundation to include approximately 20 sq ft of deck plating, intake fan foundation ring, and preserve plenum chamber as designated by the Coast Guard Inspector.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.4 Operational test, post repairs. After completion of work, the Contractor must 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.

3.5 Touch-up preservation. The Contractor must 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 38: Seawater Cooling Piping/Valves, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew designated piping and/or components of the seawater cooling system.

TABLE 1: SEAWATER SYSTEM REPAIRS

TASK #	TASK DESCRIPTION
1	Renew raw water piping in STBD mid-ship void (3-9-1-V), as shown in Coast Guard Drawings 87 WPB 256-001 and 87 WPB 533-001 and as designated by the Coast Guard Inspector.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 256-001, Rev AC, Seawater Cooling Piping

Coast Guard Drawing 87 WPB 514-001, Rev M, HVAC Duct & Piping System

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2022, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, Requirements for Preservation of Ship Structures

OTHER REFERENCES

ASTM International (ASTM) D1330, 2015, Standard Specification for Rubber Sheet Gaskets

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

None.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must 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:

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.2 Operational test, initial. Prior to commencement of work, the Contractor must 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.

3.3 Piping renewals. Using Coast Guard Drawings 87 WPB 256-001 and 87 WPB 514-001 as reference, the Contractor must perform all repair tasks designated in Table 1.

3.3.1 Renew all disturbed rubber gaskets (as applicable) with ASTM D1330 material.

3.3.2 Renew any valve label plate that is unreadable, damaged, broken, lost, etc., as applicable with the appropriate valve designation as shown on the applicable Compartment Check-off List as designated by the Coast Guard Inspector.

3.4 Hydrostatic test. After all authorized repairs, the Contractor must hydrostatically test all new and disturbed welded piping and components of the seawater cooling 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.

3.5 Leak test. After completing all authorized mechanical (i.e. threaded, bolted, etc.) joint repairs, the Contractor must test the seawater cooling 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.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.6 Operational test, post repairs. After completion of work, the Contractor must 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.

3.7 Touch-up preservation. The Contractor must 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 39: Critical Coated Surface(s), Preserve

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to perform preservation of designated critical-coated surface(s).

TABLE 1: PRESERVATION LOCATIONS

COMP. NUMBER	COMP. NAME	DESCRIPTION	SFLC STD SPECIFICATION 6310		
			APPENDIX	SYSTEM	OPTION
1-6-0-A	Deck Locker	Deck surface (up to Deta couple), 100%	B	Metal Interior and Non-Skid Areas, Metal Decks – No application of deck coverings	N/A
2-22-0-E	Lazarette	Bilges, 100%	B	Bilges, Cofferdams, and Forepeaks, Steel	I
3-9-1-V	Mid-ship Void (STBD)	Bilges, 100%	B	Bilges, Cofferdams, and Forepeaks, Steel	I

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 116-001, Rev -, Longitudinal Girders & BHD's

Coast Guard Drawing 87 WPB 117-001, Rev G, Transverse Sections

Coast Guard Drawing 87 WPB 122-001, Rev C, Watertight Bulkheads

Coast Guard Drawing 87 WPB 131-001, Rev J, Deck Construction Plan

Coast Guard Drawing 87 WPB 151-001, Rev M, Superstructure Details

COAST GUARD PUBLICATIONS

Coast Guard Commandant Instruction (COMDTINST) M10360.3D, Coatings and Color Manual

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, 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:

- 3.3 Substrate inspection.

3.1.2 Tech Rep.

None.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must 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, framing and hardware.
- Piping.
- Electrical wiring.
- E/R supply/exhaust fans, dampers, foundations, diffuser vane, and demisters

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.2 Operational test, initial. Prior to commencement of work, the Contractor must 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.

3.3 Substrate inspection. After completion of surface preparation and before primer coat application, the Contractor must perform a visual inspection of all prepared surfaces. Submit A CIR.

NOTE

Application of the preservation systems specified herein may require the use of plural-component spray equipment, or other suitable methods, to compensate for the coating system's relatively short pot life.

3.4 Surface preservation. Using Coast Guard Drawings listed in Section 2 as guidance, the Contractor must prepare and preserve areas designated in Table 1 above, including all adjacent structural members using the specified Appendix, System and Option from SFLC Std. Spec 6310.

3.4.1 Coating colors and system color schemes. The Contractor must select all colors and color coat/paint schemes in accordance with COMDTINST M10360.3D, Chapter 6 (Cutter and Boat Colors Exterior and Interior).

3.4.2 The Contractor must abide by all touch-up requirements outlined in SFLC Std. Spec 6310, Paragraph 3.1.13 (Touch-ups and minor coating repairs).

NOTE

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

3.5 In-process quality control measures. The Contractor must 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

Coast Guard personnel will operate all shipboard machinery and equipment.

3.6. Operational test, post repairs. After completion of work, the Contractor must 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.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 40: Carpeting, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew the carpeting in the locations shown in Table 1.

TABLE I - DECKING SYSTEM RENEWALS

LOCATION	AREA (*SQFT)	DECK MTL (**A/S)	SYSTEM/APPENDIX (SFLC STD SPEC 6341)	ISSUE	SYSTEM COLOR
Berthing (1-8-1-L)	20	S	Carpeting See Para 3.2.2	N/A	N/A
Berthing (1-8-2-L)	20	S	Carpeting See Para 3.2.2	N/A	N/A
Berthing (2-2-0-L)	40	S	Carpeting See Para 3.2.2	N/A	N/A
Berthing (2-6-1-L)	49	S	Carpeting See Para 3.2.2	N/A	N/A
Berthing (2-6-2-L)	49	S	Carpeting See Para 3.2.2	N/A	N/A

***Approximated.**
****Note: A = Aluminum; S = Steel.**

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 113-001, Rev G, Platform Plating & Framing

Coast Guard Drawing 87 WPB 621-001, Rev K, Joiner Work Details

Coast Guard Drawing 87 WPB 634-001, Rev G, Deck Covering and Details

Coast Guard Drawing 87 WPB 640-001, Rev P, Interior Furnishings

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, Requirements for Preservation of Ship Structures

Surface Forces Logistics Center Standard Specification 6341 (SFLC Std Spec 6341), 2022, Install Interior Deck Covering Systems

OTHER REFERENCES

MIL-D-16791, Jan 1993, Detergents, General Purpose (Liquid, Non-ionic)

MIL-PRF-24613A, Nov 2007, Deck Covering Materials, Interior, Cosmetic Polymeric

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

None.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

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

3.2 Deck covering renewal. Using Coast Guard Drawings listed in Section 2 as guidance, the Contractor must renew the deck covering systems in the space(s) identified in Table 1.

3.2.1 Upon removal of existing deck covering system, the Contractor must perform visual inspection of underlying joiner panels. Submit CFR.

3.2.2 Carpeting. Where this covering is specified in Table 1 above, the Contractor must renew the deck covering material (i.e. remove existing covering system, prepare and paint, then apply deck covering material, etc.), using carpeting in accordance with Appendix E of SFLC Std Spec 6341.

3.5 Touch-up preservation. The Contractor must 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 41: Mooring Bits, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew the mooring bits.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 582-001, Rev J, Mooring and Towing

Coast Guard Drawing 87 WPB 131-001, Rev J, Deck Construction Plan

Coast Guard Drawing 87 WPB 635-001, Rev C, Linings and Insulation

Coast Guard Drawing 87 WPB 640-001, Rev P, Interior Furnishings

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, Requirements for Preservation of Ship Structures

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Technical Representative.

None.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must 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
- Insulation

3.2 Renewals. The Contractor must refer to Coast Guard Drawing 87 WPB 582-001, 87 WPB 131-001, 87 WPB 635-001, and 87 WPB 640-001. Remove and dispose of all existing (8) carbon steel mooring bit assemblies (see Elevation 15-A of Coast Guard Drawing 582-001, 2 bits per assembly). Fabricate and install new stainless steel mooring bit assemblies (change material from carbon steel to stainless). Renew all damaged insulation and coatings. Do not renew main deck insert plates.

3.3 Touch-up preservation. The Contractor must 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.)

3.4 Pull testing. Prior to performing pull test, the Contractor must submit a test plan for accomplishing load testing to the COR. Apply a horizontal static load of 12,500 lbs (+5% - 0%) to each bit, hold for minimum 10 minutes. Conduct visual inspection; no permanent deformation allowed. Submit CFR.

4. NOTES

4.1 Redline drawings. The Contractor must provide redline drawings to reflect any discrepancies, changes, or revisions from the original drawings provided in Section 2.

WORK ITEM 42: Flood Lights, Modify

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to install new LED floodlights and mast illumination lights on the pilothouse.

1.2 Government-furnished property.

APM: Validate all GFP data. If the Spec Package's Consolidated List of GFP is changed, ensure it is changed in the source WI and GFP style is applied.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
N	Phoenix SturdiLED White	NSN: 6230-01-696-1316	2 ea.	$784.33
N	Phoenix SturdiLED Red	NSN: 6210-01-696-0472	2 ea.	$784.33

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 151-001, Rev M, Superstructure Details

Coast Guard Drawing 87 WPB 184-002, Rev A, Foundation Mods Incidental to LED Floodlight Install

Coast Guard Drawing 87 WPB 330-002, Rev -, Pilothouse LED Floodlight Modifications Electrical

Coast Guard Drawing 87 WPB 331-001, Rev R, Lighting System Deck Plan

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2022, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 3041 (SFLC Std Spec 3041), 2022, Shipboard Electrical Cable Test

Surface Forces Logistics Center Standard Specification 3042 (SFLC Std Spec 3042), 2022, Shipboard Electrical Cable Removal, Relocation, Splice, Repair, and Installation

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, Requirements for Preservation of Ship Structures

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

None.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must 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:

- Bulkhead and overhead insulation
- Electrical wire runs
- Radio antennas and foundations
- Navigation lights
- Pilothouse awning

3.2 Electrical work. The Contractor must accomplish all electrical work in accordance with SFLC Std Spec 3042, and test cables in accordance with SFLC Std Spec 3041. Utilize existing wire ways for new cable runs where possible.

3.3 Work particulars. Using Coast Guard Drawings 87 WPB 151-001, 87 WPB 184-002, 87 WPB 330-002, and 87 WPB 331-001 as guidance, the Contractor must accomplish the following:

3.3.1 Remove two existing 250watt mast illumination floodlights from the aft bulkhead of the pilothouse. Install two new, government-furnished, red LED lights in place of the removed lights. Re-orient lights to face aft to act as floodlights.

3.3.2 Remove existing 500watt aft-facing floodlight and associated foundation from the starboard aft end of the pilothouse top as shown on Coast Guard Drawing 87 WPB 184-002.

3.3.3 Fabricate and install new mast illumination floodlight foundations and government-furnished, white LED lights as shown on Coast Guard Drawing 87 WPB 184-002.

3.3.4 Install new switches and cable runs for new port and starboard floodlights and mast illumination lights as shown on Coast Guard Drawing 87 WPB 330-002.

3.4 Touch-up preservation. The Contractor must 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 43: 24VDC Distribution System, Upgrade

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to perform upgrades to the 24VDC distribution system.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
N	Panel Bridge 24 V	NSN: 6110-01-F18-5605	1 ea.	2,548.00
N	Alternator	NSN: 6125-01-020-2950	2 ea.	14,668.79
N	Regulator Voltage	NSN: 5963-01-623-3549	2 ea.	350.00
N	Resistor Thermal	NSN: 5905-01-662-5504	2 ea.	35.00
N	Harness, Wiring	NSN: 5995-01-661-5659	2 ea.	75.00
N	Seal Plain	NSN: 5330-12-314-3403	2 ea.	56.32
N	Coupling Half	NSN: 4730-12-408-7920	2 ea.	1,572.87
N	Coupling, Flex	NSN: 3010-01-255-4200	2 ea.	480.44
N	Insert, Flexible Coupling	NSN: 3010-12-332-3557	2 ea.	830.23
N	Screw Machine	NSN: 5305-01-384-3454	12 ea.	3.71
N	Washer, Spring Tension	NSN: 5310-12-125-7798	12 ea.	2.44
N	Nut, Plain Hexagon	NSN: 5310-12-156-4982	12 ea.	2.33
N	Guard Plate	NSN: 2920-12-408-7817	2 ea.	941.45
N	Plate, Mounting	NSN: 5340-12-333-7085	2 ea.	75.00
N	Screw, Cap, Hexagon	NSN: 5305-01-240-1274	14 ea.	4.53
N	Washer, Spring Tension	NSN: 5310-01-195-9000	14 ea.	1.81
N	Screw Cap Hexagon	NSN: 5305-12-142-8243	4 ea.	7.92
N	Screw, Cap	NSN: 5305-12-142-8236	4 ea.	3.64
N	Washer, Flat	NSN: 5310-12-149-4352	8 ea.	2.35
N	Bracket	NSN: 2815-12-408-5547	4 ea.	130.18

***Government-loaned property, which shall be returned to the Coast Guard Inspector upon completion of the availability.**

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 310-001, Rev J, Ship's Service One-Line Diagram

Coast Guard Drawing 87 WPB 313-001, Rev R, DC System

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 4533, SWBS 233, 2002, Propulsion Internal Combustion Engines, Maintenance Manual

Coast Guard Technical Publication (TP) 4525, SWBS 202, 2003, Main Diesel Engine Control System Schematics

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 3041 (SFLC Std Spec 3041), 2022, Shipboard Electrical Cable Test

Surface Forces Logistics Center Standard Specification 3042 (SFLC Std Spec 3042), 2022, Shipboard Electrical Cable Removal, Relocation, Splice, Repair, and Installation

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep. The Contractor must provide the services of an OEM authorized/licensed Tech Rep for the MTU Main Diesel Engines (MDE) 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 and demonstrated on their resume.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

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

3.1.5 Electrical work. The Contractor must 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.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.2 Operational test, initial. Prior to commencement of work, the Contractor must 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.

3.3 Work particulars. Using Coast Guard Drawings 87 WPB 310-001 and 313-001 and Coast Guard Tech Pub (TP) 4533 Section 3.86 as reference, the Contractor must perform the following:

3.3.1 Install Government-furnished 90 Amp alternators and accessory components on each of the MTU main diesel engines (MDE's).

3.3.1.1 Inspect alternator for ground tab. If installed as shown below in Figure 1, remove ground tab.

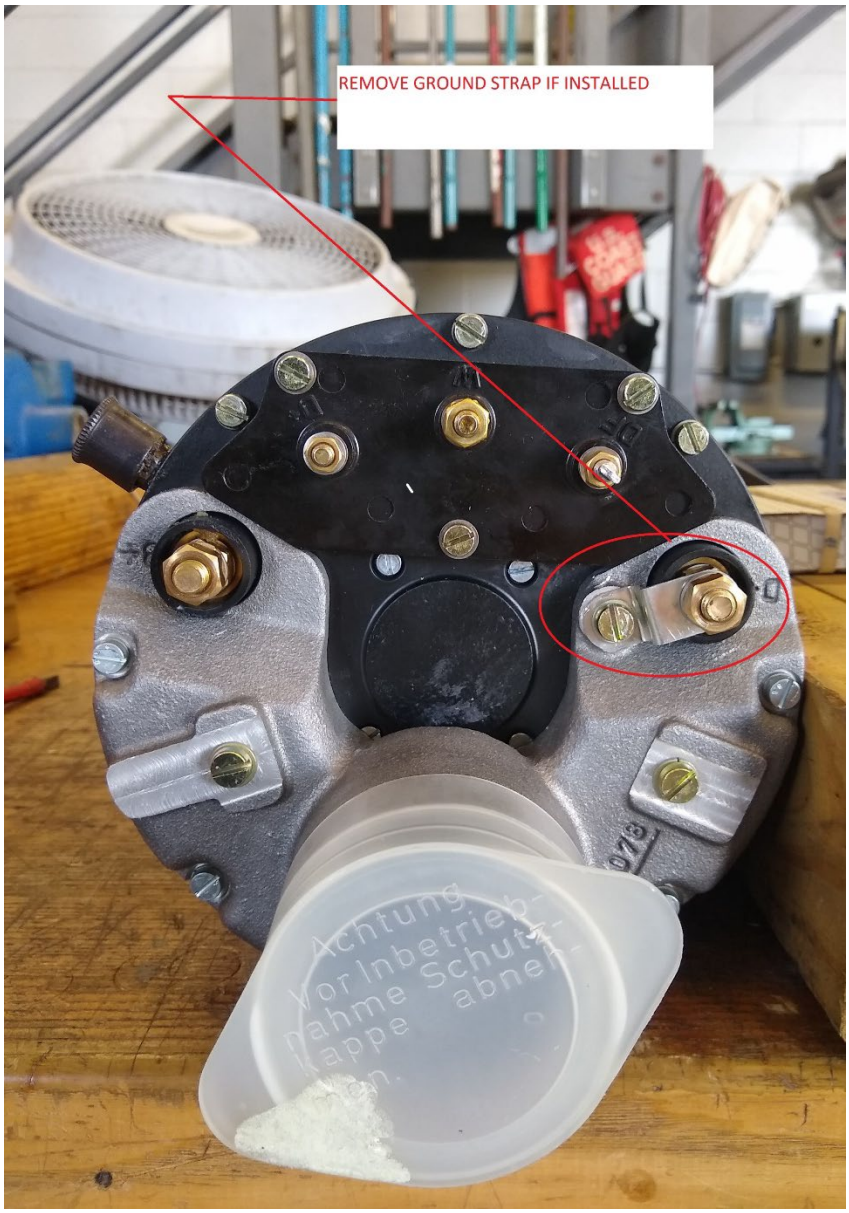


FIGURE 1. ALTERNATOR WITH GROUND STRAP

3.3.1.2 Install Government-furnished voltage regulator on door of MTU start box shown in Figure 4 below.

3.3.2 The Contractor must furnish and install two (2) Sonalerts and Panel mounted LED on PORT and STBD start control box door

3.3.3 The Contractor must furnish and install new LSDSGU-50 or equivalent cable from alternators to starters IAW 87 WPB 313-001.

3.3.4 Install Government-furnished 24/12 VDC Panel and associated components in location shown below in Figure 2 and as designated by Coast Guard Inspector in the Pilothouse.

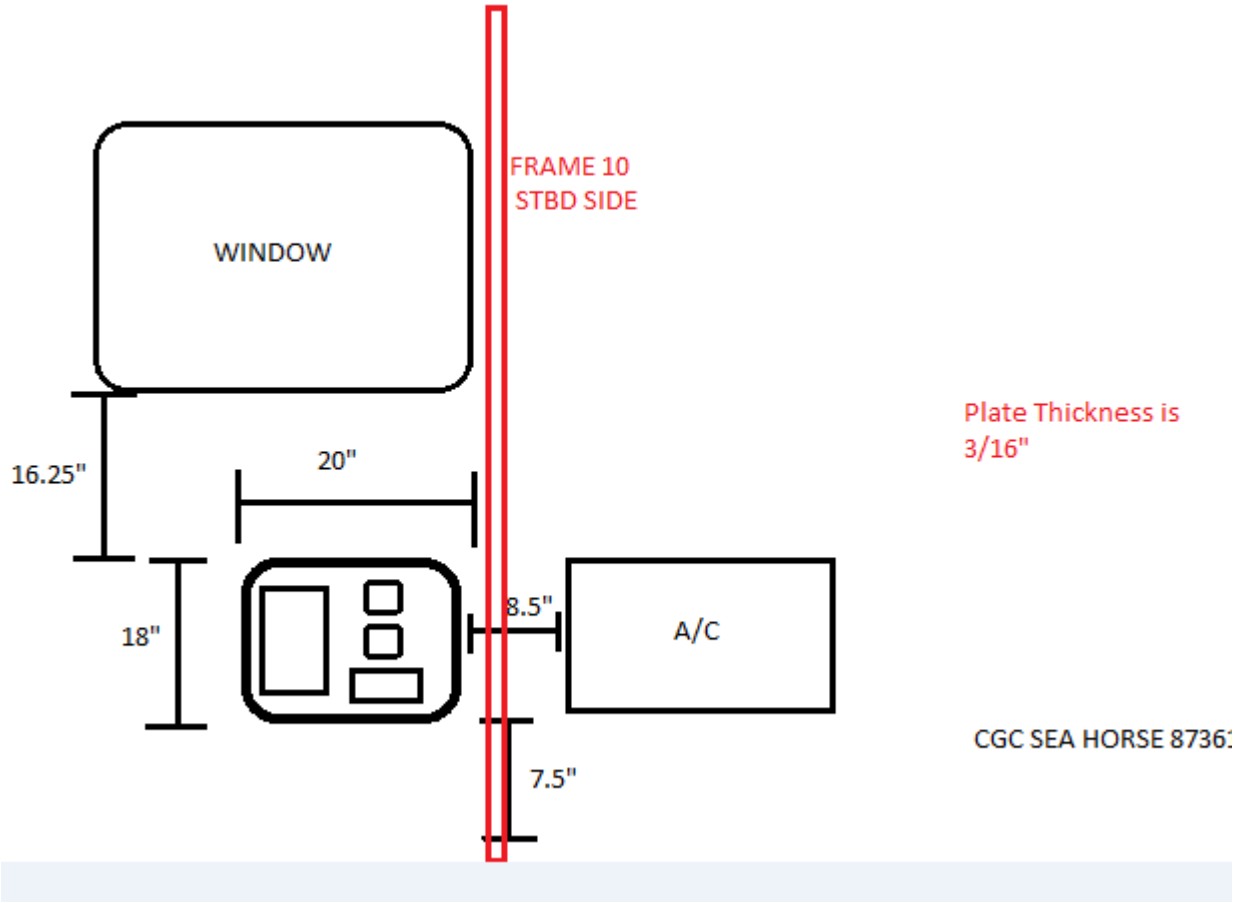


FIGURE 2. ELEVATION VIEW SKETCH

3.3.5 The Contractor must furnish and install new 50A breaker in place of the existing 100A breaker in the 24 volt DC Engine Room Panel IAW Coast Guard Drawing 87 WPB 313-001.

3.3.6 The Contractor must furnish and install new electric cable, Type LSDNW-23 or equivalent from the 50 amp breaker installed above in the 24 Volt DC Engine Room Panel to new Pilothouse 24/12 VDC Panel.

3.3.7 The Contractor must furnish and install four (4) battery temp sensors, two (2) PORT batteries, and two (2) STBD batteries

NOTE
The contractor is authorized to lengthen the cable on item NSN 5905-01-662-5504 to fit the configuration. Splice must be on the connector end and IAW SFLC Std Spec 3042

3.3.8 The Contractor must configure each voltage regulator for the correct battery type IAW the manufacturer's installation manual.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.4. Operational test, post repairs. After completion of work, the Contractor must 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.

3.4.1 Complete, sign and date the SOVT (System Operability Verification Test) below

WPB-87 24v Upgrade SOVT

Test 1 Over Temperature Alarm

This test verifies the operation of the overtemperature alarm on the Voltage Regulator. Remove the temperature probes from their connection point one at a time and slowly heat each terminal end with a heat gun to about 200 Degrees F until the alarm sounds

1A	Stbd battery bank No1	Yes	No
	Stbd battery bank No2	Yes	No
	Stbd MDE alternator	Yes	No
2A	Port battery bank No1	Yes	No
	Port battery bank No2	Yes	No
	Port MDE alternator	Yes	No

Test 2 12v and 24v battery power

This test measures the actual battery voltage to determine if the charge voltage is reaching the battery banks in later test

System settings

50a breaker	off
Main engines	off
SW1 PH	Pos 1
SW2 PH	Pos 1 or 2
PH-BC 12	off
PH-BC 24	off
ER-BC 12	off
ER-BC 24	off

Results: T2A: Port Battery Bank _____V

T2B: Stbd Battery Bank _____V

T2C: Pilot House 24v Bank _____V

T2C: Pilot House 12v Bank _____V

Test 3 Voltage Regulator Test

This test verifies the voltage regulators are wired correctly

3a Stbd Voltage Regulator Test

System settings

50a breaker	off
Main engines	off
SW1 PH	Pos 1
SW2 PH	Pos 1 or 2
PH-BC 12	off
PH-BC 24	off
ER-BC 12	off
ER-BC 24	off

Results: 1. Primary power wire RED (Terminal 3) _____V
1a. Proceed if this value is within +/- 1 volt of T2B

2. Ignition wire Brown (Terminal 2) _____V
2a. Proceed if this value is 0V

3. Primary Field wire Blue (Terminal 1) _____V
3a. Proceed if this value is 0V

3b Port Voltage Regulator Test

System settings

50a breaker	off
Main engines	off
SW1 PH	Pos 1
SW2 PH	Pos 1 or 2
PH-BC 12	off
PH-BC 24	off
ER-BC 12	off
ER-BC 24	off

Results: 1. Primary power wire RED (Terminal 3) _____V
1a. Proceed if this value is within +/- 1 volt of T2A

2. Ignition wire Brown (Terminal 2) _____V
2a. Proceed if this value is 0V

3. Primary Field wire Blue (Terminal 1) 0V

3a. Proceed if this value is 0V

Test 4 Alternator Operation

This test determines if the alternators are wired correctly and receiving power

4a Stbd Alternator Operation

System settings

50a breaker	off
Main engines	off
SW1 PH	Pos 1
SW2 PH	Pos 1 or 2
PH-BC 12	off
PH-BC 24	off
ER-BC 12	off
ER-BC 24	off

Results: 1. With the ignition off hold a metal screwdriver near the nut of the alternator pulley. You should feel no magnetic pull.

2. Turn the ignition on and hold the screwdriver in the same area. You should feel a magnetic pull

4b Port Alternator Operation

System settings

50a breaker	off
Main engines	off
SW1 PH	Pos 1
SW2 PH	Pos 1 or 2
PH-BC 12	off
PH-BC 24	off
ER-BC 12	off
ER-BC 24	off

Results: 1. With the ignition off hold a metal screwdriver near the nut of the alternator pulley. alternator. You should feel no magnetic pull.

2. Turn the ignition on and hold the screwdriver in the same area. You should feel a magnetic pull

Test 5 Alternator Output

This test determines if the alternators are generating the charge voltage

5a Stbd Alternator Output

System settings

50a breaker	off
Main engines	on
SW1 PH	Pos off
SW2 PH	Pos off
PH-BC 12	off
PH-BC 24	off
ER-BC 12	off
ER-BC 24	off

Results: This can be read from the voltage regulators display _____V
Proceed if measurement is between 26V – 28.6V

5b Port Alternator Output

Measure and record voltage on both 24V engine battery banks

System settings

50a breaker	off
Main engines	on
SW1 PH	Pos off
SW2 PH	Pos off
PH-BC 12	off
PH-BC 24	off
ER-BC 12	off
ER-BC 24	off

Results: This can be read from the voltage regulators display _____V
Proceed if measurement is between 26V – 28.6V

Test 6a Stbd Voltage Regulator Test Engines On

System settings

50a breaker	off
Main engines	on
SW1 PH	Pos off
SW2 PH	Pos off
PH-BC 12	off
PH-BC 24	off
ER-BC 12	off
ER-BC 24	off

Results: 1. Primary Power wire RED (Terminal 3) _____V
1a. Measurement should be same as measured in Test 5a

2. Ignition wire Brown (Terminal 2) _____V

2a. Measurement should be around 24V

3. Primary Field wire Blue (Terminal 1) _____V
3a. Measurement should be between 4V – 24V

Test 6b Port Voltage Regulator Test Engines On

System settings

50a breaker	off
Main engines	on
SW1 PH	Pos off
SW2 PH	Pos off
PH-BC 12	off
PH-BC 24	off
ER-BC 12	off
ER-BC 24	off

Results: 1. Primary Power wire RED (Terminal 3) _____V
1a. Measurement should be same as measured in Test 5b

2. Ignition wire Brown (Terminal 2) _____V
2a. Measurement should be around 24V

3. Primary Field wire Blue (Terminal 1) _____V
3a. Measurement should be between 4V – 24V

Test 7 Alternator output to Pilot House

Measure and record voltage on PH 24V battery bank

System settings

50a breaker	on
Main engines	on
SW1 PH	Pos 2
SW2 PH	Pos 1
PH-BC 12	off
PH-BC 24	off
ER-BC 12	off
ER-BC 24	off

Results: Voltage reading on bank _____V
Voltage should be around 28V-29V

Test 8 Temperature Sensor Test

This test verifies the system operates correctly at higher engine speeds. Test one MDE at a time with transmission in neutral

1. Start the MDE and allow the engine to reach operating temp
2. Increase engine speed at 200 RPM increments up to 2000 RPMs
3. If the engine operates properly through the entire test range, secure the engine
4. Repeat test on other MDE

Operation:

Normal
50A breaker ON
SW1 POS 1
SW2 OFF

Dead Generators
50A breaker ON
SW1 POS 2
SW2 POS Both

Sign-Offs verifying Test has been completed and is satisfactory:

Contractor _____ Date _____

Coast Guard Inspector _____ Date_____

4. NOTES

4.1 Redline drawings. The Contractor must provide redline drawings to reflect any discrepancies, changes, or revisions from the original drawings provided in Section 2.

4.2 Contractor furnished equipment.

ITEM DESCRIPTION	NSN/PN	QTY
Cable	LSDSGU-23	100 ft.
Temp sensor	MC-TS-B20	4 ea.
Sonalert	SC628H	2 ea.
Panel mount LED	Q22F1BxxR24E	2 ea.

FIGURE 3. PILOT HOUSE DC PANEL

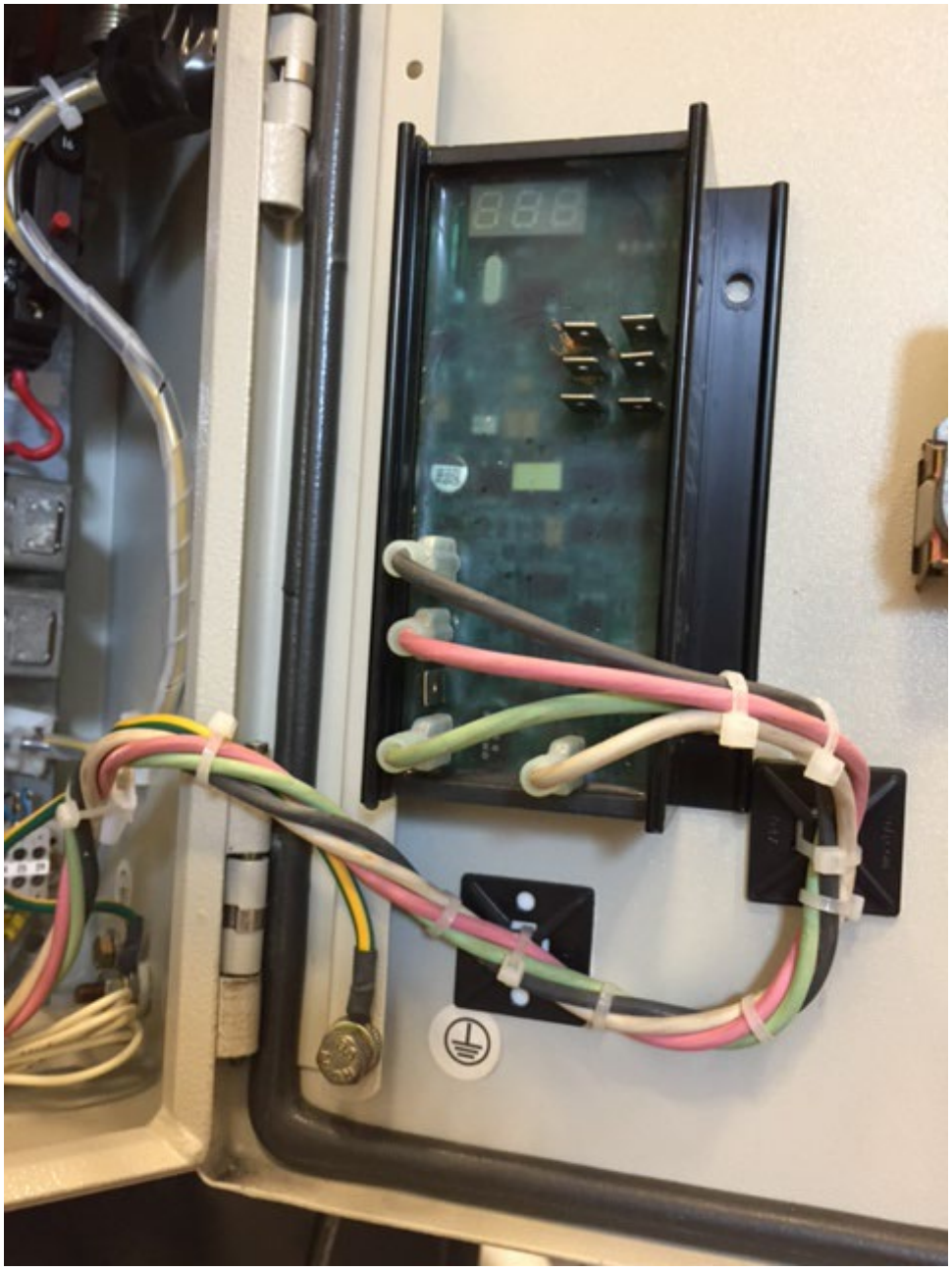


FIGURE 4. VOLTAGE REGULATOR

WORK ITEM 44: Intrusion Detection System, Replace

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to remove the existing Intrusion Detection System (IDS) and install a new Intrusion Detection System.

NOTE
Assembly of Intrusion Detection Panel, Access and Key Pad is not required. These components will be supplied fully assembled.

1.2 Background. The 87 WPB Patrol Boats, Hulls 1-50 currently have 2 spaces monitored for intrusion; The Ready Service Locker & Small Arms Locker. For hulls 52-74 the addition of the following spaces were added: (1) Pilot House, Comp 01-15-0-C, (2) Office Space, Comp 1-15-0-C, (3) FWD Qtrs Escape Hatch, Comp 2-2-0-L, (4) Engine Room Escape Hatch, Comp 2-21-1-E, (5) Starboard Lazarette Escape Hatch, Comp 2-22-1-E, (6) Port Lazarette Escape Hatch, Comp 2-22-2-E. All these spaces are currently monitored by the Engine room Alarm Panel. After completion of the Intrusion Detection System, Replace the IDS control panel will monitor the flowing compartments: (1) Pilot House, Comp 01-15-0-C, (2) Office Space, Comp 1-15-0-C, (3) FWD Qtrs Escape Hatch, Comp 2-2-0-L, (4) Engine Room Escape Hatch, Comp 2-21-1-E, (5) Starboard Lazarette Escape Hatch, Comp 2-22-1-E, (6) Port Lazarette Escape Hatch, Comp 2-22-2-E and the Engine Room Alarm Panel will continue to monitor the Ready Service Locker & Small Arms Locker on all hulls.

1.2.1 The new Intrusion Alarm System (IDS) will utilize optical proximity sensors on all hatches and doors identified below. The optical sensors will replace existing mechanical switches on applicable hulls while hulls without mechanical switches will have optical sensors installed. The Ready Service Locker and the Small Arms Locker will retain the mechanical switches. The new IDS will interface with the Fire Alarm Control Panel, Bilge Level Float Switches, telephone system, 1MC System and Engine Room Alarm Panel.

- Pilot House, Comp 01-15-0-C
- Office Space, Comp 1-15-0-C
- FWD Qtrs Escape Hatch, Comp 2-2-0-L
- Engine Room Escape Hatch, Comp 2-21-1-E
- Starboard Lazarette Escape Hatch, Comp 2-22-1-E
- Port Lazarette Escape Hatch, Comp 2-22-2-E

1.3 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
N	Sensaphone Eapress II	ACN: 6320-01-F21-6407	1	$1300

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
N	IDS Relay Panel	ACN: 6320-01-F21-6406	1	$1400
N	Switch, 3 position, Key Lock,	ACN: 6320-01-F21-6408	1	$13.00
N	Holder, switch	ACN: 6320-01-F21-6409	1	$2.00
N	Contact Block, NC	ACN: 6320-01-F21-6410	2	$5.00
N	Sensor, Optical	ACN: 6320-01-F21-6411	6	$44.00
N	Mounting Bracket, 90 deg	ACN: 5340-01-F21-6412	2	$7.00
N	Mounting Bracket, straight	ACN: 5340-01-F21-6413	4	$7.00

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87WPB 436-002, Rev C, Intrusion Detection System, Replace

Coast Guard Drawing 87WPB 431-001, Rev U, IC Panel Board Wiring Diagram

Coast Guard Drawing 87WPB 432-001, Rev L, Dial Telephone Wiring Diagram

Coast Guard Drawing 87 WPB 433-001, Rev M, General Announcing & Alarm Sys Wiring Diagram

Coast Guard Drawing 87 WPB 436-001, Rev H, Fire Detection System

COAST GUARD PUBLICATIONS

Coast Guard Commandant Instruction (COMDTINST) M5530.1C, Physical Security and Force Protection Program

Coast Guard Technical Publication (TP) 4511, SWBS 430, Jun 2019, Alarm Panel & Tank Level Indication (TLI) System

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 3041 (SFLC Std Spec 3041), 2022, Shipboard Electrical Cable Test

Surface Forces Logistics Center Standard Specification 3042 (SFLC Std Spec 3042), 2022, Shipboard Electrical Cable Removal, Relocation, Splice, Repair, and Installation

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std. Spec 6310), 2022, Requirements for Preservation of Ship Structures

OTHER REFERENCES

MIL-STD-2003, Sep 2009, Electrical Plant Installation Standard Methods for Surface Ships & Submarines

MIL-HDBK-299, Oct 1991, Cable Comparison Handbook – Data Pertaining to Electric Shipboard Cable

3. REQUIREMENTS

3.1 General. The intent of this work item is to replace the existing Intrusion Detection System. In addition, the Intrusion Detection System shall integrate into the existing Fire Alarm Control Panel, Telephone system, and the Engine Room Alarm Panel. All work shall be performed in accordance with the requirements herein and as shown on the Coast Guard Drawings referenced in section 2.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must 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
- Electrical wiring

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.2 Operational test, initial. Prior to commencement of work, the Contractor must 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.

3.3 Electrical work. The Contractor must 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.

3.4 Equipment removal. The Contractor must remove and dispose of all equipment identified for removal as shown on Coast Guard Drawing 87 WPB 436-002. Ensure all items are disposed of in accordance with applicable Federal, State and local regulations.

3.4.1 Isolate and remove each cable, designated for removal, in its entirety. The Contractor must not leave any dead ended cables in place.

3.4.2 The Contractor must blank any and all cable penetration which will not be reused, do not leave any empty module spaces in any disturbed cable penetration box. Refer to commercially available Roxtec installation guide for the removal and blanking off of modules.

3.5 Equipment installation. The Contractor must install all equipment/hardware both Government-furnished, and Contractor-furnished as shown on Coast Guard Drawing 87WPB 436-002 and those listed in Section 2 and paragraph 3.5.1. The Contractor must purchase and provide all necessary equipment not provided as GFE to accomplish this task. Compare the GFE kit contents shown in paragraph 4.2 (List of items included in GFE Kit) to the material list shown on applicable CG drawing and submit a CFR.

3.5.1 Additional Contractor furnished property. The Contractor must provide the following materials to accomplish installation of the new IDS in addition to the equipment/hardware in paragraph 3.5 and Coast Guard Drawing 87 WPB 436-002.

ITEM DESCRIPTION	NSN/PN	QTY
Relay, Gen Purpose DPDT, 6A, 24V	2967060	1
Contact Block, NO	A22NZ-S-G1A	2
Relay, Gen Purpose DPDT, 10A	1885-1534-ND	1
Socket, Relay Chassis Mount	SH2B-02	1
Relay Hold Down Spring	SY4S-02F1	1

3.5.2 The Contractor must mount the GFE provided intrusion alarm panel, Relay Panel, junction boxes and optical sensors in accordance with Coast Guard Drawings and manufacturer's instructions.

3.5.2.1 Attachment method. The installation of all components of this system are attached with the use of adhesive bond fasteners. The approved adhesive bond fasteners shall be Click Bond or equivalent.

3.5.3 The Contractor must utilize existing cableways and penetrations where possible. All installations shall be in accordance with Section 3 of MIL-STD-2003. Cable runs from optical sensors to the IDS Panel shall not run in the same wire ways as high current electric cables or radio antenna transmission lines.

3.5.4 The Contractor must maintain proper cable bending radius listed in MIL-HDBK-299. For cables which are not listed in MIL-HDBK-299, do not bend cable to less than six times the overall diameter of the cable.

3.6 Label installation, nameplate. The Contractor must install the Government-furnished nameplate label onto the Control Panel, Relay Panel and junction boxes.

3.6.1 Label installation, cable. The Contractor must furnish and install aluminum label/tag on both ends of all cable runs, including bulkhead penetrations on both sides of bulkhead. All cable termination wires shall have heat shrink sleeve with cable designation pair number (if applicable), wire color and terminal number.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.7 Operational test, post repairs. After completion of work, the Contractor must use the included SOVT under Section 4.2 to test, and demonstrate, in the presence of the Coast Guard Inspector and Coast Guard

Technical Representative, that the newly installed Intrusion Detection System performs as designed and that disturbed systems continue to operate as noted in section 3.2. Submit a CFR.

3.7.1 Sign-Off verifying Test has been completed and is satisfactory:

Coast Guard Inspector _____ Date_____

3.8 Touch-up preservation. The Contractor must prepare and coat all new and disturbed surfaces including new surface mounted balanced magnetic switches 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 Systems Operational Verification Test (SOVT).

4.1.1 Power up test.

4.1.1.1. Power up by turning on the IDS breaker on the Pilot House AC panel.

- Do the (2) two power supplies in the relay box show a green LED on each unit?

- Turn on the Express II by sliding the power switch to the on position. Does the Express II complete the system check and state "Express II is OK"?

4.1.2 Arms Locker and Ready Service Locket Test.

4.1.2.1. Ensure both lockers are closed and the arming switch is in the A&A position.

ARMS LOCKER

FUNCTION	YES/NO	COMMENTS
Open the Arms Locker. Does the A&A LED on the Express II input card turn flashing red?		
Does the Express II announce "Alarm One Exist"?		
Does a solid tone sound over the 1MC?		
Press the "Alarm Cancel" button on the Express II key pad. Does the system silence and the A&A LED on the input card turn solid red?		
Close the Locker door. Does the intrusion LED turn solid green?		
Does the Arms Locker and Ready Service Locker Alarm display and sound on the Pilot House Alarm Panel?		
Acknowledge the alarm to cancel		

READY SERVICE LOCKER TEST

FUNCTION	YES/NO	COMMENTS
Open the Ready Service Locker. Does the A&A LED on the Express II input card turn flashing red?		
Does the Express II announce "Alarm One Exist"?		
Does a solid tone sound over the 1MC?		
Press the "Alarm Cancel" button on the Express II key pad. Does the system silence and the A&A LED on the input card turn solid red?		
Close the Locker door. Does the intrusion LED turn solid green?		

GENERAL TEST

FUNCTION	YES/NO	COMMENTS
Open any door or hatch if not already open. Do any other alarms show other than the A&A?		

4.1.3 Intrusion System Test.

4.1.3.1 Close all hatches and doors on the boat. Ensure the Intrusion LED on the Express II input card is green, all other LED are either green or cancelled if red. And the Arming Switch is in the A&A/Intrusion position. Open each door or hatch, one at a time, long enough to record the information below on each hatch or door. Then return the hatch or door to the closed position until all hatch/door tests are complete.

PORT LAZARETTE HATCH

FUNCTION	YES/NO	COMMENTS
Open the hatch. Does the Intrusion LED on the Express II input card turn flashing red?		
Does the Express II announce "Alarm Three Exist"?		
Does a solid tone sound over the 1MC?		
Press the "Alarm Cancel" button on the Express II key pad. Does the system silence and the intrusion LED on the input card turn solid red?		
Close the hatch. Does the intrusion LED turn solid green?		

ENGINE ROOM ESCAPE HATCH

FUNCTION	YES/NO	COMMENTS
Open the hatch. Does the Intrusion LED on the Express II input card turn flashing red?		
Does the Express II announce "Alarm Three Exist"?		

Does a solid tone sound over the 1MC?		
Does the Express II Call the Duty phone?		
Enter the acknowledgement code “Hull number” Does the system silence and the Intrusion LED turn solid red?		

STBD LAZARETTE HATCH

FUNCTION	YES/NO	COMMENTS
Open the hatch. Does the Intrusion LED on the Express II input card turn flashing red?		
Does the Express II announce “Alarm Three Exist”?		
Does a solid tone sound over the 1MC?		
Duty Phone do not answer. Does the Express II attempt to call the Duty phone (3) three times, then call the EPO’s Phone?		
EPO. Enter the acknowledgement code “Hull number” Does the system silence and the Intrusion LED turn solid red?		
Close the hatch. Does the intrusion LED turn solid green?		

MAIN DECK OFFICE DOOR

FUNCTION	YES/NO	COMMENTS
Open the hatch. Does the Intrusion LED on the Express II input card turn flashing red?		
Does the Express II announce “Alarm Three Exist”?		
Does a solid tone sound over the 1MC?		
Duty Phone and EPO do not answer. Does the Express II attempt to call the Duty phone (3) three times, then attempt the EPO’s phone three times, then call the XO’s Phone?		
XO. Enter the acknowledgement code “Hull number” Does the system silence and the Intrusion LED turn solid red?		

PILOT HOUSE DOOR

FUNCTION	YES/NO	COMMENTS
Open the hatch. Does the Intrusion LED on the Express II input card turn flashing red?		
Does the Express II announce “Alarm Three Exist”?		
Does a solid tone sound over the 1MC?		
Enter the acknowledgement code “Hull number” Does the system silence and the Intrusion LED turn solid red?		

Close the hatch. Does the intrusion LED turn solid green?		

FWD ESCAPE HATCH

FUNCTION	YES/NO	COMMENTS
Open the hatch. Does the Intrusion LED on the Express II input card turn flashing red?		
Does the Express II announce "Alarm Two Exist"?		
Does a solid tone sound over the 1MC?		
Enter the acknowledgement code "Hull number" Does the system silence and the Intrusion LED turn solid red?		
Close the hatch. Does the intrusion LED turn solid green?		

4.1.4 High Water Alarm.

4.1.4.1 Ensure the High Water LED on the Express II input card is solid green, the High Water alarm silence switch on the engine room Alarm Panel is in the off position and all other alarm inputs are either green or acknowledged.

FUNCTION	YES/NO	COMMENTS
Activate a High Water Switch		
Does a solid tone sound over the 1MC?		
While the alarm is sounding over the 1MC, turn the High Water Alarm switch to the on position for (1) one second then back off. Does the alarm stop sounding over the 1MC then sound again when the switch is cycled back off?		
Does the Express II announce "Alarm Three Exist" and the corresponding LED flash red?		
Enter the acknowledgement code "Hull number" Does the system silence and the Hi-Water LED turn solid red?		
Does the alarm display and sound on the Pilot House Alarm Display Panel?		
Release the Hi-Water Switch. Does the Express II Hi-Water LED turn solid green?		

4.1.5 Fire Alarm Test.

FUNCTION	YES/NO	COMMENTS
Activate a Fire Alarm Sensor		

Does the Express II announce “Alarm Five Exist” and the corresponding LED flash red?		
Enter the acknowledgement code “Hull number” Does the system silence and the Fire Alarm is LED turn solid red? The Fire Alarm system will continue to sound.		
Cancel the Fire alarm		

4.1.6 Ship's horns test.

4.1.6.1 Activate the ship's horns on the Pilot house console

- Cease fire alarm?
- Chemical alarm?
- Collision alarm?
- General alarm?

4.2 Sensaphone Express Program Settings. The program settings coincide with Chapter 5 of the Sensaphone Express II User's Manual

1 Phone (pg. 30)

1 Call Schedule

1 All

2 Phone Contacts

1 Voice

2 Phone Contacts

1 Duty Phone

2 EPO

3 Xo

(more can be added in desired)

2 Dial out (pg. 34)

1 Dialing Method

2 Tone

2 Retries on Busy

2

5 Call Delay Time

0 hours

0 minutes

30 seconds

6 InterCall Delay Time

0 hours

0 minutes

0 seconds

3 Dial in (pg 36)

1 Rings Until Answer

10

2 Telephone Answering Device (TAD)

Disable

4 Messages (pg 38)

1 Record ID message (Boat name only no links to CG)

2 Record Input Message (you have 5 seconds)

a Arms and Ammo locker

b Intrusion

c High Water

d Fire Alarm

5 Inputs (pg 39)

1 Enable

2 Input Type

1 Normally Closed

2 Normally Open

3 Normally Closed

4 Normally Open

3 Input Recognition Time

1 0h, 0m, 0s

2 0h, 0m, 0s

3 0h, 0m, 30s

4 0h, 1m, 0s

4 Default

5 Alarm Reset

1-4 0h, 0m, 0s

6 Dial Out Selection

1-4 All

6 Sound (pg 42)

2 Enable/ Disble

0 =disable

7 Power

1 Power Failure Monitoring

2 Enable

2 Power Recognition Time

0h, 1m, 0s

3 Alarm Reset Time

0h, 0m, 0s

4 Dial Out Selection

1 Duty phone

0 System (pg 48)

1 Password (for programing)

7(Hull Number)

2 Date and Time

3 Acknowledgement code (for alarms)

87(Hull Number)

4 Halt Mode Delay time

1h, 0m, 0s

Security

To lock the programing see pg 50

4.3 Redline drawings. The Contractor must provide redline drawings to reflect any discrepancies, changes, or revisions from the original drawings provided in Section 2.

WORK ITEM 45: Unmanned Space Ventilation Modify

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor modify the existing ventilation system in the lazaret by installing larger inlet and outlet goosenecks, replacement of the existing gooseneck in the fore peak with two larger goosenecks, associated piping and fan, and installation of intake and exhaust in the DC locker onboard the 87 WPB.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 310-007, Rev A, Unmanned Spaces Ventilation modification Electrical

Coast Guard Drawing 87 WPB 514-005, Rev E, Ventilation Mods to Unmanned Spaces

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, Requirements for Preservation of Ship Structures

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

None.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must 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
- Installed shelving

WARNING

Do not perform any welding evolutions until all steps pertaining to welding isolation (MPC B00000.0) are completed or severe damage to electronic equipment may occur.

3.2 Removal.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.2.1 Operational test, initial. Prior to commencement of work, the Contractor must witness Coast Guard personnel perform and initial operational test of the equipment listed below to demonstrate existing operational condition. Submit a CFR.

- Lazaret ventilation system

3.2.2 The Contractor must remove existing gooseneck vents and create openings in deck and bulkhead plating for installation of new vents in accordance with Coast Guard Drawing 87-WPB-514-005.

3.3 Fabrication.

3.3. 1 The Contractor must fabricate DC locker intake and exhaust vents in accordance with Coast Guard Drawing 87-WPB-514-005.

3.4 Installation.

3.4.1 The Contractor must install electrical breakers, cable and switches to power Fore Peak and DC locker ventilation fans in accordance with Coast Guard Drawing 87-WPB-310-007.

3.4.2 The Contractor must install new goose neck vents, duct work and ventilation fans in accordance with Coast Guard Drawing 87-WPB-514-005.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.4.3 Operational test, post repairs. After completion of work and in the presence of the Coast Guard Inspector, the Contractor must thoroughly test and demonstrate the equipment listed below to be in satisfactory operating condition. Submit a CFR.

3.5 Touch-up preservation. The Contractor must 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 Redline drawings. The Contractor must provide redline drawings to reflect any discrepancies, changes, or revisions from the original drawings provided in Section 2.

4.2 The Cutter crew will remove all gear and equipment from the DC Locker, Lazaret and Fore Peak that would interfere with the contractor performing this installation.

WORK ITEM 46: Cathodic Protection/Zinc Anode(s), Remove

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to remove the four bilge mounted zincs anodes near frames 14 and 22.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 633-001, Rev A, Cathodic Protection

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, Requirements for Preservation of Ship Structures

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

None.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must 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
- Electrical wiring

NOTE

If installed, zincs located in void below fore peak tank will be left in place.

3.2 Removal. The Contractor must remove and dispose of the four existing interior keel mounted bilge zinc anodes and associated hardware, located near frame 14 and 22. Use Coast Guard Drawing 87-WPB-633-001, sheet 7, section 7-A and 7-B as reference. Dispose of removed zinc anodes and hardware in accordance with all applicable Federal, state, and local regulations.

3.3 Touch-up preservation. The Contractor must prepare and coat all 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 Redline drawings. The Contractor must provide redline drawings to reflect any discrepancies, changes, or revisions from the original drawings provided in Section 2.

WORK ITEM 47: Fire Main Bleed Line, Modify

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to modify the fire main bleed line and check valves on the 87 WPB to replace the installed threaded cooling bleed orifice with three removable flange and plate type orifices to provide dedicated cooling lines from both installed fire/bilge pumps and the P100, and install no-slam type check valves.

1.2 Government-furnished property.

None

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 521-002, Rev -, Fire Main Bleed Line Mod

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, Requirements for Preservation of Ship Structures

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

None.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance

with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must 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

WARNING

Do not perform any welding evolutions until all steps pertaining to welding isolation (MPC B00000.0) are completed or severe damage to electronic equipment may occur.

3.2 Removal.

3.2.1 The Contractor must remove existing fire main cooling bleed line piping and check valves for installation of piping, orifices and check valves in accordance with Coast Guard Drawing 87-WPB-521-002.

3.3 Installation.

Note: Install bleed orifice flanges so that flange leakage or spills during maintenance will not adjacent equipment or electrical components.

3.3.1 The Contractor must install new fire main check valves, cooling piping, and bleed orifices in accordance with Coast Guard Drawing 87-WPB-521-002.

3.4 Operational test, post repairs. After completion of work, the Contractor must thoroughly, 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.

3.5 Touch-up preservation. The Contractor must 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

NOTE: Firefighting temporary services for dockside installs only.

4.1 Firefighting temp services. During dockside availabilities, Cutter's crew must provide for firefighting coverage for the duration of time required to complete modifications to fire main piping. EPO is to set up P-100 pump discharge for firefighting external to the fire main piping.

4.2 Redline drawings. The Contractor must provide redline drawings to reflect any discrepancies, changes, or revisions from the original drawings provided in Section 2.

WORK ITEM 48: Sewage Air Compressor, Remove

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to remove the sewage air compressor and all related piping.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 87 WPB 593-005, Rev -, Air Compressor, Removal

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, Requirements for Preservation of Ship Structures

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

None.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection).

3.1.4 Interferences. The Contractor must 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:

- Electrical wiring
- Piping
- Pipe hangers
- Bulkhead insulation

3.2 Removal. The Contractor must remove the air compressor from its foundation and turn over to the Coast Guard Inspector for disposal. Remove all compressed air piping and close bulkhead penetrations IAW Coast Guard Drawing 87 WPB 593-005. Remove wiring back to breaker and re-label breaker "spare". Dispose of removed pipe and wiring in accordance with all federal, state, and local regulations.

3.3 Touch-up preservation. The Contractor must 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 Redline drawings. The Contractor must provide redline drawings to reflect any discrepancies, changes, or revisions from the original drawings provided in Section 2.