

USCGC ALERT (WMEC 630)

SPECIFICATION FOR DRYDOCK REPAIRS

FY2022

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(Rev-0, 29 June 2021)

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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 Bill of Materials 627 WMEC 007, Rev D, Structural Modifications

Coast Guard Drawing 618 WMEC 123-007, Rev A, Structural Mods, GEA Westfalia OWS Install

Coast Guard Drawing 618 WMEC 163-003, Rev D, Transducer Sea Chests Structural Arrangements & Details

Coast Guard Drawing 618 WMEC 184-007, Rev -, DS60 Doppler Sea Valve Foundation

Coast Guard Drawing 618 WMEC 320-001, Rev BA, 440 & 115 Power One Line Wiring Diagram and Details

Coast Guard Drawing 618 WMEC 320-002, Rev AG, Power Supplies to Electronic Equipment (ACTIVE only)

Coast Guard Drawing 618 WMEC 320-003, Rev AV, Power Supplies to Electronic Equipment

Coast Guard Drawing 618 WMEC 320-011, Rev A, Electrical Power Sys Mods, GEA Westfalia OWS Install

Coast Guard Drawing 618 WMEC 320-060, Rev -, OWS Booster Pump and Cooling Fan Install

Coast Guard Drawing 618 WMEC 401-001, Rev AM, I.C. & Gyro Room General Arrangement

Coast Guard Drawing 618 WMEC 401-002, Rev BJ, Arrangement of Electronics Equipment Radio Room & CIC

Coast Guard Drawing 618 WMEC 401-004, Rev AY, Pilothouse Arrangement

Coast Guard Drawing 618 WMEC 410-001, Rev M, Seawatch Block Diagram & Installation Details

Coast Guard Drawing 618 WMEC 424-001, Rev AA, Underwater Navigation Sys Block Wiring Diagram

Coast Guard Drawing 618 WMEC 424-002, Rev W, Underwater Navigation Sys Wiring Data

Coast Guard Drawing 618 WMEC 424-005, Rev -, Doppler Speed Log System Replacement Ripout, Installation, Arrangement, Wiring, and Details

Coast Guard Drawing 618 WMEC 424-007, Rev --, ODOM ECHOTRAC II Deep Water Depth Sounder System Removal

Coast Guard Drawing 618 WMEC 426-001, Rev V, Gyro Compass Block Wiring Diagram CKT “LC”

Coast Guard Drawing 618 WMEC 426-003, Rev F, MK27F Gyro Compass Installation Design Plan

Coast Guard Drawing 618 WMEC 426-005, Rev A, SAFRAN Bluenaute Gyrocompass Block and Elementary Wiring Diagram

Coast Guard Drawing 618 WMEC 451-009, Rev -, 1SG38-SINS2(V)43 Installation BWD and Details

Coast Guard Drawing 618 WMEC 529-011, Rev A, Piping Mods GEA Westfalia OWS Install

Coast Guard Drawing 618 WMEC 533-001, Rev N, Diagram Hot And Cold Potable Water System

Coast Guard Drawing 618 WMEC 535-001, Rev K, Diagram Steam, Feed And Condensate System Piping

Coast Guard Drawing 618 WMEC 535-002, Rev K, Arr. Stm, Feed And Condensate System Piping

Coast Guard Drawing 618 WMEC 551-003, Rev E, Arrangement Compressed Air Piping Outside Machinery Space

Coast Guard Drawing 618 WMEC 601-003, Rev J, General Arrangement - Second and Third Decks

Coast Guard Drawing 618 WMEC 635-002, Rev J, Sheathing And Insulation

Coast Guard Drawing 618 WMEC 672-002, Rev D, Storeroom 3rd Deck

Coast Guard Drawing 618 WMEC 801-008, Rev -, Curves of Form

Coast Guard Drawing 627 WMEC 085-231, Rev D, Booklet of General Plans

Coast Guard Drawing 627 WMEC 085-302, Rev G, Docking Plan

Coast Guard Drawing 627 WMEC 101-001, Rev -, Structural Details

Coast Guard Drawing 627 WMEC 111-001, Rev A, Shell Expansion Framing & C.V.K.

Coast Guard Drawing 627 WMEC 116-001, Rev -, Forepeak Framing, Chain Locker & Transv. Bhds #12 & #15 ½

Coast Guard Drawing 627 WMEC 117-001, Rev B, Transverse Web Frames Fwd and Aft of Midship

Coast Guard Drawing 627 WMEC 117-003, Rev A, Midship and Type Sections

Coast Guard Drawing 627 WMEC 123-007, Rev A, Structural Mods, GEA Westfalia OWS Install

Coast Guard Drawing 627 WMEC 131-001, Rev D, Second & Main Deck Plating & Supports

Coast Guard Drawing 627 WMEC 133-001, Rev B, Third Deck Plating & Supports

Coast Guard Drawing 627 WMEC 152-001, Rev G, Superstructure -Aircastle, 01 & 02 Deckhouse & Stack

Coast Guard Drawing 627 WMEC 161-001, Rev B, Arrg't & Details Stern Tube & Strut (NOTE: For purpose of bid, Contractor must assume rope guards are welded in.)

Coast Guard Drawing 627 WMEC 163-003, Rev C, Transducer Sea Chest Struct. Arrg'ts & Details

Coast Guard Drawing 627 WMEC 182-002, Rev G, Foundations In Engine Room

Coast Guard Drawing 627 WMEC 184-004, Rev E, Doppler Sea Valve Foundations

Coast Guard Drawing 627 WMEC 185-002, Rev F, FDN For Refrig'n Compressor Condens Unit & Misc. Fdns in Aux Machinery Space 4-156-0-E

Coast Guard Drawing 627 WMEC 201-003, Rev B, Arr. of Aux Machinery Space

Coast Guard Drawing 627 WMEC 243-001, Rev D, Arrangement & Detail Stern Tube Seal

Coast Guard Drawing 627 WMEC 243-002, Rev C, Arrgt & Dets of Piping & Hydraulics

Coast Guard Drawing 627 WMEC 243-006, Rev C, Line Shaft

Coast Guard Drawing 627 WMEC 243-007, Rev C, Tail Shaft

Coast Guard Drawing 627 WMEC 243-008, Rev K, Shaft Installation

Coast Guard Drawing 627 WMEC 243-009, Rev A, Arr. and Details: Installation of New John Crane Seal (Type MX9)

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Coast Guard Drawing 627 WMEC 245-001, Rev-, Hub Assy (LH)

Coast Guard Drawing 627 WMEC 245-002, Rev-, Hub Assy (RH)

Coast Guard Drawing 627 WMEC 245-003, Rev-, Control Plate Assy (LH)

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Coast Guard Drawing 627 WMEC 245-008, Rev-, CPP Hydraulic System Schematic

Coast Guard Drawing 627 WMEC 245-009, Rev A, Pitch Limit Bracket

Coast Guard Drawing 627 WMEC 245-010, Rev-, Pitch Stop Installation

Coast Guard Drawing 627 WMEC 245-017, Rev E, 210 Foot B Class WMEC Major Maint Availability Propeller Blade for 66X/4 Hub

Coast Guard Drawing 627 WMEC 245-021, Rev A, CPP Hub Modification Details

Coast Guard Drawing 627 WMEC 245-022, Rev-, Pitch Limit Bracket

Coast Guard Drawing 627 WMEC 320-001, Rev BD, 440 & 115 Volt Power One Line Block Wrg Diag & Miscellaneous Details

Coast Guard Drawing 627 WMEC 320-002, Rev AW, Power Supplies to Electronic Equipment

Coast Guard Drawing 627 WMEC 320-007, Rev -, Electrical Power Sys Mods, GEA Westfalia OWS Install

Coast Guard Drawing 627 WMEC 401-004, Rev AR, Pilothouse Arrangement

Coast Guard Drawing 627 WMEC 424-001, Rev U, Underwater Navigation Sys Block Wiring Diagram

Coast Guard Drawing 627 WMEC 424-002, Rev V, Underwater Navigation Sys Wiring Data

Coast Guard Drawing 627 WMEC 512-001, Rev D, Ventilation Equipment List.

Coast Guard Drawing 627 WMEC 512-004, Rev E, Fan Rooms 01-99-0-Q and 02-81-2-Q.

Coast Guard Drawing 627 WMEC 512-016, Rev B, Ventilation Diagram, 01 Dk & Abv.

Coast Guard Drawing 627 WMEC 521-001, Rev C, Diagram Fire Main, Sprinkling & Washdown

Coast Guard Drawing 627 WMEC 521-003, Rev H, Arr. of Firemain, Sprinkling and Washdown System 2nd Dk. & Below

Coast Guard Drawing 627 WMEC 529-012, Rev A, Piping Mods GEA Westfalia OWS Install

Coast Guard Drawing 627 WMEC 533-001, Rev J, Diagram Hot And Cold Potable Water System

Coast Guard Drawing 627 WMEC 535-001, Rev G, Diagram Steam, Feed And Condensate System Piping

Coast Guard Drawing 627 WMEC 535-002, Rev H, Arr. Stm., Feed & Condensate System Piping

Coast Guard Drawing 627 WMEC 551-003, Rev D, Arrangement Compressed Air Piping Outside Machinery Space

Coast Guard Drawing 627 WMEC 562-001, Rev H, Arrg't & Details Rudder Stocks, Bearings, & Stuffing Box

Coast Guard Drawing 627 WMEC 601-001, Rev F, Outboard Profile

Coast Guard Drawing 627 WMEC 601-003, Rev E, General Arrangement – Second and Third Decks

Coast Guard Drawing 627 WMEC 602-001, Rev B, Vessel’s Name, Number, & Draft Marks

Coast Guard Drawing 627 WMEC 633-001, Rev C, Hull Protectors

Coast Guard Drawing 627 WMEC 635-002, Rev B, Sheathing And Insulation

Coast Guard Drawing FL 6701-221, Rev U, SIRVSS & CVRS BWDs & Installation Details

Coast Guard Drawing FL 6713-203, Rev A, CRP-V850 Transducer (SS505) Adapter Assembly

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

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

NAVSEA Drawing 803-1385866, Rev E, Penetration, Bulkhead and Deck

NAVSEA Drawing 803-921865, Rev R, Cathodic Protection Hull Zinc Anodes

NAVSEA Drawing 804-5773931, Rev A, Acoustic & Thermal Insulation for Compartments Installation Details

NAVSEA Drawing 804-5959214, Rev-, Piping Insulation - Installation Details

COAST GUARD PUBLICATIONS

Coast Guard Commandant Instruction (COMDTINST) M10360.3, Jan 2014, Coatings and Colors Manual

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Coast Guard Technical Publication (TP) 3231A, Oct 2019, Manufacturer's Instruction Book-SWBS Group(s) 242-245, Chapter 243, Section A, Stern Tube Seal, MX9, US-71996

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Coast Guard Technical Publication (TP) 4034, Aug 2018, Electro-Hydraulic Steering System & Alarm System Upgrade, 210' WMEC "A" and "B" Class Cutters

Coast Guard Technical Publication (TP) 4035, Aug 2018, Fire Pump

Coast Guard Technical Publication E-424-027, 2012, SOUNDER, DEEP WATER - MODEL DF3200

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2020, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 0850 (SFLC Std Spec 0850), 2020, General Requirements for Drawing Preparation

Surface Forces Logistics Center Standard Specification 3020 (SFLC Std Spec 3020), 2020, Overhaul AC Electrical Motors

Surface Forces Logistics Center Standard Specification 3041 (SFLC Std Spec 3041), 2020, Shipboard Electrical Cable Test

Surface Forces Logistics Center Standard Specification 3042 (SFLC Std Spec 3042), 2020, Shipboard Electrical Cable Removal, Relocation, Splice, Repair, and Installation

Surface Forces Logistics Center Standard Specification 5000 (SFLC Std Spec 5000), 2020, Auxiliary Machine Systems

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures

Surface Forces Logistics Center Standard Specification 6341 (SFLC Std Spec 6341), 2020, Install Interior Deck Covering Systems

Surface Forces Logistics Center Standard Specification 8634 (SFLC Std Spec 8634), 2020, Drydocking

Surface Forces Logistics Center Standard Specification 8635 (SFLC Std Spec 8635), 2020, Temporary Services

Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2020, Temporary Hull Accesses

OTHER REFERENCES

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ASTM International (ASTM) F1387, 2019, Standard Specification for Performance of Piping and Tubing Mechanically Attached Fittings

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DS60 Doppler Speed Log Operator's Manual

Flowserve 71569102, Feb 2002, User Instructions Manual

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GEA Westfalia Separator Device list CP, P1451546584-9913-DVL000A Rev A dated 2015-10-19

GEA Westfalia Separator Drawing 8106-2021-029 Rev. 02, dated 2016-01-20

GEA Westfalia Separator Drawing P1451546584-9913-LAY000B dated 2015-10-19

GEA Westfalia Separator Drawing P1451546584-9913-PID000A dated 2015-10-19

GEA Westfalia Separator Operating Data Sheet P1451546584-9913-PDS000 dated 2015-10-19

IME/72640-G1, FURUNO DS60 Doppler Speed Log Installation Manual

International Standard Organization (ISO) 2953, 2000, Mechanical Vibration, Balancing Machines, Description and Evaluation

International Standard Organization (ISO) 4406, 2017, Hydraulic Fluid Power – Fluids – Method for Coding the Level of Contamination by Solid Particles – Third Edition

Manufacturers Standardization Society of the Valve and Fittings Industry (MSS) SP-61, 2019 Edition, Pressure Testing Of Steel Valves

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

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

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

Manufacturers Standardization Society of the Valve and Fittings Industry (MSS), SP-58, 2018, Pipe Hangers and Supports – Materials, Design, Manufacture, Selection, Application and Installation

MIL-A-18001, Dec 2015, Anodes, Sacrificial Zinc Alloy

MIL-L-46152E, May 1990, Lubricating Oil, Internal Combustion Engine, Administrative Service

MIL-PRF-16173E, Oct 2017, Corrosion Prevention Compound, Solvent Cutback, Cold-Application

MIL-S-22698, Dec 2020; Steel Plate, Shapes and Bars, Weldable Ordinary Strength and Higher Strength: Structural

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

ODOM Echotrac DF3200 MKII, Rev 2, Technical Manual

Raytheon V850 Color Echosounder, 2nd Edition, Mar 1993, Operation Manual

Society of Automotive Engineers (SAE) Aerospace Material Specification (AMS) G-6032, Mar 2018, Grease, Plug Valve, Gasoline and Oil Resistant, NATO Code Number G-363, Metric

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

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

The Society for Protective Coatings SSPC-SP 11, Jul 2012, Power Tool Cleaning to Bare Metal

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)
11	N	Overhaul kit	NSN: 2040-01-537-0557 PN: WLP001319-001	2 kt.	30,574.45
11	Y	**Seal Assy	NSN: 2040-01-433-6781 PN: US71996	2 ea.	56,687.21
13	N	Servo Box seal kit (NOTE: Parts may require machining for proper fit.)	NSN: 5330-01-517-4281	2 kt.	6,561.00
14	Y	**Hub Assembly (R/H)	NSN: 2010-01-091-5056	1 ea.	90,219.50
14	Y	**Hub Assembly (L/H)	NSN: 2010-01-092-0440	1 ea.	87,439.00
14	N	Hub Installation Kit	NSN: 2010-01-466-4844	2 ea.	9,500.00
14	Y	**Port Propeller Blades (R/H)	NSN: 2010-01-134-7238	1 se.	33,090.26
14	Y	Starboard Propeller Blades (L/H)	NSN: 2010-01-134-0378	1 se.	33,090.26
14	N	**Propeller Blade Bolts	NSN: 5306-01-225-2920	48 ea.	1,900.02
15	N	*** Fathometer Transducer, Mustow Water, 50-200 kHz (Airmar Technology SS505) (without adapter plate)	NSN: 5845-01-470-2500	1 ea.	317.00
17	N	6 inch Duplex Strainer	NSN: 4730-01-354-0482	2 ea.	23,400.00
17	N	4 inch Duplex Strainer	NSN: 4730-01-173-1413	4 ea.	8,800.00
17	N	2 inch Duplex Strainer	NSN: 4730-01-363-3085	4 ea.	5,300.00
17	N	1-1/2 inch Duplex Strainer	NSN: 4730-01-600-9049	4 ea.	3,200.00
17	N	3 inch Duplex Strainer	NSN: 4730-01-614-9064	6 ea.	6,000.00
17	N	1 inch Duplex Strainer	NSN: 4730-01-652-2067	6 ea.	2,300.00
20	Y	*Transducer Cover Plate	N/A	3 ea.	50.00
22	N	**GEA Westfalia BilgeMaster-E 500 Clean Design	PN: WSE 5-01-037 NSN: 4330-01-F17-5256	1 ea	76,640.00
22	N	***Booster Pump Control Panel	PN: BCP11-0.5-D-L1-E2-POL-PRL-DSP	1 ea	2,950.00
22	N	***Booster Pump	NSN: 4320-01-F20-5936 PN: 96082495	1 ea	888.00
22	N	Duplex Strainer, flanged	NSN: 4730-01-398-8526	1 ea	3,900.00

24	N	Hull ring	PN: DS-661-1	1 ea.	350.00
24	N	DS-60 KITS(V) 4	PN: 01F185390	1 ea.	27,900.00
27	N	Fire Pump	NSN: 4320-01-674-4640 PN: 71569102	2 ea.	21,750.00
27	N	Fire Pump Controller	NSN: 6110-01-F19-5820	2 ea.	4,492.00
29	Y	**210-B Rudder Stock w/Liner	NSN: 2040-01-344-8471	1 ea.	14,739.41

***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 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 3.2.6.1.4 (Inspection report particulars)):

Work Item	Title
1	Hull Plating, Side Scan, Ultrasonic Testing
2	Hull Plating, U/W Body, Ultrasonic Testing
3	U/W Body, Preserve (100%)
5	Appendages (U/W), Preserve (Internal) and Leak Test
7	Voids (Non-Accessible), Preserve (Internal) and Leak Test
10	Propulsion Propeller Shaft Coating, Inspect and Test
11	Propulsion Shaft Seal (Mechanical And Inflatable) Assemblies, Inspect And Repair Or Renew
12	Controllable Pitch Propellers, Clean and Inspect
13	Controllable Pitch Propeller (CPP) System, Inspect and Service
14	Controllable Pitch Propeller (CPP) Hubs, Remove, Inspect and Reinstall
17	Sea Strainers, Duplex, All Sizes, Overhaul
25	Hull Plating, Renew

PRINCIPAL CHARACTERISTICS

210' WMEC (B-CLASS)	
PHYSICAL	
Length overall	210' 6"
Length between perpendiculars	200' 0"
Beam molded	34' 0"
Depth molded, main deck amidships	19' 6"
Full load displacement	1,170 long tons
Draft, full load to baseline amidships *Baseline is 9" below keel amidships	12' 0"
Design drag between perpendiculars	1' 6"
Highest projection above baseline *VHF-FM ADF antenna	90' 0"
Shore tie voltage requirements	400A / 440V
Frame spacing	1' 0"
MACHINERY	
Main propulsion	2 ALCO Model 16-251-B Diesel Engines, 5,000 BHP total
Ship's service generators	2 Caterpillar Model 3406B Diesel-driven SR4, 250 KW each @ 0.8 power factor, 440VAC, 3 phase, 60 cycle
Emergency generator	Caterpillar Model 3306B Diesel-driven SR4, 180 KW @ 0.8 power factor, 440VAC, 3 phase 60 cycle
Number of propellers	2
Propeller diameter	7' 6"
Number of blades, each	4
Pitch	Controllable
Shaft RPM	300
Shaft diameter	8.25" at exit of hull
Anchor & chain	Two 2,800 lb Navy Stockless Anchors, 7 shots of chain each
TANK CAPACITIES	
Diesel fuel total (95%)	48,427 gal.
Fresh water total (100%)	11,693 gal.
JP-5 fuel total (95%)	4,683 gal.
Lube oil total (95%)	2,390 gal.

General Requirements

1. SCOPE

1.1 Intent. This standard specification invokes general requirements for conducting vessel repairs performed by commercial contractors at a Coast Guard 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) M10360.3, Jan 2014, Coatings and Colors Manual

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2020, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures

OTHER REFERENCES

None

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.

NOTE

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

3.2 Fire watch requirements. The Contractor must refer to 3.3.1.3 (Fire watch requirements) of SFLC Std Spec 0000, in accomplishing the following task:

- Provide portable fire extinguishers for Coast Guard fire watch personnel. Coast Guard fire watch is in lieu of contractor personnel during the hours of 0800-1600, Monday through Friday, and limited to two Coast Guard fire watch personnel.
- Provide fire watch personnel and fire extinguishers for the duration of the availability period, during and beyond noted Coast Guard fire watch support.

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

NOTE

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

3.4 Welding and brazing requirements. The Contractor 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 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.

3.5.1.1 USCG Generator status. The activity Generator Status for the Coast Guard Facility is Conditionally Exempt Small Quantity Generator (CESQG).

3.5.1.2 Plans and permits. The CG Facility has unit specific permits including the following:

- Spill Prevention Control and Countermeasures (SPCC) Plan: Unit has a SPCC Plan which requires certain unit-specific procedures be followed for the storage, inspection, and transfer of petroleum products in containers 55 gallons or greater.
- National Pollutant Discharge Elimination System (NPDES) Storm Water (SW) Permit: Unit has an NPDES SW permit which requires unit-specific procedures be followed for the storage and inspection of equipment and materials which may contribute contaminants to storm water discharges.
- Air Emission Permit: Unit has an Air Emission Permit which requires unit-specific procedures be

followed for the emissions of VOCs and hazardous air pollutants.

3.5.2 Test and procedures. The Contractor must be 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 must be responsible for all regulatory notification requirements in accordance with Federal, State and local regulations. In cases where the Coast Guard must also provide public notification, such as storm water permitting, the Contractor must coordinate with the Contracting Officer or COR, and if work is being performed at a USCG Facility, the local Facility Engineer or Engineering Officer. The Contractor 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, and must be 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 B, Requirements for Environmental Protection at USCG Facilities for HW disposal, and ensure that waste removals are conducted during normal business hours (0800-1600) on Monday through Friday (excluding holidays).

3.5.6 Additional Requirements. The Contractor must be aware of the following:

3.5.6.1 No Contractor or Subcontractor must have the authority to sign a Hazardous Waste Manifest using the Coast Guard facility's EPA Generator ID Number or remove contract generated hazardous waste from the Coast Guard facility without COR or KO-approval.

3.5.6.2 Local environmental regulations at the Government facilities may be more stringent. As with all environmental regulations, the Contractor must prepare for and comply with local and state regulations.

3.5.6.3 Coast Guard facilities do not maintain Facilities Response Plans (FRPs) per 33 CFR 154. Contractor must furnish the FRP when required for over-the-water liquids transfers to and from vessels, and is required for oil/fuel transfers to/from vessels for 250 barrels (10,500 gallons) or more.

3.6 Local Policy. None.

3.7 SFLC Standard Specification approved changes. The Contractor must be aware that the following are

approved changes to published SFLC 2020 Edition Standard Specifications and supersede published content:

None.

4. NOTES

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

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

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

CHECKPOINT 1 – COATING SYSTEM COMPLIANCE	
	Ensure all coatings are in compliance with SFLC Std Spec 6310, Appendix C.
CHECKPOINT 2 - PAINT STORAGE	
	Ensure all coatings are kept at a temperature of 65 to 85°F at all times, unless otherwise specified by the coating 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/NACE INSPECTOR	SIGNATURE	CERT. #	DATE / TIME

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

VESSEL NAME	HULL #	WORK ITEM #	WORK ITEM TITLE

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

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

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

QA-3A - QUALITY ASSURANCE INSPECTION FORM
(SURFACE PROFILE LOG FOR PROFILE MEASUREMENTS IAW ASTM D4417-METHOD-C)

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

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

PLACE SURFACE PROFILE REPLICA TAPES IN THE SPACES PROVIDED BELOW, TO SERVE AS PERMANENT QA RECORD. MAINTAIN A SEPARATE LOG FOR EACH LOCATION. WHEN AN AREA IS DIVIDED INTO SEPARATE SECTIONS, MAINTAIN A SEPARATE LOG FOR EACH SECTION.

Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here
Reading (mils):	Reading (mils):	Reading (mils):
Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here
Reading (mils):	Reading (mils):	Reading (mils):
Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here
Reading (mils):	Reading (mils):	Reading (mils):
Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here
Reading (mils):	Reading (mils):	Reading (mils):
Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here
Reading (mils):	Reading (mils):	Reading (mils):
MEAN MIL READING (IAW ASTM D4417-METHOD C) FOR ABOVE 15 READINGS:		

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

QA-3B - QUALITY ASSURANCE INSPECTION FORM
(SURFACE PROFILE LOG FOR PROFILE MEASUREMENTS IAW ASTM D4417-METHOD-B)

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

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

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

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

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

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

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

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

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

(Use one sheet for each sequence)

VESSEL NAME	HULL #	WORK ITEM #	WORK ITEM TITLE

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

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

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

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

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

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

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

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

1. SCOPE

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

1.2 Government-furnished property.

None.

2. REFERENCES

Coast Guard Drawing 627 WMEC 111-001, Rev A, Shell Expansion Framing & C.V.K.

Coast Guard Drawing 627 WMEC 562-001, Rev H, Arrg't & Details Rudder Stocks, Bearings, & Stuffing Box

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

OTHER REFERENCES

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

3. REQUIREMENTS

3.1 General.

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

- 3.2 Side scan requirements and procedures.

3.1.2 Tech Rep.

Not applicable.

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

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

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

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

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

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

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

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

- Automated scanning resolution 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 ship's 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 plate below the water line, 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, knuckle, bow stem, stabilizer tubes, and stern tubes, as applicable.
- Any areas blocked by immovable scaffolding or shipyard activity.

3.4 Side scan reports. The Contractor must submit to the COR a final report within 3 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, as part of the CIR submission prior to departing the job site. Ensure the reports include:

- Inspection overview.
- Data sheets for each plate with designated repair areas outlined in blue.
- Mosaic of scanned data overlaid on Coast Guard Drawing 627 WMEC 111-001.

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.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 2: Hull Plating, U/W Body, Ultrasonic Testing

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to conduct ultrasonic testing (UT) of U/W hull plating.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 627 WMEC 085-302, Rev G, Docking Plan

Coast Guard Drawing 627 WMEC 111-001, Rev A, Shell Expansion Framing & C.V.K.

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2020, 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:

- 3.2 (UT measurements).

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 UT measurements. The Contractor must perform a total of 200 UT measurements of U/W hull surfaces, in locations designated by the Coast Guard Inspector, using Coast Guard Drawings 627 WMEC 085-302 and 627 WMEC 111-001 for guidance, in accordance with SFLC Std Spec 0740, Appendix C. Mark up a copy of Coast Guard Drawing 627 WMEC 111-001 to show all locations selected for measurement and record all measurements in Table I (UT Measurements Summary Sheet - Port/Stbd Shell) provided at the end of this item. Submit A CIR, to also include the marked up drawing and completed Table I.

4. NOTES

4.1 UT Table. Table 1 provided below is for the recording of all UT measurements.

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%)

1. SCOPE

1.1 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 627 WMEC 601-001, Rev F, Outboard Profile

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

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, 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):

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

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

- 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.

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.

NOTE

The hull fairings are not to be removed simply as an interference for 100% near white blasting unless 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 hull fairing condition. Submit a CFR.

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.

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

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

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

3.2.2.1 Prepare and coat the U/W hull surfaces with the system specified for "Underwater (U/W) Body and Boot-Top (U/W Body and Boot-Top, Steel Hulls (Up to 7 Years), in Salt Water", in SFLC Std Spec 6310, Appendix A (Cutter and Boat Exterior Painting Systems). Ensure that the anticorrosive (AC) is tacky prior to applying the first antifouling (AF) top-coat.

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

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

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

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

NOTE

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

3.2.3.3 Ensure the alternating color coats must be as follows: Red/Grey/Black/Red/Black. The first two coats are anti-corrosive and the final three coats are anti-foulant in accordance with SFLC Std Spec 6310.

The first four coats are applied to both U/W body and boot-top. The final black AF coat is for boot-top only.

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 AF system protective measures in the event of prolonged 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 627 WMEC 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)), bilge keels, struts, skegs, gratings, rope guards, and all other appendages.

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 627 WMEC 085-231, Rev D, Booklet of General Plans

Coast Guard Drawing 627 WMEC 152-001, Rev G, Superstructure -Aircastle, 01 & 02 Deckhouse & Stack

Coast Guard Drawing 627 WMEC 602-001, Rev B, Vessel's Name, Number, & Draft Marks

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

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

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, 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 coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

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

- Areas where underwater body coating system interfaces with freeboard coating system (unless u/w body surfaces are also being preserved).
- Adjacent deck surfaces and deck fittings.
- Liferails
- Vents
- Bulkheads
- Portlights
- Vent intakes
- 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 following:

- Anchors and anchor chain
- Flight deck nets.

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 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.

3.4 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.

3.5 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.

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

3.6.2.2 Painted markings. Paint all distinctive visual identification markings, including the Coast Guard diagonal stripes, "U.S. COAST GUARD" legends, hull numbers, and draft marks in accordance with SFLC Std Spec 6310, and Coast Guard Drawings 627 WMEC 602-001, FL 2804-12 and FL 2804-22 as applicable.

NOTES

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

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

Brace Enterprises
10250 SE 138 Terrace
Dunnellon, FL 34431

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

3.7 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").

4. NOTES

4.1 Definition of freeboard surfaces. For the purposes of this item the freeboard is defined as continuous exterior/outboard steel surfaces, from the upper limit of the boot-topping to the top of the bulwark, including all 01 Level Deck edge surfaces and surfaces up to the bottom of the bridge wing, as shown on Guard Drawings 627 WMEC 152-001 and 627 WMEC 085-231.

WORK ITEM 5: Appendages (U/W), Preserve (Internal) and Leak Test

1. SCOPE

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

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 627 WMEC 085-302, Rev G, Docking Plan

Coast Guard Drawing 627 WMEC 111-001, Rev A, Shell Expansion Framing & C.V.K.

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2020, Welding and Allied Processes

OTHER REFERENCES

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

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

MIL-PRF-16173E, Oct 2017, Corrosion Prevention Compound, Solvent Cutback, Cold-Application

3. REQUIREMENTS

3.1 General.

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

- 3.2 Leak test.

3.1.2 Tech Rep.

Not applicable.

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

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

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

- Remove and dispose of all existing plugs (e.g. drain plugs, fill/vent plugs), as applicable.
- Submit a CIR noting any liquids draining from any of the appendages – indicating the presence of a leak.
- If a Change Request has been authorized and released based on the CIR, the Contractor must repair leaks.
- Dispose of any drained liquids in accordance with all Federal, state, and local laws and regulations.

NOTE

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

TABLE 1 – U/W APPENDAGES

APPENDAGE	FRAME	SIDE
Rub Rail	Bow to 66	P/S
Taff Rail	57 to Stern	P/S
Bilge Keel	76 to 146	P/S
Skeg	105 to 180	CL
Guards (numerous)		P/S

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

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

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

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

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

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

4. NOTES

This section is not applicable to this work item.

WORK ITEM 6: Propulsion Shaft Fairwaters And Rope Guards, Inspect

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to inspect all fairwaters and all rope guards on external shafting.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 627 WMEC 161-001, Rev B, Arrg't & Details Stern Tube & Strut (NOTE: For purpose of bid, Contractor must assume rope guards are welded in.)

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures

OTHER REFERENCES

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, 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).

3.2 Initial inspection. Prior to commencement of work, the Contractor must visually inspect the shaft fairwater and rope guard installations using the references listed in Section 2. Submit a CFR. If a Change Request is authorized, the Contractor must renew a designated fairwater or rope guard in lieu of repairing existing.

3.3 Removals. The Contractor must accomplish the following tasks:

3.3.1 Remove and retain existing fairwaters and rope guards. Discard all mounting hardware.

3.3.2 Grind smooth any welding left on struts after the removal of rope guards, and clean all surfaces thoroughly.

NOTE

This may require the removal of fairing material before fairwater socket hex-head bolts can be extracted.

3.3.3 Remove and install new fairing material as required to access bolts.

3.4 Inspection particulars. The Contractor must accomplish the following tasks, using the referenced drawings as guidance:

3.4.1 Prepare the fairwater and rope guard surfaces in accordance with SFLC Std Spec 6310 to the equivalent of a “SSPC-SP 10/NACE No. 2, Near-White Blast Cleaning”, with a 1.5 to 2.5 mil anchor profile; or to "SSPC-SP WJ-2/L”.

3.4.2 Visually inspect all fairwater and rope guard surfaces, including hardware mounting brackets/surfaces for corrosion, cracks, and all other defects. Submit a CFR.

3.4.3 Coat all fairwater and rope guard surfaces, using the coating system specified for “Underwater (U/W) Body and Boot-Top, Steel Hulls (Up to 7 Years), in Salt Water”, in SFLC STD 6310, Appendix A (Cutter and Boat Exterior Painting Systems), and using the drawings listed in Section 2 as guidance.

3.5 Reinstallation. After coating system has cured sufficiently to prevent being damaged, the Contractor must reinstall fairwaters and rope guards. Renew all fasteners.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 7: Voids (Non-Accessible), Preserve (Internal) and Leak Test

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to perform leak test and preserve internal surfaces of non-accessible voids.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 627 WMEC 085-302, Rev G, Docking Plan

Coast Guard Drawing 627 WMEC 111-001, Rev A, Shell Expansion Framing & C.V.K.

Coast Guard Drawing 627 WMEC 116-001, Rev -, Forepeak Framing, Chain Locker & Transv. Bhds #12 & #15 ½

Coast Guard Drawing 627 WMEC 163-003, Rev C, Transducer Sea Chest Struct. Arrg'ts & Details

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2020, Welding and Allied Processes

OTHER REFERENCES

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

MIL-PRF-16173E, Oct 2017, Corrosion Prevention Compound, Solvent Cutback, Cold-Application

MIL-S-45180, 1998; Sealing Compound, Gasket, Hydrocarbon Fluid and 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:

- 3.2 Leak test.

3.1.2 Tech Rep.

Not applicable.

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

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

3.2 Leak test. In the presence of the Coast Guard Inspector, the Contractor must accomplish the following tasks for all designated non-accessible voids (see Table 1 for list) and submit a CIR, using Coast Guard Drawings 627 WMEC 085-302, 627 WMEC 111-001, 627 WMEC 116-001, and 627 WMEC 163-003 as guidance:

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

CAUTION

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

3.3 Preservation of void internal surfaces. The Contractor must accomplish the following tasks for each void designated in Table 1, using the Coast Guard Drawings 627 WMEC 085-302, 627 WMEC 111-001, 627 WMEC 116-001, and 627 WMEC 163-003 as guidance:

- Remove any existing rust preventive compound using steam, solvent, vapor degreaser, or other suitable method.
- Fill all void interior surfaces with new rust preventive compound conforming to MIL-PRF-16173, Class II, Grade 3, to coat all surfaces.
- Drain, collect, and dispose of remaining compound in accordance with all applicable Federal, state, and local regulations.
- Ensure that the coated surfaces are left exposed to the atmosphere for 24 hours to allow for adequate drying.

TABLE 1 - DRAIN PLUGS FOR NON-ACCESSIBLE VOIDS

VOID	FRAME	SIDE
AN/SQN-13 Transducer Fairing	73	P
Forepeak (4-FP-0-W) Stem Void	0 - 12	CL
Forward Keel Void (Under Chain Locker Sump)	12 - 20	CL
Chain Locker (3-12-0-Q) Side Shell Voids	12 - 15 1/2	P & S

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

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

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

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

4. NOTES

This section is not applicable to this work item.

WORK ITEM 8: Main Mast, Preserve, 100 Percent

1. SCOPE

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

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 627-WMEC 085-301, Rev C, Booklet Of General Plans

Coast Guard Drawing 627-WMEC 171-001, Rev R, MMA Main Mast Radar Platform

Coast Guard Drawing 627-WMEC 613-001, Rev B, Mainmast Rigging Arrg't & Dets.

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 3042 (SFLC Std Spec 3042), 2020, Shipboard Electrical Cable Removal, Relocation, Splice, Repair, and Installation

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, 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 The Contractor must, once the equipment has been removed from the Mast, ensure it is stored in a protective environment. Areas/equipment/components to be protected include, but are not limited to the following (as applicable):

- Cable runs
- Label plates
- Connectors
- Rubber gaskets
- Yardarm blinkers
- Wind speed air vanes
- Navigation lights
- Ship's bell
- Adjacent bulkhead and deck surfaces
- Contact points
- Insulators
- Rubber shock mounts
- Safety climb.

3.1.3.2 The Contractor must coil up electrical cabling down to associated deck/bulkhead penetrations. Mark, seal, and cover all coiled cabling. Ensure the cable is protected from abrasion and damage. 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 following.

- Radar gear, including associated pedestals
- Navigation lights
- Electrical fittings
- Rigging
- Antennas
- Wind direction indicator

3.1.4.1 The Contractor must notify the COR 72 hours in advance of beginning interference removals.

3.1.5 Personnel qualification. The Contractor must ensure that all Contractor personnel performing removal and installation of electronics equipment must have the training of an electronics journeyman and be knowledgeable in the areas of electrical and physical standards for equipment such as radar, waveguides and antennas.

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 mast electrical and electronic equipment to demonstrate existing operational condition. Submit a CFR.

3.3 Mast removal. The Contractor must be aware that removal of the masts is not practical for this class of cutters.

3.3.1 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 3.3 (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.

NOTE

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

3.3.2 Substrate inspection. After surface preparation and before the coating application, the Contractor must perform a visual inspection of all cleaned mast surfaces, including electrical hangers, hardware, and safety rail hardware. Submit a CFR

3.4 Preservation requirements. The Contractor must prepare and coat the mast surfaces using the system specified for "Freeboard/Superstructure/Mast (Freeboard/Superstructure)" in Appendix A (Cutter and Boat Exterior Painting Systems) of SFLC Std Spec 6310. Select the following:

- "Option I" system, for aluminum surfaces
- Black (17038), as the top/finish color.

3.5 Weather-proofing requirements. The Contractor must weatherproof all connectors, cables and fasteners in accordance with SFLC Std Spec 3042.

3.6 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).

NOTES

1. Unless a containment system is used for 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. Coating application by brushing or rolling may require additional coats to obtain required dry film thickness.

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

3.7 Repair of unintended damages. The Contractor must repair all damages (including overspray) incurred to vessel surfaces (including those not covered by the intended scope of this work item), during surface preparation and paint application procedures.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.8 Operational test, post repairs. After completion of work, the Contractor must witness an operational test (by Coast Guard personnel, including C4IT personnel) of all mast electrical and electronic equipment, to prove satisfactory operating condition. Submit a CFR.

4. NOTES

4.1 Coast Guard Inspector. CG Inspector will ensure that antennas are mounted and weather-proofed before final operational test.

WORK ITEM 9: Propulsion Shafting, Strain Gage Alignment, Inspect

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to perform strain gage alignment inspections prior to vessel dry-docking, during dry-docking, and after refloating.

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), 2020, General Requirements

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 a Qualified Tech Rep who is familiar with the shaft alignment by strain gauge method to accomplish the following on site:

- Advise on manufacturer's proprietary information pertinent to the system.
- Assist with proper alignment, clearances, and repair methods associated with stern tube modification and propulsion shaft system removal and installation.
- Ensure compliance with manufacturer's procedures and standards during all phases of inspection.

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

3.1.4 Interferences. The Contractor 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:

- Mechanical seal
- Shaft coating.

3.1.5 Inspection. The Contractor must perform strain gage alignment inspections on the propulsion shafting before dry-docking, in dry-dock before commencement of hot work and/or structural modifications, in dry-dock after completion of hot work and/or structural modifications, and after vessel refloating.

3.1.6 Dry-docking extension. In order to allow sufficient time to perform the pre-dry-docking alignment inspection, the Government will extend the time requirement of dry-docking the vessel after the vessel arrives at the Contractor's facility from 72 hours to 120 hours.

3.2 Alignment preparation. The Contractor must ensure the following conditions are met for the alignment check before dry-docking and after refloating:

- All shaft components are installed
- The vessel is in the water for at least 24 hours before alignment inspection
- All permanent ballast are in place
- Fuel, water, and temporary ballast tanks are filled to normal operating levels, generally half to 75% capacity. For 110’ cutters, the normal operating level must be 95%
- Vessel is on an even keel

NOTE

It is highly recommended that the Cutter get the pre-dock strain gauge reading done in advance instead of shortly prior to the dry-docking.

- All major machinery weighing over 500 pounds is either installed or simulated by equivalent weights appropriately located
- The shafts must be free to rotate and the stern tube face seal must not be any tighter than necessary

NOTE

Small boats are not considered major machinery and therefore do not need to be simulated by equivalent weights in their absence.

3.3 Alignment by strain gage method. The Contractor must furnish all necessary equipment and install sufficient strain gages, measure strains, and calculate vertical and horizontal reactions using the strain gage measurement method. Install strain gages internally and externally to measure all the bearing reactions (external gages are not required in pre-docking inspection). All strain gages must remain at the same locations throughout all required inspections. Perform the strain gage measurements under the direct supervision of personnel experienced in and regularly engaged in shaft alignment by the strain gage method.

3.3.1 Definitions and standard units. The Contractor must ensure for the purposes of this specification, any reports generated, "optimal alignment" must be defined as "a state of shaft alignment (though all phases of bearing wear down) where the bearing loads are within a satisfactory range, bending stresses are minimal, gear box bearings (Fwd and Aft) loads always remain positive and are near equal at midlife wear, the shaft slope through long bearings matches the bearing slope within a reasonable range, and horizontal loads are minimized as much as practical." Whenever strain gauge is being performed in conjunction with components being moved or relocated e.g. foundations altered, chockfast poured, new strut being installed, new stern tube installed, etc. the goal must be to achieve an "optimal alignment".

3.3.1.1 Whenever "optimal alignment" cannot be achieved because the scope of associated work does not provide for relocation of components necessary to obtain optimal, then an acceptable state of alignment must be obtained. Acceptable alignment must be defined as "a state of achievable shaft alignment, whereby components are constrained (movement/relocations not within work scope), but the current bearing loads are within a satisfactory range and if possible remain satisfactory though continued bearing wear down, and horizontal loads are minimized as much as practical. Oftentimes, when present, an inboard line shaft bearing is the only component available to shim (vertically) or jack (horizontally) to change the "as measured" results.

3.3.1.2 All reports, correspondences, and discussions must be in STANDARD / US CUSTOMARY UNITS and not in SI / METRIC UNITS.

3.3.2 Pre-dry-dock inspection. The Contractor must submit a written report of results with the following information to the COR within 48 hours after alignment check:

- All inboard bearing reactions, bearing offsets, bearing influence numbers, allowable bearing load, bearing clearances, etc.
- A description of the alignment procedures used to obtain the bearing loads
- Strain gage locations
- Bearing locations and reactions in shaft modeling
- Detail dimensions and configuration of the shaft model
- All mathematics values used in the shaft model such as material properties, spring constant, thermal growth effects, bearing offsets, all concentrated weights, etc.
- All assumptions applied in the shaft model
- All constant values used in the shaft model
- Any indication of misalignment
- Bearing reactions at the calculated optimum shaft alignment condition
- Any recommended corrective procedures. The recommended corrective procedures must include, but not be limited to:
- New bearing off-sets to achieve an optimum shaft alignment

- New bearing off-sets to achieve a satisfactory (acceptable) shaft alignment
- Other alternative to achieve an optimum shaft alignment
- Detailed procedures to achieve shaft alignment

3.3.3 Dry-docking inspection. After dry-docking the vessel and before performing any hot work and/or structural modifications, the Contractor must conduct a strain gage alignment inspection to determine all bearing reactions (five bearings per shaft) as specified in 3.3 through 3.3.2. Provide additional strain gauges, temporary wiring, and set-up on the shaft outboard as required for the three outboard bearing measurements. Submit a CFR with information as specified in 3.3.2 within 48 hours after alignment check.

3.3.4 Before re-floating alignment inspection. After all the hot work and/or structural modifications have been completed, and before re-floating the vessel, the Contractor must conduct a strain gage alignment inspection of shaft alignment as specified in 3.3.3 and compare the results with dry-docking inspection. Submit a written report with any recommended further action to the COR within 48 hours after alignment check.

3.3.5 Post-dry-dock inspection. The Contractor must conduct post-dry-dock inspection of shaft alignment per paragraph 3.2 through 3.3.2 for all the inboard and outboard bearings (total five bearings per shaft). Use similar set-up as the dry-docking inspection. Submit a CFR similar as the pre-dry-docking report including the additional information of the three outboard bearings of each shaft, within 24 hours after taking the strain gauge readings. The inspection report must compare the findings of the inboard bearings with the pre-dry-dock conditions and provide analysis, comments and recommendations.

3.4 Alignment drawing. The Contractor must provide an alignment drawing clearly showing all components including reduction gear and all bearings, a table of calculated influence numbers and reactions of each shaft bearing and reduction gear bearing at afloat and dry-docking conditions, and calculated optimum bearing reactions.

3.4.1 The Contractor must ensure all bearing compression and clearances, bearing offsets relative to the bore sight reference line, General Notes, and related shaft reference drawings must also be included on the drawing.

3.4.2 In addition, The Contractor must provide a table of calculated bearing wear down analysis.

3.4.3 The Contractor must submit a preliminary drawing to COR for approval within seven (7) calendar days after final alignment has been determined. After revising the drawing based on the comments of COR, submit two (2) sets of the final drawing to COR within 14 calendar days upon completion of work. Submit one set of inspection report and final drawing to the COR (See 4.1 (Result submittals)).

4. NOTES

4.1 Results submittal. The COR will forward a copy of shaft alignment related inspection results and drawing as specified in 3.3.2 thru 3.3.5, and 3.4 with all subparagraphs to the Engineering Branch of the applicable Product Line.

WORK ITEM 10: Propulsion Propeller Shaft Coating, Inspect and Test

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to inspect the port and starboard propeller shaft coating.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 627 WMEC 243-006, Rev C, Line Shaft

Coast Guard Drawing 627 WMEC 243-007, Rev C, Tail Shaft

Coast Guard Drawing 627 WMEC 243-008, Rev K, Shaft Installation

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

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:

- 3.2 (Inspection particulars).

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:

- Rope guard
- Fairwaters

3.2 Inspection particulars. Using the Coast Guard drawings listed in Section 2 (References) as guidance, the Contractor must clean the shaft free of all marine growth and accomplish the following inspections. Submit CIR.

3.2.1 Visual inspection. Visually inspect the following components for excessive wear and other mechanical defects such as nicks, cracks, and corrosion:

- Shaft surfaces
- All shaft and propeller associated fasteners
- Couplings (as applicable)
- Stern tube/shaft sealing systems (as applicable)
- Packing ring and glands (as applicable).

3.2.2 Shaft coating inspection. Inspect the shaft fiberglass covering for porosity as follows:

3.2.2.1 Visually inspect the plastic covering for evidence of lack of adhesion, and other defects.

3.2.2.2 Conduct a high voltage spark test of the covering at 250 to 300 volts per mil of glass reinforcement (approximately 15,000 volts for a four-ply covering).

NOTE

Pay particular attention to the joining line between sleeves, couplings, and shafts.

Coast Guard personnel will operate all shipboard machinery and equipment.

3.3 Operational test, post repairs. After completion of work, the Contractor must witness an operational test (by Coast Guard personnel) of the shafting system, for a minimum of 4 hours, to prove satisfactory operating condition. Submit a CFR.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 11: Propulsion Shaft Seal (Mechanical And Inflatable) Assemblies, Inspect And Repair Or Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to overhaul the stern tube seal assemblies for the port and starboard propulsion shafts. The stern tube seal assemblies consist of both mechanical and inflatable components.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
N	Overhaul kit	NSN: 2040-01-537-0557 PN: WLP001319-001	2 kt.	30,574.45
Y	**Seal Assy	NSN: 2040-01-433-6781 PN: US71996	2 ea.	56,687.21

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

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 627 WMEC 243-001, Rev D, Arrangement & Detail Stern Tube Seal

Coast Guard Drawing 627 WMEC 243-002, Rev C, Arrgt & Dets of Piping & Hydraulics

Coast Guard Drawing 627 WMEC 243-006, Rev C, Line Shaft

Coast Guard Drawing 627 WMEC 243-007, Rev C, Tail Shaft

Coast Guard Drawing 627 WMEC 243-008, Rev K, Shaft Installation

Coast Guard Drawing 627 WMEC 243-009, Rev A, Arr. and Details: Installation of New John Crane Seal (Type MX9)

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3231A, Oct 2019, Manufacturer's Instruction Book-SWBS Group(s) 242-245, Chapter 243, Section A, Stern Tube Seal, MX9, US-71996

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

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:

- 3.2.2 Inspection

3.1.2 Tech Rep. The Contractor must provide the services of a Qualified Technical Representative who is familiar with the John Crane type MX9 shaft seal system/equipment, to accomplish the following on site:

- Advise on manufacturer's proprietary system information.
- Assist with proper installation and repair methods.
- Ensure compliance with manufacturer's procedures and standards during disassembly, inspection, and reassembly of the system.
- Attend the sea trial and assist with final adjustment.

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

3.1.4 Interferences. The Contractor 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 plating and framing
- Shelves/supply storage
- Safety grating
- Propulsion shaft
- Cooling water piping
- Air line.

3.2 Inspection and repair requirements. The Contractor must accomplish the below-specified tasks for each of the two stern tube seal assemblies (port and starboard), in accordance with TP 3231 and all applicable sections therein, and using Coast Guard Drawings 627 WMEC 243-001, 627 WMEC 243-002, 627 WMEC 243-006, 627 WMEC 243-007, 627 WMEC 243-008 and 627 WMEC 243-009 as guidance:

3.2.1 Disassembly and removal. Disassemble and remove the seal assembly, which consists of following major components, in accordance with TP 3231, Subsection 4.4 (Seal Overhaul):

- Mounting ring
- Inflatable seal
- Bellows assembly
- Face insert and sealing strip

- Seat and O-rings
- Compression adapters, rods, and nuts
- Drive ring
- Splash guard

3.2.2 Inspection. After removal of seal components, clean and visually inspect the shaft sleeve surfaces, and the removed seal components for wear, defects and deterioration. Visually inspect the shaft seal mounting faces (including bulkhead mounting flange) and exposed adjacent surfaces for evidence of corrosion or deterioration. Submit a CIR, including recommended repairs, if any.

3.2.3 Reassembly and reinstallation. Upon completion of all authorized repairs, if any, accomplish the following:

3.2.3.1 Reassemble the seal components, using the Government-furnished seal kit, in accordance with TP 3231, Subsection 8-5 (Site Preparation), 8-6 (Tool and Materials Required), 8-7 (Installation Instructions).

3.2.3.2 Re-machine the seal seats, in accordance with TP 3231, Subsection 6.5.

3.2.3.3 Provide and install new mounting gasket as specified in TP 3231, Section 1.

3.2.3.4 If a Change Request is released and approved by the KO, build-up/repair the shaft seal bulkhead mounting flange using a commercially available metallic polymer (e.g. Belzona or equivalent).

3.2.4 Setting of seal compression. Set the stern tube seal compression during the installation, using TP 3231, Subsection 6.2 (Setting Seal Compression) as a guide.

3.2.5 Alignment of seat. Align each seat to run true with its associated shaft, as shown on TP 3231, Figure 6.2, and as follows:

- Attach a dial indicator so as to indicate either the face of the seat, aft side of the face carrier, or the flat side of the forward main clamp ring near the butt joint.

NOTE

This will indicate relative misalignment of the seat in relation to the stationary face insert as the shaft rotates.

- Engage turning gear to rotate the shaft.
- Adjust the alignment bolts and drive bolts to have a total indicator reading of 0.002" while the shaft is rotating. Take readings for three complete revolutions of the shaft. Submit a CFR.
- Once alignment is complete, lock the alignment bolts with their locking nuts while the shaft is rotating and the indicator is still installed. Recheck alignment after locking. Submit a CFR.
- Disengage turning gear and install splash guard onto the face carrier.

3.2.6 Inflatable seal air test. Conduct the inflatable seal pressure drop test as follows:

- Operate the inflatable seal and increase pressure to 45 PSI.
- Visually inspect to ensure all pipe joints are tight.
- With seal inflated to 45 PSI, shut off all supply valves, and monitor air leakage. Ensure that pressure does not drop more than 3 PSI in 15 minutes. Correct any discrepancy noted. Submit

a CFR.

WARNING

Do not rotate shaft while testing inflatable seal!

3.2.7 Inflatable seal water leakage test. After the vessel is waterborne conduct the inflatable seal water leakage test as follows:

- Operate inflatable shaft at normal pressure in accordance with manufacturer's instructions.
- Slowly open the seal drain valve and drain the seal cavity.
- Once seal cavity is drained, measure the seal leakage; which must not exceed one pint per minute. Take corrective action if the leakage exceeds one pint per minute. Submit a CFR.
- Align the seal water flush lines for normal operation.

3.3 Stern tube seal change-out. The Contractor must be aware that the Government reserves the right to furnish a new stern tube seal for installation in-place of the one removed at no additional cost. When the Government exercises this right, the Contractor must turn over the removed stern tube seal(s) to the Coast Guard Property Administrator as a MTI item.

WARNING

Do not drain any fluids, including fresh water, into any space, bilge, or exterior location.

3.4 Pipe flushing. The Contractor must flush all new and disturbed piping with clean fresh water until all debris is removed but no longer than five minutes. Ensure flushing fluid is directed to move scale and foreign debris away from installed machinery to prevent possible damage upon operational testing. Submit a CFR documenting date and time of flushing process and level of pipe cleanliness.

3.4.1 Dispose of flushing fluid in accordance with all applicable Federal, state, and local regulations.

3.5 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.. Inspect and correct any water leaks, abnormal noise, and any binding caused by stern tube seals in normal shaft operation.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 12: Controllable Pitch Propellers, Clean and Inspect

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean and inspect the propeller immediately after drydocking.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 627 WMEC 245-017, Rev E, 210 Foot B Class WMEC Major Maint Availability Propeller Blade for 66X/4 Hub

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

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):

- 3.3 (CPP 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).

3.1.5 Competent personnel. Only competent, trained, qualified, and experienced personnel who are familiar with naval propeller critical geometries and characteristics must perform or supervise CPP cleaning operations and conduct visual technical inspection.

3.2 CPP Cleaning. The Contractor must thoroughly clean the Cutter's controllable pitch propeller or propellers depicted in Coast Guard Drawing 627 WMEC 245-017 to remove all marine growth and fouling.

3.2.1 The Contractor must ensure cleaning and inspection must be performed as soon after dry-docking as practical (not to exceed 24 hours) and prior to any other related Controllable Pitch Propeller work is performed. Cleaning is not to be confused with polishing which is not the subject of this specification.

3.2.2 The Contractor must ensure CPP cleaning must not result in damage to or the removal of blade or hub material. The following methods are acceptable for cleaning installed CPPs and fairwater caps in drydock and are listed in order of precedence.

3.2.2.1 Hydroblasting (high pressure water jet cleaning) may be used on all CPP and fairwater surfaces. For best results, perform hydroblasting immediately after drydocking and before marine growth has dried. At NO TIME must hydroblasting on CPP or fairwater cap surfaces exceed 10,000 pounds per square inch. Do not direct the water jet directly into blade seal cavities since this may cause undesirable water and/or contaminant intrusion into the CPP's internals.

3.2.2.2 Hand cleaning, including scraping and wire brushing is more effective if performed prior to drying of marine growth. Use hard plastic or wood scraper or soft bronze or brass wire brushes to clean all CPP surfaces. DO NOT use metallic scrapers or scrapers impregnated with abrasive material. Scraping and wire brushing must be performed by hand and not powered. The final cleaning operation of CPP edges (within 3 inches of the edges and tips) must be cleaned by hand with plastic surface conditioning material (e.g. Scotch-Brite "greenies" or equivalent).

3.2.2.3 Powered cleaning methods with surface conditioning discs must only be used on CPP surfaces of minimal curvature and must not be used within 6 inches of blade edges, tips, cusps, fillets (excluding hub to blade interface) or other sensitive areas. Powered surface conditioning discs must only be utilized by experienced personnel who are familiar with navy propeller critical geometries and characteristics. The use of powered nylon or plastic brushes is acceptable for cleaning edges and tips, provided proper care is taken to avoid removal of metal. When cleaning the outer periphery of the CPP blades, the brushes and disks must be kept flat on the surface. Do not attempt to round the edges of the propeller blade with brushes and disks.

3.3 CPP Inspection. After cleaning, the Contractor must perform a visual technical inspection of all external CPP components. Submit A CIR.

3.3.1 The Contractor must visually inspect and record the condition of all CPP surfaces including blades (suction and pressure sides) , fillet areas, edges and tips, blade palms and hub noting defects and damage such as: nicks, dents, bends, cracks, curling, flat spots, ridges, surface finish, grooves, gouges, pitting, porosity, cavitation, erosion, waviness, and roughness.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 13: Controllable Pitch Propeller (CPP) System, Inspect and Service

1. SCOPE

1.1 Intent This work item describes the requirements for the Contractor to inspect and service the Controllable Pitch Propeller (CPP) system.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
N	Servo Box seal kit (NOTE: Parts may require machining for proper fit.)	NSN: 5330-01-517-4281	2 kt.	6,561.00

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 627 WMEC 243-002, Rev C, Arrgt & Dets of Piping & Hydraulics

Coast Guard Drawing 627 WMEC 243-010, Rev-, CPP Hydraulic Storage Tank & Piping Arrangement

Coast Guard Drawing 627 WMEC 245-001, Rev-, Hub Assy (LH)

Coast Guard Drawing 627 WMEC 245-002, Rev-, Hub Assy (RH)

Coast Guard Drawing 627 WMEC 245-003, Rev-, Control Plate Assy (LH)

Coast Guard Drawing 627 WMEC 245-004, Rev-, Control Plate Assy (RH)

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 0701, SWBS 245, Section A, Feb 2019, Controllable Pitch Propeller

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2020, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 5000 (SFLC Std Spec 5000), 2020, Auxiliary Machine Systems

OTHER REFERENCES

International Standard Organization (ISO) 4406, 2017, Hydraulic Fluid Power – Fluids – Method for Coding the Level of Contamination by Solid Particles – Third Edition

MIL-L-46152E, May 1990, Lubricating Oil, Internal Combustion Engine, Administrative Service

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 Hydraulic fluid samples
- 3.1.5.2 Component cleanliness inspections
- 3.2.1 Tanks

3.1.2 Tech Rep. The Contractor must provide the services of a certified Tech Rep, who is familiar with the KAMEWA CPP system, to accomplish the following tasks – on site:

- Provide information, software, and tools pertinent to the equipment/system.
- Assist with proper repair methods, and ensure compliance with manufacturer's procedures and standards during disassembly, inspection, repair, modification, calibration, and reassembly of the equipment/system.

3.1.2.1 Ensure that the Tech Rep is a Certified Representative of KAMEWA.

3.1.2.2 Submit the Tech Rep’s name and resume to the COR at the Arrival Conference.

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

3.1.3.1 Protective measures, hydraulic system(s). Maintain existing hydraulic system cleanliness and take all necessary precautions to prevent the introduction of contaminants into the hydraulic system. Immediately after disconnecting or removing components from the hydraulic system, seal all openings to the rest of the system using caps for externally threaded connection points, bolt-on blanks, or taped-on discs/covers made of durable plastic or sheet-metal that is no less than 1/16-inch thick.

NOTE

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

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

3.1.5 Hydraulic system cleanliness. The Contractor must continuously monitor hydraulic system cleanliness for the duration of this work item. Cleanliness Grade A as defined in SFLC Std Spec 5000 is required.

3.1.5.1 Hydraulic fluid samples. Prior to and immediately following the work herein, the Contractor must sample and test the system hydraulic fluid in accordance with SFLC Std Spec 5000, Appendix C, Paragraph C2.1 (Fluids). Submit a CIR for the initial fluid sample.

3.1.5.2 Component cleanliness inspections. Upon disassembly of the system, inspect all components for signs of particulate contamination. Submit a CIR.

3.1.5.3 Ensure all components meet Cleanliness Grade A prior to reinstallation.

3.1.6 CPP service particulars. The Contractor must accomplish all work specified herein under the supervision of the Tech Rep, using Coast Guard Drawings 627 WMEC 243-002, 627 WMEC 243-010, 627 WMEC 245-001, 627 WMEC 245-002, 627 WMEC 245-003, 627 WMEC 245-004 and TP 0701 as guidance.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.1.7 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.

3.1.8 Pitch checks. Prior to commencement of work, the Contractor must check pitch of blades against indicated pitch scale in accordance with TP 0701 to ensure synchronization. Check the time for pitch to advance from zero to full pitch ahead and full pitch astern. Submit a CFR.

NOTE

Seals must be water-lubricated during pitch checks.

3.1.9 System fluid drainage and disposal. The Contractor must drain all hydraulic oil from the Port and Stbd CPP systems (approximately 400 gallons total) into a suitable container; dispose of removed fluids in accordance with all applicable Federal, state and local regulations.

3.2 Maintenance requirements. The Contractor must accomplish the following for the complete CPP system, port and starboard in accordance with SFLC Std Spec 5000, Appendix C, Hydraulic Systems and submit CFR.

3.2.1 Tank/reservoir cleaning. The Contractor must wipe the interior surfaces of both port and stbd hub oil reservoirs between the reduction gears, with a lint-free cloth and solvent, to remove any debris and remaining hydraulic oil residue. Visually inspect and submit CIR.

3.2.2. Valve manifold. The Contractor must accomplish the following in accordance with SFLC Std Spec 5000:

3.2.2.1 Inspection. Disassemble and clean the hydraulic valve manifold, and visually inspect all component parts for signs of excessive wear or damage. Submit a written condition found report to the COR within 24 hours after completion of inspection.

3.2.2.2 Pressure test. Pressure test and adjust the following valves, in accordance with manufacturer's recommendations:

TABLE 1 – PRESSURE RELIEF VALVES

VALVE	SETTING (PSIG)
Manifold Relief Valve	450
Cross Head Cavity Relief Valve	450
Pressure Reducing Valve	28-35
Unloading Valve	200
Adjustable Relief Valve	15

3.2.2.3 Reassembly. Reassemble the hydraulic valve manifold, with new seal, O-ring and gasket. Renew the by-pass valves.

3.2.3 Filters. The Contractor must clean all filter housings to remove all foreign debris and renew all filter elements.

3.2.4 OD box inspection. The Contractor must accomplish the following:

3.2.4.1 Disassemble and clean the OD box, including associated auxiliary servo control valve and auxiliary servo control cylinder. Measure and compare all clearances with allowable clearances specified by the manufacturer. Submit a CFR.

NOTE

Dimensions listed on the referenced drawing are for new components; allowable normal wear clearances are generally twice the maximum dimensions shown on the drawing – see TP 0701, Section 5.5.

3.2.4.2 Seal renewal. Renew the OD Box high pressure seals and low pressure seals with Government-furnished components.

NOTE

Disassembly of sliding ring chamber to allow circular parts to be slid off is necessary for renewal of high and low pressure seals.

3.2.4.3 Reassembly. Reassemble the OD box, including auxiliary servo control valve, and auxiliary servo control cylinder. Renew all O-rings, gaskets and end seals.

3.2.5 System flushing. The Contractor must flush the hydraulic system with the system fully assembled using the system's operating fluid in accordance with the following:

3.2.5.1 Install a 3 micron filter on the return line from the O.D. Box (directly at Port K on the O.D. Box). The Contractor must furnish all necessary fittings and filtering rig. Equipment tie-in must minimize loss of fluid when connecting/disconnecting equipment (installation of temporary isolation valves for example).

3.2.5.2 Install a 40 micron filter with a pressure differential gauge on the return line, between the O.D. box and the return check valve. The Contractor must furnish all necessary fittings and the filter assembly.

Use this filter as an inspection point to determine if fragments are still coming out of the return piping. If necessary, to maintain system recommended temperature, install an external in-line heater at this location.

NOTE

Carefully monitor the heater to ensure that they do not char the oil around the elements

3.2.5.3 While operating the system normally, using system pumps, cycle pitch full astern/ahead repeatedly, while periodically rotating the shafting. Continue to monitor return pressure, ensuring that it remains within system guidelines.

3.2.5.4 After 15 cycles, shut down and inspect the return filter. Continue to repeat 3.2.5.3 and 3.2.5.4 until target particulate count of 18/16/13 or better per ISO 4406 is achieved.

3.2.5.5 Submit a detailed report to the COR within 24 hours. Report must include:

- Method used to obtain the particulate contamination reading.
- Method used to determine particle size.
- Final contamination level readings.

3.2.5.6 After flushing, remove and dispose of temporary filters and mesh screens. Renew all system hydraulic filters.

3.2.6 System fluid renewal. The Contractor must renew 100% of each controllable pitch propeller system with 200 gallons (total of 400 gallons) of the mfr recommended oil per TP 701 (MIL-L-46152, Grade 10W-30), filtered through a nonbypass type, 10 micron absolute filter while refilling. See Table 2 below for USCG approved lubricants.

TABLE 2 – AUTHORIZED LUBRICANTS

OEM SPEC OIL	SHELL OILS	BP/CASTROL OILS	CHEVRON /TEXACO OILS	EXXONMOBIL OILS
SAE 10W30	Rotella T3 Fleet 10W30	Tection HD 10W30	Delo 400 SDE 10W30	Delvac 1300 Super 10W30

3.2.7 Pressure test. The Contractor must perform a pressure test of both CPP systems per manufacturer instructions. Repair all leaks.

3.3 Positioning and control adjustments. The Contractor must make all necessary positioning and control adjustments in accordance with TP 0701. Submit CFR.

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 and then repeat the requirements of paragraph 3.1.8 (Pitch checks) while the vessel is still in drydock. Repair all defects. Submit a CFR.

3.4.1 Hydraulic filters and strainers. Make a check of differential pressure indicators on the filters and strainers for clogged conditions. When the discharge filter differential pressure gauge reads in excess of 50 psig, clean the filtering element and recheck. When the suction filter telltale indicator enters the red zone, clean the element and recheck. Both filters allow changeover to alternate filtering elements without interrupting system operation.

3.4.2 Hydraulic oil temperature. Check hydraulic oil temperature range during operation of the CPP system; should be between 105°F and 135°F. This reading is taken from the thermometer at the inlet side of the oil cooler.

3.4.3 Oil Sump Tank. Check and record sump tank level.

3.4.4 Air in the system. Check sight gauge on head tank for indication of air. Oil should be clear. IF there is air in the system, oil will be clouded and frothy.

3.4.5 Actuating Unit Seal. Check sight glass in connection piping from the actuating unit. Ensure a small oil flow through the unit housing seal to relieve the pressure on the oil retainer ring. High oil flow indicates the pressure on the retainer ring is too high.

3.4.6. Sump Tank Oil Sample. Extract one pint of oil from each CPP return line. Test samples for water and other impurities.

3.4.7. Pitch Change Rate. Measure and record time for blades to pitch from full ahead to full astern with two CPP hydraulic pumps on. Time should be approximately 20 seconds or less.

3.4.8. Pitch drift. Set pitch to Full ahead. Once pitch is met, ensure pitch does not drift astern.

3.5 Control console groom. The Contractor must plan for and allow ship's force up to 2 days to conduct a CPP control console system groom prior to placing the vessel back in the water.

3.6 Sea trial. The Contractor must conduct a four-hour sea trial to test the CPP system with the hub operating in all pitch positions. Submit a CFR.

4. NOTES

4.1 Coast Guard Inspector responsibilities. The Coast Guard Inspector will be responsible for the following:

4.1.1 Visually verify the presence of protective coverings each and every time the hydraulic system is opened and exposed to potential contamination. The Coast Guard Inspector will initial and date as verified the CFR provided by the Contractor, detailing protective measures taken.

4.1.2 Visually verify tank cleanliness prior to closure.

4.1.3 Visually verify cleanliness of all hoses and containers used for removal and installation of fluids.

4.1.4 Confirm all above verifications in writing on CFR provided by Contractor.

WORK ITEM 14: Controllable Pitch Propeller (CPP) Hubs, Remove, Inspect and Reinstall

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to remove, inspect and reinstall both controllable pitch propeller hub assemblies.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
Y	**Hub Assembly (R/H)	NSN: 2010-01-091-5056	1 ea.	90,219.50
Y	**Hub Assembly (L/H)	NSN: 2010-01-092-0440	1 ea.	87,439.00
N	Hub Installation Kit	NSN: 2010-01-466-4844	2 ea.	9,500.00
Y	**Port Propeller Blades (R/H)	NSN: 2010-01-134-7238	1 se.	33,090.26
Y	Starboard Propeller Blades (L/H)	NSN: 2010-01-134-0378	1 se.	33,090.26
N	**Propeller Blade Bolts	NSN: 5306-01-225-2920	48 ea.	1,900.02

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

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 627 WMEC 243-002, Rev C, Arrgt & Dets of Piping & Hydraulics

Coast Guard Drawing 627 WMEC 243-010, Rev-, CPP Hydraulic Storage Tank & Piping Arrangement

Coast Guard Drawing 627 WMEC 245-001, Rev-, Hub Assy (LH)

Coast Guard Drawing 627 WMEC 245-002, Rev-, Hub Assy (RH)

Coast Guard Drawing 627 WMEC 245-003, Rev-, Control Plate Assy (LH)

Coast Guard Drawing 627 WMEC 245-004, Rev-, Control Plate Assy (RH)

Coast Guard Drawing 627 WMEC 245-008, Rev-, CPP Hydraulic System Schematic

Coast Guard Drawing 627 WMEC 245-009, Rev A, Pitch Limit Bracket

Coast Guard Drawing 627 WMEC 245-010, Rev-, Pitch Stop Installation

Coast Guard Drawing 627 WMEC 245-021, Rev A, CPP Hub Modification Details

Coast Guard Drawing 627 WMEC 245-022, Rev-, Pitch Limit Bracket

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 0701, SWBS 245, Section A, Feb 2019, Controllable Pitch Propeller

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2020, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 5000 (SFLC Std Spec 5000), 2020, Auxiliary Machine Systems

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General. The Contractor must accomplish all work specified herein under the supervision of the Tech Rep, using the Coast Guard drawings referenced in Section 2 (References) and TP 0701.

3.1.1 CIR.

None.

3.1.2 Tech Rep. The Contractor must provide the services an OEM authorized/ licensed Tech Rep for the Bird Johnson/Kamewa CPP systems, 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 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 coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor must remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.3.1 Protective measures, hydraulic system(s). Maintain existing hydraulic system cleanliness and take all necessary precautions to prevent the introduction of contaminants into the hydraulic system. Immediately after disconnecting or removing components from the hydraulic system, seal all openings to the rest of the system using caps for externally threaded connection points, bolt-on blanks, or taped-on discs/covers made of durable plastic or sheet-metal that is no less than 1/16-inch thick.

NOTE

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

3.1.4 Interferences. The Contractor 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:

- Blades
- Shafting
- Rudders
- CPP tubing

NOTE

Initial operational test may be conducted in conjunction with initial operational test in Work Item "Controllable Pitch Propeller (CPP) System, Inspect and Service".

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.

- After drydocking the vessel, and under direction from Tech Rep, cycle CPP hub and observe hub for any external hydraulic fluid leakage.

3.3 Propeller blades. The Contractor must accomplish the following for the propeller blades:

3.3.1 Removal. Remove the propeller blades from CPP hub assemblies. Before blade removal, ensure that the propeller shaft is restrained from turning.

NOTE

Propeller blade inspections are accomplished in Work Item "Controllable Pitch Propellers, Clean and Inspect".

3.3.2 Cleaning and inspection. Clean and inspect the hub assembly and associated components free of all surface contaminants, and conduct the following. Submit a CFR.

3.3.2.1 Perform non-destructive testing of all blade bolts, blade bolt holes, dowel pins, and hubs, in accordance with SFLC Std Spec 0740, Appendix C. Submit a CFR.

3.3.3 Blade reassembly/renewals. After all components have been inspected and allowable dimensional clearances have been verified, reassemble the blades. Renew all blade seals, O-rings, springs (if applicable per Tech Rep) and fasteners. Perform a pressure test and submit CFR. Renew all parts contained in the Reinstallation Kit (see Paragraph 4.1).

3.2.4 Starboard Propeller Repair. The Contractor must repair/replace the damage to the starboard propeller.

3.4 Propeller hubs. The Contractor must accomplish the following for the propeller hubs:

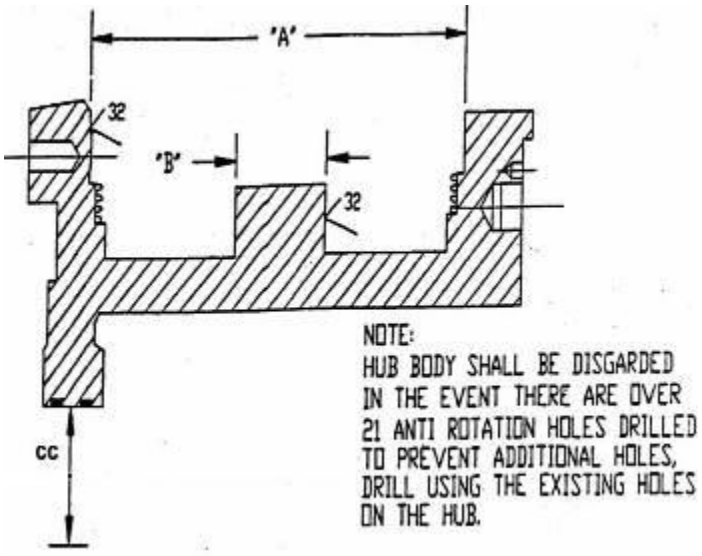
3.4.1 Hub removal. Using TP 0701 as guidance, remove each hub assembly to a suitable storage facility. Clean and visually inspect all disassembled components for any defects. Submit a CFR.

3.4.2 Hub inspection. Using TP 0701 as guidance, and at the direction of the Tech Rep, inspect the hub as follows. Submit a CIR.

3.4.2.1 Inspect blade bearing surfaces for nicks and scratches.

3.4.2.2 Inspect all wear components to verify that dimensions and clearances are within allowable wear limits. Submit the following measurements. The below measurements must not be construed as the only measurements that need to be taken. Tech Rep direction must be followed. Submit a CFR.

3.4.2.2.1 Measure and record (or obtain from Tech Rep inspection reports) Propeller Hub dimensions shown in Figure 1 to nearest 0.001" (2 places, 90 degrees apart).

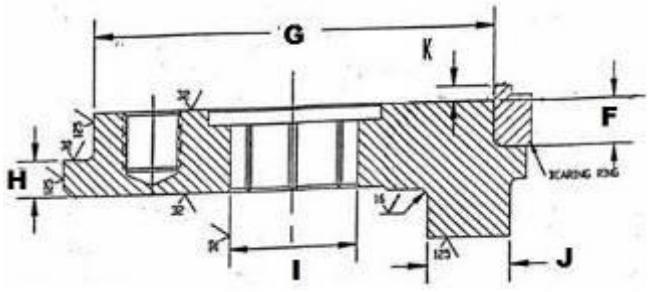


POSITION	MEASURED (2 places, 90 degrees apart)
"B" Blade 1	
"B" Blade 2	
"B" Blade 3	

"B" Blade 4	

FIGURE 1: HUB DIMENSIONS

3.4.2.2.2 For each Propeller Blade, measure and record Blade Trunnion dimensions shown in Figure 2 (or obtain from Tech Rep inspection reports), to nearest 0.001" (2 places, 90 degrees apart).



POSITION	MEASURED (2 places, 90 degrees apart)
"I" Blade 1	
"I" Blade 2	
"I" Blade 3	
"I" Blade 4	

FIGURE 2: BLADE TRUNNION DIMENSIONS

3.4.3 Hub renewal change request authorization. If a Change Request has been authorized and released based on inspection results, the Contractor must renew designated hub as follows:

3.4.3.1 Old hub packaging and return.

3.4.3.1.1 Reuse the steel shipping blanks (provided with the new hub) onto the blade ports of the old hub, with seals.

3.4.3.1.2 Connect the hub oil head tank to the hub, and top off the head tank with suitable CPP hydraulic oil. Check and take corrective action for any oil leaks.

3.4.3.1.3 Reuse the shipping crate (provided with the new hub) for packaging the old hub.

3.4.3.1.4 Turn the packaged hub over to the Coast Guard Property Administrator (PA) as an MTI item.

3.4.3.2 New hub preparation.

3.4.3.2.1 Transport the hub to the Contractor's repair facility.

3.4.3.2.2 Open the shipping crate, ensuring the crate does not sustain any damage.

3.4.3.2.3 Disconnect the hub oil head tank from the hub, while in the crate.

3.4.3.2.4 Remove the hub from the crate; drain and dispose of all existing hydraulic oil from the hub, in accordance with all applicable Federal, state, and local regulations.

3.4.3.2.5 Perform a visual inspection of the hub, and submit a written condition found report to the COR within 24 hours after completion of the inspection.

3.4.4 Hub installation. Install each hub assembly, using Government-furnished reinstallation kit.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.5 Government's right for changing out additional components. The Contractor must be aware that the Government reserves the right to furnish new CPP Hub Assembly components for installation in place of the existing. If the Government exercises this right, the Contractor must turn over the removed components to the Coast Guard PA as an MTI item.

4. NOTES

4.1 Reinstallation kit contents. Each installation kit contains the following parts:

ITEM #	QTY	PN	DESCRIPTION
1	48	O-2-1-16	O-Ring Blade Bolt
2	1	O-7-1-23	O-Ring, Sheath
3	1	O-3-2-12	O-Ring, Hub To Tail Shaft
4	1	O-12-1-5	O-Ring, Sheath

5	24	O-2-1-14	O-Ring, Hub Body Bolt
6	4	O-7-1-13	O-Ring, Blade Dynamic Seal
7	24	O-4-3-24	Seal, Stat-O Sheath
8	24	K-8-1-5	Scr, Cap Scr Sheath
9	1	K-5-2-23	Sscr, Skt Kcp Safety Valve
10	4	K-5-2-7	Sscr, Skt Cup Valve Rod
11	1	B066SA04010	Safety Valve Assy, Tailshaft Flange
12	24	J-1-3-1	Nylon Pellet Blade Bolt
13	12	J-1-2-29	Nylon Pellet Hub Body Bolt
14	2	O-2-1-25	O-Ring, Shaft Multi-Coupling Sleeve

4.2 Coast Guard Inspector responsibilities. The Coast Guard Inspector will be responsible for the following:

4.2.1 Visually verify the presence of protective coverings each and every time the hydraulic system is opened and exposed to potential contamination. The Coast Guard Inspector will initial and date as verified the CFR provided by the Contractor, detailing protective measures taken.

4.2.2 Visually verify tank cleanliness prior to closure.

4.2.3 Visually verify cleanliness of all hoses and containers used for removal and installation of fluids.

4.2.4 Confirm all above verifications in writing on CFR provided by Contractor.

WORK ITEM 15: Fathometer Transducer, General Maintenance

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean and inspect the fathometer transducer.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
N	*** Fathometer Transducer, Mustow Water, 50-200 kHz (Airmar Technology SS505) (without adapter plate)	NSN: 5845-01-470-2500	1 ea.	317.00

*****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 FL 6713-203, Rev A, CRP-V850 Transducer (SS505) Adapter Assembly

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2020, Welding and Allied Processes

OTHER REFERENCES

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-SP 11, Jul 2012, Power Tool Cleaning to Bare Metal

Raytheon V850 Color Echosounder, 2nd Edition, Mar 1993, Operation Manual

ODOM Echotrac DF3200 MKII, Rev 2, Technical Manual

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).

3.2 Transducer maintenance and inspection. The Contractor must accomplish the following tasks while the vessel is not waterborne, using ODOM Echotrac Technical Manual, Raytheon Echosounder Technical Manual and Coast Guard Drawing FL 6713-203 for disassembly and reassembly guidance:

3.2.1 Transducer removal. Disconnect and remove the existing fathometer transducer, along with the associated transducer hull adapter(s) and gasket(s), if so installed. Retain all mounting hardware for reinstallation. Remove the emergency cover plate setscrews from each transducer hull ring.

3.2.2 Cleaning.

3.2.2.1 Transducer. Clean the removed transducer. To remove marine growth from the face of a mustow water transducer, use a stiff brush, putty knife, or wet sand with fine sandpaper (#220 grade or finer) to restore a smooth surface to the transducer face.

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

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

3.2.4 Preservation. Prepare, prime and paint the hull opening and surrounding areas under the work item for underwater body preservation. Prepare, prime and paint the surfaces of the transducer hull ring adapter in accordance with the referenced drawing(s).

3.2.5 Reinstallation. After the last coat of paint has cured for at least 24 hours (total cure time depends upon specific coating system used and environmental conditions), reinstall hull ring adapter and transducer in accordance with the applicable drawing using new gaskets, mold release coating, and adhesive sealants.

3.2.5.1 Be aware that the Government, at no additional consideration, may elect to furnish new transducer for reinstallation instead of reusing the old.

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

3.2.5.3 Reconnect 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.

3.2.5.4 Protect transducer from damage with a metal cover plate bolted to the hull until just prior to undocking.

3.3 Undocking. The Contractor must, upon completion of all underwater body work and prior to undocking, remove all temporary coverings from the fathometer transducer affected by this work item. Install new Monel set screws in each hull ring, coating the threads with anti-seize compound. Recess the set screws ⅛ inch and cover with beeswax tallow.

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

3.4.1 Water hose test. Inspect and perform a water hose test of all affected boundaries in accordance with SFLC Std Spec 0740, Appendix C. Submit a CFR.

3.4.2 Leak repairs. Observe each transducer for leaks during the vessel re-floating process. Repair all leaks detected. Submit a CFR.

3.4.3 Operational test, post repairs. After completion of work, thoroughly test and prove the new transducer(s) to be satisfactory operating condition. Submit a CFR.

4. NOTES

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

WORK ITEM 16: Sea Valves and Waster Pieces, Overhaul Or Renew

1. SCOPE

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

1.1.1 Valves designated for overhaul.

TYPE	SIZE (INCHES)	DESCRIPTION	FRAME NO. VALVE NO.	PRESSURE (PSIG)
Gate	5.0	Port MDE Ovbd	2-133-1	30
Gate	5.0	Stbd MDE Ovbd	2-133-2	30
Gate	6.0	Port MDE S/W Suct	4-108-0	30
Gate	6.0	Stbd MDE S/W Suct	4-108-0	30
Gate	8.0	Doppler Speed Log	3-50-1	50
Gate	4.0	Fire pump suction	4-111-2	30
Gate	4.0	Fire pump suction	3-158-1	30
Gate	3.0	Sewage Ovbd	2-92-2	50
Ball/Check	4.0	Scupper	2-110-1	15
Ball/Check	4.0	Scupper	2-110-2	15
Ball/Check	3.0	Scupper	2-131-1	15
Ball/Check	3.0	Scupper	2-132-2	15
Ball/Check	3.0	Scupper	2-161-1	15
Ball/Check	3.0	Scupper	2-162-2	15

NOTE: Scupper valves may be long lead time items. Contractor must take this into consideration in planning work. Contractor must not overhaul any valve he elects to renew.

1.1.2 Valves designated for renewal.

TYPE	SIZE (INCHES)	DESCRIPTION	FRAME NO. VALVE NO.	PRESSURE (PSIG)
Gate	3.0	A/C S/W Suction	3-95-2	30
Gate	3.0	A/C S/W Suction	3-95-3 x2	30
Gate	2.0	OWS Ovbd	2-158-2	125
Gate	3.0	A/C Ovbd	2-112-2	50
Gate	4.0	#1 Fire Pump	2-124-2	175
Gate	3.0	Deck Drain	2-58-1	15
Gate	3.0	Deck Drain	2-58-2	15
Gate	3.0	Deck Drain	2-100-1	15
Gate	3.0	Deck Drain	2-100-2	15
Gate	3.0	Aux S/W Suction	3-95-2	30

Ball/Check	2.0	Scupper	2-110-4	15
Gate	2.0	Bilge Overboard	2-125-1	85
Gate	2.0	Stbd SSDG Ovbd	2-129-1	15
Gate	2.0	Port SSDG Ovbd	2-129-2	15
Gate	2.0	Stbd SSDG Suct	4-110-3	30
Gate	2.0	Port SSDG Suct	4-110-4	30
Gate	2.0	EDG Exhaust Cooling	4-191-1	30
Gate	1.5	Sea Chest Vent	4-110-1	30
Gate	1.5	Sea Chest Vent	4-110-2	30
Gate	2.0	Sea Chest Vent	3-95-1	30
Gate	2.0	Sea Chest Vent	3-95-6	30
Gate	2.0	Deicing	4-112-2	30
Gate	2.0	Deicing	4-111-1	30
Gate	0.75	Sea Chest Blowout	4-157-1	30
Gate	1.5	Sea Chest Blowout	4-110-1	30
Gate	1.5	Sea Chest Blowout	4-110-2	30
Gate	1.5	Sea Chest Blowout	3-95-1	30
Gate	2.0	Sea Chest Deicing	4-119-4	30
Gate	1.0	Reefer Suction	4-157-3	30
Gate	1.0	Reefer Suction	3-158-1	30
Gate	1.0	#2 Fire Pump	2-160-1	175
Gate	0.75	JP-5 Strip	2-162-2	15

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 627 WMEC 184-004, Rev E, Doppler Sea Valve Foundations

Coast Guard Drawing 627 WMEC 201-003, Rev B, Arr. of Aux Machinery Space

Coast Guard Drawing 627 WMEC 521-003, Rev H, Arr. of Firemain, Sprinkling and Washdown System 2nd Dk. & Below

Coast Guard Drawing 627 WMEC 535-002, Rev H, Arr. Stm., Feed & Condensate System Piping

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2020, Welding and Allied Processes

OTHER REFERENCES

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

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

Manufacturers Standardization Society of the Valve and Fittings Industry (MSS) SP-61, 2019 Edition, Pressure Testing Of Steel Valves

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

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

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

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

3.1.4 Interferences. The Contractor 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
- Insulation
- Pipe contents
- Associated system tanks and filters
- Valve flanges.

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

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

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

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

NOTE

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

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

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

NOTE

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

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

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

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

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

TABLE 1 - VALVE STANDARDS

VALVE TYPE	INDUSTRY STANDARD

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

3.7 Renewal.

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

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

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

- Remove and dispose of all blank flanges and associated gaskets.
- Reinstall/install all overhauled and new valves with new gaskets.
- Renew all missing or damaged valve label plates.
- Renew all bolting hardware.
- Prepare and coat all new and disturbed surfaces to match existing adjacent surfaces in accordance with SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs).

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

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

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

4. NOTES

This section is not applicable to this work item.

WORK ITEM 17: Sea Strainers, Duplex, All Sizes, Overhaul

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to overhaul the following Duplex Sea Strainers listed in Table 1:

TABLE 1: SEA STRAINERS

SERVICE	SIZE (INCHES)	QTY	MANUFACTURER
MDE	6	2	Kraissl
Fire Pump	4	2	Kraissl
SSDG	2	2	Kraissl
Shaft Cooling	1	2	Kraissl
A/C	3	2	Kraissl
Evaporator	3	1	Kraissl
Bilge	3	1	Kraissl
Reefer	1	2	Kraissl
OWS	1	1	Kraissl
Port Service Tank	2	2	Kraissl
Condensate Pump	1 1/2	1	Kraissl
EDG	1 1/2	1	Kraissl
Reduction Gear	4	2	Kraissl

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
N	6 inch Duplex Strainer	NSN: 4730-01-354-0482	2 ea.	23,400.00
N	4 inch Duplex Strainer	NSN: 4730-01-173-1413	4 ea.	8,800.00
N	2 inch Duplex Strainer	NSN: 4730-01-363-3085	4 ea.	5,300.00
N	1-1/2 inch Duplex Strainer	NSN: 4730-01-600-9049	4 ea.	3,200.00
N	3 inch Duplex Strainer	NSN: 4730-01-614-9064	6 ea.	6,000.00
N	1 inch Duplex Strainer	NSN: 4730-01-652-2067	6 ea.	2,300.00

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 627 WMEC 201-003, Rev B, Arr. of Aux Machinery Space

Coast Guard Drawing 627 WMEC 521-003, Rev H, Arr. of Firemain, Sprinkling and Washdown System 2nd Dk. & Below

Coast Guard Drawing 627 WMEC 535-002, Rev H, Arr. Stm., Feed & Condensate System Piping

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures

OTHER REFERENCES

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

Society of Automotive Engineers (SAE) Aerospace Material Specification (AMS) G-6032, Mar 2018, Grease, Plug Valve, Gasoline and Oil Resistant, NATO Code Number G-363, Metric

3. REQUIREMENTS

3.1 General.

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

- 3.2.2 Cleaning and inspection

3.1.2 Tech Rep.

Not applicable.

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

3.1.4 Interferences. The Contractor 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 and grating
- Piping and hoses.

3.2 Requirements. The Contractor must overhaul and test the designated strainers (see paragraph 1.1 (Intent)), shown on Coast Guard Drawing 627 WMEC 201-003, 627 WMEC 521-003, and 627 WMEC 535-002. The Contractor must accomplish the following for each sea strainer in accordance with manufacturer’s recommendations:

3.2.1 Remove. Secure, isolate, and remove to a suitable repair facility the designated sea strainers. Install blank flanges and gaskets over the piping system openings and secure with at least two bolts 180-degrees apart to provide a watertight seal. Ensure that the blank flanges are installed immediately after the sea

strainers are removed and remain in-place until strainers are reinstalled, removing only for sea valve visual inspection.

3.2.2 Clean and inspect. After removing the sea strainers, visually inspect in-place the exposed sea valves and piping/hoses located adjacent to the strainers. Completely disassemble and thoroughly clean all strainer components to bright metal without damage or deformation to any component. Visually inspect all disassembled components. Submit A CIR.

3.2.3 Reassemble. Reassemble each strainer. Renew the basket, cover and packing gland fasteners; as applicable. Lubricate the valves with plug valve grease conforming to AMS-G-6032.

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

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

CAUTION

Ensure that the drain valve for each chamber is closed.

3.3 Reinstall. After completion and acceptance by the Coast Guard Inspector; the Contractor must reinstall all overhauled, cleaned and new strainers to their original locations, as shown on Coast Guard Drawing 627 WMEC 201-003, 627 WMEC 521-003, and 627 WMEC 535-002. Renew all gaskets with material conforming to ASTM D1330 of the same size and configuration as those gaskets removed. Renew all hardware with nickel-copper alloy fasteners.

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

3.5 Government's right for change out. 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). If the Government exercises this right, the Contractor must dispose of the removed strainer(s) in accordance with all applicable Federal, state, and local regulations.

3.6 Contractor's option for strainer renewal. The Contractor may opt to renew strainers designated for overhaul if preferable for the Contractor, and is at no additional cost to the Government. New strainers must be equivalent (including identical material) to the strainer being renewed. Visually inspect the piping and mounting arrangements, and submit a CFR detailing any required modifications to accommodate the new strainer(s).

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

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

- Sea strainer surfaces
- All adjacent structural members.

3.8.1 Preparation method. The Contractor must prepare interior surfaces using system specified for "Bilges, Cofferdams and Forepeaks, Steel, Option II".

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

4. NOTES

4.1 Definition. The terms 'duplex' as used in this work item refer to the generic strainer type, not a manufacturer's brand name.56212_CMD_0221_210_270

WORK ITEM 18: Superstructure, Preserve, 100 Percent

1. SCOPE

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

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 627 WMEC 152-001, Rev G, Superstructure – Aircastle, 01 and 02 Deckhouse and Stack

Coast Guard Drawing 627 WMEC 601-001, Rev F; Outboard Profile

Coast Guard Drawing 627 WMEC 602-001, Rev B, Vessel's Name, Number, & Draft Marks

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, 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 coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor must remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

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

- Life lines
- Bulkheads
- Port lights
- Ventilation system components
- Deck surfaces
- Cableways and cable runs
- Mast and staffs
- Junction boxes
- Windows
- Stuffing tube gaskets
- JP-5 hoses
- Davit fall guides
- Deck fittings
- Bitt and chock foundations
- Helicopter safety nets
- Hoses.

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:

- 1MC speakers.
- Lights
- Electrical/electronic equipment.

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 Stack Surfaces. Prepare and coat exterior stack surfaces using the system specified for "Smoke Stack Casing, Steel, Exterior" in Appendix A (Cutter and Boat Exterior Painting Systems) of SFLC Std Spec 6310. Install all associated emblems supplied by the cutter over preserved areas.

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 In-process QC measures for critical-coated surfaces. Surfaces being preserved are considered "critical-coated surfaces."

3.6. Abrasive grit compliance conformance. If abrasive blasting is selected by the Contractor as the surface preparation method, the Contractor must ensure that the abrasive material used on all aluminum surfaces is an aluminum oxide, garnet or equivalent inert material conforming CID A-A-59316, Type I & IV.

4. NOTES

4.1 Definition of superstructure. For the purposes of this item, superstructure surfaces are defined as vertical and horizontal surfaces (excluding deck and mast surfaces) from the Main Deck Level up, which include, but are not limited to bulkheads, aircastles, bulwarks (inboard side), doors, underside of overhangs and overheads (historically, surfaces beneath the flight deck overhang are highly corroded), stack, ladders, metallic rails, stanchions, stand offs, brackets, piping, electrical conduit, gooseneck vents, stuffing tubes, structural tees, gun mount, angles, and gussets.

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

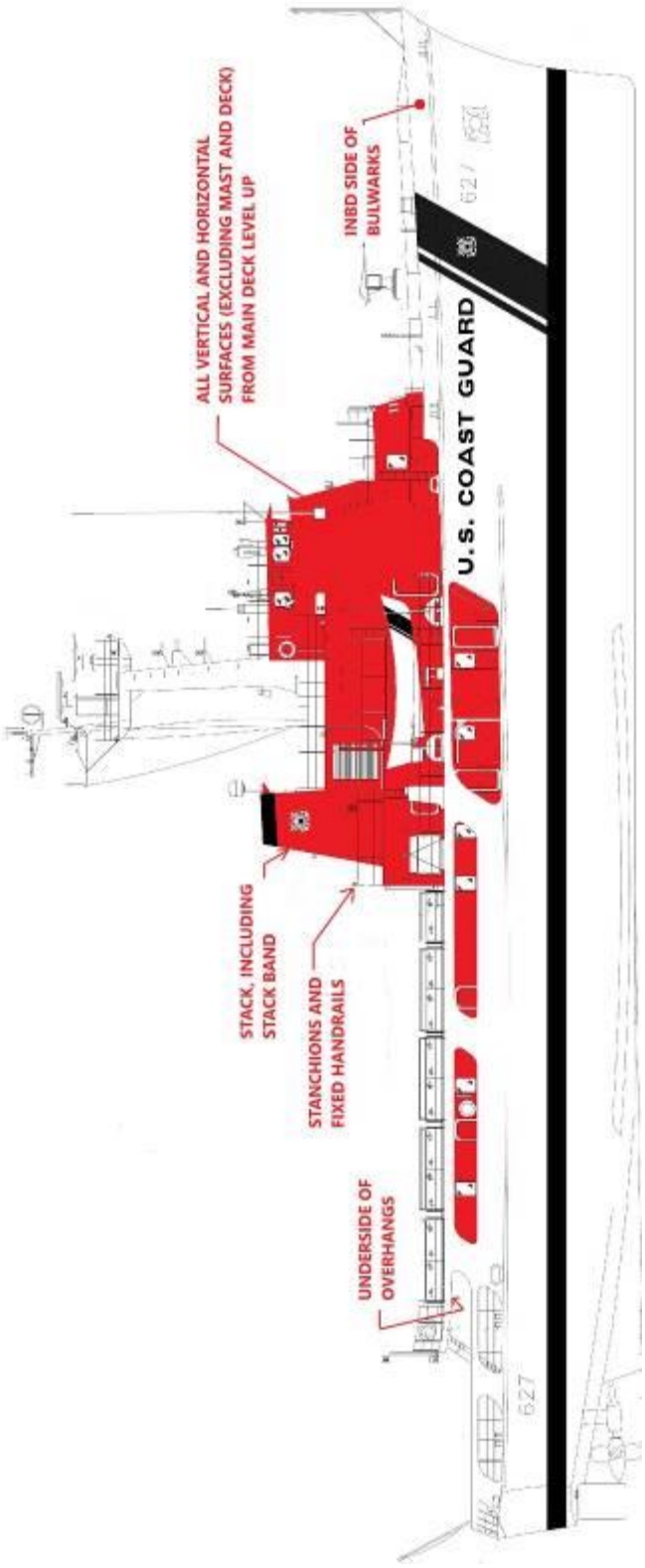


FIGURE 4.1 – SUPERSTRUCTURE SURFACES

WORK ITEM 19: Cathodic Protection, Zinc Anodes, Renew,

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew the following cathodic protection anodes:

QTY	TYPE/DESCRIPTION	SIZE (INCHES)	LOCATION
84	ZHC/23	23-3/4 x 3 x 1-1/8	Hull
2	ZHC/23 ZHC/23	15 x 1-1/2 x 1/2	Refrigerator sea chest
4	ZHC/23	12 x 6 x 1	Aux sea chest
4	ZHC/23	36 x 1-1/2 x 1/2	MDE sea chest

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 627 WMEC 633-001, Rev C, Hull Protectors

NAVSEA Drawing 803-921865, Rev R, Cathodic Protection Hull Zinc Anodes

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures

OTHER REFERENCES

Commercial Item Description (CID) A-A-59313, Sep 2019, Thread Compound; Anti-seize, Zinc Dust-Petrolatum

MIL-A-18001, Dec 2015, Anodes, Sacrificial Zinc Alloy

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

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

3.2 Renewal particulars. The Contractor must accomplish the following tasks. Use NAVSEA Drawing 803-921865 and Coast Guard Drawing 627 WMEC 633-001 as guidance.

3.2.1 Removals. The Contractor must remove and dispose of all designated anodes (see Table under paragraph 1.1 (Intent)). Accomplish the following additional tasks, as applicable:

3.2.1.1 Retain all anode mounting hardware (studs, nuts, and washers).

3.2.1.2 Grind flush all residual roughness with the hull or mounting surfaces.

3.2.1.3 Visually inspect all mounting hardware, including studs, washers, and nuts. Verify the quality of the zinc anode stud weldment to the hull by tapping perpendicular on the nutted stud with a rubber hammer and submit a CFR.

3.2.2 New installations. Furnish and install new anodes conforming to MIL-A-18001, in place of the removed.

- Drill holes in each mounting strap, to facilitate stud attachment.

NOTE

All bolt studs may not have the exact same spacing.

Anode arrangements are shown on the class applicable CG Drawing 618/627 WMEC 633-001.

All zinc alloy anodes must be a Mil Spec A18001K zinc alloy or equal.

Sizes shown above are estimated. The weight of the anode and mounting pattern should be attempted to be matched. Overall dimensions of commercial anodes could vary +/- ¼ inch depending on manufacturer's mold and final cast shape.

- Renew up to 100% of mounting hardware.
- Ensure two star type lockwashers are installed: one between the nut and anode strap, and one between the anode strap and ship structure, to ensure electrical continuity between the anode and the attachment point.

- Apply antisieze compound, conforming to (CID) A-A-59313, to studs before each anode installation.
- Chip, grind, or wire-brush smooth all straps, welds, and mounting studs, as applicable. In addition, ensure that all installed anode surfaces are free of paint.

3.3 Electrical resistance testing. The Contractor 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.

3.4 Touch-up preservation. The Contractor must prepare and coat the below listed surfaces to match existing adjacent surfaces in accordance with SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs.)

- External portions of studs, nuts, washers and straps, if applicable.
- Hull surfaces in way of removed anodes.

3.4.1 Wire brush all anodes within 24 hours before refloating the cutter. Take care not to disturb the U/W body coating system.

3.4.2 Do not paint new anodes.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 20: 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	3 ea.	50.00

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

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 627 WMEC 085-302, Rev G, Docking Plan

Coast Guard Drawing 618 WMEC 801-008, Rev -, Curves of Form

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 8634 (SFLC Std Spec 8634), 2020, Drydocking

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

3.1.4 Interferences. The Contractor 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 Drawing 627 WMEC 085-302 and 618 WMEC 801-008 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 FW): 1164
- VCG (FT ABL): 14.65
- LCG (FT AFT MS): 5.25
- LCF (FT AFT MS): 11.77
- Trim (FT by stern): 1.378 (includes 18” of design drag)
- MT1” (LT-FT/Inch): 148.95

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.

TABLE 1 – BLOCKING

	BLOCK HEIGHT ABOVE DOCKING FACILITY DECK							
POS. #	MIN.	RUDDER REMOVAL	PROPELLER REMOVAL	SHAFT REMOVAL	STEEL PLATE	SITUATION AWARENESS	FIN STABILIZERS	ADDITIONAL
1	48"	NA	17’ 7” minimum		NA	NA	NA	None

			clearance from stern for shaft removal.					

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.

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 be aware that fuel offloading is not mandatory to drydock the vessel.

4. NOTES

4.1 Arrival conditions. The COR will advise the Contractor of the actual tank and draft readings when the vessel arrives, and will discuss with the Contractor any liquid loading changes necessary.

WORK ITEM 21: 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), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 8635 (SFLC Std Spec 8635), 2020, 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 coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against

contamination during the performance of work. Upon completion of work, the Contractor must remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor 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: 8 male, 2 female. Duty section berthing must be provided for the entire duration of the availability.	Y
3.3.5	Electrical power (including all requirements in associated sub-paragraphs)	Y
3.3.6	Hull grounding straps (not applicable when cutter is waterborne)	Y
3.3.7	Compressed air (including all requirements in associated sub-paragraphs)	Y
3.3.8	Hazardous material/hazardous waste disposal (see Tables 2 and 3 below)	Y
3.3.9	Heavy lift equipment: 100 hours	Y
3.3.10	Water supply	
3.3.10.1	Potable water: 2,000 gallons per day, at 45 psig.	Y
3.3.10.2	Hot-circulating water	N
3.3.10.3	Cooling water	Y
3.3.10.4	Firemain system (including all requirements in associated sub-paragraphs)	Y
3.3.11	Steam (including all requirements in associated sub-paragraphs)	Y
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.	Y
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
50	600	3,000

TABLE 3 - HAZARDOUS WASTE DISPOSAL – SOLIDS

OILY FILTERS	OILY RAGS (LBS)	EMPTY 1-GAL CONTAINER*	EMPTY 5-GAL CONTAINER*	EMPTY 55-GAL CONTAINER*
30	50	0	0	0

***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 22: Oily Water Separator, Replace

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to remove and dispose of the existing Oily Water Separator (OWS) and to install the GEA Westfalia Oily Water Separator in the hold level of the Engineering Storeroom (Compartment 4-143-0-A), Passageway 2-140-0-L and the Engine Room (Compartment 4-108-0-E).

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
N	GEA Westfalia BilgeMaster-E 500 Clean Design	NSN: 4330-01-F17-5256 PN: WSE 5-01-037	1 ea.	76,640.00
N	Booster Pump Control Panel	NSN: 6110-01-F20-6126 PN: BCP11-0.5-D-L1-E2-POL-PRL-DSP	1 ea.	2,950.00
N	Boost Pump, Centrifugal	NSN: 4320-01-689-8635 PN: 96082495	1 ea	950.00

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 618 WMEC 123-007, Rev A, Structural Mods, GEA Westfalia OWS Install

Coast Guard Drawing 618 WMEC 320-011, Rev A, Electrical Power Sys Mods, GEA Westfalia OWS Install

Coast Guard Drawing 618 WMEC 320-001, Rev AY, 440V/115V One Line Diagram Block Wiring

Coast Guard Drawing 618 WMEC 529-011, Rev A, Piping Mods GEA Westfalia OWS Install

Coast Guard Drawing 618 WMEC 320-060, Rev -, OWS Booster Pump and Cooling Fan Install

Coast Guard Drawing 618 WMEC 533-001, Rev N, Diagram Hot And Cold Potable Water System

Coast Guard Drawing 618 WMEC 535-001, Rev K, Diagram Steam, Feed And Condensate System Piping

Coast Guard Drawing 618 WMEC 535-002, Rev K, Arr. Stm, Feed And Condensate System Piping

Coast Guard Drawing 618 WMEC 551-003, Rev E, Arrangement Compressed Air Piping Outside Machinery Space

Coast Guard Drawing 618 WMEC 635-002, Rev J, Sheathing And Insulation

Coast Guard Drawing 627 WMEC 123-007, Rev A, Structural Mods, GEA Westfalia OWS Install

Coast Guard Drawing 627 WMEC 320-007, Rev -, Electrical Power Sys Mods, GEA Westfalia OWS Install

Coast Guard Drawing 627 WMEC 320-001, Rev BA, 440V/115V One Line Diagram Block Wiring

Coast Guard Drawing 627 WMEC 529-012, Rev A, Piping Mods GEA Westfalia OWS Install

Coast Guard Drawing 627 WMEC 533-001, Rev J, Diagram Hot And Cold Potable Water System

Coast Guard Drawing 627 WMEC 535-001, Rev G, Diagram Steam, Feed And Condensate System Piping

Coast Guard Drawing 627 WMEC 535-002, Rev H, Arr. Stm, Feed And Condensate System Piping

Coast Guard Drawing 627 WMEC 551-003, Rev D, Arrangement Compressed Air Piping Outside Machinery Space

Coast Guard Drawing 627 WMEC 635-002, Rev B, Sheathing And Insulation

NAVSEA Drawing 804-5959214, Rev-, Piping Insulation - Installation Details

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2020, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 3041 (SFLC Std Spec 3041), 2020, Shipboard Electrical Cable Test

Surface Forces Logistics Center Standard Specification 3042 (SFLC Std Spec 3042), 2020, Shipboard Electrical Cable Removal, Relocation, Splice, Repair, and Installation

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures

OTHER REFERENCES

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

ASTM International (ASTM) F683, 2010, Standard Practice for Selection and Application of Thermal Insulation for Piping and Machinery

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

GEA Westfalia Separator Operating Data Sheet P1451546584-9913-PDS000 dated 2015-10-19

GEA Westfalia Separator Drawing P1451546584-9913-PID000A dated 2015-10-19

GEA Westfalia Separator Device list CP, P1451546584-9913-DVL000A Rev A dated 2015-10-19

GEA Westfalia Separator Drawing P1451546584-9913-LAY000B dated 2015-10-19

GEA Westfalia Separator Drawing 8106-2021-029 Rev. 02, dated 2016-01-20

GEA Westfalia Installation Instructions No. 2058-9601-020 Edition 0211

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

MIL-S-22698, Aug 2002; Steel Plate, Shapes and Bars, Weldable Ordinary Strength and Higher Strength: Structural

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 GEA Westfalia Oily Water Separator (see Paragraph 4.3) to accomplish the following on site:

- Provide Commissioning Services following Contractor installation of the new OWS. Commissioning Services must include a technical representative to provide technical assistance to the independent installing activity to ensure that the equipment is installed correctly and to observe and/or participate in the shipboard installation testing.
- Provided on-site training to Ship's Force for new OWS operation and maintenance. Training must include:
    - Hands on training
    - Operational theory
    - Review of maintenance documentation
    - Review of start-up and operational procedures
    - Safety
    - Settings and adjustments
    - Interpretation of displayed sensor data
    - Emergency procedures
    - Troubleshooting and fault isolation

3.1.2.1 Ensure the Tech Rep is an OEM Certified Representative for the system/equipment stated above and demonstrated on their résumé.

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).

3.1.4 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:

- Wire ways
- Structure

- Piping
- Deck Plating
- Ventilation
- Electrical Cables
- Cable Racks
- Storage racks
- Lighting
- Bulkhead and Pipe Insulation
- Oily Water Holding Tank, 4-143-0-F
- Water Tight Hatch 2-154-1
- Fuel Service tank.

3.1.5 Essential characteristics. A product equal to Lokring for the purposes of this work item, must have the following essential functional characteristics:

- Product must eliminate the need to gas free the lines and tanks being required for hot work.
- Product must have the ability to be installed in a system that is not or cannot be thoroughly drained and dried.
- Product must eliminate the need to flush the modified lines (as would be required for brazing or welding).
- Product must have passed ASTM F1387 testing.
- Product must have NAVSEA, Coast Guard and ABS approvals.
- Product must have NAVSEA approval of stainless steel (SS/CRES) and 90/10 & 70/30 Copper Nickel (CuNi) fittings in fire hazardous services and systems for operating pressures to 3,300 psi (224 bar), and temperatures to 500° F (260° C).

3.1.6 OEM Drawings. The Coast Guard upon request will provide the GEA Westfalia Separator drawings, and Operating and Maintenance Instructions.

3.2 Operations 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.

NOTE
An initial operational test of the OWS is not required.

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 Pipe hanger installation. The Contractor must furnish, fit, and install new pipe hangers in accordance with MSS SP-58.

3.5 OWS removal. The Contractor must remove and dispose of the existing oily water separator including but not limited to all cabling, valves, and piping as follows:

3.5.1 Power Cable removal. The Contractor must disconnect and dispose of circuit (3-108-2)-4P-K from the OWS up to and including breaker K in power panel (3-108-2) as shown on Coast Guard Drawing 618 WMEC 320-001 or 627 WMEC 320-001 as class applicable.

3.5.2 Auxiliary Sea Water Supply and Piping removal. The Contractor must remove and dispose of the ASW supply piping, including sea water pump, from the discharge side of the isolation valve (shown in Figure 1) on the starboard side of Engineering Storeroom to the OWS.

3.5.2.1 The Contractor must install a blank flange on the discharge side of the isolation valve, leaving the isolation valve in place.

3.5.2.2 The Contractor must remove and dispose of all brackets, the pressure reducing station and mounting plate, gauge lines, gauges, gauge mounts and all other equipment associated with this supply line.

3.5.2.3 The Contractor must renew any damaged or removed sheathing and insulation material as shown on Coast Guard Drawing 618 WMEC 635-002 or 627 WMEC 635-002, as class applicable. Visually inspect any newly exposed plating, and submit CFR.

3.5.3 OWS Suction Piping removal. The Contractor must remove and dispose of the OWS suction line in accordance with Coast Guard Drawing 618 WMEC 529-011 or 627 WMEC 529-012, as class applicable. The Contractor must seal opening left in Oily Water Holding Tank, 4-143-0-F by removal of original suction piping utilizing a welded insert of plate steel 10.2# meeting MIL-S-22698.

3.5.4 OWS Light Effluent Discharge Piping removal. The Contractor must remove and dispose of the light effluent discharge line from the OWS to the flange connection to the Dirty Oil Tank. Also remove and dispose of the JP-5 tank stripping pipe teed into the light effluent discharge line back to approximately frame 155-1/2.

3.5.5 OWS Dump to Tank Piping removal. The Contractor must remove and dispose of the OWS dump to tank piping in accordance with Coast Guard Drawing 618 WMEC 529-011 or 627 WMEC 529-012, as class applicable. The Contractor must seal opening left in Oily Water Holding Tank, 4-143-0-F by removal of original suction piping utilizing a welded insert of plate steel 10.2# meeting MIL-S-22698.

3.5.6 OWS Clean Water Effluent Piping and 3-Way Valve removal. The Contractor must remove and dispose of the clean water effluent (overboard discharge) piping (including 3-way valve) from the OWS to where the line ties into the 3” overboard discharge piping in accordance with Coast Guard Drawing 618 WMEC 529-011 or 627 WMEC 529-012, as class applicable.

3.5.7 OWS removal. The Contractor must remove and dispose of the Sigma OWS from its existing foundation. The Sigma OWS may need to be disassembled to be removed through the existing water tight door. The foundation will be modified later in this work item to accept the installation of the new GEA Westfalia OWS.

3.5.8 Potable Water Piping removal. The Contractor must remove and dispose of sufficient potable water piping to install a new branch connection as detailed in Coast Guard Drawing 618 WMEC 529-011 or 627 WMEC 529-012, as class applicable.

3.5.9 Ship Service Air Piping removal. The Contractor must remove and dispose of sufficient ship service air piping to install a new tee connection as detailed in Coast Guard Drawing 618 WMEC 529-011 or 627 WMEC 529-012, as class applicable.

3.6 OWS Foundation installation. The Contractor must furnish and install all material necessary to modify the former OWS foundation to accept the installation of the GEA Westfalia OWS as shown on Coast Guard Drawing 618 WMEC 123-007 or 627 WMEC 123-007, as class applicable.

3.7 Foundation preservation. Upon completion of the necessary modifications and prior to the installation of the OWS, the Contractor must prepare and coat all new and disturbed foundation surfaces, as applicable, to match existing adjacent surfaces in accordance with SFLC Standard Spec 6310, (Touch-ups and minor coating repairs.)

3.8 OWS disassembly. The Contractor must disassemble the government furnished OWS into components small enough to be carried into the vessel. The Contractor must utilize the following GEA provided information as guidance for disassembly:

- GEA Westfalia Separator Operating Data Sheet P1451546584-9913-PDS000A
- GEA Westfalia Separator Drawing P1451546584-9913-PID000A
- GEA Westfalia Separator Device list CP, P1451546584-9913-DVL000A
- GEA Westfalia Separator Drawing P1451546584-9913-LAY000B
- GEA Westfalia Separator Drawing 8106-2021-029
- GEA Westfalia Installation Instructions No. 2058-9601-020

3.8.1 Component tracking. The Contractor must keep a detailed log and track all pieces and components disassembled to ensure all items are properly accounted for upon reassembly. Submit a CFR upon completion of disassembly detailing all components removed for tracking upon reassembly.

3.8.2 Disassembly documentation. The Contractor must document the disassembly digitally (e.g. via digital photo or video) and submit a CFR with the digital documentation detailing the steps taken upon completion of the disassembly.

3.8.3 Parts and Consumables. The Contractor must furnish and utilize as required all necessary parts, gaskets and consumable materials to reassemble the GEA OWS unit onboard the vessel. Any items purchased for reassembly must be certified GEA Westfalia components or approved by a GEA Tech Rep.

3.9 OWS installation. The Contractor must reassemble the GEA Westfalia OWS in the location previously occupied by the Sigma OWS. Piping interface connections are shown in Figure 5 and Table 1 and are further detailed in GEA Drawing P1451546584-9913-PID000A and Coast Guard Drawing 618 WMEC 529-011 or 627 WMEC 529-012, as class applicable.

TABLE 1 OWS INLET AND OUTLET PIPING CONNECTIONS

VALVE NUMBER	TYPE OF FLUID	NOMENCLATURE	CONNECTS TO
08-7-001	Compressed Air	Compressed Air Inlet	From Ship Service Air System piping
09-7-002	Potable Water	Potable Water Inlet	From PW system isolation valve
10-7-001	Oily Water	Oily Water Inlet	From OWHT suction strainer
06-7-001	Steam	Hot Water Supply	From Steam piping
07-7-001	Condensate	Hot Water Return	To Condensate piping
11-7-001	Clean Water	Clean Water Discharge	To Overboard Discharge piping
12-7-002	Oily Water	Cold Oily Water Return to Tank	Combines with 95-7-001 and tees into discharge to OWHT
95-7-001	Oily Water	Oily Water Return to Tank from OCM	To OWHT
92-7-001	Sludge Discharge	Sludge Tank Discharge	Combines with 13-7-001 and tees into discharge to Dirty Oil Tank
13-7-001	Light Effluent Discharge	Dirty Oil Tank	Combines with 92-7-001 and tees into discharge to Dirty Oil Tank

3.9.1 Power Panel Breaker replace. The Contractor must remove and dispose of the existing OWS breaker located in power panel (3-108-2) and must furnish and install a new 20 AMP breaker in circuit "K" as shown on Coast Guard Drawings 618 WMEC 320-011 or 627 WMEC 320-007 and 618 WMEC 320-001 or 627 WMEC 320-001, as class applicable.

3.9.2 OWS Power Cable installation. The Contractor must furnish and install an LSTSGU-9 power cable for circuit (3-108-2)-4P-K from power panel 3-108-2 breaker K to the newly installed OWS as shown on Coast Guard Drawing 618 WMEC 320-011 or 627 WMEC 320-007, as class applicable.

3.9.3 OWS/TLI System Interconnect install. The Contractor must furnish and install all cable and materials necessary to integrate the OWS control cabinet with the engineering control center and central alarm panel as shown on Coast Guard Drawing 618 WMEC 320-011 or 627 WMEC 320-007, as class applicable.

3.9.4 Compressed Air Piping and Filter install. The Contractor must furnish and install all necessary components identified on Coast Guard Drawings 618 WMEC 551-003 or 627 WMEC 551-003 and 618 WMEC 529-011 or 627 WMEC 529-012, as class applicable, to cut the current compressed air line at the overhead, and install a new line through an isolation valve (located at approximately frame 156), filter/regulator and hose to the OWS supply valve 08-7-001.

3.9.5 Potable Water Supply Piping modification. The Contractor must furnish and install all fittings, piping, valves, hoses and other material necessary to connect the OWS potable water inlet valve 09-7-002 to the ships potable water system.

3.9.5.1 The Contractor must furnish a new isolation valve, check valve and backflow preventer and mount them in the overhead at approximately frame 145 as detailed in Coast Guard Drawing 618 WMEC 529-011 or 627 WMEC 529-012, as class applicable.

3.9.5.2 The Contractor must furnish and install a new booster pump and foundation and all fittings, piping, valves, hoses and other material necessary to connect the new booster pump to the OWS and existing potable water piping as detailed in Coast Guard Drawing 618 WMEC 529-011 or 627 WMEC 529-012, as class applicable.

3.9.5.3 The Contractor must furnish and install condenser and foundation and all fittings, piping, valves, hoses and other material necessary to connect the condenser to the new booster pump piping as detailed in Coast Guard Drawing 618 WMEC 529-011 or 627 WMEC 529-012, as class applicable.

3.9.5.4 The Contractor must install booster pump control panel as detailed in Coast Guard Drawing 618 WMEC 320-060.

3.9.5.5 The Contractor must furnish and install an LSTSGU-4 power cable for circuit (3-108-2)-4P-M(1) from power panel 3-108-2 breaker M to the newly install control panel as detailed in Coast Guard Drawing 618 WMEC 320-060.

3.9.5.6 The Contractor must furnish and install an LSDSGU-4 power cable for circuit (3-108-2)-1P-M from booster pump control panel to the newly installed condenser cooling fan as detailed in Coast Guard Drawing 618 WMEC 320-060.

3.9.5.7 The Contractor must furnish and install an LSTSGU-4 power cable for circuit (-108-2)-4P-M(2) from booster pump control panel to the newly installed booster pump as detailed in Coast Guard Drawing 618 WMEC 320-060.

3.9.5.8 The Contractor must furnish and install a hose as detailed in Coast Guard Drawing 618 WMEC 529-011 or 627 WMEC 529-012, as class applicable, from the isolation valve to the OWS potable water inlet valve 09-7-002 as shown on GEA Drawing P1451546584-9913-PID000A.

3.9.6 OWS Suction Piping and Suction Strainer install. The Contractor must furnish and install a new 1-inch simplex suction strainer, 1-inch suction piping, as detailed in Coast Guard Drawing 618 WMEC 529-011 or 627 WMEC 529-012, as class applicable.

3.9.6.1 The Contractor must mount the simplex strainer to the OWHT tank top at approximately frame 156 as shown on Coast Guard Drawing 618 WMEC 529-011 or 627 WMEC 529-012, as class applicable.

3.9.6.2 The Contractor must pipe the inlet of the strainer to the existing OWS suction piping in the OWHT as shown on Coast Guard Drawing 618 WMEC 529-011 or 627 WMEC 529-012, as class applicable.

3.9.6.3 The Contractor must pipe the outlet of the strainer to the OWS inlet valve 10-7-001. The Contractor must ensure there is sufficient room above the strainer for removal of the strainer baskets by maintenance personnel standing on the deck plating forward of the new OWS.

3.9.7 Clean Water Discharge Piping and 3-Way Valve install. The Contractor must furnish and install all piping, fittings, hoses and valves as shown on Coast Guard Drawing 618 WMEC 529-011 or 627 WMEC 529-012, as class applicable, to connect the OWS clean water discharge valve 11-7-001 as shown on GEA Drawing P1451546584-9913-PID000A to a newly installed 3-Way valve.

3.9.7.1 The Contractor must mount the 3-Way valve on the frame of the OWS control panel.

3.9.7.2 The Contractor must pipe the first discharge from the 3-way valve down to the OWHT.

3.9.7.3 The Contractor must pipe the second discharge to the existing overboard discharge piping at approximately frame 156 port side.

3.9.8 Cold Oily Water return to tank. The Contractor must furnish and install all material necessary as detailed in Coast Guard Drawing 618 WMEC 529-011 or 627 WMEC 529-012, as class applicable, to pipe the cold oily water from discharge valve 12-7-002 as shown on GEA Drawing P1451546584-9913-PID000A and tee into the return line from Oil Content Meter discharge valve 95-7-001 to the OWHT.

3.9.9 OCM return to tank. The Contractor must furnish and install all material necessary to pipe the bilge water return line from the Oil Content Meter discharge valve 95-7-001 as shown on GEA Drawing P1451546584-9913-PID000A to the OWHT.

3.9.10 OWS Light Effluent and Sludge Discharge to Dirty Oil Tank Piping install. The Contractor must furnish and install all piping, fittings, hoses, and hardware to combine and connect the OWS light effluent discharge valve 13-7-001 and sludge tank discharge 92-7-001 to the existing flange connection to the Dirty Oil Tank as shown on Coast Guard Drawing 618 WMEC 529-011 or 627 WMEC 529-012, as class applicable.. Also connect the existing JP-5 tank stripping piping to the light effluent discharge and sludge tank discharge piping as shown on Coast Guard Drawing 618 WMEC 529-011 or 627 WMEC 529-012, as class applicable.

3.9.11 Steam Heating install. The Contractor must furnish and install all piping, valves, and material necessary to connect the steam line to the GEA OWS inlet valve 06-7-001 as shown on GEA Drawing P1451546584-9913-PID000A and as shown in Coast Guard Drawings 618 WMEC 535-001 or 627 WMEC 535-001, 618 WMEC 535-002 or 627 WMEC 535-002 and 618 WMEC 529-011 or 627 WMEC 529-012, as class applicable.

3.9.11.1 Steam Supply line. The Contractor must tie into the steam line from the space directly above the Engineering Storeroom (Figure 2). The piping must go starboard approximately 22 inches before going down to the Engineering Storeroom between the existing ventilation piping and compressed air piping. (Figures 3 and 4).

3.9.11.2 Piping insulation installation. The Contractor must install new insulation materials over the exposed pipe surfaces at thicknesses appropriate to the application and temperature ranges specified in ASTM F683 Tables identified in Table 2 below and in accordance with details in NAVSEA Drawing 804-5959214:

- Associated pipe hangers
- Valves
- Fittings
- Flanges

CAUTION

Use glass cloth lagging only in high traffic areas where insulation is subject to damage.

TABLE 2 - PIPING SYSTEMS INSULATION INSTALLATION REFERENCES

PIPING SYSTEMS APPLICATION	TEMPERATURE RANGE	ASTM F683 TABLES
Interior gas, steam, hot water, and oil piping	125 to 1200 Deg. F	S1.1; S1.2; S1.4
Interior refrigerant, hot water, cold water, and chill water piping	-20 to +180 Deg. F	S1.1 and S1.5

3.9.11.2.1 Coat the newly installed insulation using the system specified for "Insulation Surfaces, Fiberglass Sheet/Closed Cell PVC Foam" in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems).

3.9.12 Condensate Return install. The Contractor must furnish and install all piping, valves, and material necessary to connect the condensate return line to the GEA OWS discharge valve 07-7-001 as shown on GEA Drawing P1451546584-9913-PID000A and return line to the condensate cooler as shown in Coast Guard Drawings 618 WMEC 535-001 or 627 WMEC 535-001, 618 WMEC 535-002 or 627 WMEC 535-002 and 618 WMEC 529-011 or 627 WMEC 529-012, as class applicable.

3.9.13 Sludge Tank Vent install. The Contractor must furnish and install all piping, valves, and material necessary to pipe the sludge tank vent line from the GEA OWS connection 91 as shown on GEA Drawing P1451546584-9913-PID000A to the OWHT as detailed in Coast Guard Drawing 619 WMEC 529-011 or 627 WMEC 529-012, as class applicable.

3.10 Pipe flushing. After all authorized work is complete, the Contractor must accomplish the following:

3.10.1 Flush all new and disturbed compressed air, potable water, oily water supply and discharge, and preheating loop piping with clean fresh water until all debris is removed but not longer than five minutes. Ensure flushing fluid is directed to move scale and foreign debris away from installed machinery to prevent possible damage upon operational testing. Submit a CFR documenting date and time of flushing process and level of pipe cleanliness.

3.10.1.1 When flushing the clean water discharge line from the OWS through the 3-way valve to the skin valve 3-147-1, the Contractor must install a blank flange on the inlet side of the overboard skin valve to provide a second means of protection from the sea while the flushing is ongoing.

WARNING

Ships force must verify that the locked cross connect valve to the dirty oil transfer pump is locked in the closed position when flushing the clean water discharge line. Ships force must verify that the overboard skin valve is closed.

3.10.2 Dispose of flushing fluid in accordance with all applicable Federal, state, and local regulations.

WARNING

Do not drain any fluids including fresh water, into any space, bilge, or exterior location.

3.11 Operational test, specific.

3.11.1 Overboard Configuration. The Contractor must configure the OWS clean effluent discharge during the remainder of testing so that any water discharging from the OWS runs through 3-way valve to the OWHT and NOT to the overboard discharge connection.

NOTE

Ships force will ensure there is sufficient oily water in the Oily Water Holding Tank 4-143-0-F to enable processing by the newly installed OWS.

Ships force will configure the suction and discharge valves to enable suction from the Oily Water Holding Tank, 4-143-0-F, and discharge to the Oily Water Holding Tank, 4-143-0-F. All other cross connects are to remain closed.

3.11.2 Operational test, post repairs. After completion of work, the Contractor must thoroughly test under the direction of the GEA Tech Rep and in the presence of the Coast Guard Inspector and demonstrate the OWS unit to be in satisfactory operating condition. Submit a CFR.

3.11.2.1 Oily Water Holding Tank Low Level Cut Out Test. Under the direction of the Coast Guard Inspector and in the presence of the GEA Tech Rep, trigger the OWHT TLI low level and verify the OWS shuts down. Submit a CFR.

3.11.2.2 OWS Operation. Under the direction of the GEA Tech Rep and in the presence of the Coast Guard Inspector and NSWC PHL representative, the Contractor must operate the OWS unit, with the discharge to the OWHT, on the existing contents of the Oily Water Holding Tank for a minimum of 60 minutes. The Contractor must demonstrate the following:

- Light Effluent Discharge / Clean Water Discharge. The Contractor must demonstrate the successful cleaning of the oily water and the successful discharge of the light effluent to the Dirty Oil Tank and the clean water to the OWHT via the 3-way valve.
- Sludge Tank / Light Effluent Discharge. The Contractor must demonstrate that the sludge tank can discharge to the Dirty Oil Tank at the same time as the OWS is discharging light effluent to the Dirty Oil Tank.
- Cold Oily Water Return to Tank. The Contractor must demonstrate that when the temperature falls below the required 185 degree minimum for separation, the OWS dumps the oily water back to tank.
- OCM >15 ppm Return to Tank. The Contractor must demonstrate while separation is occurring and while clean effluent is being discharged to the OWHT via the 3-way valve, that oil content higher than 15 ppm injected into the OCM will trigger the OCM to secure discharging through the 3-way valve and commence sending the OWS output back to the OWHT.

3.11.2.2.1 Readings. The Contractor must take a reading at a minimum of every 15 minutes, and at a tighter interval when necessary, of the following OWS parameters. The Contractor must furnish and install the necessary meters and gauges to capture the below information if required. Submit a CFR at the completion of testing detailing all tests conducted, all readings taken, the results of all tests and any recommendations. Record results on form provided at the end of this work item.

- OWS suction strainer inlet pressure
- OWS suction strainer outlet pressure
- Oily Water Temperature at the inlet to the OWS 10-7-001

- Oily Water Temperature at the discharge from the temperature valve 12-7-002
- Light Effluent Temperature at the discharge side of the OWS
- Oil Content Meter Reading
- Compressed Air Inlet Pressure
- Potable Water Inlet Pressure
- Status of the oily water discharge from the temperature control valve (discharge or not)
- Status of the oily water discharge from the oil content meter (discharge or not)
- Amperage draw of the OWS
- Ambient Air Temp at the OWS
- OWHT (4-143-0-F) Level

3.12 Thermal insulation renewal. The Contractor must renew any damaged or removed sheathing and insulation material as shown on Coast Guard Drawing 618 WMEC 635-002 or 627 WMEC 635-002, as class applicable.

3.13 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, (Touch-ups and minor coating repairs.)

3.14 Pipe labeling. The Contractor must accomplish the following:

3.14.1 Stencil the following onto the pipe surfaces:

- Name of the piping system service.
- Destination, where feasible.
- Direction of flow, indicated by an arrow three inches long pointing away from the lettering (for reversible flow, point an arrow away from each end of the lettering).

3.14.2 Ensure all lettering and arrow(s) are as follows:

- In general, black color except white for dark-colored piping.
- Applied in conspicuous locations and preferably near control valves.

3.15 Operational test, post repairs. After completion of work, the Contractor must witness an operational test (by Coast Guard personnel) of all other items or shipboard devices (besides the new OWS) that have been disturbed, used, repaired, altered, or installed, to prove that they are in satisfactory operating condition. Submit a CFR.

3.15.1 Hydrostatic test. After all authorized repairs, the Contractor must hydrostatically test all new and disturbed piping and components 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.

3.16 Tank disinfecting. After all other work involving the potable water system has been completed, the Contractor must disinfect and treat disturbed piping and components, as necessary, to meet or exceed the requirements of AWWA C652. Remove and dispose of all treated water in accordance with all Federal, state and local regulations.

4. NOTES

4.1 Tank content removal. The Ship's force will pump down the tanks to the maximum extent possible with the installed pumping system.

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

4.3 Tech rep info. The following is provided as a potential source for GEA Westfalia Tech Rep services:

GEA Mechanical Equipment US, Inc.
Dennis W. Grice Sr.
Service Advisor
Phone: +1-863-603-8912
Cell: +1-863-206-6184
Dennis.Grice@gea.com

NOTE
Actual vessel conditions may vary from what is depicted below for CGC DEPENDABLE.



FIGURE 1 ASW SUPPLY PIPING (BLANK AT VALVE)



FIGURE 2 STEAM LINE (ABOVE AFFF LINE) SOURCE FOR ENGINEERING STOREROOM SPACE BELOW. LOOKING AFT, BRANCH TO STARBOARD

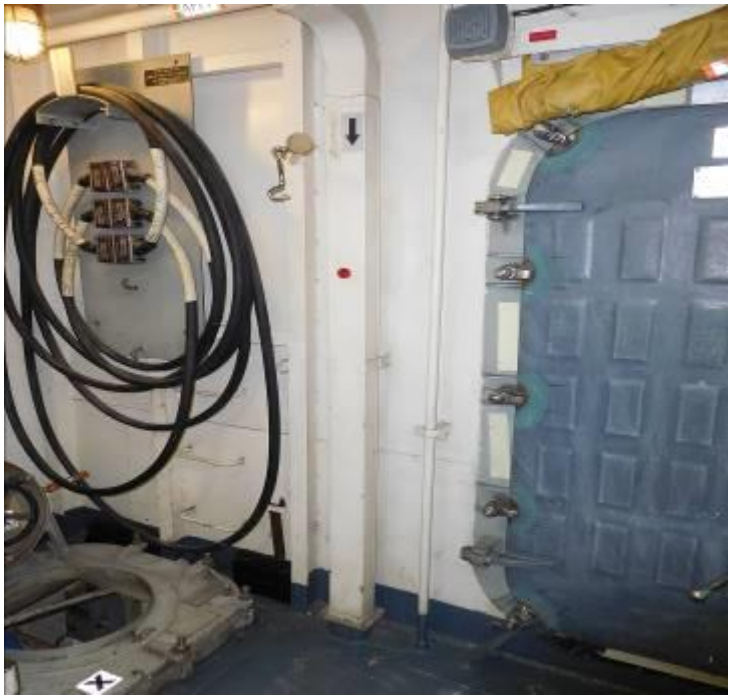


FIGURE 3 NEW STEAM PIPING LOCATION BETWEEN VENT PIPING AND COMPRESSED AIR PIPING



FIGURE 4 OWS SPACE (AFT PORT) SHOWING COMPRESSED AIR AND LOCATION OF STEAM PIPING INTO THE SPACE

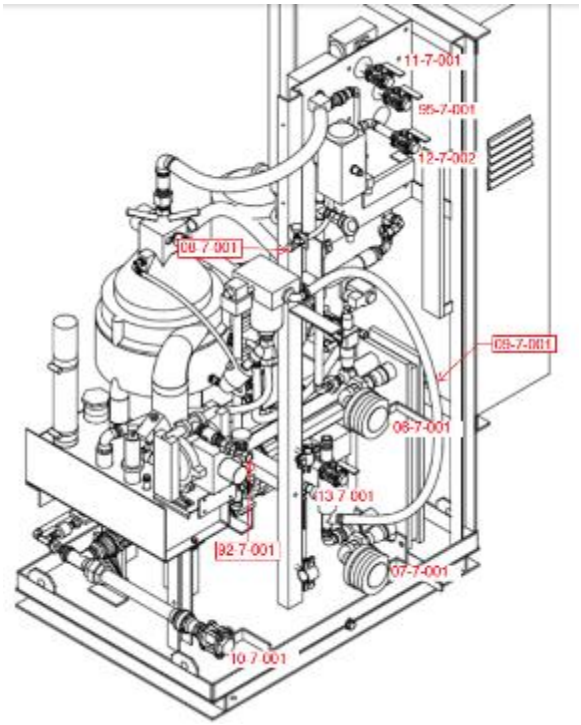


FIGURE 5 OWS ISOMETRIC WITH INLET VALVE NUMBERING PER GEA P&ID DRAWING

READING	+15 MINUTES	+30 MINUTES	+45 MINUTES	+60 MINUTES
OWS suction strainer inlet pressure				
OWS suction strainer outlet pressure				
Oily Water Temperature at the inlet to the OWS 10-7-001				
Oily Water Temperature at the discharge from the temperature valve 12-7-002				
Light Effluent Temperature at the discharge side of the OWS				
Oil Content Meter Reading				
Compressed Air Inlet Pressure				
Potable Water Inlet Pressure				
Status of the oily water discharge from the temperature control valve (discharge or not)				
Status of the oily water discharge from the oil content meter (discharge or not)				
Amperage draw of the OWS				
Ambient Air Temp at the OWS				
OWHT (4-143-0-F) Level				

WORK ITEM 23: Deep Water Sounder, Remove

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to remove the ODOM DF3200 ECHOTRAC-MKIICG Deep Water Sounder in its entirety without replacement.

1.2 Government-furnished property.

None

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 618 WMEC 163-003, Rev D, Transducer Sea Chests Structural Arrangements & Details

Coast Guard Drawing 627 WMEC 163-003, Rev C, Transducer Sea Chest Struct. Arrg'ts & Details

Coast Guard Drawing 618 WMEC 320-002, Rev AG, Power Supplies to Electronic Equipment (ACTIVE only)

Coast Guard Drawing 618 WMEC 320-003, Rev AV, Power Supplies to Electronic Equipment

Coast Guard Drawing 627 WMEC 320-002, Rev AW, Power Supplies to Electronic Equipment

Coast Guard Drawing 618 WMEC 401-004, Rev AY, Pilothouse Arrangement

Coast Guard Drawing 627 WMEC 401-004, Rev AR, Pilothouse Arrangement

Coast Guard Drawing 618 WMEC 410-001, Rev M, Seawatch Block Diagram & Installation Details

Coast Guard Drawing 618 WMEC 424-001, Rev AA, Underwater Navigation Sys Block Wiring Diagram

Coast Guard Drawing 618 WMEC 424-002, Rev W, Underwater Navigation Sys Wiring Data

Coast Guard Drawing 627 WMEC 424-001, Rev U, Underwater Navigation Sys Block Wiring Diagram

Coast Guard Drawing 627 WMEC 424-002, Rev V, Underwater Navigation Sys Wiring Data

Coast Guard Drawing 618 WMEC 424-007, Rev --, ODOM ECHOTRAC II Deep Water Depth Sounder System Removal

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication E-424-027, 2012, SOUNDER, DEEP WATER - MODEL DF3200

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2020, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 0850 (SFLC Std Spec 0850), 2020, General Requirements for Drawing Preparation

Surface Forces Logistics Center Standard Specification 3041 (SFLC Std Spec 3041), 2020, Shipboard Electrical Cable Test

Surface Forces Logistics Center Standard Specification 3042 (SFLC Std Spec 3042), 2020, Shipboard Electrical Cable Removal, Relocation, Splice, Repair, and Installation

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures

Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2020, Temporary Hull Accesses

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General. The Contractor must refer to the Coast Guard drawings and TP listed in Section 2 (References) for guidance in accomplishing this work item.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not required.

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

3.1.4 Interferences. The Contractor 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:

- Non-structural bulkheads
- Insulation.

3.1.5 Temporary access opening. Upon obtaining specific express written permission from the KO, the Contractor must cut temporary access openings as designated by the Coast Guard Inspector to facilitate ingress/egress of equipment as necessary. Perform all required work for opening the access and reinstallation of closure plates in accordance with SFLC Std Spec 8636, Temporary Hull Accesses.

3.1.6 Electrical requirements. The Contractor must accomplish all electrical work in accordance with SFLC Std Spec 3042 and test cables in accordance with SFLC Std Spec 3041.

3.2 Removals. The Contractor must turn over all removed components to the Coast Guard Property Administrator for disposition. If a Change Request is released and approved by the KO, the Contractor must package and ship specific removed components as designated by the Coast Guard Inspector. The Contractor must perform a visual inspection of exposed areas after interferences are removed. Submit CFR. The Contractor must accomplish the following using the class-applicable Coast Guard drawings listed in Section 2 (References) as guidance.

3.2.1 Remove ODOM ECHOTRAC DF3200 MKII Depth Recorder (PN: KMKIICG-28K), and ODOM ECHOTRAC DF3200 MKII Remote Display (PN: RDU-97-28K). Both are located in the Pilothouse, compartment 03-62-0-C. Refer to class-applicable Coast Guard Drawing 618/627 WMEC 424-001 for guidance.

3.2.1.1 Disconnect cable R-SD7 from the COM2 data jack (J6) on rear panel of the recorder.

3.2.1.2 Disconnect cable R-SD6 from the transducer jack (J3) on the rear panel of the recorder.

3.2.1.3 Remove depth recorder from bulkhead. Depth recorder weighs 48 pounds; provide adequate support while loosening and removing fasteners.

3.2.1.4 Disconnect cable R-SD7 from J1 on rear panel of the remote display. (A junction box may or may not exist in this cable; remove and discard junction box if existing.)

3.2.1.5 Disconnect cable R-SD8 from I/O #1 on rear panel of the remote display.

3.2.1.6 Remove remote display, with bracket, from the pilothouse navigation shelf.

3.2.1.7 Completely remove cable R-SD7, formerly connecting recorder and remote display (including junction box, if present).

3.2.1.8 Completely remove cable R-SD8, formerly connecting remote display and Seawatch system.

3.2.1.9 Completely remove cable (03-72-2)-1P-L, formerly connecting recorder and power panel (03-72-2) and mark circuit as SPARE.

3.2.2 Remove TRANSDUCER ASSEMBLY and JUNCTION BOX R-SD1. Both are located in IC/Gyro Room, compartment 3-72-0-C. Refer to class-applicable Coast Guard Drawing 618/627 WMEC 424-001 for guidance.

3.2.2.1 Disconnect cable R-SD6 from Junction Box R-SD1 and remove in its entirety.

3.2.2.2 Disconnect cable R-SD5 from Junction Box R-SD1 and remove in its entirety.

3.2.2.3 Disconnect cable R-SD5 from the transducer (PN: TR355/UQN).

3.2.2.4 Remove Junction Box R-SD1 from the forward bulkhead of IC/Gyro Room. Turn Junction Box over to the vessel for disposal or reutilization.

3.2.2.5 Remove transducer and gasket from hull ring (see Figure 1).

CAUTION

Transducer is heavy (170 pounds). Appropriate lifting aids will be required.



FIGURE 1: ODOM ECHOTRAC TRANSDUCER IN TRANSDUCER WELL (4-72-0-Q), ACCESSIBLE FROM IC/GYRO ROOM, (3-72-0-C).

3.2.2.6 Remove hull ring from hull.

3.3 Hull repairs. The Contractor must repair/restore affected plating as shown on class-applicable Coast Guard Drawing 618/627 WMEC 163-003.

3.3.1 Patch the existing transducer opening, and any other openings caused by the removal of equipment, with a permanent closure plate equivalent to the adjacent plating.

3.3.2 Seal any cable stuffing tubes, or transit ways which remain open due to electrical cable removals. Submit CFR.

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 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.

3.6 Redlined drawing deliverable(s). The Contractor must “red-line” the drawing(s) listed under Section 2 (References) to reflect the work or deviations specified in this work item in accordance SFLC Std Spec 0850.

3.6.1 Preliminary/draft submission. No later than 24 hours after completion of this work item, submit a draft copy of the "red-lined" drawing(s) to the COR for review and approval.

3.6.2 Final submission. No later than 10 calendar days after receiving Coast Guard comments or completion of the availability, whichever occurs first, incorporate all comments and deliver one set of the final red-lined drawing(s) to the COR.

4. NOTES

This section is not applicable to this work item.

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WORK ITEM 24: Doppler Speed Log, Replace

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to replace the Sperry SRD-500 Doppler Speed Log System with the Furuno DS-60 Doppler Speed Log System.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
N	Hull ring	PN: DS-661-1	1 ea.	350.00
N	DS-60 KITS(V) 4	PN: 01F185390	1 ea.	27,900.00

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 618 WMEC 184-007, Rev -, DS60 Doppler Sea Valve Foundation

Coast Guard Drawing 618 WMEC 320-001, Rev BA, 440 & 115 Power One Line Wiring Diagram and Details

Coast Guard Drawing 618 WMEC 401-001, Rev AM, I.C. & Gyro Room General Arrangement

Coast Guard Drawing 618 WMEC 401-002, Rev BJ, Arrangement of Electronics Equipment Radio Room & CIC

Coast Guard Drawing 618 WMEC 401-004, Rev AY, Pilothouse Arrangement

Coast Guard Drawing 618 WMEC 410-001, Rev M, Seawatch Block Diagram & Installation Details

Coast Guard Drawing 618 WMEC 424-001, Rev AA, Underwater Navigation Sys Block Wiring Diagram

Coast Guard Drawing 618 WMEC 424-005, Rev -, Doppler Speed Log System Replacement Ripout, Installation, Arrangement, Wiring, and Details

Coast Guard Drawing 618 WMEC 426-001, Rev V, Gyro Compass Block Wiring Diagram CKT "LC"

Coast Guard Drawing 618 WMEC 426-003, Rev F, MK27F Gyro Compass Installation Design Plan

Coast Guard Drawing 618 WMEC 426-005, Rev A, SAFRAN Bluenaute Gyrocompass Block and Elementary Wiring Diagram

Coast Guard Drawing 618 WMEC 451-009, Rev -, 1SG38-SINS2(V)43 Installation BWD and Details

Coast Guard Drawing 618 WMEC 601-003, Rev J, General Arrangement - Second and Third Decks

Coast Guard Drawing 618 WMEC 672-002, Rev D, Storeroom 3rd Deck

Coast Guard Drawing FL 6701-221, Rev U, SIRVSS & CVRS BWDs & Installation Details

NAVSEA Drawing 803-1385866, Rev E, Penetration, Bulkhead and Deck

NAVSEA Drawing 804-5773931, Rev A, Acoustic & Thermal Insulation for Compartments Installation Details

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3446, May 2013, Doppler Speed Log, Model SRD-500 Dual Axis

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2020, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 0850 (SFLC Std Spec 0850), 2020, General Requirements for Drawing Preparation

Surface Forces Logistics Center Standard Specification 3041 (SFLC Std Spec 3041), 2020, Shipboard Electrical Cable Test

Surface Forces Logistics Center Standard Specification 3042 (SFLC Std Spec 3042), 2020, Shipboard Electrical Cable Removal, Relocation, Splice, Repair, and Installation

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures

Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2020, Temporary Hull Accesses

OTHER REFERENCES

IME/72640-G1, FURUNO DS60 Doppler Speed Log Installation Manual

DS60 Doppler Speed Log Operator’s Manual

Actisense Data Multiplexer NDC-4 Full User Manual

3. REQUIREMENTS

3.1 General. The Contractor must refer to the Coast Guard drawings and TPs listed in Section 2 (References) for guidance in accomplishing this work item.

3.1.1 CIR.

None.

3.1.2 Tech Rep. The Contractor must provide the services of a Qualified Technical Representative who is familiar with the Furuno Doppler Speed Log System to accomplish the following on site:

- Advise on manufacturer's proprietary system information.
- Assist with installation and repair method(s).
- 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 coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor must remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor 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:

- Non-structural bulkheads
- Insulation.

3.1.5 Inspection. The Contractor must perform a visual inspection of exposed areas after interferences are removed. Submit CFR if damage or excessive corrosion is found.

3.1.6 Temporary access opening. Upon obtaining specific express written permission from the KO, the Contractor must cut temporary access openings as designated by the Coast Guard Inspector to facilitate ingress/egress of equipment as necessary. Perform all required work for opening the access and reinstallation of closure plates in accordance with SFLC Std Spec 8636, Temporary Hull Accesses.

3.1.7 Bulkhead and deck penetrations, furnish and installation. The Contractor must furnish and install all bulkhead and deck penetrations in accordance with procedures and notes shown on NAVSEA Drawing 803-1385866.

3.1.8 Acoustic insulation, installation. For all insulation removed as interference to work, the Contractor must install new, perforated, faced, thermal and sound absorptive, insulation material over plating surfaces and structural members as shown on NAVSEA Drawing 804-5773931. Coat the newly installed insulation using the system specified for “Insulation Surfaces, Fiberglass Sheet/Closed Cell PVC Foam” in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems).

3.1.9 Electrical requirements. The Contractor must accomplish all electrical work in accordance with SFLC Std Spec 3042 and test cables in accordance with SFLC Std Spec 3041.

3.2 Foundation and mounting flange renewal. The Contractor must crop and renew the Doppler Speed Log foundation, and mounting flange, using Coast Guard Drawing 618 WMEC 184-007 as reference.

3.3 Valve renewal. The Contractor must crop and renew the Doppler Speed Log valve, as shown on Coast Guard Drawing 618 WMEC 424-005, and as designated by the Coast Guard Inspector.

3.4 Hydrostatic test. After all authorized repairs, the Contractor must hydrostatically test all new and disturbed piping and components of the Doppler Speed Log 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 Electrical removals. The Contractor must turn over all removed components to the Coast Guard Property Administrator for disposition. If a Change Request is released and approved by the KO, the Contractor must package and ship specific removed components as designated by the Coast Guard Inspector.

The Contractor must accomplish the following using Coast Guard Drawings 618 WMEC 424-001, 618 WMEC 424-005, and TP-3446 as guidance:

3.5.1 Remove SRD-500 transducer and associated cable (C-Y1) from gate valve assembly in Storeroom 4-32-0-A and junction box C-Y1.

3.5.2 Remove junction box C-Y1 from bulkhead in Storeroom 4-32-0-A. Take care to preserve studs as they will be reused in a later step.

3.5.3 Remove cable C-Y1-1 in its entirety. Cable C-Y1-1 runs from junction box C-Y1 in Storeroom 4-32-0-A to the SRD-500 Elex Unit in IC/Gyro, 3-72-0-C.

3.5.4 Remove SRD-500 Elex Unit in IC/Gyro Room, 3-72-0-C.

3.5.5 Remove cable C-Y3 in its entirety. Cable C-Y3 runs from the Elex Unit in IC/Gyro, 3-72-0-C to the Master Display Unit in the Pilothouse, 03-62-0-C.

3.5.6 Remove Cable (3-72-1)-1P-C in its entirety. This cable runs from the Elex Unit in IC/Gyro, 3-72-0-C to power panel 3-72-1. The circuit breaker will be reused with the new system.

CAUTION

Do not remove Danger Tag at this time.

3.5.7 Remove SRD-500 Master Display Unit from the Pilothouse, 03-62-0-C. The foundation will be reused with the new system.

3.5.8 Remove Cable C-Y4 in its entirety. This cable runs from the Master Display Unit in the Pilothouse, 03-62-0-C to the Remote Display Unit in the Combat Information Center (CIC).

3.5.9 Remove Cable C-Y6 in its entirety. This cable runs from the Master Display Unit in the Pilothouse, 03-62-0-C to the Seawatch system NDIU.

3.5.10 Remove Cable (03-72-2)-1P-H in its entirety. This cable runs from the Master Display Unit in the Pilothouse, 03-62-0-C to power panel 03-72-2. The breaker will not be reused. Contractor must mark breaker “SPARE”.

3.5.11 Remove SRD-500 Remote Display Unit, along with its foundation, from CIC, 02-56-2-C.

3.5.12 Remove Cable (02-68-2)-1P-F in its entirety, which runs from the Remote Display Unit in CIC, 02-56-2-C to power panel 02-68-2. The breaker will not be reused. Contractor must mark breaker "SPARE".

3.5.13 Remove Cable C-Y7 in its entirety, which runs from the Remote Display Unit in CIC, 02-56-2-C to the Seawatch Terminal Server Interface Panel in CIC, 02-56-2-C.

3.5.14 Remove Cable C-Y101 in its entirety, which runs from the Master Display Unit to the #1 Steering Control Unit in the Pilothouse. 03-62-0-C .

3.5.15 Remove Cable C-Y102 in its entirety, which runs from the Master Display Unit in the Pilothouse to the #2 Steering Control Unit.

3.6 Structural removal and installation. The Contractor must accomplish the following:

3.6.1 Remove existing gate valve from the hull ring IAW TP-3446.

3.6.2 Remove existing fairing and hull ring IAW CG drawing 618 WMEC 184-007, keeping in mind that the new hull ring is only ½" larger than the existing one.

3.6.3 Install Hull ring IAW CG drawing 618 WMEC 184-007 and DS60 Doppler Speed Log Installation Manual.

3.6.4 Install epoxy fairing as shown in CG drawing 618 WMEC 184-007. Fairing must be installed to reduce, as much as possible, water turbulence around the transducer face.

3.6.5 Install DS661 Gate Valve Assembly on properly preserved hull ring (in accordance with SFLC Std Spec 6310) using Furuno DS60 Installation Manual as a guide.

3.7 Electrical installations. The Contractor must install all GFE listed in paragraph 1.2 above; provide and install all material listed in Table 1 below. The Contractor must accomplish the following using the Coast Guard Drawings listed as references in Section 2 for guidance, particularly 618 WMEC 424-005 and the Furuno DS60 Installation Manual.

TABLE 1 - CONTRACTOR FURNISHED MATERIAL

QTY	NSN/ACN	PART NUMBER	NOMENCLATURE	SOURCE
1 EA	5930-00-943-0260		Switch, toggle, 20A	
1 EA	5975-00-284-5827		Box, utility, 2x4	
1 EA	5975-00-501-4924		Plate, wall, electrical	
1 EA	5935-00-489-9999		Connector, receptacle, DB-25 male	
1 EA	5935-01-388-0078		Backshell, DB-25	
1 EA	5895-99-812-8087		Multiplexer, NMEA data, NDC-4	Actisense
1 SF	9330-01-100-0084		Phenolic Plate, Black/White	
1 KT	8040-00-061-8303		Adhesive, Epoxy-Patch	
1 EA	N/A	#4786	Plate, aluminum, 0.125", 12"x24"	Onlinemetals.com
1 EA	N/A	#4786	Plate, aluminum, 0.125", 36"x36"	Onlinemetals.com
1 EA	N/A	#4786	Plate, aluminum, 0.125", 24"x36"	Onlinemetals.com
90 FT	6145-01-202-6974	LS2SJ-11	Cable, electrical	MIL-C-24643/43B
190 FT	6145-01-224-8312	2XSOW-7	Cable, electrical	MIL-C-24640/16A

55 FT	6145-01-202-2795	LSDSGU-4	Cable, electrical	MIL-C-24643/15B
500 FT	6145-01-202-7769	LS2SJ-20	Cable, electrical	MIL-C-24643/43B
50 FT	6145-01-602-9132	LSC50S-4	Cable, electrical	Drawing Gen Note 12, 13
90 FT	6145-01-224-8311	2XSOW-3	Cable, electrical	MIL-C-24640/16A

Note: Cable lengths shown are estimates only. Unforeseen circumstances may require a different cable path, which may lengthen (or shorten) the required amount of cable. Therefore, actual cable lengths must be determined at installation.

3.7.1 Install the DS630 Transducer into the DS661 Gate Valve Assembly in Storeroom, 4-32-0-A. Route supplied transducer cable, C-Y1, along the path of the previously removed transducer cable. Transducer cable C-Y1 can be shortened to the appropriate length to reach DS620 Transceiver Unit.

3.7.2 Install the DS620 Transceiver Unit with adapter plate in place of removed junction box C-Y1 in Storeroom, 4-32-0-A. Connect cable C-Y1 to Transceiver Unit. Connect Transceiver to ground.

3.7.3 Install the DS610 Distribution Unit with adapter plate on the bulkhead in Passageway, 2-76-0-L. Connect a ground between the DS610 and the existing foundation supporting the Fire Fighting Hose Storage Station.

3.7.4 Install Actisense NDC-4 inside DS610 Distribution Unit.

3.7.5 Install the Safety Disconnect Switch on the adapter plate near the DS610 Distribution Unit on the bulkhead in Passageway, 2-76-0-L.

3.7.6 Install one DS600 Display Unit with bracket in place of removed Remote Display Unit in CIC, 02-56-2-C. Connect Display Unit to ground.

3.7.7 Install one DS600 Display Unit with bracket and adapter plate in place of removed Master Display Unit in Pilothouse, 03-62-0-C. Connect Display Unit to ground.

3.7.8 Install and connect cables C-Y2 and C-Y3 between the DS620 Transceiver Unit in Storeroom, 4-32-0-A and the DS610 Distribution Unit in Passageway, 2-76-0-L.

3.7.9 Install and connect cable C-Y4 between the DS610 Distribution Unit in Passageway, 2-76-0-L and the DS600 Main Display Unit in Pilothouse, 03-62-0-C.

3.7.10 Install and connect cable C-Y5 between the DS610 Distribution Unit in Passageway, 2-76-0-A and the DS600 Aux Display Unit in CIC, 02-56-2-C.

3.7.11 Install and connect cable C-Y6 between the DS610 Distribution Unit in Passageway, 2-76-0-L and the existing Seawatch System NDIU in CIC, 02-56-2-C.

3.7.12 Install and connect cable C-Y7 between the Actisense NDC-4 inside of the DS610 Distribution Unit in Passageway, 2-76-0-L and the existing Seawatch System Terminal Server Interface Panel in CIC, 02-56-2-C.

3.7.13 Install and connect cables C-Y11 between the DS610 Distribution Unit in Passageway, 2-76-0-L and the existing 1SG38-SINS2(V)43 System in Pilothouse, 03-62-0-C. If SINS2 is not installed yet, the Contractor must roll up the cable and label for SINS2 install.

3.7.14 Install and connect cable R-ND12-3 between the DS610 Distribution Unit in Passageway, 2-76-0-L and the existing Seawatch System DGPS Port expander in CIC, 02-56-2-C.

3.7.15 Install and connect cable (3-72-1)-1P-C(1) between the Safety Disconnect Switch in Passageway, 2-76-0-L and the existing power panel 3-72-1 in IC/Gyro, 3-72-0-C.

3.7.16 Install and connect cable (3-72-1)-1P-C(2) between the Safety Disconnect Switch and the DS610 Distribution unit, both in Passageway, 2-76-0-L.

3.7.17 Install and connect cable C-Y12 between the DS610 Distribution Unit in Passageway, 2-76-0-L and the existing Scandinavian Micro Systems Synchro to NMEA converter in IC/Gyro, 3-72-0-C.

3.7.18 Connect cables C-Y101A and C-Y102A to the DS610 Distribution Unit in Passageway, 2-76-0-L.

NOTE

If the cutter being installed has the new Steering Control System, these cables will be labelled C-Y101A and C-Y102A and will be connected to a FSL Serial NMEA VBW output. Repeat the following instructions for both SCU's. This will require the following instructions for both (Port and Starboard) Steering Systems:

a. Press menu button until able to select "Service Setup 2"
b. Enter access code 007
c. Press "Accept" for SCU configuration
d. Press "Accept" for Serial Interface
e. Use arrow keys to scroll to "Speed" and press "Accept"
f. Press "Accept" for Message Type
g. Use arrow keys to change from "PPM" to "VBW" message
h. Exit configuration menu repeatedly until the saving function executes
i. Check: At the DS60, manually change speeds and view the NP4000 to ensure the speed changes accordingly.

Cables C-Y101 and C-Y102 can be removed if installed.

3.7.19 Install and connect cable JP-1 between the Actisense NDC-4 and DS610 Distribution Unit TB-9 in Passageway, 2-76-0-L.

3.7.20 Install and connect cable JP-2 between the Actisense NDC-4 and DS610 Distribution Unit TB-10 in Passageway, 2-76-0-L

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).

WARNING

Do not paint transducer face!

3.9 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.

3.10 Operational test. Contractor must submit the attached Technical Services Check Sheet to the COR prior to conducting Sea Trials. In the presence of the Coast Guard Inspector and Tech Rep, the Contractor must thoroughly test and prove the new Doppler Speed Log system to be in satisfactory operating

condition. Ensure Cutter Crew is familiar with the DS60 Doppler Speed Log Operator's Manual and the Actisense Data Multiplexer NDC-4 Full User Manual. Submit a CFR.

3.11 Redlined drawing deliverable(s). The Contractor must "red-line" the drawing(s) listed under Section 2 (References) to reflect the work or deviations specified in this work item in accordance SFLC Std Spec 0850.

3.11.1 Preliminary/draft submission. No later than 24 hours after completion of this work item, submit a draft copy of the "red-lined" drawing(s) to the COR for review and approval.

3.11.2 Final submission. No later than 10 calendar days after receiving Coast Guard comments or completion of the availability, whichever occurs first, incorporate all comments and deliver one set of the final red-lined drawing(s) to the COR.

4. NOTES

This section is not applicable to this work item.

TECH SERVICES CHECK SHEET

Doppler Speed Log System.

1. Verify system intact and properly installed. Date_____

ShipSup___ Tech Rep____ Ships Force Rep___ COR _____

2. Commission system IAW operating instructions. Date_____

ShipSup___ Tech Rep____ Ships Force Rep___ COR _____

3. Conduct operator & maintenance training. Date_____

ShipSup___ Tech Rep____ Ships Force Rep___ COR _____

4. Inventory spare parts. Date_____

ShipSup___ Tech Rep____ Ships Force Rep___ COR _____

5. Signatures:

ShipSup: _____

_____

(print)

Tech Rep: _____

_____

(print)

SF Rep: _____

_____

(print)

COR: _____

_____

(print)

WORK ITEM 25: Hull Plating, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew designated hull plating and stringers in JP-5 Pump Room (Compartment 4-156-0-E).

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Bill of Materials 627 WMEC 007, Rev D, Structural Modifications

Coast Guard Drawing 627 WMEC 101-001, Rev -, Structural Details

Coast Guard Drawing 627 WMEC 111-001, Rev A, Shell Expansion Framing & C.V.K.

Coast Guard Drawing 627 WMEC 117-001, Rev B, Transverse Web Frames Fwd and Aft of Midship

Coast Guard Drawing 627 WMEC 117-003, Rev A, Midship and Type Sections

Coast Guard Drawing 627 WMEC 133-001, Rev B, Third Deck Plating & Supports

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2020, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General. The Contractor must refer to the drawings listed under Section 2 (References) as guidance in accomplishing this work item.

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

- 3.2 Ultrasonic thickness (UT) measurement.

3.1.2 Tech Rep.

Not applicable.

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

3.1.4 Interferences. The Contractor 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:

- Reefer raw water pumps
- JP-5 filter pods
- JP-5 piping
- JP-5 service tank 4-164-1-J (945 gallon capacity)

NOTE

Work Item for "Oily Water Separator, Replace" requires removal of the JP-5 service tank's contents.

3.2 Ultrasonic thickness (UT) measurement. The Contractor must take a total of 200 UT measurements in accordance with SFLC Std Spec 0740, Appendix C, in locations designated by the Coast Guard Inspector and using Coast Guard Drawings listed in Section 2 (References) as guidance. Submit a CIR.

3.3 Renewal. The Contractor must crop and renew up to 10 square feet of hull plating and stiffeners located in JP-5 Room (Compartment 4-156-0-E), as designated by the Coast Guard Inspector and as shown on Coast Guard Drawings listed in Section 2 (References).

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.)

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.5 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 Tank content restoration. The ship's forces will procure new fluids as needed and refill all tanks at the appropriate time.

WORK ITEM 26: Vent Fans and Motors, Non-Machinery Spaces, Overhaul

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to overhaul the fan and motor assemblies designated in Table 1 below.

TABLE 1 – FANS

LOCATION	FAN NUMBER	DESCRIPTION
01-99-0-Q	01-101-2	3,100/2,065 CFM, 3 hp, 1,200/1,800 RPM, 440VAC, 60 Hz Supply Fan
01-99-0-Q	01-103-2	15,800/10,535 CFM, 15 hp, 1,200/1,800 RPM, 440VAC, 60 Hz Supply Fan

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 627 WMEC 512-001, Rev D, Ventilation Equipment List.

Coast Guard Drawing 627 WMEC 512-004, Rev E, Fan Rooms 01-99-0-Q and 02-81-2-Q.

Coast Guard Drawing 627 WMEC 512-016, Rev B, Ventilation Diagram, 01 Dk & Abv.

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 3020 (SFLC Std Spec 3020), 2020, Overhaul AC Electrical Motors

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures

OTHER REFERENCES

ASTM International (ASTM) D3951, 2015, Standard Practice for Commercial Packaging

International Standard Organization (ISO) 2953, 2000, Mechanical Vibration, Balancing Machines, Description and Evaluation

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:

- Duct work.
- 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 each fan and motor assembly to demonstrate existing operational condition. Measure and record each fan's CFM output; compare readings against manufacturer's rated tolerances. Submit a CFR.

3.3 Removal. The Contractor must remove each designated fan and motor assembly from the vessel and package it for delivery to and from a suitable repair facility, in accordance with ASTM D3951.

3.4 Overhaul requirements. The Contractor must accomplish the following tasks for each ventilation fan and motor assembly, using Coast Guard Drawings 627 WMEC 512-001, 627 WMEC 512-004, and 627 WMEC 512-016 as guidance.

3.4.1 Fan cleaning. Clean the interior and exterior fan assembly surfaces, including housing, fan blade, and end bell surfaces by first using suction, then with a soapy water solution, and followed by a thorough rinsing of all metal surfaces. Ensure that there are no cleaning fluid residues or injurious effects on cleaned surfaces.

3.4.1.1 Prepare and coat the fan casing surfaces using the coating system specified for "Machinery, Operating Temperatures Under 200^{o}F, Unmachined Surfaces", in SFLC Std Spec 6310, Appendix B (Cutters and Boats Interior Painting Systems). Select finish/top coat color to match existing adjacent surfaces.

3.4.1.2 After surface preparation and before surface coating, visually inspect the fan assembly surfaces including bearing surfaces for cracks, areas of distortion, and deterioration. Submit a CFR.

3.4.2 Motor overhaul requirements. Clean, inspect, and test each motor in accordance with SFLC Std Spec 3020.

3.4.2.1 Preserve each motor casing using the coating system specified for "Machinery, Operating Temperatures Under 200◦F", in SFLC Std Spec 6310, Appendix B (Cutters and Boats Interior Painting Systems). Select finish/top coat color to match existing adjacent surfaces.

3.4.2.2 If a Change Request has been released and authorized, accomplish each of following additional tasks

- Varnish-treat the motor
- Rewind the rotor
- Rewind the stator

3.5 Fan and motor assembly restoration. The Contractor must reassemble each fan and motor assembly; couple the fan to the motor assembly using new stainless steel hardware.

3.5.1 Ensure angular misalignment of shaft couplings does not exceed a total indicator reading of 0.001 inch for each inch of radius of the coupling hub.

3.6 Dynamic balancing and documentation. The Contractor must dynamically balance the rotating elements along with associated equipment as a unit (i.e. fan blade and motor installed and in casing), in accordance with ISO 2953. Submit a written balance report.

3.7 Reinstallation. The Contractor must reinstall the fan/motor assembly into its associated fan space using new rubber vibration dampers, gaskets, resilient mounts, fan connectors and rings (as applicable) in the ductwork; restore all ductwork to original condition and configuration upon completion of dynamic balance. Reconnect electrical leads with nut and bolt lugs; wrap with electrical tape.

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 each fan and motor assembly to be in satisfactory operating condition at both high and low speeds, in the correct direction, with no excessive vibration. The Contractor must measure and record the overhauled vaneaxial fan's CFM output to verify it is within the manufacturer's rated tolerances. Submit a CFR.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 27: Fire Pumps, Replace

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to remove and dispose of the existing fire pumps and to install new fire pumps in the hold level of the Auxiliary Machinery Space (Compartment 4-156-0-E), and the Engine Room (Compartment 4-108-0-E).

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
N	Fire Pump	NSN: 4320-01-674-4640 PN: 71569102	2 ea.	21,750.00
N	Fire Pump Controller	NSN: 6110-01-F19-5820	2 ea.	4,492.00

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 627 WMEC 182-002, Rev G, Foundations In Engine Room

Coast Guard Drawing 627 WMEC 185-002, Rev F, FDN For Refrig'n Compressor Condens Unit & Misc. Fdns in Aux Machinery Space 4-156-0-E

Coast Guard Drawing 627 WMEC 521-001, Rev C, Diagram Fire Main, Sprinkling & Washdown

Coast Guard Drawing 627 WMEC 635-002, Rev B, Sheathing And Insulation

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 4035, Aug 2018, Fire Pump

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2020, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 3041 (SFLC Std Spec 3041), 2020, Shipboard Electrical Cable Test

Surface Forces Logistics Center Standard Specification 3042 (SFLC Std Spec 3042), 2020, Shipboard Electrical Cable Removal, Relocation, Splice, Repair, and Installation

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures

OTHER REFERENCES

ASTM International (ASTM) F1387, 2019, Standard Specification for Performance of Piping and Tubing Mechanically Attached Fittings

Manufacturers Standardization Society of the Valve and Fittings Industry (MSS), SP-58, 2018, Pipe Hangers and Supports – Materials, Design, Manufacture, Selection, Application and Installation

MIL-S-22698, Dec 2020; Steel Plate, Shapes and Bars, Weldable Ordinary Strength and Higher Strength: Structural

Flowserve 71569102, Feb 2002, User Instructions Manual

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).

3.1.4 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:

- Wire ways
- Structure
- Piping
- Deck Plating
- Ventilation
- Electrical Cables
- Cable Racks
- Storage racks
- Work Bench
- Bulkhead and Pipe Insulation
- Fuel Injector Drip Tank
- Fuel Injector Drip Piping

3.1.5 Essential characteristics. A product equal to Lokring for the purposes of this work item, must have the following essential functional characteristics:

- Product must eliminate the need to gas free the lines and tanks being required for hot work.

- Product must have the ability to be installed in a system that is not or cannot be thoroughly drained and dried.
- Product must eliminate the need to flush the modified lines (as would be required for brazing or welding).
- Product must have passed ASTM F1387 testing.
- Product must have NAVSEA, Coast Guard and ABS approvals.
- Product must have NAVSEA approval of stainless steel (SS/CRES) and 90/10 & 70/30 Copper Nickel (CuNi) fittings in fire hazardous services and systems for operating pressures to 3,300 psi (224 bar), and temperatures to 500° F (260° C).

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

3.3 Electrical requirements. The Contractor must accomplish all electrical work in accordance with SFLC Std Spec 3042, and test cables in accordance with SFLC Std Spec 3041. Existing wireways must be utilized for new cable runs as much as possible.

3.4 Pipe hangers. The Contractor must furnish, fit, and install new pipe hangers in accordance with MSS SP-58.

3.5 Fire pump removal. The Contractor must remove both installed fire pumps including but not limited to all cabling, valves, and piping as shown on Coast Guard Drawings 627 WMEC 182-002, 627 WMEC 185-002, 627 WMEC 521-001, as follows:

3.5.1 Power cable removal. The Contractor must disconnect and tie back all electrical wires from the fire pumps and controllers. Retain wire for later use.

3.5.2 Fire pump suction piping removal. The Contractor must remove and dispose of the suction piping for both fire pumps from the outlet of the sea water strainer flange to the fire pump suction flange.

3.5.3 Fire pump removal. The Contractor must remove both fire pump assemblies and dispose of as scrap.

3.6 Fire pump controller removal. The Contractor must remove and dispose of both fire pump controllers and dispose of as scrap. Retain fasteners and foundations for later use.

3.7 Engine room fire pump foundation modification. The Contractor must furnish and install all material necessary to modify the former Engine Room fire pump foundation to accept the installation of the new fire pump as shown on Coast Guard Drawings 627 WMEC 182-002 and 627 WMEC 521-001, as follows:

3.7.1 Remove and discard as scrap the top plate of the Engine Room Fire Pump Foundation.

3.7.2 Fabricate and install a new Engine Room Fire Pump foundation top plate as shown on Coast Guard Drawing 627 WMEC 182-002, in accordance with MIL-S-22698.

3.7.3 Fabricate and install reinforcing gussets under top plate overhang (2 places) as shown on Coast Guard Drawing 627 WMEC 182-002, in accordance with MIL-S-22698.

3.7.4 Ensure the top plate has a top surface flatness of .015 inch per foot across the diagonal corners of the top plate in accordance with Flow Serve User Instructions Manual, 71569102.

3.8 Fuel injector drain piping modification. The Contractor must furnish and install all material necessary to modify and reroute the fuel injector drain piping impacted by the new Engine Room fire pump foundation.

3.8.1 Re-route piping leading to and from the fuel injector drain pump as needed to not interfere with the new Engine Room fire pump foundation.

3.8.2 Ensure all new piping connections are located in an accessible location for future maintenance requirements.

3.9 Foundation preservation. Upon completion of the necessary modifications and prior to the installation of the fire pumps, the Contractor must prepare and coat all new and disturbed foundation surfaces, as applicable, to match existing adjacent surfaces in accordance with SFLC Standard Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs.)

3.10 Fire Pump installation. The Contractor must install the new fire pumps on the foundations previously occupied by the fire pumps. The Contractor must mount the new fire pumps on the foundations as shown on Coast Guard Drawings 627 WMEC 182-002 and 627 WMEC 185-002 in accordance with Flow Serve User Instructions Manual, 71569102.

3.10.1 Mount the Engine Room pump as far inboard as possible on the modified foundation so as to clear all pipes and wires above it.

3.10.2 Mount the Auxiliary Machinery Space Fire Pump centered on the existing foundation as shown on Coast Guard Drawing 627 WMEC 185-002.

3.10.2.1 Weld repair 4 (of 8) existing holes in way of new holes in the Auxiliary Machinery Space Fire Pump foundation.

3.10.3 Bore four (4) new 13/16 inch holes as required to match the new fire pump bases.

3.10.4 Provide and install all new hardware to mount the new pumps to the foundation. Mounting hardware must be 316 CRES ¾”-10 x 3 1/2“ long.

3.10.5 Install the new fire pump controllers on the foundations previously occupied by the old fire pump controllers. The Contractor must mount the new fire pump controllers on the foundations using mounting hardware retained in 3.6 above.

3.10.6 Route and connect electrical wires to new fire pump controllers and new fire pumps in accordance with the schematic located inside the fire pump controller.

3.10.7 Modify the existing discharge piping to connect the fire main piping to the new 2-inch fire pump discharge flange as detailed in Coast Guard Drawing 627 WMEC 521-001.

3.10.7.1 Modify the restricted orifices in the discharge by increasing the diameter of the hole from .199 inch to .289 inch.

3.10.8 Furnish and install a new 3-inch suction piping, from the sea water strainer to the fire pump suction flange as shown in Coast Guard Drawing 627 WMEC 521-001.

3.10.8.1 Re-route the new suction piping for the Engine Room fire pump along the bulkhead to permit locating the fire pump as far inboard as possible on the foundation.

WARNING

Do not drain any fluids including fresh water, into any space, bilge, or exterior location.

3.11 Pipe flushing. The Contractor must flush all new and disturbed piping with clean fresh water until all debris is removed but no longer than five minutes. Ensure flushing fluid is directed to move scale and foreign debris away from installed machinery to prevent possible damage upon operational testing. Submit a CFR documenting date and time of flushing process and level of pipe cleanliness.

3.11.1 Dispose of flushing fluid in accordance with all applicable Federal, state, and local regulations.

3.12 Alignment check. Prior to energizing the fire pump the Contractor must perform a final pump and motor alignment check in accordance with Flow Serve User Instructions Manual, 71569102. Submit CFR.

3.12.1 Upon final satisfactory pump and motor alignment check the Contractor must install the coupling, provided with the pump assembly, between the motor and pump in accordance with Flow Serve User Instructions Manual, 71569102.

3.13 Operational test, post repairs. After completion of work, the Contractor must thoroughly test both fire pumps in the presence of the Coast Guard Inspector and demonstrate each pump independently provides 125 PSI with two 1-1/2 inch fire hoses in simultaneous use outfitted with Coast Guard Vari-pattern 1-1/2” nozzles in straight stream setting. Pressure readings must be taken at the gauge nearest to the fire pump. Submit a CFR.

3.14 Thermal insulation renewal. The Contractor must renew any damaged or removed sheathing and insulation material as shown on Coast Guard Drawing 627 WMEC 635-002.

3.15 Touch-up preservation, general. The Contractor must prepare and coat all new and disturbed exterior and interior surfaces, as applicable, to match existing adjacent surfaces in accordance with SFLC Standard Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs.)

3.16 Pipe labeling. 0), 2020, 0), 2020, 0), 2020, The Contractor must accomplish the following:

3.16.1 Stencil the following onto the pipe surfaces:

- Name of the piping system service.
- Destination, where feasible.
- Direction of flow, indicated by an arrow three inches long pointing away from the lettering (for reversible flow, point an arrow away from each end of the lettering).

3.16.2 Ensure all lettering and arrow(s) are as follows:

- In general, black color except white for dark-colored piping.
- Applied in conspicuous locations and preferably near control valves.

3.17 Operational test, post repairs. After completion of work, the Contractor must witness an operational test (by Coast Guard personnel) of all other items or shipboard devices (besides the new fire pumps) that have been disturbed, used, repaired, altered, or installed, to prove that they are in satisfactory operating condition. Submit a CFR.

3.17.1 Hydrostatic test. After all authorized repairs, the 0), 2020, 0), 2020, 0), 2020, Contractor must hydrostatically test all new and disturbed piping and components in accordance with SFLC Std Spec 0740, Appendix C, Hydrostatic Test. Ensure zero leakage from or permanent deformation of pressure-containing parts by repairing all leaks, deformations, and discrepancies. Submit a CFR.

4. NOTES

4.1 OEM Drawings. The Coast Guard upon request will provide the Flow Serve drawings, and User Instructions Manual.

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S21_0001_63410_SRH_0421_630

WORK ITEM 28: Deck Covering, Interior, Wet and Dry, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew deck covering in the Galley (1-146-0-Q).

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 627 WMEC 131-001, Rev D, Second & Main Deck Plating & Supports

Coast Guard Drawing 627 WMEC 601-003, Rev E, General Arrangement – Second and Third Decks

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, Requirements for Preservation of Ship Structures

Surface Forces Logistics Center Standard Specification 6341 (SFLC Std Spec 6341), 2020, Install Interior Deck Covering Systems

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2020, 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, (Interferences). Known interferences include, but are not limited to the following:

- Galley equipment

3.2 Deck covering installation particulars. The Contractor must perform all tasks specified in SFLC Std Spec 6341 and herein, to install a new covering system in the location(s) specified in Table 1 below.

NOTES

1. The exposed deck surfaces are prepared and coated in accordance with SFLC Std Spec 6310. Refer to SFLC Std Spec 6341, Para 3.2.1.2 for additional information.

2. Ensure the final surface condition of the deck is made "slip resistant" in accordance with manufacturer's installation procedures. Refer to SFLC Std Spec 6341, Para A2.1.2.2.

TABLE 1 - DECKING SYSTEM

LOCATION	AREA (*SQFT)	DECK MTL (A/S**)	SYSTEM/ APPENDIX (SFLC STD SPEC 6341)	COVE BASE	SYSTEM COLOR	UNDERLAYMENT REQUIREMENT
Galley	100	S	Porcelain/Quarry tile, Grooved, 6x6 inch.	N	See paragraph 3.4 (Deck covering color)	Renew existing underlayment.

***Approximated.**
****A = Aluminum; S = Steel.**

3.3 Ultrasonic thickness (UT) measurement. The Contractor must take a total of 100 UT measurements of in locations designated by the Coast Guard Inspector, in accordance with SFLC Std Spec 0740, Appendix C. Use Coast Guard Drawings 627 WMEC 131-001 and 627 WMEC 601-003 as guidance. Submit a CFR.

3.4 Deck covering color. The Contractor must submit a deck covering color chart to Coast Guard Inspector, for the purpose of color selection.

4. NOTES

This section is not applicable to this work item.

S17_0005_56200_SRH_0621_630
S20_0005_56200_SRH_0621_630

WORK ITEM 29: Structural Repairs and Bearing Housing, Rudder Stocks, Inspect and Repair

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to inspect and repair the port and starboard stuffing boxes, renew the port and starboard packing gland, and preserve the port and starboard rudder trunks/bilge area.

NOTE

Accomplish this work item in conjunction with the work item for "Rudder Assemblies, Inspect and Repair" to coordinate interference removals, inspections, and renewals.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
Y	**210-B Rudder Stock w/Liner	NSN: 2040-01-344-8471	1 ea.	14,739.41

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

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 627 WMEC 117-002, Rev D, Aft Peak Framing Fr. 188-Stern

Coast Guard Drawing 627 WMEC 259-001, Rev D, Arrangement Exhaust Piping

Coast Guard Drawing 627 WMEC 562-001, Rev H, Arrg't & Details Rudder Stocks, Bearings, & Stuffing Box

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2020, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2020, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2020, 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 coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, the Contractor must remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor 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:

- Deckplates and support frames
- Emergency Diesel Generator (EDG) exhaust piping
- Rudder stock and associated hardware

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.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.2 Stuffing box repairs. Using Coast Guard drawings listed in Section 2 as reference, the Contractor must perform the following:

3.2.1 Ultrasonic thickness (UT) measurements. The Contractor must take up to 50 UT measurements of the port and starboard rudder bearing housings and surrounding plating and structure as designated by Coast Guard Inspector, in accordance with SFLC Std Spec 0740, Appendix C. Submit a CFR.

3.2.2 Ring renewal. Using Coast Guard Drawing 627 WMEC 562-001 as guidance, fabricate and install new port and starboard rings, as designated by the Coast Guard Inspector. Renew all disturbed fasteners.

3.2.3 Prepare and preserve up to 100 square feet of interior hull and structural plating, framing, and housings as designated by Coast Guard Inspector using the system specified for “Bilges, Cofferdams, and Forepeaks, Steel” in SFLC Std Spec 6310 Appendix B.

NOTE

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

Forward side of the rudder trunk is difficult to access due to being in close proximity of the Emergency Diesel Generator.

3.2.4 Renew lower bearing grease fittings and grease lines using Coast Guard Drawing 627 WMEC 562-001 as guidance. Extend lines to 2nd Deck level at location designated by Coast Guard Inspector. See Figure 1 below for guidance.

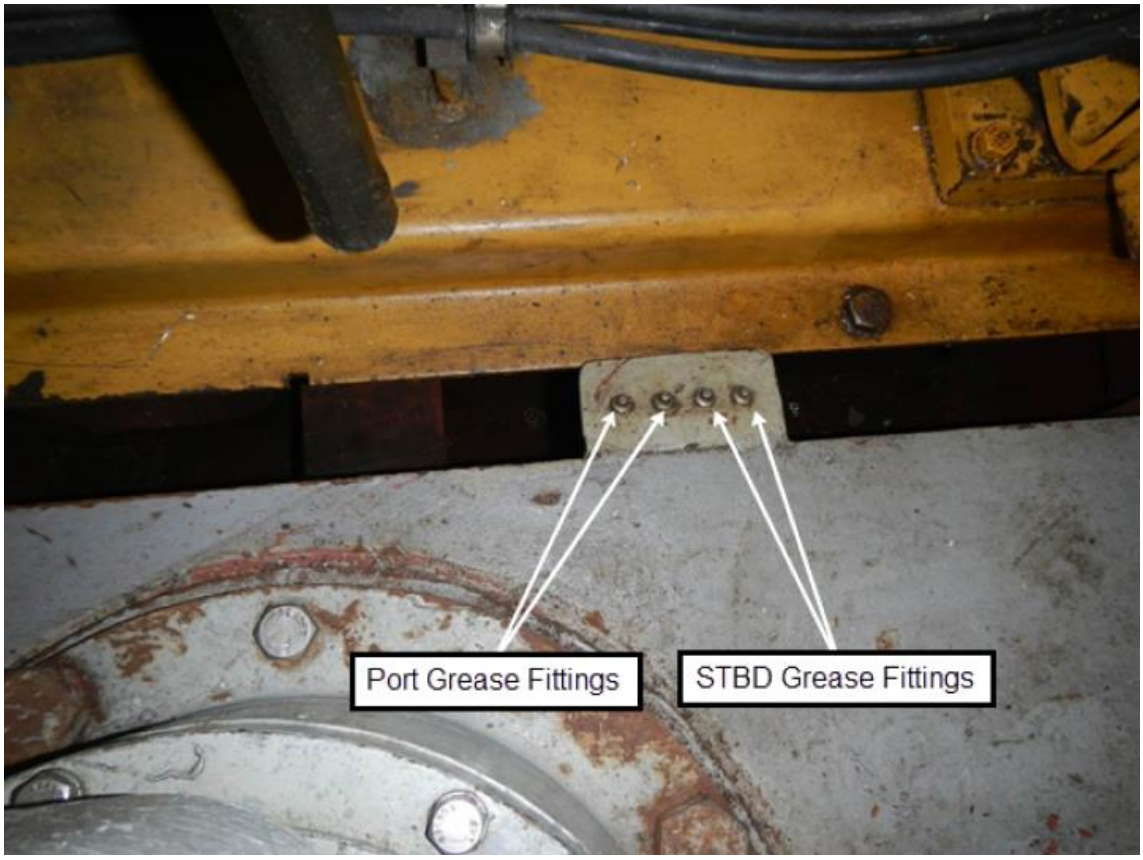


FIGURE 1 – RUDDER BEARING GREASE APPLICATION POINTS (RELOCATED)

3.2.5 Renew port spherical bearing.

NOTE

Bearing is stuck on the tiller arm pin. Machine and bush live end ram eye if fit is no longer interference. (-0.002" from outer race diameter)

3.2.6 Renew stuffing box sleeves. Fabricate and press fit new sleeves in port and stbd stuffing boxes (pc 38 of Coast Guard Drawing 627 WMEC 562-001) to restore inside diameter to dimensions showing on Coast Guard Drawing 627 WMEC 562-001. Ensure that grease ports shown in Coast Guard Drawing 627 WMEC 562-001 are drilled through new sleeve and line up with grease ports in the housing. Stake new sleeves in place to prevent rotation and obstruction of grease ports.

NOTE:

Stuffing boxes, pc 38 of 627 WMEC 562-001, have been modified. They have been reamed out and have had sleeves installed.

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 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").

3.5 Government's right for change out. The Contractor must be aware that the Government reserves the right to furnish a new rudder stock for installation in place of the existing rudder stock. If the Government exercises this right, the Contractor must return the removed rudder stock to the Coast Guard PA as an MTI item.

4. NOTES

This section is not applicable to this work item.