



USCGC ALDER (WLB 216)

SPECIFICATION FOR DRYDOCK REPAIRS

FY2027

Developed By: KAH

(Rev-0, 05 May 2026)

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REVISIONS RECORD

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

DATE	REV#	WORK ITEM#	CHANGES MADE

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

CONSOLIDATED LIST OF REFERENCES

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

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

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NAVSEA Drawing 803-5001104, Rev -; Rudder Stock Bearings and Seals

NAVSEA Dwg 803-1385664, Bearings, Stern Tube & Strut

NAVSEA Dwg 803-2145807, Propulsion Shafting & Components

COAST GUARD PUBLICATIONS

«REF_A»

«TECHPUBS»Coast Guard Technical Publication (TP) CP-H5-0001-V0, Twin Pivot Arm Davit - TYPE TW.PIV 5.0B - Ref. No. 5558-I Thru 5558-15

Coast Guard Commandant Instruction (COMDTINST) 9077.1 (series), Equipment Lockout/Tags-Plus Instruction

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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)
22	N	USCG 225 MRG Service Kit	3020-01-F20-5954	1 ea.	184,871
22	N	Set of 12 Pads (shoes) for Thrust Bearing	Philadelphia Gear Corporation P/N 000010188000	1	9,986
22	N	Complete Turning Gear	Philadelphia Gear Drawing 01070-0353 (NIIN:01-F19- 5931)	1 ea.	30,000
23	Y	**Propeller shaft	NSN: 2010-01-399-5912	1ea.	165,000
23	N	**Grounding Silver Strip	NSN: 5340-01-126-4569	1ea.	1,889
23	N	**SST Straps	NSN: 5340-01-126-4570	4ea.	28
23	N	**SST Bailing Seals	NSN: 5330-01-284-3686	4ea.	6
23	N	Reduction Gear LS shaft aft seals (36000- 1231)	NSN: 5330-01-407-8055	2ea.	368
24	N	225' WLB Major Overhaul Kit	NSN: 5330-01-520-5284	1 ea.	67,931.41
24	N	**225' WLB Seat (Split)	NSN: 5330-01-645-3665	1 ea.	17,913.71
24	Y	*Seal Compression Tool	Onboard Tool	1 ea.	200.00
25	N	**Oversized shaft seal diaphragm (Main Prop Shaft)	NSN: 2010-01-537-2301	2 ea.	9,828.00
25	N	**Oversized shaft seal diaphragm (PTO shaft)	PN: H74265-01-3	1 ea.	4,250.00
25	N	**Entire New Seal (Main Prop Shaft)	NSN: 2040-01-393-7061	2 ea.	18,883.00
33	N	Stat-O-Seal Washers	NSN: 5310-01-212-5987 PN: 0-4-3-5	12 ea.	55.61
33	N	O-Ring, Hub Flange Bolt Cover	NSN: 5331-00-983-9878 PN: 0-2-2-5	12 ea.	50.00
34	Y	**Blade Bolts	NSN: 5306-01-410-6893	4 ea.	1,854.12
34	N	Blade Bolt O-rings	NSN: 5330-01-408-7251 PN: 0-3-2-1	48 ea.	2.25
34	N	Blade Seal	NSN: 5331-01-623-0621 PN: 2-472 KA174-75	4 ea.	55.00
34	Y	*Lifting Device, Propeller Blade	NSN: 2020-01-F02-6825	1 ea.	100.00
35	N	Item #9, Flange Bolt	NSN: 5306-01-515-9158	2 ea.	1306.38
36	Y	*Lifting Device, Propeller Blade	NSN: 2020-01-F02-6825	1 ea.	100.00

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36	N	Blade Bolt O-rings	NSN: 5330-01-408-7251 PN: 0-3-2-1	48 ea.	2.25
36	N	Blade Seal	NSN: 5331-01-623-0621 PN: 2-472 KA174-75	4 ea.	55.00
41	N	*** Fathometer Transducer, shallow water, 50-200 kHz (Airmar Technology SS505)	NSN: 5845-01-518-7231 PN: SS505	2 ea.	343.63
41	Y	***Fathometer Transducer, Deep Water, 24kHz	NSN: 5845-01-496-9770 PN: TH28/20-41-516CG	1 ea.	\$7,709.21
57	N	**Upper bearing	NSN: 3110-01-466-9924	1 ea.	10,525.45
57	N	Rudder Seal Kit	NSN: 5330-01-565-8083	1 ea.	2,433.76
58	N	Lower bearing	NSN: 3120-21-912-7635	1 ea.	6,661.26
58	N	Pintle bearing	NSN: 3120-21-912-7634	1 ea.	3,380.38
59	N	Seal Kit, Thruster	NSN: 2010-01-555-9048	2 ea.	4376.00
59	N	Anode, Zinc	NSN: 5365-01-495-5350	18 ea.	113.75
59	N	**Seal Spacer (B125SM44178)	NSN: 2010-01-495-6823	2 ea.	700.00
59	N	**Shaft Sleeve	NSN: 2010-01-495-2638	2 ea	5702.40
61	N	Repair Kit Assembly	NSN: 2040-01-496-9418	2 ea.	1,968.67
61	N	Rod Seal Repair Kit (FL-2605-29 PC#37)	NSN: 2040-01-496-9422	2 ea.	3,030.07
61	N	Repair Kit, Cable Chain (Includes Pads) (FL-2605-29 PC#36)	NSN: 3020-01-538-0684	16 ea.	257.99
61	N	**Cylinder Assembly Actuating, Linear	NSN: 3040-01-496-9424	4 ea.	1,969.24
62	N	Hand Pump SS	NSN: 4320-01-517-1444	1 ea	1,499.66
62	N	Pressure Gauge - Model BMD-471	NSN: 6685-01-437-2519	4 ea	43.79
62	N	Wire Rope Assembly	NSN: 4010-01-643-2077	4 ea	900.00
62	N	Hydraulic Brake Repair Kit - Model BMD-471	NSN: 3950-01-526-9090	4 ea.	913.00
62	N	Counterbalance Valve - Model BMD-471	NSN: 4810-01-353-0586	4 ea.	150.00
62	N	Shuttle Valve - Model BMD-471	NSN: 4820-01-317-2748	4 ea.	35.00
62	N	Hydraulic Motor Seal Kit - Model BMD-471	NSN: 5330-01-475-4566	8 ea.	84.00
62	N	Clutch Shoe - Model BMD-471	NSN: 4910-01-475-4125	4 ea.	56.90
62	N	Drum Bushing - Model BMD-471	NSN: 3950-01-631-0884	8 ea.	272.00
62	N	Shaft Bushing - Model BMD-471	NSN: 3950-01-631-0771	4 ea.	298.00
62	N	Gearbox Seal Kit (For Winch Gearbox	NIIN: XFC343225 PN: YMD-8194-R	4 ea.	70.00

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		Assemblies) - Model BMD-471			
62	N	Control Station Repair Parts. Kit	NSN: 6110-01-644-9898	4 ea.	438.00
62	N	Flag Block Pivot Bearing	NSN: 3110-01-644-9905	4 ea.	675.00
62	N	Flag Block Bearing Cup, Sheave	NSN: 3110-01-644-9670	4 ea.	231.00
62	N	Flag Block Bearing Cone, Sheave	NSN: 3110-01-013-4036	4 ea.	182.00
62	N	Seal	NSN: 5330-01-287-2826	4 ea.	104.00
62	N	Manifold Repair Kit	PN: YMD-8192-R	4 ea.	551.00
63	N	Roller bearing Unit	NSN: 3130-01-504-4363	2 ea.	4,012.00
63	N	Grease seal	NSN: 5330-01-462-5544	4 ea.	79.25
63	N	Level wind pivot bushing	NSN: 3120-01-621-2293	1 ea.	1,139.00
63	N	Level wind thrust bearing	NSN: 3120-01-621-2300	2 ea.	483.30
63	N	Rexroth DCV	NSN: 4810-01-507-0037	1 ea.	208.29
63	N	Rexroth Sandwich Flow Control	NSN: 4810-01-505-9289	1 ea.	250.00
63	N	Sun Sandwich Relief Valves	NSN: 4820-01-439-2451	2 ea.	900.00
63	Y	Level Wind Hydraulic Cylinder	NSN: 3040-01-441-3721	1 ea.	7,423.00
63	N	3:1 Pilot Ratio, Vented Counterbalance Valve Assembly	NSN: 4820-01-563-5841	1 ea	98.70
63	N	Fully Adjustable Needle Valve	NSN: 4820-01-416-0579	1 ea	48.75
63	N	Wire Rope Assembly	NSN: 4010-01-646-6972	1 ea.	500.00
63	Y	**Hydraulic Motor	NSN: 4320-01-445-2248	1 ea	23,998
63	N	**Pump, Hydraulic Ram, Hand Driven	NSN: 4320-01-286-4065	1 ea.	419.77
63	N	**Cylinder Pin	NSN: 5315-01-515-9847	1 ea	500.00
63	N	**Cylinder Pin	NSN: 5315-01-515-9912	1 ea	520.00
64	N	Hardware Kit, Pins	NSN: 2030-01-485-7209	2 ea.	528.47
64	N	Hardware Kit, Mechanical	NSN: 2030-01-485-7215	2 ea.	538.91
73	N	Swing Brake Seal Kit	NSN: 5330-01-390-3514 PN: 90-016-2011	2 ea	68.45
73	N	Swing Brake Disc Kit	NSN: 3010-01-464-1040 PN: 90-016-2131	2 ea	187.20
73	N	Swing Holding Valve	NSN: 4820-01-466-4918 PN: CBEA-LHV-YHL (Sun Hydraulics)	1 ea	251.50
73	N	Wire Rope Assembly	NSN: 4010-01-620-9604 PN: JWCG062100PL	1 ea	660.00
74	N	4 Year Davit In-Place	NSN: 3950-01-F18-5354 P/N:	1 ea.	130,816.35

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		Overhaul Kit	892-02053		
74	Y	Cylinder Assembly	NSN: 3040-99-239-4845 P/N: 5727-1501	2 ea.	20,718.88
74	Y	Hook, Release, Boat Davit	NSN: 4030-01-467-1005 P/N: APR-356-CBH	2 ea.	5,858.19
74	Y	Accumulator, Complete Assembly	NSN: 3040-99-355-4929 P/N: 885-02012	2 ea.	13,750.83
76	N	Main Fall Wire Rope	NSN: 4010-01-486-0047 PN: JWCG13001919PL	1	2,642.00
76	N	Aux Fall Wire Rope	NSN: 4010-01-594-2228 PN: JWCG75200637PL	1	805.32
93	N	Reference electrode, silver & silver chloride Siemens Water Technologies W3T105012 (Electrocatalytic 32622)	NSN: 5977-01-346-0750	2 ea.	1,300.02
94	Y	*Transducer Cover Plate	N/A	4 ea.	50.00
103	N	Quick Acting Watertight Steel Door 36" x 66", Left Hand, 10 Dog w/ hasp and staple. 9" diameter fixed light		1 ea.	\$5000
109	N	COMPRESSOR UNIT, REFRIERATION	4130-01-660-8240	1	10,206.30
111	N	Heading Sensor, Processor Box (Fluxmeter)	NSN: 6625-01-514-3574 PN: 02-0400-02	1 ea.	5,210.00
111	N	Display Assembly	NSN: 5980-01-676-1704 PN: 02-0401-01	1 ea.	1,201.46
111	N	Junction Box Assembly (Interconnecting Box)	NSN: 5895-01-514-2455 PN: 02-0402-02	1 ea.	3,039.00
111	N	Power Cable, w/ conn	NSN: 5995-01-373-3391 PN: 32-0309-15	1 ea.	1,305.41
111	N	Data Cable, w/ conn	NSN: 6150-01-F20-6013 PN: 32-0308-15	1 ea.	1,045.00
111	N	Sensor Cable, w/ conn	NSN: 5995-01-373-3390 PN: 32-0313-25	1 ea.	2,535.10
111	N	Extension Cable, Remote Display, w/ conn	NSN: 6450-01-F20-6014 PN: 32-0316-25	1 ea.	1,392.00
111	N	Data Key Plug	NSN: 5935-01-485-7325 PN: 02-0782	1 ea.	561.60
111	N	Power Supply, 24VDC	NSN: 6130-01-490-7110 PN: 24WB125	1 ea.	210.00
113	N	Directional Control Valve (DCV)	NSN: 4810-01-F19-5719 PN: 4WRE10E75-2X/G24K4/V	1 ea.	1137.00

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113	N	Amplifier Card	NSN: 5996-01-F19-5720 PN: VT-VRPA2-2-1X/V0/T1	1 ea.	958.21
113	N	Amplifier Card Holder	NSN: 5996-01-F19-5721 PN: VT3002-1-2X/48F	1 ea.	367.50
113	N	Mating Connector, 4P G4WIF PG7 SW	NSN: 5935-01-F19-5722 PN: R900023126	1 ea.	150.00
114	N	GEA Fuel Oil Purifier System	P/N: OSF 12-91-067/10	1 ea.	\$58,880.00
118	N	**Pump, Centrifugal, M-Series Vertical In-Line, Close-Coupled Flanged 4x4x6, CD4CuN, 670 gpm at 110â€™™ TDH, 30 hp, 3600 rpm, 460 VAC	Carver P/N: 998-4506-F-01	2 ea.	\$72,675
118	N	** Controller, Pump, Prewired w/Starter, NEMA12, 30 hp, 460Â VAC, Size 3	JOKELL P/N: 156515	2 ea.	\$6,385
118	N	** Controller, Pump, Disconnect Type w/Starter, NEMA 12, 30Â hp, 460 VAC, Size 3	REXEL P/N: S142868199	2 ea.	\$6,663
119	N	Coast Guard (C-G) CGDR50TDRASS01 Flush Pad-eye Assembly: Coast Guard (C-G) CGDR50T01 (NSN# 5365-01-612-1273) D-Ring (Rated Load 12,300 lbs), welded strap, fabricated bowl	NSN# 2020-01-682-7587	4	
120	N	30 inch x 30 inch Quick-Acting Watertight Hatch, Steel, (Raised 12 inch coaming, 21 inch QAWTS (hinge fwd))}	NSN: PN:	1 ea.	

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

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

***Government-furnished property, which is to be supplied by either the vessel or the C4IT ServiceCenter

CONSOLIDATED LIST OF CRITICAL INSPECTION ITEMS

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

Work Item	Title
3	Hull Plating, U/W Body, Ultrasonic Testing
9	Appendages, U/W, Leak Test
13	Tanks, MP Fuel Stowage and Overflow, Clean and Inspect
14	Voids, Non-Accessible, Leak Test
21	Hydraulically Operated Cargo Hatch, Inspect and Service
23	Propulsion Shafting; Remove, Inspect, and Reinstall
24	Propulsion Shaft Seals, Mechanical Overhaul And Inflatable Renewal
25	Propulsion Shaft Seals, Bulkhead, Overhaul
29	Propulsion Shaft Bearings, External, Check Clearances
32	Controllable Pitch Propellers, Clean and Inspect
33	Controllable Pitch Propeller, System Maintenance, Perform
34	Controllable Pitch Propeller Hub, General Maintenance with EAL, Perform
47	Sea Strainers, Duplex, All Sizes, Overhaul
49	Sea Bay, Clean and Inspect
52	Compressed Air Receivers and System Valves, All, Clean, Inspect, Hydro and Lift
55	Rudder Stock Bearings, Check Clearances
56	Rudder, Inspect And Repair
57	Rudder and Rudder Stock, Remove and Inspect
61	Hydraulic Chain Stoppers, Inspect And Service
62	Crossdeck Winches, Inspect and Service
63	Hydraulic Inhaul Winch, Inspect And Service

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64	Mechanical Chain Stoppers, Inspect and Service
65	Anchor Windlass, Inspect and Service
66	Anchor Chains and Ground Tackle, Inspect and Repair
71	Warping Capstan, Inspect and Service
73	Single Point Davit, Inspect and Service
74	Welin Lambie Dual Point Davit TWPIV 5.0B, Inspect, Test, and Overhaul
75	Commissary Hoist, Inspect and Service
76	Buoy Crane, Appleton EB600-60-40, Inspect and Service
89	Hull Plating Freeboard (Buoy Port Areas), Preserve
92	Impressed Current Cathodic Protection System, Inspect and Maintain
94	Drydock
97	Potable Water Pump Room Deck, Preserve
98	Deck Covering, Interior, Wet and Dry, Renew
101	Space or Component, Preserve
105	Drain Piping, Renew
106	Fuel Oil Tank Sounding Tube Repair
107	Walk-In Reefer and Freezer, Repair and Renew
109	Crane Cab A/C Unit
110	Galley Vent Ducting Modify
113	Directional Control Valve, Upgrade
117	Thruster Generator, Clean & Inspect
121	Sounding Tube Cap Repair

PRINCIPAL CHARACTERISTICS

225' WLB (B-CLASS)	
PHYSICAL	
Length overall	225' 0"
Length between perpendiculars	206' 0"
Maximum beam	46'
Designed draft	13' 0"
Full load displacement	1905.6 Long Tons SW
Light ship displacement	1500.7 Long Tons SW
Minimum operating displacement	1869.2 Long Tons SW
Mast height (above 12' waterline)	67' 5"
Anchor	Two 4000 lb standard Navy stockless anchors, 8 shots each, port and starboard, 1-3/8 die lock chain
HULL	
Bilge keels (port & starboard)	Frames 42-79
Frame spacing	
FR 0 to 12	21"
FR 12 to 30	22"
FR 30 to 102	24"
MACHINERY	
Main propulsion	Diesel Reduction
Diesel engines	Two Caterpillar 3608, TA, 3100 BHP each @ 900 RPM
Number of propellers	1
Number of blades	4
Diameter	10'
Pitch	Controllable
RPM	254
Ship's service diesel generators	Two Caterpillar 3508 TA, 450 KW
Emergency diesel generator	One Caterpillar 3406 DITA, 280 KW
Shore tie	Two 450 VAC, 400 Amp, 3-wire
Shaft bearing, forward	Cooper Bearing 01-BCP-1400-EX-TL
Shaft bearing, aft	Water Lubricated Cutless Bearing
TANK CAPACITIES	
Diesel oil	76,498 gal.
Fresh water capacity	8056 gal.
Hydraulic oil capacity	2785 gal.
Lube oil storage	764 gal.
Grey water tank	2700 gal.
Sewage holding tank	1700 gal.

General Requirements

1. SCOPE

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

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

2. REFERENCES

COAST GUARD DRAWINGS

None

COAST GUARD PUBLICATIONS

Coast Guard Commandant Instruction (COMDTINST) M10360.3 (series), Coatings and Color Manual
Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), Latest Version,
General Requirements

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

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

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

OTHER REFERENCES

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

NAVSEA Technical Publication T9074-AD-GIB-010/1688, (TP 1688), July 2012, Requirements for
Fabrication, Welding, and Inspection of Submarine Structure

3. REQUIREMENTS

3.1 General. The Contractor must conform to all requirements specified in SFLC Std Spec 0000 and in this item, as applicable, during the performance of this availability. The requirements in this WI applies to all work under the scope of this contract, whether explicitly stated in all following work items or not, and to all other work subsequently authorized by changes, modifications, or extensions to the contract.

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

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

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

NOTE

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

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

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

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

3.3.2 Coating colors and system color schemes. The Contractor must obtain a written KO authorization to deviate from any coatings required in SFLC Std Spec 6310 Appendix C before work.

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

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

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

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

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

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For non-submerged (non-immersed) applications conductivity measurements must not exceed 70 microsiemens/cm. If a conductivity check fails, clean the surface in accordance with SFLC Std Spec 6310, paragraph 3.1.8.5 (Soluble salt removal).

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

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

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

3.4.1 HY-130 material substitution. The Contractor must be aware that HY-130 steel plating is no longer commercially available. For the purpose of performing flight deck repairs on US Coast Guard WMEC-270 “B-Class” cutters, Strenx 900 steel plating has been approved as a replacement for HY-130. Due to the similarity in material properties and weldability of HY-130 and Strenx 900, all welding procedures and welder qualifications for welding Strenx 900 must be the same as those outlined in NAVSEA TP 1688 as applicable for welding HY-130.

3.4.2 Standard spec modification. For any welding involving HY-130 on the flight deck of WMEC-270 “B-Class” cutters, perform all welding and allied processes, and non-destructive evaluation (NDE) in accordance with NAVSEA TP 1688. The Contractor must be aware that the welding requirements specified in this document take precedence over paragraph 3.3.6 of SFLC Standard Spec 0000 for the purpose of welding involving HY-130.

3.4.3 Approval to weld HY-130. To obtain Coast Guard approval to weld on HY-130 steel for WMEC-270 “B-Class” cutters, the Contractor must provide written Performance Qualification Records (PQR’s) for each process to be used. The PQR’s must be approved by one of the regulatory agencies affirming that the WPS meets the welding requirements of NAVSEA TP 1688. In addition, the Contractor must ensure that all subcontractors, prior to performing welding operations, have qualified procedures by meeting all the requirements set forth in this document.

NOTE

NAVSEA approval is NOT required for welding procedures submitted but the procedures must be reviewed and shown to satisfy the requirements set forth in NAVSEA TP 1688, by a welding regulatory agency. The requirements for welding Strenx 900 are considered the same as those for welding HY-130.

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

3.5.1 Contractor operated (non USCG) facilities. The Contractor must provide and maintain environmental protection as defined in SFLC Std Spec 0000 Appendix A, Requirements for Environmental Protection at Contractor Operated (Non USCG) Facilities, as applicable, during the performance of this availability. Contractor must plan for and provide environmental protective measures to control pollution that develops during normal practice, as well as plan for and provide environmental protective measures required to correct conditions that develop during the project. Contractor must comply with applicable Federal, state, and local laws, codes, ordinances, and regulations in their entirety. Any reference to a specific portion of a Federal, state, or local law,

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code, ordinance, or regulation in this or any other item must not be construed to mean that relief is provided from any other sections of the law, code, ordinance, or regulation.

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

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

3.5.4 Environmental manager. The Contractor must appoint in writing an Environmental Manager for the project, who is responsible for coordinating Contractor compliance with Federal, State, local, and station environmental requirements. The Environmental Manager must ensure compliance with Hazardous Waste Program requirements, including hazardous waste handling, storage, manifesting, and disposal; implement the Contractors' Environmental Management Plan; ensure that all environmental permits are obtained, maintained, and closed out; ensure compliance with Storm Water Program Management requirements; ensure compliance with Hazardous Materials including storage, handling, and reporting requirements; as well as coordinate any remediation of regulated substances such as lead, asbestos, and polychlorinated biphenyl (PCB). This may be a collateral position; however the individual must be trained to accomplish the following duties; ensure waste segregation and storage compatibility requirements are met; inspect and manage Satellite Accumulation areas; ensure only authorized personnel add wastes to containers; ensure all Contractor personnel are trained in 40 CFR requirements and individual position requirements; coordinate removal of waste containers; and maintain the Environmental Records binder and required documentation, including environmental permits compliance and close-out.

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

3.6 Local Policy. The Contractor must refer to site (e.g., Base) Regulations and Instructions for details regarding local policies (e.g., crane services, parking, or facility usage).

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

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

4. NOTES

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

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

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

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

USCGC ALDER (WLB-225B) DRYDOCK AVAILABILITY FY2027
QA-2 - QUALITY ASSURANCE INSPECTION FORM
(ENVIRONMENTAL READINGS)

VESSEL NAME	HULL #	WORK ITEM #	WORK ITEM TITLE

Use one sheet for each activity. Record conditions every four hours from before surface preparation to application of final coating system coat.							
DATE & TIME	ACTIVITY (SURFACE PREPARATION, PRIMER COAT, BARRIER COAT, TOP COAT, ETC...)	LOCATION (FRAME & DECK, RELATION TO EQUIPMENT, ETC.)	TEMPERATURE				% REL. HUMID-ITY
			DEW PT.	SURFACE	AMBIENT	ΔT DP - SURFACE	
NAME OF QP-1/AMPP INSPECTOR		SIGNATURE			CERT. #		DATE / TIME
NAME OF CG REPRESENTATIVE		SIGNATURE			UNIT		DATE/TIME

USCGC ALDER (WLB-225B) DRYDOCK AVAILABILITY FY2027
QA-3a - QUALITY ASSURANCE INSPECTION FORM
(SURFACE PROFILE LOG FOR PROFILE MEASUREMENTS IAW ASTM D4417-METHOD-C)

VESSEL NAME	HULL #	WORK ITEM #	WORK ITEM TITLE
LOCATION OF WORK (FRAME REFERENCES)			AREA (SQFT)

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

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

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

USCGC ALDER (WLB-225B) DRYDOCK AVAILABILITY FY2027
QA-3b - QUALITY ASSURANCE INSPECTION FORM
(SURFACE PROFILE LOG FOR PROFILE MEASUREMENTS IAW ASTM D4417-METHOD-B)

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

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

RECORD MEASUREMENTS TAKEN IN THE SPACES PROVIDED BELOW, TO SERVE AS PERMANENT QA RECORD. MAINTAIN SEPARATE LOG FOR EACH LOCATION. WHEN AN AREA IS DIVIDED INTO SEPARATE SECTIONS, MAINTAIN A SEPARATE LOG FOR EACH SECTION.					
Reading (mils):					
Reading (mils):					
Reading (mils):					
Reading (mils):					
Reading (mils):					
Reading (mils):					
Reading (mils):					
Reading (mils):					
Reading (mils):					
Reading (mils):					
Mean Mils Reading (IAW ASTM D4417-Method B for above 10 readings (by column):					
Mean Reading (mils)					

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

USCGC ALDER (WLB-225B) DRYDOCK AVAILABILITY FY2027
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)

[illegible]

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

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

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

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4.2 Tank and Void Assessment form.

SFLC-ESD-25		TANK AND VOID ASSESSMENT FORM	
PRINT	RESET		
GENERAL DATA Note: Use SFLC-ESD-29 for Compartments other than Tanks & Voids.			
Inspector's Name:		Organization:	Contact Info:
Cutter Name:		Cutter Class:	Hull:
Tank:	Service:	Tank Area:	Gallons:
Solid Balast:	Access Compt:	Date:	Assessment Reason:
ACCESS DATA			
Manhole and cover condition:		Tank Penetration Condition:	
VENT OVERFLOW DATA			
Present: ☐ Yes ☐ No		Check Valve Installed: ☐ Yes ☐ No	Check Valve Operates Properly: ☐ Yes ☐ No
LADDER DATA			
NR of Ladder(s) Present: ☐ Yes ☐ No		Ladder Damaged: ☐ Yes ☐ No	Ladder Material:
TANK LEVEL INDICATOR (TLI) DATA			
TLI Present in Tank: ☐ Yes ☐ No		TLI Damaged: ☐ Yes ☐ No	TLI Type:
SOUNDING TUBE DATA			
Sounding Tube Present in Tank: ☐ Yes ☐ No		Sounding Tube Damaged: ☐ Yes ☐ No	
Striker Plate Damaged (>50%): ☐ Yes ☐ No			
CATHODIC PROTECTION DATA			
Cathodic Protection in Tank: ☐ Yes ☐ No		Total Zincs:	Number of Zincs > 50% Depleted:
1-6 Cleanliness & Housekeeping			
Clean to light layer or residue		1-2 (G)	Comments:
Loose accumulation scale		3-4 (Y)	
Impending residue and sediments		5-6 (R)	
% 1-6 Coating Systems			
All Painted Surfaces		1-2 (G)	Comments:
		3-4 (Y)	
		5-6 (R)	
% 1-6 Structural			
Corrosion		1-2 (G)	Comments:
		3-4 (Y)	
		5-6 (R)	
Pitting & Grooving		1-2 (G)	Comments:
		3-4 (Y)	
		5-6 (R)	

SFLC-ESD-25	TANK AND VOID ASSESSMENT SHEET
PRINT	

Structural Integrity Data			
Estimated Total Linear Feet of Structure Requiring Repair:		Estimated Total Square Feet of Plating Requiring Repair:	
Cracks/ Fractures Present:	☐ Yes ☐ No	Buckling/Deflections/ Distortions Present:	☐ Yes ☐ No
Holes Present:	☐ Yes ☐ No	Material Wastage Present:	☐ Yes ☐ No
All Welds Intact:	☐ Yes ☐ No	Structural Evaluation Recommended:	☐ Yes ☐ No
PHOTOGRAPHS			
Pictures Taken (enter quantity):			
Note: To add pictures to this form, Work Station must have Adobe Acrobat (not Reader) installed. Add all photos and photo comments to a word document and save file. Open this form and click "Combine Files". Add the document with photos you've just saved and save as a new combined .pdf files.			
Additional Comments:			

WORK ITEM 1: Fire Prevention Requirements

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to minimize shipboard fire risk and to clarify the Contractors' role in fire prevention and response.

NOTE

This work item is not separately priced. Factor fire prevention and response costs into bid of affected work items.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

None

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 Fire Plan. The Contractor must develop and implement a written fire plan in accordance SFLC Std Spec 5550. The Contractors Fire Plan must address Fire Protection and Response specifics as required in this Work Item.

3.1.1 The availability's specific Fire Plan must always address the following:

- material condition and fire protection boundary obstruction mitigations
- inoperable fittings log

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- fire alarms
- firefighting equipment disposition

3.1.2 The Fire Plan must also address the following:

- fire protection system status
- communication links
- temporary services
- power disconnects
- fire prevention and safety inspections

3.2 Fire Prevention Responsible Party. The Contractor must appoint a Fire Prevention Responsible Party (FPRP) who acts as the Contractor's Responsible Person for fire prevention concerns during the entire availability.

3.3 Fire Prevention and Response Conference. The Contractor must participate in the Fire Prevention and Response Conference as required in Std Spec 5550, paragraph 3.12. The participants must address the contents of SFLC Std Spec 5550, paragraph 3.12.1, as applicable.

3.4 Fire Responsibility Familiarization Tour and Initial Inspection. The Contractor must participate in the Fire Responsibility Familiarization Tour and Initial Inspection as required in Std Spec 5550, paragraphs 3.12.2 through 3.12.4.

3.5 Material Condition and Fire Protection Boundary Obstruction Mitigation Requirements. The Contractor must conform to all material condition and fire protection boundary obstruction mitigation requirements detailed in SFLC Std Spec 5550, paragraph 3.2.

3.6 Inoperable Fittings Log Requirements. The Contractor must conform to all inoperable fittings log requirements detailed in SFLC Std Spec 5550, paragraph 3.3.

3.6.1 The Contractor must maintain an Inoperable Fittings log. The logs must contain the same information as a Damage Control Closure Log found in Appendix A of SFLC Std Spec 5550. The log must remain at the access point of the vessel available for inspection or use by authorized personnel, i.e., casualty response. Deliver all logs to the CG when requested and at the end of the availability.

3.7 Fire Prevention Service Particulars. The Contractor must conform to the below listed fire prevention service requirements, in accordance with SFLC Std Spec 5550.

TABLE 1 – FIRE PREVENTION SERVICE SELECTION

*SUB-PARAGRAPH	TITLE	Y/N
3.4	Fire prevention system status	Y
3.4.1	Temporary firefighting system proposal	Y
3.4.2	Emergent firefighting system inoperability approval and notification	Y
3.4.3	“Disabled equipment” signage for disabled initial responder equipment	Y
3.4.4	Firefighting system inoperability allowance for removed hazards	Y

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*SUB-PARAGRAPH	TITLE	Y/N
3.4.5	Maintain sprinkling zone operability	Y
3.4.6 including all subparagraphs	Hazard mitigation for maintenance of fixed extinguishing systems	Y
3.4.7	Procedure implementation for enabling/disabling fire suppression systems	Y
3.4.8	Portable water pumping requirement for vessels w/o installed capability	Y
3.4.9	Limitations on operation of major machinery while firefighting systems are offline	Y
3.4.10	Liquid fuel pumping requirement for operational permanent or temporary firefighting systems	Y
3.4.11	Mechanical AFFF equipment must be available to initial responders in compartments with risk of flammable/combustible liquid spillage	Y
3.4.12 including all subparagraphs	Portable fire extinguisher requirements	Y
3.4.13	Hose and reel protection	Y
3.4.14 including all subparagraphs	Drydock firefighting requirements	Y
3.4.15	Fire protection system status in Fire Plan	Y
3.5	Fire response related communication links in Fire Plan	Y
3.6	Fire response related temporary services in Fire Plan	
3.6.1	Minimize downtime of fixed extinguishing systems	Y
3.6.2 through 3.6.10	Firemain and related equipment requirements	Y
3.6.11	Permanent lighting requirements	Y
3.6.12 including all subparagraphs	Temporary lighting requirements	Y
3.6.13	Electrical power, firefighting water, and lighting source location and testing identified in Fire Plan	Y
3.7 including all subparagraphs	Fire alarm requirements	Y
3.8	Shore power manual disconnect locations identified in Fire Plan	Y
3.9	Other power manual disconnect locations identified in the Fire Plan	Y
3.10 including subparagraph	Vessel firefighting equipment placement and disposition info in Fire Plan	Y
3.11	Fire prevention and safety inspections in Fire Plan	Y
3.11.1	Initial and daily inspection requirements	Y
3.11.2	Additional details in fire inspection reports	Y

*Each sub-paragraph number relates directly to the identical sub-paragraph number in SFLC Std Spec 5550.

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3.5 Extended fire prevention services. If the performance period of the contract is extended by the KO, the contractor must continue to provide all fire prevention services as specified herein for the extension period.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 2: Hull Plating, U/W Body, Inspect

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to inspect/survey the vessel's Under Water (U/W) hull plating, including U/W appendages and coating system.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 111-001, Rev A; Shell Expansion

Coast Guard Drawing 225B WLB 114-001, Rev C; Shell Appendages

Coast Guard Drawing 225B WLB 562-002, Rev C; Rudder Structural A & D

Coast Guard Drawing 225B WLB 801-006, Rev D; Docking Drawing

COAST GUARD PUBLICATIONS

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

OTHER REFERENCES

ASTM International (ASTM) D4138, 2013, Standard Practices for Measurement of Dry Film Thickness of Protective Coating Systems by Destructive, Cross-Sectioning Means

The Society for Protective Coatings (SSPC), January 2015, Paint Application Specification No. 2 (PA-2), Procedure for Determining Conformance to Dry Coating Thickness Requirements

3. REQUIREMENTS

3.1 General.

None.

3.1.2 Tech Rep.

Not applicable.

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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 Inspection. The Contractor must accompany the Underwater Hull Inspection Board (UWHIB) in the performance of the below inspection tasks, as applicable, using the drawings listed in Section 2 (References) as guidance. The Contractor must provide the following, to facilitate the UWHIB in assessing the condition of the designated U/W hull components and systems:

- A hull repair supervisor and a marker.
- Temporary staging and other necessary equipment, as applicable, for ensuring safe access to all areas of the U/W hull.

NOTES

1. The COR will convene the UWHIB as soon as possible after the vessel has been dry-docked and before any work (except U/W hull cleaning/wash down) is performed on the U/W hull and appendages.

2. Some of the components and/or systems addressed in this work item may not be applicable to all vessel classes.

3.2.1 Hull plating.

3.2.1.1 The Contractor must inspect the condition of the hull plating (including thruster tunnel plating, as applicable), for the presence of marine growth, deformation, and any evidence of major corrosion or electrolytic action.

3.2.1.2 The Contractor must inspect the hull and keel areas, report on the condition of butt-welded seams, doubler plates, lap seams, and for any signs of damaged plating or unusual waviness in the plating.

3.2.2 Sea chests and all other cooling system intake components. The Contractor must inspect all sea chests, sea beam arrays, tunnels, hull openings, and grates for general appearance, loose, damaged, or missing grates, loose or missing fasteners, condition of sea strainers and lockwire on bolts, marine growth on grating slots, and any obstructions in the openings that might prevent proper suction and discharge of water.

3.2.3 Rudders. The Contractor must check general condition, condition around the drain plugs, and check for pitting, if any, on the leading and trailing edges.

3.2.4 Propeller and shaft associated components. The Contractor must inspect the condition of propellers for signs of corrosion, pitting, erosion, fouling, cracks, dings, and nicks by side and blade; inspect fairwaters, rope guards, shafts, and mechanical seals - look for missing screws, physical damage to the blades, pitting, condition of dunce caps, and condition of securing devices.

3.2.5 Transducers. The Contractor must check general condition for cuts, cracks, corrosion, and surface defects around the openings. Check transducer securing nuts for tightness, and inspect cables for chafing and other damage.

3.2.6 Zinc anodes.

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3.2.6.1 The Contractor must remove all marine growth and oxide coating from all hull, rudder, shaft strut, sea chest, sea beam array, z-drive, and thruster tunnel zinc anodes, or water jet drives anodes, as applicable, using a light-wire brush.

3.2.6.2 The Contractor must visually inspect all zinc anodes; check the soundness of mounting strap and stud welds, missing fasteners, and percentage of remaining material.

3.2.7 Coating system inspections. The Contractor must accomplish the below inspections, in conjunction with the underwater hull inspection conducted by the Underwater Hull Inspection Board (UWHIB). Document the condition found as “Partial - Condition A”, “Partial - Condition B”, or “100%”, as applicable (see 4.1 (Definitions)). Submit a CFR.

NOTE

The following inspections are for determining the existing condition of the coating system for the underwater body surfaces, which are deemed “Critical-coated” surfaces; they must be carried out by a SSPC-QP-1 certified contractor/sub-Contractor or a NACE Inspector – see SFLC Std Spec 0000, paragraph 3.2.4.2 (In-process QC measures for “critical-coated surfaces”).

3.2.7.1 Visual. Perform a visual inspection of the existing U/W body coating system.

3.2.7.2 Dry film thickness (DFT) measurements. Take total DFT measurements of the U/W body coating system, in accordance with SSPC-PA 2.

3.2.7.3 Coating system thickness and scheme inspection. Perform a microscopic observation of precision angular cuts in the coating system film (“Tooke Paint Inspection”), in accordance with ASTM D4138, and measure the total coating thickness and thickness of each individual coat of paint, in addition to identifying/verifying the existing color scheme for each coat of paint comprising the coating system.

NOTE

The Tooke Paint Inspection Gage/Gauge (Plastic) is a precision tool for inspection and thickness measurement (ASTM D4138) of single or multiple coats on any substrate, and for microscopic observation and measurement of substrate and film defects. The gage uses an illuminated 50-power microscope with measuring reticle, and mounts tungsten carbide cutting tips for precise incision of the work surface.

Direct measurement of total coating thickness and thickness of individual coats of paint is a unique capability of the Tooke Paint Inspection Gage/Gauge. Thus, in addition to routine use, it often serves as a “referee” instrument to calibrate indirect or non-destructive thickness measuring instruments.

Other uses include assessment of substrate conditions and coating adhesion, and observation of microscopic cracking, tendency for brittleness, cratering, or other microscopic film symptoms.

3.2.7.3.1 Take a total of four readings in locations designated by the Coast Guard Inspector, and as follows: one each, port and starboard, in the boot-top area; and one each, port and starboard, below the boot-topping.

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3.2.7.3.2 Ensure that the repair of all areas affected by the destructive Tooke Gauge inspection is included in the optional repair work item that is activated by the result of the inspection.

4. NOTES

4.1 Definitions.

4.1.1 "Partial – Condition A": The condition that exists where the substrate is exposed in up to 33% of the entire U/W body.

4.1.2 "Partial - Condition B": The condition that exists where the coating system has incurred damage, but the substrate is not exposed in any location.

4.1.3 "100%": The condition that exists where more than 33% of the U/W body hull substrate is exposed.

4.2 UWHIB convention. The COR will convene the UWHIB as soon as possible after the vessel has been dry-docked and before any work (except U/W hull cleaning/wash down) is performed on the U/W hull and appendages.

WORK ITEM 3: 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 225B WLB 111-001, Rev A; Shell Expansion

Coast Guard Drawing 225B WLB 801-006, Rev C; Docking Drawing

Coast Guard Drawing 225B WLB 940-001, Rev E; Hull Block 940 – Panels

Coast Guard Drawing 225B WLB 940-001, Rev E; Hull Block 940 - Modules

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

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

- 3.2 (UT measurements).

3.1.2 Tech Rep.

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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 500 UT measurements of U/W hull surfaces, in locations designated by the Coast Guard Inspector, using the Coast Guard drawings listed in Section 2 “References” for guidance, in accordance with SFLC Std Spec 0740, Appendix C. Mark up a copy of Coast Guard Drawing 225B WLB 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(s) and completed Table I.

4. NOTES

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

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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 4: Hull Plating, Freeboard, Ultrasonic Testing

1. SCOPE

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

1.2 Government-furnished property.

None.

2. REFERENCES

Coast Guard Drawing 225B WLB 111-001, Rev A; Shell Expansion

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

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

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paragraph 3.3.5 (Interferences).

3.2 UT measurements. The Contractor must perform a total of 500 UT measurements of freeboard hull surfaces, in locations designated by the Coast Guard Inspector, using Coast Guard Drawing 225B WLB 111-001 for guidance, in accordance with SFLC Std Spec 0740, Appendix C. Mark up a copy of Coast Guard Drawing 225B WLB 111-001 to show all locations selected for measurement and record all measurements in Table 1 (UT Measurements Summary Sheet - Port/Stbd Shell) provided at the end of this item. Submit CFR, to also include the marked up drawing and completed Table 1.

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

4. NOTES

This section is not applicable to this work item.

WORK ITEM 5: U/W Body, Preserve, Partial, Condition A

1. SCOPE

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

NOTES

1. The purpose of the preservation tasks covered in this item is to repair the existing U/W body coating, where the substrate is exposed, and to rebuild all remaining coated surfaces
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 225B WLB 601-001, Rev L; General Arrangement Inboard and Outboard Profiles

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

ASTM International (ASTM) D3359, 2009, Standard Test Methods for Measuring Adhesion by Tape Test

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

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

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

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

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

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

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection). Specific areas/equipment/components to be protected include, but are not limited to:

- All scuppers and overboard discharges.
- Fathometer transducer surfaces.
- Sea valve openings.
- Propeller shafts.
- Shaft bearings and seals.
- Rudder bearings.
- Propellers.
- Bow and stern thruster propellers, and thruster bearings.
- Impressed current system and associated dielectric shield.

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.
-

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.

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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), Refer to SSPC-SP WJ-2/NACE WJ-2, 2012, for guidance. 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 in accordance with SFLC 6310:

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 Coating removal.

3.4.2.1 Selectively remove all existing AF top-coating from the entire underwater body to expose but not damage the intact anticorrosive coating system, by abrasive-sweeping or by water-jetting.

3.4.2.2 Clean areas for up to 33% of the entire U/W body, where the substrate is exposed, by abrasive-blasting to “SSPC-SP 10/NACE No. 2, Near-White Blast Cleaning”, to produce a 1.5 to 2.5 mil anchor profile; or by waterjetting to “SSPC-SP WJ-2(M)/NACE WJ-2(M)”.

3.4.2.3 Roughen/abrade newly exposed undercoating (after removing AF top coating), by either sweep-blasting, 100-grit paper, or water-jetting, to produce a suitable surface profile to allow proper adhesion of a new coating.

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3.4.2.4 Where new coating is to be merged into existing coating, provide an approximately 3-inch wide overlap between the new coating and existing coating, smoothly tapering the overlap from the existing coating into the prepared surfaces.

3.2.3 Post-surface preparation inspection and cleaning.

3.2.3.1 Inspection of remaining coatings. Perform a visual inspection and dull putty knife check of all remaining AC coatings, in accordance with SSPC-SP 3, to check adhesion in areas of suspected delamination. Submit a CFR.

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

3.2.4 Coating application.

3.4.4.1 Hull and appendages.

3.4.4.1.1 Spot coat all bare steel surfaces with the coating system specified for “Anti-Abrasion Coating, Icebreaker <235 feet” in SFLC STD SPEC 6310, Appendix A (Cutter and Boat Exterior Painting Systems, to match existing color scheme, and to a thickness matching that of existing adjacent undercoating. Ensure an approximately 3-inch wide overlap between the new coating and existing coating, to minimize edge lifting and provide a better appearance.

3.4.4.1.2 When spot-coated areas are ready for overcoating, apply a full coat of the “Anti-Abrasion Coating, Icebreaker <235 feet” in SFLC STD SPEC 6310, Appendix A (Cutter and Boat Exterior Painting Systems), in accordance with manufacturer’s recommendations.

Apply an additional a full coat of the “Anti-Abrasion Coating, Icebreaker <235 feet” in SFLC STD SPEC 6310, Appendix A (Cutter and Boat Exterior Painting Systems), in accordance with manufacturer’s recommendations, over the boot-topping area.

3.4.4.2 Sea chests. Coat sea chest surfaces with the coating system specified for “Underwater Water (U/W) Body and Boot-Top (U/W Body Sea Chest, Icebreaker in Fresh Water)”, in SFLC STD SPEC 6310, Appendix A (Cutter and Boat Exterior Painting Systems).

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

4. NOTES

4.1 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 225B WLB 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)) and sea chest-to-sea bay piping, bilge keels, struts, skegs, gratings, and rope guards.

4.1.2 "Partial - Condition A". The condition that exists where up to 33% of the U/W body hull substrate is exposed.

WORK ITEM 6: U/W Body, Preserve, Partial, Condition B

1. SCOPE

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

NOTES

1. This purpose of the preservation tasks covered in this item is to restore the entire existing anticorrosive (AC) U/W body coating system to original DFT, as recommended by the system's manufacturer.

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

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225 WLB 601-001, Rev M; General Arrangement Inboard & Outboard Profiles

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

ASTM International (ASTM) D3359, 2009, Standard Test Methods for Measuring Adhesion by Tape Test

MIL-PRF-24647, 2013, Paint System, Anticorrosive and Antifouling, Ship Hull

The Society for Protective Coatings (SSPC)/NACE International (NACE) Joint Surface Preparation Standard SSPC-SP 7/NACE No.4, 2007, Brush-Off Blast Cleaning

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

The Society for Protective Coatings (SSPC)/NACE International (NACE) Joint Surface Preparation Standard SSPC-SP WJ-4/NACE WJ-4, 2012, Waterjet Cleaning of Metals – Light Cleaning

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

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

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

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

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

3.1.3 Protective measures. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces near the work area against contamination during the performance of work. Upon completion of work, 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.
- Fathometer transducer surfaces.
- Sea valve openings.
- Propeller shafts.
- Shaft bearings and seals.
- Rudder bearings.
- Propellers.
- Bow and stern thruster propellers, and thruster bearings.
- Impressed current system and associated dielectric shield.

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

- Sea chest grating.
-

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

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

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

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

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

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

NOTES

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

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

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

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

3.2.2 Coating removal.

3.2.2.1 U/W Hull plating and appendages. Clean all U/W hull and appendages by water-jetting to achieve the “Light Cleaning” degree of surface cleanliness (SSPC-SP WJ-4/NACE WJ-4); or by “Brush-off Blast Cleaning” (SSPC-SP 7/NACE No.4), to remove all loose residues of mill scale, rust, and coatings, while uniformly roughening the surface.

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3.2.2.2 Sea chests. Prepare all sea chest surfaces by waterjetting to achieve the “Very Thorough Cleaning” degree of surface cleanliness (SSPC-SP WJ-2(M)/NACE WJ-2(M)).; or by rasive-blasting to achieve the “Near-White Metal” cleanliness (SSPC-SP 10/NACE No. 2), and produce a 1.5 to 2.5 mil anchor profile.

3.2.3 Post-surface preparation inspection and cleaning.

3.2.3.1 Inspection of remaining coatings. Perform a visual inspection and dull putty knife check of all remaining AC coatings, in accordance with SSPC-SP 3, to check adhesion in areas of active or suspected delaminating. Submit a CFR.

NOTE

The dull putty knife check is a good way to check adhesion in areas of active or suspected delaminating. However, we need to clarify that the dull putty knife check is only for AC coats and may not be used on the AF coats.

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

3.2.4 Coating application. 3.2.4.1 U/W hull and appendages. Apply an “Anti-Abrasion Coating, Icebreaker <235 feet” in SFLC Std Spec 6310, Appendix A (Cutter and Boat Exterior Painting Systems, not to exceed the manufacturer’s total recommended DFT, to match existing color scheme.

3.2.4.2 Sea chests. Coat the sea chests with coating system specified for “Underwater Water (U/W) Body and Boot-Top (U/W Body Sea Chest, Icebreaker in Fresh Water)”, in SFLC Std Spec 6310, Appendix A (Cutter and Boat Exterior Painting Systems.

NOTE

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

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

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

4. NOTES

4.1 Definitions.

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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 225 WLB 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)) and sea chest-to-sea bay piping, bilge keels, struts, skegs, gratings, and rope guards.

4.1.2 "Partial - Condition B". The condition that exists, where the coating system has incurred damage, but, the hull substrate is not exposed in any location.

WORK ITEM 7: U/W Body, Preserve “Partial - Condition C”

1. SCOPE

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

NOTE

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 225 WLB 601-001, Rev M; General Arrangement Inboard & Outboard Profiles

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

ASTM International (ASTM) D 4138, 2007, Standard Practices for Measurement of Dry Film Thickness of Protective Coating Systems by Destructive, Cross-Sectioning Means

The Society for Protective Coatings (SSPC)/NACE International (NACE) Joint Surface Preparation Standard SSPC-SP 7/NACE No.4, 2007, Brush-Off Blast Cleaning

The Society for Protective Coatings (SSPC)/NACE International (NACE) Joint Surface Preparation Standard SSPC-SP 12/NACE No.5, 2007, Surface Preparation and Cleaning of Steel & Other Hard Materials by High and Ultrahigh Pressure Water Jetting

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Technical Representative.

Not applicable.

3.1.3 Protective measures. The Contractor shall protect non-affected vessel's equipment, components, and spaces during surface preparation and coating application procedures, as specified in SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection). Specific areas/equipment/components to be protected include, but are not limited to:

- All scuppers and overboard discharges.
- Fathometer transducer surfaces.
- Sea valve openings.
- Propeller shafts.
- Shaft bearings and seals.
- Rudder bearings.
- Propellers.
- Bow and stern thruster propellers, and thruster bearings.
- Impressed current system and associated dielectric shield.

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

- Sea chest grating.
-

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

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

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

NOTE

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

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

3.2.1 UW body and appendage preservation.

3.2.1.1 Surface preparation. Lightly clean the designated surfaces by water-jetting (SSPC-SP 12/NACE No.5) or abrasive-off-blasting (SSPC-SP 7/NACE No.4), to remove (as applicable) all visible oil, grease, dirt, dust, loose mill scale, loose rust, and loose antifouling (AF) coating. If water-jetting is selected, continue cleaning until the existing AF leaching layer has been removed (when wash turns clear).

3.2.1.2 Coating application. Apply “Anti-Abrasion Coating, Icebreaker <235 feet”, to match existing color scheme, and provide a uniform thickness over the entire u/w body surfaces, not to exceed the manufacturer’s total system recommended DFT.

3.2.2 Sea chest preservation. Prepare and coat the sea chests and sea chest-to-sea bay piping with the system specified for “Underwater Water (U/W) Body and Boot-Top (U/W Body Sea Chest, Icebreaker in Fresh Water)”, in SFLC Std Spec 6310, Appendix A (Cutter and Boat Exterior Painting Systems).

NOTE

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

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

NOTES

- 1. Surfaces being preserved are considered “critical-coated surfaces”.**
- 2. A “Tooke Paint Inspection Gage” may be used for inspection and thickness measurement (in accordance with ASTM D4138) of single or multiple coats on any substrate.**
- 3. All authorized coating materials and suppliers, and coating colors are listed in SFLC Std Spec 6310 Appendix C (Authorized Coatings for Use on Cutters and Boats) and Chapter 11 (Cutters and Boats Colors – Exterior and Interior), respectively.**

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

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 225 WLB 601-001, including rudders, transducer hull rings, sea chests and sea chest-to-sea bay piping, bilge keels, struts, skegs, gratings, and rope guards.

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4.1.2 “Partial - Condition C”. The condition that exists where damage is confined to the antifouling topcoating; the epoxy undercoating system is not exposed.

WORK ITEM 8: Hull Plating Freeboard, Preserve, Partial

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to perform partial preservation of the freeboard surfaces. Refer to 4.1 Definition of freeboard surfaces.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 601-002, Rev G, Booklet of General Drawings

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

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

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

Coast Guard Commandant Instruction (COMDTINST) M10360.3, Jun 2006, Coatings and Colors
Manual

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

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

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

The Society for Protective Coatings (SSPC)/NACE International (NACE) Joint Surface
Preparation Standard SSPC-SP 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, (Vessel component, space, and equipment protection).

- 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.
- Vent intakes.
- Deck equipment.

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:

- Overboard discharges.

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

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

3.4 Preservation requirements. The Contractor must prepare and coat a total of approximately 3500 square feet of the freeboard surface, as designated by the Coast Guard Inspector (where there is evidence of coating failure) with the system specified for “Freeboard/Superstructure/Mast (Freeboard/Superstructure)” in SFLC Std Spec 6310. Select the following:

- Select “Option I” system, for the applicable metal substrate (steel or aluminum).

3.4.1 Surface preparation. The Contractor must prepare all surfaces identified for preservation in accordance with SFLC Std Spec 6310, paragraph 3.1.13, Touch-ups and minor coating repairs.

NOTES

1. A profile suitable for over coating would be similar to what is produced by abrading the coating with 100-grit paper.

2. For larger areas in need of repair, abrasive blasting to SSPC-SP 10 or water jetting to SSPC-WJ-2(M) may be used in lieu of SSPC-SP 11.

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

3.4.2 Coating application. The Contractor must apply coatings to the repair area in accordance with SFLC Std Spec 6310, paragraph 3.1.13, Touch-ups and minor coating repairs. Top coat color must match existing adjacent surfaces in accordance with COMDTINST M10360.3 Table 6.2 (Underwater Body, Boot-top, and Freeboard Colors).

3.5 Visual identification markings. The Contractor must ensure the following:

3.5.1 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.

3.5.2 Painted markings: Paint all distinctive visual identification markings, including the Coast Guard diagonal stripes, "U.S. COAST GUARD" legends, hull numbers, and draft marks in accordance with SFLC Std Spec 6310, and Coast Guard Drawings FL 2804-12 and FL 2804-22 as applicable. Surfaces being preserved are considered "critical-coated surfaces".

CAUTION

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

- 1. All surface preparation tools/equipment must vacuum-shrouded.**
- 2. Coatings must be applied by brushing or rolling, which may require additional coats to obtain required dry film thickness.**

NOTES

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

**Brace Enterprises
10250 SE 138 Terrace
Dunnellon, FL 34431
352-489-4442 / Fax: 352-489-4476
www.braceenterprise.com**

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

4. NOTES

4.1 Definition of freeboard surfaces. For the purposes of this item the freeboard is defined as exterior steel hull surfaces from the upper limit of the boot-topping to the top of the bulwark, as shown on . Coast Guard Drawing 225 WLB 601-002.

WORK ITEM 9: Appendages, U/W, Leak Test

1. SCOPE

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

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 111-001, Rev A, Shell Expansion

Coast Guard Drawing 225B WLB 114-001, Rev C, Shell Appendages

Coast Guard Drawing 225B WLB 114-002, Rev -, Flow Accelerating Fin

Coast Guard Drawing 225B WLB 801-006, Rev G, Docking Drawing

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

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

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

3. REQUIREMENTS

3.1 General.

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

- 3.2 Leak test.
- 3.4 Appendage air test.

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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 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.
- Dispose of any drained liquids in accordance with all Federal, state, and local laws and regulations.

CAUTION

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

3.3 Plug renewal. Upon completion of all work on appendages, the Contractor 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.

TABLE 1 – PLUGS FOR U/W APPENDAGES

APPENDAGE	FRAME	SIDE
Bilge Keel	42 to 79	P/S
Rudder	105 to 109	CL
Flow Accelerating Fin	93.5 to 106	P/S

3.4 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 CIR.

4. NOTES

This section is not applicable.

WORK ITEM 10: 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 225B-WLB 243-2, Rev G; Stern Tube and Bearing a & D

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

The Society for Protective Coatings (SSPC)/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 Inspection - initial. 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 (U/W Body and Boot-Top, Icebreaker <235', in Fresh Water (Excluding Sea Chest)" 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 11: Appendages, U/W, Internal, Preserve

1. SCOPE

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

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 111-001, Rev A, Shell Expansion

Coast Guard Drawing 225B WLB 114-001, Rev C, Shell Appendages

Coast Guard Drawing 225B WLB 114-002, Rev -, Flow Accelerating Fin

Coast Guard Drawing 225B WLB 801-006, Rev D, Docking Drawing

COAST GUARD PUBLICATIONS

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

OTHER REFERENCES

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

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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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 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.

TABLE 1 - DRAIN PLUGS FOR U/W APPENDAGES

APPENDAGE	FRAME	SIDE
Bilge Keel	42 to 79	P/S
Rudder	105 to 109	CL
Flow Accelerating Fin	93.5 to 106	CL

4. NOTES

This section is not applicable to this work item.

WORK ITEM 12: Chain Lockers, Clean and Inspect

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean and inspect the Chain Locker(s).

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225 WLB 581-001, Rev E, Anchor Handling System Arrangement

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General. The Contractor must refer to Coast Guard Drawing 225 WLB 581-001 for guidance in accomplishing this work item.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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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:

- Eductor strainer.
- Anchors and chains.
- Float switch bilge alarm.
- Fluid contents of chain locker(s).
- Deck grating.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.2 Operational test, initial. Prior to commencement of work, the Contractor must witness Coast Guard Personnel perform an initial operational test of the bilge sensor(s)/alarm(s), as applicable, to demonstrate existing operational condition. Submit a CFR.

3.3 Cleaning tasks. The Contractor must refer to Coast Guard Drawing 225 WLB 581-001 for guidance and clean all interior surfaces free of all foreign materials, such as sediment or sludge. Remove all persistent residues, taking care not to damage the coating system. Remove cleaning media and residues continuously during the washing process. Remove any residual wash media and wipe up residual moisture with clean lint-free cloths. Collect, contain, and dispose of all wash media, residues, and cleaning materials in accordance with all Federal, state, and local regulations.

3.4 Inspection. The Contractor must visually inspect sounding tubes and the port and starboard chain locker surfaces, including the sump, bellmouths, hawse pipes, chain pipes, bulkhead padeye and all structural members. Complete the “Tank and Void Assessment Form” (found in the Work Item titled “General Requirements”) and submit via CFR. Electronic PDF version of this form will be furnished by the COR upon request. Include the following, as applicable:

- Structural condition
- Inaccessible areas
- Condition of coating system, including measurements taken, percentage, location, and type of coating failure.

3.5 Ultrasonic thickness (UT) measurement. The Contractor must take a total of 50 UT measurements of tank plating, in locations designated by the Coast Guard Inspector, in accordance with SFLC Std Spec 0740, Appendix C. Use Coast Guard Drawing _____ as guidance. Submit a CFR.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.6 Operational test, post repairs. After completion of work, the Contractor must thoroughly test, in the presence of the Coast Guard Inspector and demonstrate the bilge sensor(s)/alarm(s) to be in satisfactory operating condition. Submit a CFR.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 13: Tanks, MP Fuel Stowage and Overflow, Clean and Inspect

1. SCOPE

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

TYPE OF TANK	LOCATION	CAPACITY - 95% (GALLONS)	LOW SUCTION (GALLONS)
Diesel Fuel Storage	4-17-1-F	5,090	161
Diesel Fuel Storage	4-17-4-F	3,457	109
Diesel Fuel Overflow	3-54-0-F	5,549	175

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 541-001, Rev G; Fuel Oil System Diagram

Coast Guard Drawing 225B WLB 541-007, Rev D; Incinerator Fuel Oil Service Tank

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

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

Society of Automotive Engineers (SAE) Aerospace Material Specification (AMS) C-6183B,
2019, Cork and Rubber Composition Sheet; for Aromatic Fuel and Oil Resistant Gaskets

3. REQUIREMENTS

3.1 General.

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

- 3.9 (Ultrasonic thickness (UT) measurement).

3.1.2 Tech Rep.

Not applicable.

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

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

- Fuel
- Piping
- Tank access cover

3.1.4.1 Remove up to a total of 5,000 gallons of diesel fuel. Document a complete chain of custody record of the removed tank contents from the vessel to the point of final destination or delivery. Submit document to the COR upon completion of work.

3.1.4.2 Dispose of removed fluids in accordance with all applicable Federal, state, and local regulations.

3.1.4.3 Provide the following to support Coast Guard personnel to refuel equipment:

- boom around cutter
- tagout crane way equipment
- Oil transfer supervisor.

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.

- TLI for tanks

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

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

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

3.4 Cleaning requirements. The Contractor must refer to Coast Guard Drawings 225B WLB 541-001 and 225B WLB 541-007 for guidance. The Contractor must remove tank cover(s) and clean tank interior surfaces free of all foreign materials, such as residual fuel or water, sediment, sludge, rust, or biological growth, taking care not to damage the coating system (if applicable). Remove cleaning media and

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residues continuously during the washing process. Remove any residual wash media and wipe up residual moisture with clean lint-free cloths.

3.5 Tank content and waste disposal. The Contractor must dispose of residual tank contents and any cleaning fluids in compliance with all applicable Federal, state, and local laws, ordinances and regulations. Document a complete chain of custody record of the removed tank contents and generated wastes, from the vessel to the point of final destination or delivery. Submit document to the COR upon completion of work.

3.6 Inspection. The Contractor must visually inspect all tank interior surfaces, including, but not limited to bulkheads, floor and overhead plating, structural members, manhole cover surfaces, fasteners and gasket seating surfaces. Complete the “Tank and Void Assessment Form” (found in the Work Item titled “General Requirements”) and submit via CFR. Electronic PDF version of this form will be furnished by the COR upon request. Include the following, as applicable:

- Tank structural condition.
- Inaccessible areas.
- Condition of tank coating, including measurements taken, percentage, location, and type of coating failure (if tank interior surfaces are coated).
- Tank level indicator (TLI) and/or float switch condition, as applicable.
- Sounding/vent tube and striker plate condition (including vent check valve and waster piece).
- Suction and discharge piping condition.
- Fastener material and condition (correct fastener material is stainless steel).

3.7 Tank closing. The Contractor must ensure that the tank(s) remain open for at least 24 hours after completion of any KO-authorized repair and preservation procedures. Notify the COR at least 24 hours prior to closing the tank(s) and ensure tank closure is accomplished in the presence of the Coast Guard Inspector. After satisfactory inspection by the Coast Guard Inspector and completion of all authorized repairs, close tank manhole cover(s) with new gasket material conforming to AMS-C-6183. Chase threads on studs to ensure even installation of the access covers. Renew any damaged nuts.

3.7.1 The Contractor must renew 100% of nuts and washers.

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

- Designated tank TLIs
- Vent check valves

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

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

4. NOTES

4.1 Tank content removal. The Ship's force will pump down the tanks to the maximum extent possible with the installed pumping system.

4.2 Tank inspection. The Coast Guard Inspector will visually inspect the tank interior immediately prior to closing.

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

WORK ITEM 14: Voids, Non-Accessible, Leak Test

1. SCOPE

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

TABLE 1 - PLUGS FOR NON-ACCESSIBLE VOIDS

VOID	FRAME	SIDE
Inaccessible void	102	P/S

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 111-001, Rev A, Shell Expansion
Coast Guard Drawing 225B WLB 801-006, Rev D, Docking Drawing

COAST GUARD PUBLICATIONS

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

OTHER REFERENCES

ASTM International (ASTM) D5363, 2016, Standard Specification for Anaerobic Single-
Component Adhesives (AN)
MIL-S-45180, 1998, Sealing Compound, Gasket, Hydrocarbon Fluid and Water Resistant

3. REQUIREMENTS

3.1 General.

3.1.1 CIR. The Contractor 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 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 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 the Coast Guard drawings listed in Section 2 (References) as guidance:

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

CAUTION

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

3.3 Plug renewal. Upon completion of all work on the designated voids, the Contractor 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.
- Submit a CFR.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 15: Voids, Non-Accessible, Internal Surfaces, Preserve

1. SCOPE

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

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 111-001, Rev A, Shell Expansion

Coast Guard Drawing 225B WLB 801-006, Rev D, Docking Drawing

COAST GUARD PUBLICATIONS

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

OTHER REFERENCES

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

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

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

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

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 listed in Section 2 (References) herein as guidance:

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

TABLE 1 - DRAIN PLUGS FOR NON-ACCESSIBLE VOIDS

VOID	FRAME	SIDE
Inaccessible void	102	P/S

4. NOTES

This section is not applicable to this work item.

WORK ITEM 16: Tanks, MP Fuel Service, Clean and Inspect**1. SCOPE**

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

TABLE 1 - FUEL SERVICE TANKS

TYPE OF TANK	LOCATION	CAPACITY - 95% (GALLONS)	LOW SUCTION (GALLONS)
Diesel Fuel Service	3-61-1-F	4,341	137
Diesel Fuel Service	3-62-2-F	3,472	137
Incinerator Diesel Fuel Service	01-78-1-F	576	Empty
Emergency Generator Diesel Fuel Service	02-86-2-F	101	

1.2 Government-furnished property.

None.

2. REFERENCES**COAST GUARD DRAWINGS**

Coast Guard Drawing 225B WLB 541-001, Rev G; Fuel Oil System Diagram

Coast Guard Drawing 225B WLB 541-007, Rev D; Incinerator Fuel Oil Service Tank

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

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

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

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

- Fuel
- Piping
- Tank access cover

3.1.4.1 The Contractor must remove up to a total of 5,000 gallons of diesel fuel. Document a complete chain of custody record of the removed tank contents from the vessel to the point of final destination or delivery. Submit document to the COR upon completion of work.

3.1.4.2 Dispose of removed fluids in accordance with all applicable Federal, state, and local regulations (see 4.2 (Tank content restoration)).

NOTE

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

3.4 Cleaning requirements. The Contractor must remove tank cover(s) and clean tank interior surfaces free of all foreign materials, such as residual fuel or water, sediment, sludge, rust, or biological growth, taking care not to damage the coating system (if applicable). Remove cleaning media and residues continuously during the washing process. Remove any residual wash media; and wipe up residual moisture with clean lint-free cloths. The Contractor must refer to Coast Guard Drawings 225B WLB 541-001 and 225B WLB 541-007 for guidance.

3.5 Tank content and waste disposal. The Contractor must dispose of residual tank contents and any cleaning fluids in compliance with all applicable Federal, state, and local laws, ordinances and regulations. Document a complete chain of custody record of the removed tank contents and generated wastes, from the vessel to the point of final destination or delivery. Submit document to the COR upon completion of work.

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3.6 Inspection. The Contractor must accomplish the following tasks:

3.6.1 Visually inspect all tank interior surfaces, including, but not limited to bulkheads, floor and overhead plating, structural members, manhole cover surfaces, fasteners and gasket seating surfaces. Complete the “Tank and Void Assessment Form” (found in the Work Item titled “General Requirements”) and submit via CFR. Electronic PDF version of this form will be furnished by the COR upon request. Include the following, as applicable:

- Tank structural condition.
- Inaccessible areas.
- Condition of tank coating, including measurements taken, percentage, location, and type of coating failure (if tank interior surfaces are coated).
- Tank level indicator (TLI) and/or float switch condition, as applicable.
- Sounding/vent tube and striker plate condition.
- Suction and discharge piping condition.
- Fastener material and condition (correct fastener material is stainless steel).

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

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

3.7.2 Ensure that the tank(s) remain open for at least 24 hours. Notify the COR at least 24 hours prior to closing the tank(s) and ensure tank closure is accomplished in the presence of the Coast Guard Inspector. After satisfactory inspection by the Coast Guard Inspector and completion of all authorized repairs, close tank manhole cover(s) with new gasket material conforming to AMS-C-6183. Chase threads on studs to ensure even installation of the access covers. Renew any damaged or missing fasteners. Existing undamaged fasteners may be reused. For purpose of bid, assume 10% of existing fasteners will require renewal. Renew all Nylock hex nuts.

NOTES

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

Coast Guard personnel will operate all shipboard machinery and equipment.

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

- Designated tank TLIs
- Vent check valves

3.9 Ultrasonic thickness (UT) measurement. The Contractor must take a total of 50 UT measurements of tank plating, in locations designated by the Coast Guard Inspector, in accordance with SFLC Std Spec 0740, Appendix C. Use Coast Guard Drawing as guidance. Submit a CFR.

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

4. NOTES

4.1 Tank content 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.

WORK ITEM 17: Tanks, Potable Water, Clean and Inspect**1. SCOPE**

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

TABLE 1 - TANKS

TYPE OF TANK	LOCATION	CAPACITY - 95% (GALLONS)	LOW SUCTION (GALLONS)
Potable Water	2-25-1-W	4,028	80
Potable Water	2-25-2-W	4,028	80

1.2 Government-furnished property.

None.

2. REFERENCES**COAST GUARD DRAWINGS**

Coast Guard Drawing 225B WLB 601-001, Rev F, General Arrangement Inboard & Outboard Profiles

COAST GUARD PUBLICATIONS

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

OTHER REFERENCES

American National Standards Institute/NSF International (ANSI/NSF) 61, 2015, Drinking Water System Components - Health Effects

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

3. REQUIREMENTS

3.1 General.

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:

- Fluid contents
- Piping
- RO system components
- Deck grating.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

- TLI

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

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

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

3.4 Tank content removal. The Contractor must remove and dispose of all fluids and/or residues in accordance with all applicable Federal, state, and local regulations. The Contractor must notify the Dockmaster prior to filling or draining the potable water tank(s), when this item is being executed in a drydock availability. The Contractor must refer to Coast Guard Drawing 225B WLB 601-001 for guidance.

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3.5 Tank cleaning. The Contractor must remove tank cover(s); clean tank interior surfaces free of all foreign materials, such as sediment, sludge and bacterial growth. Remove all persistent residues, taking care not to damage any tank coating system. Remove cleaning media and residues continuously from the tank during the washing process. Remove any residual wash media and wipe up residual moisture with clean lint-free cloths. Collect, contain, and dispose of all wash media, residues, and cleaning materials in accordance with all Federal, state, and local regulations.

3.6 Inspection. The Contractor must visually inspect all tank interior surfaces, including, but not limited to bulkheads, floor and overhead plating, structural members, manhole cover surfaces, fasteners and gasket seating surfaces. Complete the “Tank and Void Assessment Form” (found in the Work Item titled “General Requirements”) and submit via CFR. Electronic PDF version of this form will be furnished by the COR upon request. Include the following, as applicable:

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

3.7 Tank closing. The Contractor must notify the COR at least 24 hours prior to closing the tank(s) and ensure tank closure is accomplished in the presence of the Coast Guard Inspector. After satisfactory inspection by the Coast Guard Inspector, and completion of all authorized repairs, close tank manhole cover(s) with new gasket material conforming to ANSI/NSF 61. Renew all stud cotton grommets (as applicable) upon reinstallation of manhole cover(s).

3.7.1 The Contractor must renew 100% of nuts and washers.

3.8 Tank disinfecting. After all other work involving the potable water system and tank closing have been completed, the Contractor must disinfect and treat the affected potable water tank(s) and associated disturbed piping and components, as necessary, to meet or exceed the requirements of AWWA C652. After tank disinfecting, remove and dispose of all treated water in accordance with all Federal, state and local regulations. Ensure that no one enters the tanks once disinfection is completed. Submit CFR providing confirmation that disinfection of tank(s) and associated potable water system disturbed piping and components has been completed and certifying that all sampling and testing is negative for coliform organisms.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

- TLI

4. NOTES

This section is not applicable to this work item.

WORK ITEM 18: Tanks, Ballast, Clean and Inspect**1. SCOPE**

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

TABLE 1 - TANKS

TYPE OF STRUCTURE	LOCATION	CAPACITY - 95% (GALLONS)	LOW SUCTION (GALLONS)
Forepeak Ballast	4-0-0-W	9,142	274
Ballast	4-6-0-W	11,525	350
Ballast	4-21-0-W	17,711	560
Ballast	4-30-3-W	4,108	130
Ballast	4-30-4-W	4,108	130
Ballast	4-57-0-W	27,117	856

1.2 Government-furnished property.

None.

2. REFERENCES**COAST GUARD DRAWINGS**

Coast Guard Drawing 225B-WLB 111-001, Rev A, Shell Expansion
 Coast Guard Drawing 225B WLB 601-002, Rev L, Booklet off General Drawings
 Coast Guard Drawing 225B-WLB 801-013, Rev B, Midship Section & Typical Sections
 Coast Guard Drawing 225B-WLB 801-015, Rev B, Scantling, Decks, & Platforms
 Coast Guard Drawing 225B-WLB 801-016, Rev -, Scantlings, Watertight Bulkheads

COAST GUARD PUBLICATIONS

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

OTHER REFERENCES

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

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

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

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

- TLI's for tanks listed in paragraph 1.1

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

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

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

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

3.4 Cleaning. The Contractor must clean the designated structure's (see paragraph 1.1 (Intent)) interior surfaces free of all foreign materials, such as sediment, sludge and fungal growth. Remove all persistent residues, taking care not to damage the tank coating system. Remove cleaning media and residues continuously from the compartment during the washing process. Remove any residual wash media and wipe up residual moisture with clean lint-free cloths. Collect, contain, and dispose of all wash media, residues, and cleaning materials in accordance with all Federal, state, and local regulations. The Contractor must refer to Coast Guard Drawing 225B WLB 601-002 for guidance.

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3.5 Inspection. The Contractor must visually inspect all interior surfaces, including, but not limited to bulkheads, floor and overhead plating, structural members, manhole cover surfaces, fasteners and gasket seating surfaces. Complete the “Tank and Void Assessment Form” (found in the Work Item titled “General Requirements”) and submit via CFR. Electronic PDF version of this form will be furnished by the COR upon request. Include the following, as applicable:

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

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

3.6.1 The Contractor must renew 100% of nylon insert/nylock nuts and washers.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

- TLIs

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

3.8.1 In addition to the UT measurements, take a total of 25 pit-depth measurements, using a suitable pit depth gauge

4. NOTES

This section is not applicable to this work item.

WORK ITEM 19: Voids, Accessible, Clean and Inspect**1. SCOPE**

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

TABLE 1 - VOIDS

TYPE OF STRUCTURE	LOCATION	CAPACITY - 95% (GALLONS)
Void	*4-17-2-V	1,854
Void	4-37-2-V	1,396
Void	4-39-0-V	
Void	3-51-0-V	
Void	4-98-0-V	

*There are there are two accesses for 4-17-2- Void.

1.2 Government-furnished property.

None.

2. REFERENCES**COAST GUARD DRAWINGS**

Coast Guard Drawing 225B-WLB 111-001, Rev A, Shell Expansion
 Coast Guard Drawing 225B WLB 601-002, Rev L, Booklet off General Drawings
 Coast Guard Drawing 225B-WLB 801-013, Rev B, Midship Section & Typical Sections
 Coast Guard Drawing 225B-WLB 801-015, Rev B, Scantling, Decks, & Platforms
 Coast Guard Drawing 225B-WLB 801-016, Rev -, Scantlings, Watertight Bulkheads

COAST GUARD PUBLICATIONS

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

OTHER REFERENCES

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

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

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

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

3.3 Cleaning and inspection requirements. The Contractor must refer to Coast Guard Drawing 225B WLB 601-002 for guidance. to accomplish the following tasks:

3.3.1 Content removal. The Contractor must remove and dispose of all fluids and/or residues in accordance with all applicable Federal, state, and local regulations.

3.3.2 Cleaning. The Contractor must remove access cover(s). Clean the designated structure's interior surfaces free of all foreign materials, such as sediment, sludge and fungal growth. Remove all persistent residues, taking care not to damage the tank coating system. Remove cleaning media and residues continuously from the compartment during the washing process. Remove any residual wash media and wipe up residual moisture with clean lint-free cloths. Collect, contain, and dispose of all wash media, residues, and cleaning materials in accordance with all Federal, state, and local regulations.

3.3.3 Inspection. The Contractor must visually inspect all interior surfaces, including, but not limited to bulkheads, floor and overhead plating, structural members, manhole cover surfaces, fasteners and gasket seating surfaces. Complete the "Tank and Void Assessment Form" (found in the Work Item titled "General Requirements") and submit via CFR. Electronic PDF version of this form will be furnished by the COR upon request. Include the following, as applicable:

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

3.4 Closing. The Contractor must ensure that the compartment(s) remain open for approximately 24 hours after completion of the tasks specified above. Notify the COR at least 24 hours prior to closing the compartment(s) and ensure tank closure is accomplished in the presence of the Coast Guard Inspector. After satisfactory inspection by the Coast Guard Inspector, and completion of all authorized repairs, close the manhole cover(s) with new gasket material conforming to ASTM D1330 and cotton grommets on the studs (as applicable). The Contractor must renew up to 10% of missing or damaged nuts and washers.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.5 Operational test, post repairs. After completion of work and in the presence of the Coast Guard inspector, the Contractor must thoroughly test and demonstrate the TLI's for tanks listed in paragraph 1.1 (Intent), to be in satisfactory operating condition. Submit a CFR.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 20: Tanks, Dirty Oil and Waste, Clean and Inspect**1. SCOPE**

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

TABLE 1 – TANKS

TYPE OF TANK	LOCATION	CAPACITY - 95% (GALLONS)	LOW SUCTION (GALLONS)
Dirty Oil	3-77-0-F	586	
Oily Water	3-74-0-F	937	
Waste Oil	4-60-1-F	1,786	
Waste Oil	4-71-0-F	606	18
Oily Water	4-60-2-F	1,875	200
Sludge	4-74-2-F	200	

*(Note: Tank CAPACITY - 95% at 95%)

1.2 Government-furnished property.

None.

2. REFERENCES**COAST GUARD DRAWINGS**

Coast Guard Drawing 225B WLB 601-002, Rev H, Booklet of General Drawings
Coast Guard Drawing 225B WLB 801-005, Rev A Tank CAPACITY - 95% Curves
Coast Guard Drawing 225 WLB 801-020, Rev B, Tank CAPACITY - 95% Curves

COAST GUARD PUBLICATIONS

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

OTHER REFERENCES

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

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

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

3.2 The Contractor must remove up to a total of 1000 gallons of waste oil and oily water, to facilitate gas-freeing. Dispose of removed fluids in accordance with all applicable Federal, state, and local regulations.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

- TLI's for tank(s) listed in paragraph 1.1 (Intent)

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

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

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3.4.2 Ensure the plug log is available to the Coast Guard inspector when the inspector is performing his close-out inspection on each tank.

NOTE

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

3.5 Cleaning requirements. The Contractor must remove tank cover(s) and clean tank interior surfaces free of all foreign materials, such as sediment or sludge, taking care not to damage the coating system (if applicable). Use Coast Guard drawings 225B WLB 601-002, 225B WLB 801-005 and 225B WLB 801-020 for guidance. Remove cleaning media and residues continuously during the washing process. Remove any residual wash media; and wipe up residual moisture with clean lint-free cloths.

3.6 Tank content and waste disposal. The Contractor must dispose of tank contents and all cleaning fluids in compliance with all applicable Federal, state, and local laws, ordinances and regulations. Document a complete chain of custody record of the removed tank contents and generated wastes, from the vessel to the point of final destination or delivery. Submit document to the COR upon completion of work.

3.7 Inspection. The Contractor must visually inspect all tank interior surfaces, including, but not limited to bulkheads, floor and overhead plating, structural members, manhole cover surfaces, fasteners and gasket seating surfaces. Complete the “Tank and Void Assessment Form” (found in the Work Item titled “General Requirements”) and submit via CFR. Electronic PDF version of this form will be furnished by the COR upon request. Include the following, as applicable:

- Tank structural condition.
- Inaccessible areas.
- Condition of tank coating, including measurements taken, percentage, location, and type of coating failure.
- Tank level indicator (TLI) and/or float switch condition.
- Sounding tube and striker plate condition.
- Suction and discharge piping condition.
- Fastener material and condition (correct fastener material is stainless steel).

3.8 Tank closing. The Contractor must ensure that the tank(s) remain open for at least 24 hours after completion of all authorized repair and preservation procedures. Notify the COR at least 24 hours prior to closing the tank(s) and ensure tank closure is accomplished in the presence of the Coast Guard Inspector. After satisfactory inspection by the Coast Guard Inspector and completion of all authorized repairs, close tank manhole cover(s) with new gasket material conforming to AMS-C-6183.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

- TLI's for tank listed in paragraph 1.1 (Intent)

4. NOTES

4.1 The Coast Guard Inspector will visually inspect the tank interior immediately prior to closing.

WORK ITEM 21: Hydraulically Operated Cargo Hatch, Inspect and Service

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to perform inspections and service for the hydraulically-operated cargo hatch.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 528-002, Rev D, Weather Deck Drains Diagram
Coast Guard Drawing 225B WLB 549-001, Rev C, Onboard Lubrication Requirements
Coast Guard Drawing 225B WLB 556-001, Rev F, Hydraulic System Diagram
Coast Guard Drawing 225B WLB 601-001, Rev M; General Arrangement Inboard and Outboard Profiles

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3717, Jun 2003, Hydraulic Cargo Hatch
Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements
Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2022, Welding and Allied Processes
Surface Forces Logistics Center Standard Specification 5000 (SFLC Std Spec 5000), 2022, Auxiliary Machine Systems
Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, Requirements for Preservation of Ship Structures

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

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

- 3.2 (Tasks to be accomplished) – Task #1.

3.1.2 Tech Rep.

Not applicable.

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

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

- Electrical and hydraulic switches.
- Dogs.
- Toggles.
- Hydraulic cylinders.
- Hydraulic lines.
- Electrical cables.
- Hoses.
- Overhead insulation.

3.2 Tasks to be accomplished. The Contractor must perform the following tasks:

CAUTION

Do not paint gaskets or any moving parts, including dogs, nuts, wedges, spindles, yokes, packing, connecting rods and hinge pins.

CAUTION

For Task #2, failure to remove hinge interferences during hatch removal/reinstallation may result in damage to coaming and hinges. Protect hinges during hatch removal and reinstallation.

				ADDITION REQUIREMENTS	
#	TASK TYPE	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM 5000 STD	OTHER
1	Operate and Inspect	1	Cargo hatch assembly	3.2.1 (Operate and inspect)	1. Check hatch for proper operation of all indicators, switches, dogging un-dogging

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				ADDITION REQUIREMENTS	
#	TASK TYPE	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM 5000 STD	OTHER
					and overall operation. 2. Check entire coaming and drains for signs or debris or clogging of drains. 3. Conduct a visual inspection of the hatch. Check all linkages. 4. Inspect both inner and outer knife-edges for proper height and evenness of wear. 5. Inspect entire hatch structure, for signs of paint wear and corrosion. 6. Inspect gasket channels for corrosion. 7. Take 10 UT measurements of gasket channel surfaces, in locations designated by the Coast Guard Inspector, in accordance with SFLC Std Spec 0740, Appendix C. 8. Inspect hydraulic hose condition. 9. Check condition of dogs and wedges. Submit A CIR.
2	Remove and reinstall	1	Cargo hatch assembly	N/A	Remove hatch, to facilitate inspections and service tasks, and reinstall hatch, upon completion of work. Coaming in way of hatch hinges may be an interference to hatch removal. Inspect hinge clearance prior to commencing unshipping operations and determine if modifications are required. Modify/remove as necessary and return to original configuration at hatch reinstallation. Failure to remove interferences may result in damage to coaming and hinges. Protect hinges during hatch removal and reinstallation.
3	NDE	1	Cargo hatch assembly	3.2.5 (NDE)	Components designated for NDE: All welds. Submit a CFR.
4	Service and Inspect	1	Hydraulic hatch lift cylinder	3.2.2 (Service and inspect)	Submit CFR
5	Renew	1	Cargo hatch gasket	N/A	See CG TP-3717. Conduct gasket compression test, upon installation. Submit CFR.
6	Preserve	1	Cargo hatch assembly	3.2.4 (Preservation)	Use Coating System: "Weather Decks (Weather Deck, Buoy Tender Working Deck)" in accordance with in SFLC Std Spec 6310, Appendix A (Cutter and Boat Exterior Painting Systems). Submit CFR.

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				ADDITION REQUIREMENTS	
#	TASK TYPE	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM 5000 STD	OTHER
7	Groom And Lubricate	1	Cargo hatch assembly	3.2.6 (Groom and lubricate)	See Coast Guard Drawing 225B WLB 549-001.
8	Boundary Testing	1	Cargo hatch assembly	N/A	Accomplish a chalk test and water hose test, in accordance with SFLC Std Spec 0740, Appendix C. Adjust dogs in accordance with CG TP-3717. Submit a CFR.
9	Operational Testing – Post Repairs	1	Cargo hatch assembly	N/A	1. Raise and lower, dog and un-dog, the hatch three complete cycles. 2. Verify hatch operates in accordance with parameters specified in TP-3717 with no unusual noise or binding. Submit CFR.
10	Touch-Up Preservation	All	New and disturbed surfaces	N/A	Prepare and coat all new and disturbed exterior and interior surfaces to match existing adjacent surfaces, in accordance with SFLC Std Spec 6310, Appendix A (Cutter and Boat Exterior Painting Systems) and Appendix B (Cutter and Boat Interior Painting Systems), respectively, and as applicable.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 22: Main Reduction Gear, Overhaul

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew worn or end of life internal components of the MRG (Main Reduction Gear). All seals and bearings must be renewed and thrust bearing fully inspected. The entire reduction gear will be drained, cleaned, flushed, and restored so that the system is fully operational upon the completion of the repair. Reduction gear is a Philadelphia Gear Model # 96DHCMG-CP.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
N	USCG 225 MRG Service Kit	3020-01-F20-5954	1 ea.	184,871
N	Set of 12 Pads (shoes) for Thrust Bearing	Philadelphia Gear Corporation P/N 000010188000	1	9,986
N	Complete Turning Gear	Philadelphia Gear Drawing 01070-0353 (NIIN:01-F19-5931)	1 ea.	30,000

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

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

***Government-furnished property, which is to be supplied by either the vessel or the C4IT Service Center.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225-WLB 243-001, Rev B; PROPULSION SHAFTING ARRANGEMENT

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) IB-H2-0012-V0, Sep 2025, REDUCTION GEAR MODELS 96DHCMG-CP & 96DHCMGH-CP OPERATING & MAINTENANCE INSTRUCTIONS

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

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

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

OTHER REFERENCES

A-A-59323, Rev -; CLOTHS, CLEANING, LOW-LINT , 6/30/99

MIL-PRF-9000, Rev H; Lubricating Oil, Shipboard Internal Combustion Engine, High Output Diesel, 9/16/87

Naval Ships' Technical Manual, Chapter 241, Propulsion Reduction Gears, Couplings, Clutches, and Associated Components

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep 1. The Contractor must provide the services of an OEM authorized/ licensed Tech Rep for the Philadelphia Gear Corporation 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 When required, 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.

3.1.2.3 Submit a copy of the Tech Rep's résumé and a list of references to the to the COR at the Arrival Conference.

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

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

NOTE

The following interference list was derived from past “Major MRG Overhauls” it represents the maximum expected interference that will be encountered. However, this evolution is more limited and only interference required to remove the cover, a HS pinion, and replace the cover are required.

- Reduction gear lube oil cooler
- Engine room ventilation including the plenum box below the soft patch
- Engine room centerline light (mounted to bottom of plenum box)
- Both MDE exhaust, including the turbo nozzles

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- Ensure turbos are covered when nozzles are removed
- Mess Deck vent duct
- Mess Deck drop ceiling as necessary to allow padeye access
- Both MDE crank case breather hoses
- Clutch guards
- Engine couplings and guards
- Shaft speed sensor box mounted on top of reduction gear case
- Electrical wiring in overhead of lower engine room
- IR temperature
- IR temperature sensor in lower engine room, aft on the port side (monitors #2 clutch)
- Clutch air pinning including both solenoid valves
- ASW piping
- Power take-off shaft and bulkhead seal (support carbon fiber shaft with strapping to allow separation of coupling at MRG)
- Generator Pinion/Turning Gear

3.1.5 Other general information.

3.1.5.1 The concerned work area is MMR, Main Reduction Gear 96DHCMG-CP Philadelphia Gear Corporation. Refer to CG Tech Pub IB-H2-0012-V0 for arrangement and details.

3.1.5.2 At the end of each working day and during periods when the work on the reduction gears has ceased, the reduction gears and open piping must be wrapped with plastic sheeting and taped closed to exclude dirt and moisture.

3.1.5.3 All disconnected lube oil piping and hoses must be blanked or capped immediately after opening to prevent dirt or foreign particle intrusion.

3.1.5.4 All parts (including piping, hoses, fittings etc.) must be thoroughly cleaned prior to reassembly of the reduction gear.

3.1.5.5 Conduct all hotwork in accordance with SFLC Std Spec 0740.

3.2 Reduction Gear security, production precautions, and contamination control.

3.2.1 The Contractor must propose, implement, and employ effective physical security and contamination control measures concurrent with opening, inspecting, and repairing reduction gears.

3.2.2 Entry into the red gear and thrust bearing or the lubrication system must be made only with the knowledge and approval of the cutter's Engineer Officer or his designated representative and only after written concurrence with contractor's procedures and methods used to exclude contamination.

3.2.3 Plug, cap, cover, or erect barriers as necessary to preclude dirt contamination and foreign object damage, as each part of the reduction gear and thrust bearing system is disconnected or otherwise disturbed to facilitate inspection. Coordinate and sequence work to prevent conflicting operations that may result in loose materials and tools being used over an open gear. Coordinate and sequence work to

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eliminate dust, debris, and dirt-generating processes like grinding, sanding, slag chipping, while any part of the gear box is open for inspection or repair.

3.2.4 Only workers with clean clothing and tools will be permitted to work around the reduction gear's open case. Worker's pockets must be empty, and all jewelry, watches, and loose personal effects must be removed, to prevent items from inadvertently falling into the gear casing.

3.2.5 All tools must be safeguarded from dropping into the open reduction gear case by securing with lanyards attached to a fixture or the worker.

3.2.6 No material, tools, parts, must be placed or stored on any catwalks, staging, ledges or any other location above the level of the open reduction gear casing within a ten foot radius.

3.2.7 All lifting equipment; chain blocks, rope, nylon slings, wire rope slings, and any other equipment must be washed clean prior to use to prevent dirt or paint chips from falling into the open reduction gear casing.

3.2.8 All parts must be thoroughly cleaned prior to reassembly of the reduction gear.

3.2.9 Observe and implement all the precautions detailed in CG Tech Pub 3253, for opening and protecting parts, equipment, and personnel. Note in particular the following subparagraph's specific precautions:

3.2.9.1 Avoid damage to all joint surfaces. Prevent the forming of burrs or ridges that will result in oil leakage. Protect joint flanges with clean canvas and wooden blanks or visyquene.

3.2.9.2 Mark or tag parts to aid in correct reassembly. Place these parts in clean containers for temporary storage. Match mark parts as necessary where indexed relationships between parts exist for proper fit or operation of the equipment.

3.2.9.3 Treat thermometers and sight flow indicators, when removed, with care and blank exposed pipe and flange ends to prevent contamination. Sections of oil supply and drain piping should be removed from the-immediate area to prevent damage, bending or other casualty which may hinder proper reassembly.

3.2.9.4 Protect all pipe openings with clean, canvas covered tapered wooden plugs, caps , or bolted blanks. Do not use rags or waste for this application.

3.2.9.5 Covers, end covers and other portions of the housing, when removed, must be placed and supported to fully protect the flange joints. Support heavy parts on wooden blocks or inverted, whichever is easier and allows the better protection in the available space. Pinions and gears, if removed should be supported on clean wooden blocks and must be covered with clean rubber matting, pig mats, or similar (with USCG's concurrence).

3.2.9.6 Wire cables, hooks or shackles must not be used adjacent to gear and pinion teeth or journal surfaces. Shaft areas, adjacent to-journal surfaces which may be used for sling locations, should be protected with sheet lead or soft copper chafing gear or appropriate rubber mats or pig mats.

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3.2.9.7 Protect the exposed surfaces of all precision and running parts, particularly gear teeth, shaft journals, and sleeve bearing surfaces. Cover precision and running parts to prevent contamination and impact damage.

3.3 Lifting points and weight handling.

3.3.1 Provide a weight handling plan for all heavy lifts contemplated for this work. The weight handling plan must identify all instances where ship's structure will be used to handle casings and all weight handling equipment, including chain falls, slings, hooks lifting points or padeyes are needed beyond those existing. The Contractor must install and test (200% of rated load and PT or MT and correct any deficiencies) all new and existing lifting points and padeyes prior to opening the reduction gear case. The Contractor must ship check and provide a CFR.

3.3.1.1 All weight handling equipment, lifting gear, and rigging used on this project must be certified as statically load tested to 150% of the safe working load. The Contractor may elect to demonstrate load capacity of lifting gear and rigging in conjunction with padeye load tests, in the presence of the Coast Guard Inspector.

3.3.1.2 Provide and use spreader bars and beams as necessary to eliminate side pull due to excessive fleet angle.

3.3.1.2.1 In lifting the bull gear the heavies component be aware an I-beam in the overhead to distribute the weight may be necessary. In past efforts the messdeck decking was bent by not adequately supporting the weight. If the bull gear is not being removed from the gear casing (Technical Representative discovered no conditions or damage that would require removal) it theoretically can just be raised a very slight amount to allow bearing renewals. Although this aspect of the work is performance based and Contractor may elect to follow other feasible alternatives, this information is shared to help ensure the Contractor can formulate a fair and accurate cost estimate of the work required.

3.4 Storage, staging, and mess deck soft patch.

3.4.1 The contractor must develop a plan for temporary relocation and storage of the disassembled reduction gear components and removed interferences. The plan must be submitted to and approved by the Coast Guard Inspector prior to implementation. The contractor must conduct the actual temporary relocation and storage activities in full accordance with the approved plan.

3.4.2 The contractor must determine the feasibility of storing the reduction gear components within the confines of the machinery space or the necessity of removing any or all components from the cutter during the repairs. The contractor must stipulate the intended temporary storage location for each component in the submitted storage plan. All components removed from the cutter must be stored out of the weather and under cover.

3.4.3 All openings into reduction gear components must be capped and sealed during storage. Machined surfaces must be protected. The external surfaces of all components must be wiped clean prior to reinstallation on the reduction gears.

3.4.4 If the possibility of contamination exists due to failure to protect surfaces or cap and seal openings, components must be cleaned and flushed prior to reinstallation on the reduction gears.

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3.4.5 Staging. Previous jobs revealed the need to build staging over the MDE's in order to facilitate storage and work areas. Any staging erected should not contact the MDE's. Although this aspect of the work is performance based and Contractor may elect to follow other feasible alternatives, this information is shared to help ensure the Contractor can formulate a fair and accurate cost estimate of the work required.

3.4.5.1 Previous jobs, the gear case was suspended from the overhead above one MDE.

NOTE

Contractor may request to suspend some components from the overhead, either short term or long term. Those request (suspending parts) must be agreed to by USCG. USCG reserves the sole right to approve or disapprove such requests.

3.4.6 Mess deck soft patch. Previous jobs revealed the mandatory need to remove the mess deck soft patch in order to stage larger items out of the engine room. Although this aspect of the work is performance based, this information is shared to help ensure the Contractor can formulate a fair and accurate cost estimate of the work required.

3.5 Clean room.

3.5.1 The contractor must construct a "Clean Room" over and around the reduction gear. Construct the sides and top of the room from polyethylene film at least 6 mils in thick, above and on all sides of the starboard reduction gear prior to lifting the cover. The clean room must be maintained in good repair from the time the reduction gear is first opened to the engine room atmosphere until the reduction gear is completely closed, with all piping, covers, and caps back in place and fastened.

3.5.2 The clean room must be in place for all times the housing cover has been removed and internals are exposed and vulnerable.

3.6 Bilge and overhead cleaning prior to commencing reduction gear work.

3.6.1 Wipe down the overheads above the Main Diesel Engine and above the Reduction Gear, including all framework, stiffeners, piping, exhaust piping and other items in the overhead to remove dirt and dust which could fall into the engine or reduction gear during work.

3.6.2 Clean and dry the entire bilge, below the deck plate level around the designated reduction gear, in compartment 5-192-01-E, Engine Room. High pressure water wash the foundation around the reduction gear prior to the bilge cleaning and gas free certification. Gas free and certify all affected compartments in accordance with the General Requirements. The affected compartments must be certified "Safe for Personnel - Safe for Hotwork" for the duration of work performed under this item.

3.6.2.1 Thoroughly clean the reduction gear and the area around and above the designated reduction gear to remove all debris that could possibly contaminate the interior of the thrust bearing and reduction gear.

3.6.3 Obtain the CG Inspector verification for cleanliness of the work area prior to opening access covers.

3.7 Preliminary gear tooth contact check.

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3.7.1 Remove gear inspection covers and clean the gear teeth.

3.7.2 Apply hard dye/hard dykem to the gear teeth in accordance with NSTM Chapter 241 at locations approved by the Coast Guard Inspector and the Technical Representative. At a minimum, apply dykem to each of the pinion gears and the low speed gear.

3.7.3 Allow the dykem to dry for at least 24 hours.

3.7.4 After allowing the dykem to dry, jack over the reduction gear. Open the inspection covers and verify proper gear tooth contact. Verify Gear tooth contact in the presence of the Technical Representative and the Coast Guard Inspector.

3.7.5 During jacking energize the electric lube oil pump and verify that lube oil spray patterns are correct and that there is no indication of any clogged nozzles or other abnormalities.

NOTE

Taking pre-overhaul assumes a functioning reduction gear. In the event this work item is being performed after a casualty where debris has been spread and/or known damage has occurred this pre-work tooth contact and any rotation of the reduction gear shall not occur.

3.8 Reduction gear repairs, renewals, and inspections.(All part numbers in paragraph 3.6 refer to drawing 01070-0353 of Tech Pub IB-H2-0012-V0) .

3.8.1 The Contractor must remove all interferences in way of the reduction gear's disassembly, repair and reassembly activity and must restore all affected equipment to the normal operating condition upon completion of the reduction gear repair.

3.8.2 Staging and mess deck soft patch.

3.8.2.1 Previous jobs revealed the need to build staging over the MDE's in order to facilitate storage and work areas. Any staging erected should not contact the MDE's.

3.8.2.2 Previous jobs revealed the need to remove the mess deck soft patch in order to stage larger items out of the engine room .

3.8.3 Open the reduction gear, remove split gear casing, drain oil.

3.8.3.1 Drain the reduction gears sump (110 gallons), the head tank (20 gallons), and lubrication piping of all oil. Remove and dispose of reduction gear oil in accordance with all applicable local, state, and federal laws, and regulations.

3.8.4 Remove HS pinion shafts.

3.8.4.1 A review of Tech Pub indicates the following can be expected effort to remove HS pinion shafts.

3.8.4.2 Briefly, the following major actions are listed in the procedure per CG Tech Pub's IB-H2-0012-V0 Corrective Maintenance Section 6.7.11.1 titled "HS pinion and Quill Shaft Assembly, Removal and Disassembly":

- Remove oil piping and disconnect wiring to permit lifting reduction gear covers

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- Remove engine couplings
- Remove clutch guards
- Remove high speed caps/seal housings, quill shaft bearing plates, and thrust bearing caps
- Remove low speed thru cap/seal housing
- Remove dowels, nuts, and bolts holding housing halves together. Note also there are 2(ea) recessed bolts in the thru-caps for the HS Pinion's forward side.
- Lift housing cover from housing base (Per paragraph 3.3.1 a rigging plan is required)
- Remove both HS pinion and quill shaft assemblies (Per paragraph 3.3.1 a rigging plan is required)
- Remove both HS pinion and quill shaft assemblies(Per paragraph 3.3.1 a rigging plan is required)

3.8.5 Preparing to raise LS shaft.

3.8.5.1 Briefly, once the HS pinion and Quill Shaft Assemblies are removed, then the required steps to lift the bull gear (AKA LS pinion shaft) can commence. Per CG Tech Pub's IB-H2-0012-V0 6.7.11.2, titled "Low speed Gear and shaft Disassembly" to access and renew bearings:

- Removal of CPP Oil Distribution Box
- Remove thrust bearing shoes, then remove thrust bearing base ring assemblies
- Rig for lifting (Per paragraph 3.3.1 a rigging plan is required)
- Lift the LS gear (as required) from gear housing to facilitate LS Bearing renewal,

3.8.5.2 The LS Shaft's coupling's mating surface (when coupling is removed) in the course of the MRG Overhaul is already required to be NDT's in related "Propulsion Shafting; Remove, Inspect, and Reinstall" Work Item. Ensure the NDT has occurred before coupling is re-installed.

3.8.6 Clean and Inspect all removed parts.

3.8.6.1 Clean and inspect in Technical Representative's and CG Inspector's presence all removed parts with solvent.

3.8.6.2 Once the internal gears, shafts, and other components are removed, then clean all internal reduction walls/framing/chambers with solvent and hand cleaning as required to restore a clean deposit free (like new) surface.

3.8.7 Coordination with other work items. The main propulsion shaft including Servo Box are removed in related Work Item "Propulsion Shafting; Remove, Inspect, and Reinstall" coordinate with that related Work Item. The low speed (LS) shaft related renewals cannot be performed until the shaft has been removed (as interference).

3.8.8 Reduction Gear Bearing Renewals.

3.8.8.1 Bearings are believed to be at their end of life. All reduction gear bearings must be renewed The following Table identifies the GFE bearings being provided. Bearings are utilized throughout the reduction gear, attached pumps, turning gear, and Generator pinion. Renewal may involve rigging shafts and pressing new bearing components onto shafts. The exact details for performance are not being

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offered, because this is a performance specification whereby the Technical Representative and Technical documentation together exist to perform the work scope.

TABLE 1 – LIST OF GFE BEARINGS

TABLE LINE NUMBER	ITEM DESCRIPTION	NSN/PN	QTY
1	HS pinion bearing, DWG 01070-0353 item 04	P/N 31000-1017	2 ea.
2	HS pinion bearing, DWG 01070-0353 item 05	P/N 31000-1018	2 ea.
3	HS pinion bearing, DWG 01070-0353 item 06	P/N 31000-0475	2 ea.
4	HS pinion bearing, DWG 01070-0353 item 07	P/N 31000-0474	2 ea.
5	HS pinion bearing, , DWG 01070-0353 item 15	P/N 31000-1047	2 ea.
6	PTO CPP bearing, DWG 01070-0353 item 63	P/N 31000-1780	2 ea.
7	ALOP bearing, DWG 01070-0353 item 63	P/N 31000-1780	2 ea.
8	LS shaft bearing DWG 01070-0353 Item 33	P/N 31000-1777	1 ea.
9	LS shaft bearing DWG 01070-0353 Item 59	P/N 31000-1778	1 ea.
10	Clutch end quill shaft bearing DWG 01070-0353 Item 27	P/N 31000-1779	2 ea.
11	Turning Gear/Generator Pinion Bearing DWG 01070-0353 Item 74	P/N 31000-1795	1 ea.
12	Turning Gear/Generator Pinion Bearing DWG 01070-0353 Item 75	P/N 31000-1796	1 ea.
13	Turning Gear/Generator Pinion Bearing DWG 01070-0353 Item 76	P/N 31000-0224	1 ea.
14	Turning Gear/Generator Pinion Bearing DWG 01070-0353 Item 77	P/N 31000-0223	1 ea.

3.8.9 Seal Renewals.

3.8.9.1 All reduction gear seals must be renewed. Renewal may involve additional disassembly (beyond bearing renewals). The exact details for performance are not being offered, because this is a performance specification whereby the Technical Representative and Technical documentation together exist to perform the work scope.

3.8.9.2 Technical Representative must determine the timing of these seal renewals in regard to housing cover removal and reinstallation, as well as any other scheduled work.

3.8.9.3 Seals must not be cut and glued and/or vulcanized without USCG concurrence. Split seal options (vs. intact one piece seals) must also not be installed without USCG concurrence. Submit such request in a CFR with justification. It is acknowledged that split seals may reduce disassembly efforts, regardless of that Contractor's bid must be for one-piece seals and the associated effort required to install.

3.8.9.4 The following Table lists the seals identified for renewals and offered as GFE. Identify in CFR any missing seals or gaskets from the Table, so they may be added to Table for future versions of this specification.

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TABLE 1 – LIST OF GFE SEALS

TABLE LINE NUMBER	ITEM DESCRIPTION	NSN/PN	QTY
1	Oil Seal Dwg 010170-0317; 408	P/N 36000-0409	2 ea
2	Plate, Seal Dwg 010170-0317; 426 DH1259K-4	P/N 34000-8834	1 ea
3	Oil Seal Dwg 010170-0317; 431	P/N 36000-2344	1 ea
4	Gasket Dwg 010170-0317; 449 DH25K	P/N 34000-8742	1 ea
5	Oil Seal Dwg 010170-0317; 450	P/N 36000-1279	1 ea
6	Seal, Oil Dwg 010170-0353; 11	P/N 36000-0049	4 ea
7	Seal, Oil Dwg 010170-0353; 12	P/N 36000-2541	2 ea
8	Spacer, Oil Dwg 010170-0353; 14	P/N 50315-9672	2 ea
9	Retainer, Seal Dwg 010170-0353; 16	P/N 50085-3146	2 ea
10	Seal, Oil Dwg 010170-0353; 20	P/N 36000-2277	2 ea
11	Spacer, Seal Dwg 010170-0353; 21	P/N 50315-9030	2 ea
12	Seal, Oil Dwg 010170-0353; 22	P/N 36000-1752	2 ea
13	Spacer, Seal Dwg 010170-0353; 35	P/N 50315-9031	1 ea
14	Oil Seal Dwg 010170-0353; 36	P/N 3600-1231	2 ea
15	Retainer, Seal Dwg 010170-0353; 47	P/N 50085-3186	1 ea
16	Retainer, Seal Dwg 010170-0353; 49	P/N 50085-2850	1 ea
17	Oil Seal Dwg 010170-0353; 55	P/N 36000-1531	2 ea
18	Spacer, Seal Dwg 010170-0353; 56	P/N 50315-9032	1 ea
19	Oil Seal Dwg 010170-0353; 80	P/N 36000-0739	2 ea
20	Spacer, Seal DWG 010170-0353; 81	P/N 50315-9033	1 ea
21	O-Ring DWG 010170-0353; 96	P/N 36000-1760	1 ea
22	Gasket DWG 010170-0353; 98	P/N 40225-0562	2 ea
23	Seal DWG 010170-0353; 307	P/N 36000-0030	1 ea
24	Seal DWG 010170-0353; 311	P/N 50085-2865	1 ea
25	Gasket DWG 010170-0109; 609	P/N 36000-1788	3 ea
26	Gasket DWG 010170-0131; 277	P/N 36000-1957	3 ea
27	Gasket DWG 010170-0131; 516	P/N 36000-1786	4 ea
28	DWG 010170-0131; 534	P/N 36000-1958	2 ea
29	Gasket DWG 010170-0131; 546	P/N 36000-2662	1 ea
30	Gasket DWG 010170-0131; 556	P/N 36000-1787	1 ea
31	Gasket DWG 010170-0131; 565	P/N 36000-1788	1 ea
32	Gasket DWG 010170-0131; 501	P/N 36000-1956	6 ea

3.9 Other prudent inspections.

3.9.1 While the cover is off besides the primary and secondary objectives discussed above, the Technical Representative must perform all prudent internal inspections that are customary for this model reduction gear, normally performed when cover is removed, and are customary for a reduction gear in service for 15-20 year range. Some of these inspections may include but not limited to:

- Thrust bearing inspections. Pads (shoes) must be renewed.
- Abnormal wear, conditions, loose parts, debris

NOTE

The 29” Thrust bearing (part 31000-1776) is not being outright renewed. If inspection, in place, revealed a significant discrepancy (reported by a CFR) USCG may have a deep insurance spare available in their supply system.

3.10 Turning gear renewal.

3.10.1 Remove the existing turning gear in its entirety for the Cutter. Renew the turning gear with the government furnished provided unit. The turning gear for the purpose of this paragraph is defined as that depicted in CG Tech Pub IB-H2-0012-V0, Drawing 01070-0317 “Turning Gear Parts List”.

3.10.2 Transfer any required components from the removed turning gear as required to facilitate installing the new GFE turning gear, e.g. mounting brackets.

3.11 Reduction gear reassembly.

3.11.1 Reassemble the removed components using the new government furnished parts (including set of 12 pads/shoes for thrust bearing).

3.11.2 Assembly must follow the Technical Representative guidance and applicable procedures found in Tab 6, titled “Corrective Maintenance” of CG Tech Pub IB-H2-0012-V0.

3.11.3 Upon completion of all inspections and repairs, reassemble the reduction gear under the direction of the Coast Guard Inspector and the Tech Representative and in accordance with CG Tech Pub IB-H2-0012-V0.

3.11.4 Remove all plugs, caps, flanges and reconnect all reduction gear piping removed during disassembly. Renew all gaskets/O-rings and hardware.

3.12 Reduction gear cleaning (abbreviated flush).

3.12.1 When all gear work is completed, wash down the gears and the interior of the casing with solvent approved by tech rep/manufacturer.

3.12.2 Manually hand clean sump and head tank with lint free rags to remove contamination and residue.

3.12.3 Clean the oil filter, in accordance with procedure 4.4.4 titled, “Clean Oil Filter on Reduction Gears” of CG Tech Pub IB-H2-0012-V0.

3.12.4 Hose down the inside of the gear casing, thrust bearing area, and the gear rotors by spraying approximately 100 gallons of 140 deg F new oil (TEP 2190). The oil must be circulated through a Contractor provided heater for heating the oil through a 10 micron filter and then into the reduction gear through a fabricated nozzle (3' piece of soft copper tubing).

3.12.4.1 The Contractor must provide all equipment and oil for wash down the gears and the interior of the casing. Discard this used flushing oil in accordance with all applicable federal, state, and local laws and regulations.

3.12.5 Once again (in addition to the pre-flush cleaning), manually hand clean sump with lint free rags to remove contamination and residue.

3.12.6 Reinstall all removed covers.

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3.12.7 Renew lube oil to the reduction gears (130 gallons). Oil must be in accordance with MIL-L-9000, TEP 2190.

3.12.7.1 Process any new oil added to the system through a non-bypass filter assembly prior to its introduction into the reduction gears. Filter assembly must utilize new clean disposable filter elements with a minimum Beta 10 = 75 ratio rating. Do not exceed filter assembly and/or element flow ratings or pressure ratings (both maximum collapse as well as delta across) during filling.

3.12.7.2 Non-bypass filter assemblies utilizing MIL-F-24702/1-B10-75 filter elements have been found to meet the above requirements. They are designed for low pressure applications and are inexpensive, have a rated flow of 30 GPM per element, and are commonly available. NSN is 4330-00-229-4147 for these elements.

NOTE

Schroeder Industries and Parker Hannifin Corporation are known manufacturer's of MIL-F-24702/1-B10-75 filter elements as identified in the qualified products list (QPL).

3.12.8 Install muslin bags in lubrication system per NSTM Chapter 241, section 3.2.2.3 (NSTM excerpt pasted below).

- 241-3.2.2.3 Large amounts of foreign particles may enter into and contaminate the lube oil whenever MRG casing covers or bearing caps are lifted for maintenance, inspection, or repair; and during extended system shutdowns. If contamination is present, install temporary muslin or nylon filter bags (NSTM Chapter 262) in the strainer baskets until those particles that would normally pass through the strainer are removed from the system and the bags are free from debris. Ships using filters may be able to replace the filters with temporary strainer baskets and muslin or nylon bags. When the bags are clean, remove the strainer and muslin bag assembly and reinstall the filters. Even though filters may provide a higher level of filtration, strainer bags are preferred for inspection for foreign material.

3.12.9 Remove the tags from the electrical L/O pump, energize it and use it to flush the red gear system until muslin bags remain clean (no less than 30 minutes).

3.12.10 After using muslin bags, install normal clean system filters and run L/O pump for 1 hour (or longer depending on Technical Representative's guidance). At conclusion of run, remove inspect and clean filters in accordance with procedure 4.4.4 titled, "Clean Oil Filter on Reduction Gears" of CG Tech Pub IB-H2-0012-V0.

3.12.11 Clean the oil filter, in accordance with procedure 4.4.4 titled, "Clean Oil Filter on Reduction Gears" of CG Tech Pub IB-H2-0012-V0.

3.12.12 Repeat the cycle until filters remain clean and Technical Representative concurs flushing is adequate.

3.13 Post repair/post flush operational testing and gear tooth contact check.

3.13.1 Remove gear inspection covers and clean the gear teeth.

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3.13.2 Apply prussian blue dye to the gear teeth in accordance with NSTM 241 at locations approved by the Coast Guard Inspector and the Technical Representative. At a minimum, apply dye to each of the high speed gears and the low speed pinions.

3.13.3 Energize the electric lube oil pump and jack over the reduction gear. Open the inspection covers and verify proper gear tooth contact. Verify Gear tooth contact in the presence of the Technical Representative and the Coast Guard Inspector.

3.13.4 Even if previously performed, once again, during jacking verify that all lube oil spray patterns are correct and that there is no indication of any clogged nozzles or other abnormalities.

3.13.5 Reinstall gear inspection covers.

3.13.6 Move the shaft fore and aft 3 times, measuring the movement of the gears with a dial indicator or other suitable device. Submit a CFR with nominal axial play and the existing axial play.

3.13.7 The Contractor must attend while the Coast Guard Inspector operates the lube oil system and turns the reduction gear with the Main Diesel Engine during a dockside test.

3.13.8 Run the unit for ½ hour in normal direction of rotation with no load. Observe and record load and percentage of tooth contact.

3.13.9 Run the unit for one hour in normal direction of rotation with 30% rated load (or load recommended by the Technical Representative). Observe and record load and percentage of tooth contact.

3.13.9.1 A good contact under 30% load will be centered along the pitchline covering the entire uncrowned length of the gear tooth (50-60% of total gear face width) and spread up at least 50% of the profile. The 30% load contact pattern should be equal to or greater than the no load contact pattern check.

3.14 Sea trial.

3.14.1 After successful dock trials, the Cutter will get underway for sea trials. The Cutter will be operated up to full power both ahead and astern with the MDE and MGT. Full power trial must be a minimum of two hours after the propulsion system is in a stable condition.

3.14.2 Submit a condition found report at the end of sea trials. The CFR, (including photos and sketches) of the conditions found and any recommended repairs must be delivered to the CG Inspector in accordance with the General Requirements. Any repairs necessary to restore the operational integrity of the reduction gears may be negotiated as a contract change.

3.14.3 Conduct a sea trial to verify reduction gear operations. The Contractor Representatives and Technical Representative must attend entire sea trial. For estimating purposes, the sea trial will take approximately 1 day at sea.

3.14.4 During sea trials, ship's force will monitor bearing temperature and oil flow to the reduction gears.

3.14.5 During the sea trial the Technical Representative will inspect the gear tooth contact after trials at 50% power and again after trials at 100% power.

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3.14.6 During the sea trial the Technical Representative will assist the ship's force take and record thrust bearing clearances (the underway method).

3.14.7 After returning from sea trial, in the presence of the Technical Representative and the Coast Guard Inspector, open the gear case inspection covers and check the gear tooth contact patterns. Note any indications of unusual contact or wear. Submit a CFR with the inspection results.

3.14.7.1 After completion of final inspections, provide and install new flange spray shields at all lube oil connections that were disturbed during this work.

3.15 Upon completion of all inspections and tests take an oil sample and send it out for analysis and submit a CFR.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 23: Propulsion Shafting; Remove, Inspect, and Reinstall

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to remove, inspect, and reinstall the propulsion (tailshaft). After the shaft has been removed, the line shaft bearings, bulkhead and stern tube seals, stern tubes, shaft bearings, shafting, shaft sleeves, couplings, and oil tubes will be inspected. While the shafting is removed, the stern tube will be inspected and preserved (preservation is part of an optional work item). In addition, the contractor will inspect the bearing staves and hub assembly, and perform visual alignment checks of the propulsion shafting system and strain gage instrumentation checks after re-assembly.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
Y	**Propeller shaft	NSN: 2010-01-399-5912	1ea.	165,000
N	**Grounding Silver Strip	NSN: 5340-01-126-4569	1ea.	1,889
N	**SST Straps	NSN: 5340-01-126-4570	4ea.	28
N	**SST Bailing Seals	NSN: 5330-01-284-3686	4ea.	6
N	Reduction Gear LS shaft aft seals (36000-1231)	NSN: 5330-01-407-8055	2ea.	368

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

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B-WLB 233-1, Rev F, Propulsion Train Installation Drawing
 Coast Guard Drawing 225B-WLB 243-1, Rev J, Propulsion Shafting Arrangement
 Coast Guard Drawing 225B-WLB 243-2, Rev G, Stern Tube and Bearing A & D
 Coast Guard Drawing 225B-WLB 556-8, Rev C, CPP Hydraulic System Diagram
 Coast Guard Drawing 225B-WLB 562-2, Rev D, Rudder Structural A & D
 Coast Guard Drawing 225B-WLB 611-1, Rev D, Lifting Pads - Main and Aux Machinery Room
 Coast Guard Drawing FL 1204-003, Rev A, Welded Padeyes & Link
 NAVSEA Dwg 803-2145807, Propulsion Shafting & Components

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) IB-H2-0012-V0, Sep 2025, REDUCTION GEAR MODELS 96DHCMG-CP & 96DHCMGH-CP OPERATING & MAINTENANCE INSTRUCTIONS

Coast Guard Technical Publication (TP) IB-H2-0003-V0, Nov 2024, PROPELLER SYSTEM – CPP – MODELS 102 & 110251007 – INSTRUCTION MANUALS

Coast Guard Technical Publication (TP) IB-H2-0002-V0, Nov 2024, ROPULSION SHAFTING AND BEARINGS - MODEL 01-BCP, 587.55TS-94365A & 1K571500 - TECHNICAL MANUAL

Coast Guard Technical Publication (TP) 3574, May 1996, Manufacturer's Instruction Book-SWBS Group(s) 633-638

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

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

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

OTHER REFERENCES

Commercial Item Description (CID), A-A-59323, Mar 2005, Cloths, Cleaning, Low-Lint MIL-PRF-24176, 2004, Cement, Epoxy, Metal Repair and Hull Smoothing (Metric)

Naval Sea Systems Command (NAVSEA) S9243-AW-TRS-011, Surface Ships Main Propulsion Shafting Refurbishment Procedures, Volume I, Part 1

Naval Sea Systems Command (NAVSEA) S9243-AW-TRS-012, Surface Ships Main Propulsion Shafting Examination, Test and Repair Action Record, Volume 1, Part 2

The Society for Protective Coatings (SSPC)/NACE Joint Surface Preparation Standard SSPC-SP 10/NACE No.2, 2004, Near-White Blast Cleaning

The Society for Protective Coatings (SSPC) Surface Preparation Specification No. 11 (SSPC-SP 11), 2007, Power Tool Cleaning to Bare Metal

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

3. REQUIREMENTS

3.1 General.

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

- 3.3.1 (Afloat, pre-drydock strain gauge measurements).
- 3.4.1 (Drydocked (pre-work) strain gauge measurements).
- 3.15 (Shaft inspections).
- 3.21 (Stern tube surface inspection, repair, and preservation).
- 3.22.3.1 (Oil Tube Leak test).

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- 3.23.2 (Bulkhead Seal inspection)
- 3.23.3 (Bulkhead Seal Alignment check)

3.1.2 **Tech Rep.** The Contractor must provide the services of qualified Tech Rep, who is familiar with the Bird-Johnson Company (now Rolls Royce, LLC - herein referred to as OEM) CPP system, to accomplish the following tasks – on site:

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

3.1.2.1 The Contractor must ensure that the Tech Rep is a certified representative of Rolls Royce, LLC.

3.1.2.2 The Contractor must submit the name of the Tech Rep to the COR at the Arrival Conference.

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

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

NOTES

1. Plastic bags may be used only when arrangement or configuration prevents the use of the other sealing methods specified above.

2. Cleanliness is of prime importance. If cleanliness is not maintained at all times, work may be suspended by the Contracting Officer on the advice of the Technical Representative.

3. The absolute necessity of keeping the hydraulic openings of the controllable pitch propeller system contamination free cannot be over emphasized. The cleanliness must be maintained and ceaselessly pursued. Contamination of the hydraulic system would be catastrophic to performance and reliability.

3.1.3.2 When not actually one exposed oil tubes, shafting internals, or other open CPP components, they must be wrapped with plastic sheeting and then taped closed to exclude dirt and moisture.

3.1.3.3 When not actually working on the hub and upon its removal from the Propeller shaft, it must be wrapped with plastic sheeting, then taped closed to exclude dirt and moisture.

3.1.3.4 Only workers with clean clothes and tools must be assigned to work around the propeller's open hub mechanism.

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3.1.3.5 All lifting equipment, chain blocks, rope, nylon slings, and other equipment/tools must be washed clean prior to use on the CPP system to prevent dirt from falling into the system.

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 Other general information. The Contractor must be aware of the following

3.1.5.1 The arrangements and details are shown in the above CG drawings and references, which are provided for guidance.

NOTES

- 1. The reduction gear is Philadelphia Gear 96DHCMG-CP.**
- 2. The Ship's Force will position the rudder, as necessary, to help facilitate this work.**

3.1.5.2 Any O-ring (or custom o-ring made out of stock) that is cut and then requires rejoining must not be glued back together, but rather joined together by a vulcanizing process.

NOTE

This vulcanizing requirement has come about due to a rash of failed glued joints that required emergency dry-docking of numerous Cutters. On a case by case basis (and only on non-underwater sealing joints, and if supported by OEM), the Contractor may appeal this vulcanizing requirement. Coast Guard reserves the sole right to approve or disapprove such appeals.

3.2 Strain gage alignment check. The Contractor must provide the services of a Consulting Engineer who is an expert in propulsion shafting alignment using strain gage alignment method to perform the propulsion shafting alignment check.

NOTES

- 1. The intent of the strain gage alignment check is to document the state of the existing alignment of the propulsion shafting, to ensure existing alignment is correct, and to collect baseline data. Take strain gage readings at four key events as discussed in below paragraphs: afloat (pre-work), drydocked (pre-work), drydocked (post-work), afloat (post-work).**
- 2. This alignment section of the specification is a performance specification. The performance specification describes the end result of work that the Contractor must accomplish, and the criteria by which this work will be measured. The Contractor is left on his own to achieve the specified end result, as long as he complies with the "measures of performance" that are specified.**

3.2.1 The Contractor must ensure that the Consulting Engineer has performed similar propulsion shaft alignments of like (or greater) horsepower, length and configuration. Provide proof of this experience to the KO at the arrival conference.

3.2.2 The Consulting Engineer must develop a 225' WLB propulsion mathematical model that is based on transfer matrix theory using the referenced documents.

3.2.3 The Contractor must be responsible for developing and recommending an acceptable shaft alignment in accordance with the requirements in this specification.

NOTE

An acceptable alignment is defined as the vertical and athwartships positioning of all shafting system bearings, such that satisfactory bearing loads and wear patterns on all bearings are achieved, including reduction gear bearings.

3.2.4 The Consulting Engineer must develop a mathematical model. As a minimum, the model must take into account the following characteristics of the shafting system:

- The characteristics of stern tube, strut and other bearings. Use manufacturer's recommended clearance and compression (crush) data.
- Dimensions of the propeller, propulsion shaft, couplings, thrust bearing, and reduction gear.
- Limitation on the reduction gear bearing loading.
- Bearing wear down.
- Difference between docked and afloat conditions.
- Bearing crush and radial clearance.
- Permissible loads on all bearings.

NOTE

For the purposes of this specification, any reports generated, and/or any negotiated growth work, "optimal alignment" is 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, and the shaft slope through long bearings matches the bearing slope within a reasonable range. It is understood that altering alignment, other than adjusting line shaft bearing (e.g. realigning the reduction gears or re-boring the stern tube) is outside the scope of this specification.

3.2.5 For consistency with past alignments, the aft stern tube bearing (72" Thordon) must be modeled as two bearings. Half the bearing must be modeled at a point 9" aft of the stern bearings forward end. The other half must be modeled at a point 9" forward of the stern bearings aft end.

3.2.6 The Consulting Engineer must undertake the appropriate numerical investigations, using the referenced documents. The shafting alignment analysis must provide, as a minimum, the following information:

- Straight-line bearing reactions.
- Optimum bearing reactions with associated slopes and deflections.
- Influence Number Table.
- Shaft slope, stress, and deflection at each bearing, flange, and concentrated load.
- Location of maximum shaft stresses and deflections.
- Whirling critical RPM.
- Bearing wear down analysis.

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3.3 Afloat pre-drydock strain gauge measurements. For alignment purposes, the Contractor must instrument and measure, using the strain gauge method, the static alignment of shaft with the cutter afloat under the guidance of the Consulting Engineer. This must be accomplished prior to the cutter arrival at the Contractor's facility. The cutter must not be drydocked until the completion of this work in accordance with Definite Item "Drydocking Accomplish". The plant must be in the cold condition. The Contractor and the CG Inspector must ensure that the fuel, water, and temporary ballast tanks (liquid loading) are filled to normal operating levels.

NOTE

CG personnel will rotate the shaft. The CG Inspector will witness the readings.

3.3.1 The Consulting Engineer must carry out conversion of strain gauge readings to bearing reactions and offsets. The Contractor must submit a CIR.

3.4 Drydocked (pre-work) strain gauge measurements. The Contractor must instrument and measure, using the strain gauge method, the static alignment of the shaft with the cutter in drydock under the guidance of the Consulting Engineer.

NOTE

The CG personnel will rotate shaft. The CG Inspector will witness the readings.

3.4.1 The Consulting Engineer must carry out conversion of strain gauge readings to bearing reactions and offsets. The Contractor must submit a CIR.

3.5 Drydocked (post-work) strain gauge measurements. The Contractor must, after installation of the bearings and shafting system, take strain gauge measurements and carry out conversion of strain gauge readings to the bearing reactions and offsets. Submit a CFR.

NOTES

- 1. CG personnel will rotate the shaft. The CG Inspector will witness the readings.**
- 2. The Cutter's tanks will be empty or reduced to a minimum.**

3.5.1 The data obtained from all of these strain gage alignments must be used to document the before and after states of the alignment, as well as to serve as a baseline for future strain gage alignment checks.

3.6 Load cell measurements. Prior to drydock (afloat), then again in the drydock prior to removal of the shafting, the Contractor must measure the line shaft bearing loads using the load cell method. Submit a CFR showing the measured bearing loads.

NOTE

Propeller blade removal and reinstallation and system draining are covered in related Work Item "Controllable Pitch Propeller, Hub General Maintenance".

3.7 Shafting removal (with hub attached). The Contractor must remove the tailshaft, with the hub attached, in accordance with the applicable Coast Guard Drawings and Technical Publications listed in Section 2 herein.

3.7.1 General instructions. In additions, follow these following general instructions:

- Provide all equipment for the removal and reinstallation of the tailshaft. Removal equipment, lifting devices, and securing devices must be in a safe operating condition and adequate for the work to be accomplished.
- At the end of each working day and during periods when the work on the hub has ceased, all shaft opening and open piping must be wrapped with plastic sheeting and taped closed to exclude dirt and moisture.
- Coordinate the progress of this item with other hull work to avoid sand blasting while the propeller and/or shafting is open. Do not break connections in or open the CPP system (i.e., disconnect the hydraulic oil tubes) while any blasting or other debris generating activity is occurring in the vicinity of the drydock.
- All work involving disassembly, inspection, repair, re-assembly, and testing of the CPP components and servo system must be accomplished in the presence of the Coast Guard Inspector.

3.8 Rudder access cover removal and installation and rudder mechanism disconnect. The Contractor must disconnect the rudder linkage, as necessary, to allow rudder to be swung the necessary 90 degrees for the shaft removal evolution. Included in the linkages requiring disconnection are the rudder angle indicator and rudder stops.

3.8.1 To allow the oil tubes to pass through the rudder, the access cover (designed for this evolution) must be removed. Grind or air arc the seam weld on the cover for removal. See Figure 1 below, showing shaft being removed through rudder.

3.8.2 Pay particular attention to backing plate design, depicted in Figure 2 below.

NOTE

Previous inattention to the detail (on other Cutters) has resulted in cuts and welds towards center of the access cover, missing the backing plate and attaching the Access cover to rudder structure and ring. This makes cover s very difficult to remove, damages rudder structure, and results in excessive growth in work scope.

3.9 Completion. Upon completion of work, at the appropriate time, Contractor must re-connect any disturbed rudder linkages, including the rudder angle indicator and rudder stops.



FIGURE 1. PHOTOGRAPH OF SHAFTING BEING REMOVED THROUGH RUDDER

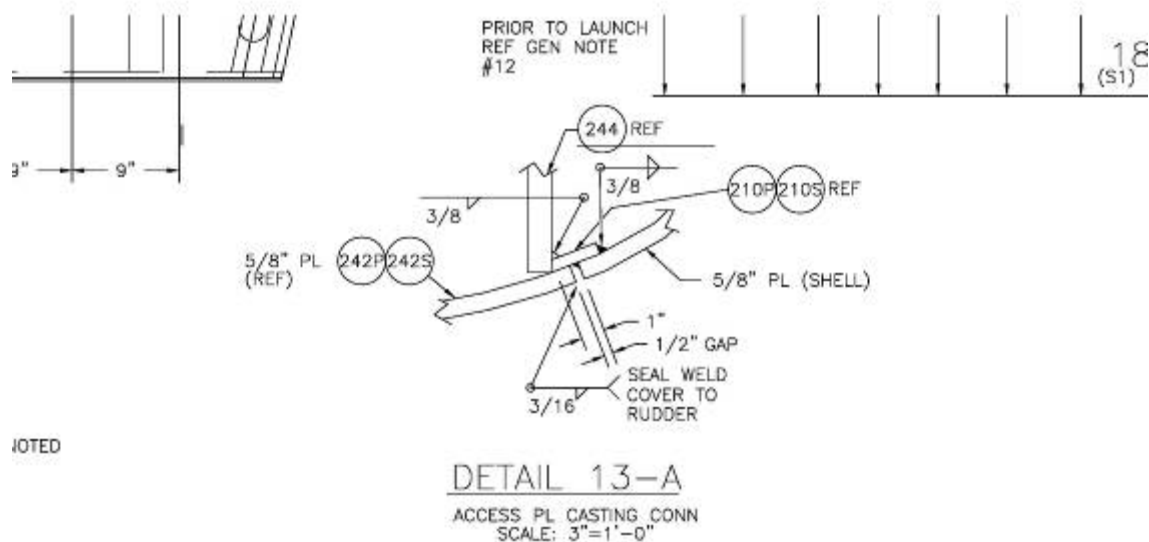


FIGURE 2. DRAWING DETAIL OF ACCESS COVER ATTACHMENT WELD

3.10 Padeyes/lifting points. Utilize existing lifting points or padeyes, to facilitate rigging of the shaft. Submit a CFR, if additional padeyes are required.

3.10.1 If a Change Request is authorized and released, furnish and weld-install each additional padeye, in location designated or approved by the Coast Guard Inspector, using Coast Guard Drawing FL 1204-003 as guidance. Upon installation, do the following, for each padeye:

3.10.1.1 Pull the padeye using the test load specified in Coast Guard Drawing FL 1204-003, for the specific padeye size. Prior to pull-testing, determine the proper direction to pull against the hull.

NOTE

General purpose fittings are typically strongest when pulled perpendicular to surface where they are attached. Special purpose fittings may be stronger in a direction specific to their intended use that may differ from perpendicular to the deck or bulkhead.

3.10.1.2 Ensure testing is done in the direction determined above and hold for one minute, ensuring the following:

- No other portion of the ship's structure must be used as tie-downs for any part of the test equipment during the performance of the test without the approval of the Coast Guard Inspector.
- A dynamometer must be installed in the test lead immediately adjacent to the padeye to record the actual test load being applied. Submit a copy of the Dynamometer calibration certificate to the Coast Guard Inspector.

NOTE

The test loads listed on Coast Guard Drawing FL 1204-003 are static loads. Dynamic loading is not to be used in this test procedure.

3.10.1.3 Release the load and verify no permanent deformation or damage to the fitting or the surrounding hull surfaces.

3.10.1.4 Perform NDE of all new welds, in accordance with SFLC Std Spec 0740, Appendix C. Submit a CFR.

3.10.1.5 After inspection and testing, do the following:

3.10.1.5.1 Prepare and coat all new and disturbed padeye surfaces, as applicable, to match existing adjacent surfaces in accordance with SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs.)

3.10.1.5.2 Affix a label plate, inscribed with the test load and date tested, adjacent to each padeye. Ensure that all newly installed padeyes are not removed.

3.11 Overall description of process. The Contractor must be aware of the following:

3.11.1 A procedure for removal of the Rolls Royce, LLC propeller and shafting is shown in Tab 245-B, Section II (Repair), Chapter 6 (Corrective Maintenance) and Chapter 8 (Installation), of CG TP IB-H2-0003-V0.

NOTE

To facilitate shaft removal, it is recommended to either remove the stern tube bearing or at least loosen the top half of the bearing shell. Otherwise, damage to the bearing staves will occur during the shaft removal process. Bearing shells have on occasion been difficult to remove, Contractor may need to utilize dry ice, strongbacks, or other methods to successfully remove.

3.11.2 The following major actions will occur for the shaft removal (follow the advice of the Tech Rep, the CG Tech Pub, Coast Guard Drawing 225B-WLB 233-001, and the additional requirements of this specification for the detailed procedures, instructions, and cautions):

- Disconnect and dismount the OD Box under the OEM Tech Reps guidance and per Section 6-7.1 “OD Box Removal” of CG Tech Pub IB-H2-0003-V0, Section 245.

WARNING!

Ensure the OD Box is properly supported at all times and the weight of the OD Box is never held by the oil tubes or extension tube. Improper dismounting practices has been theorized to contribute to oil tube damage and potential catastrophic failure

- Oil tubes disconnected.
- After stern tube bearing and bearing shell removed.
- Entire stern tube sealing assembly is removed from the shaft & stern tube.
- Sealing assemblies are removed from bulkheads at Bulkhead 82 and Bulkhead 92.
- Shaft Grounding Assembly is disconnected and removed from shaft.
- Line shaft is supported.
- Line shaft bearing is removed.
- Inboard Coupling is disconnected.
- Propeller shaft is removed.

3.12 John Crane stern tube seal, bulkhead seals, and shaft ground assembly. The Contractor must disassemble the shaft sealing assembly and remove it in accordance with CG TP IB-H2-0003-V0 and Definite Item “Propulsion Shaft Seal Mechanical Overhaul and Inflatable Renewal”. Mark each component for use in re-assembly.

3.12.1 Disassemble and remove the John Crane Type ND bulkhead seals to facilitate the removal and reinstallation of the tailshaft in accordance with CG TP IB-H2-0003-V0, Tab 243-B and Definite Item “Propulsion Shaft Seals (Bulkhead), Overhaul”.

3.12.2 Disassemble and remove the Shaft Ground Assembly to allow for shaft removal in accordance with CG TP 3574 section 6 titled “CAPAC Equipment Propeller Shaft Ground Assembly”. The silver strip strapped and taped to shafting must remain installed and stay with shafting.

3.13 Line shaft bearing. The Contractor must disassemble the Cooper bearing to facilitate the removal of the tailshaft using CG TP IB-H2-0002-V0, Tab 244A, and Coast Guard Drawing 225B-WLB 233-001. Remove line shaft bearing and bearing housing. Remove each bearing shell and components from the housing to prevent any damage to the roller bearing, oil rings, and seals. Reinstall the bearing caps and bolt down. Wrap each bearing housing ends to prevent entry of material into the bearing housing. Obtain verification from the Coast Guard Inspector for the protective measures taken for storing the bearing and components.

3.13.1 Prior to removal of the line shaft bearing, support the shafting to prevent any damage to the shafting system. Contractor must immediately, upon disassembly, when the surfaces first become observable, and in Coast Guard Inspector’s presence, document in a Condition Found Report, the initial condition of the shaft surfaces in the Cooper bearing areas. Protect the shaft surface at all times with

adequate protective covers. The propulsion shaft surfaces in way of the Cooper double split roller bearing are critical shaft bearing support surfaces and must not suffer damage.

NOTE

These shaft surfaces (on other Classes of CG Cutters) have been inadvertently damaged in drydock evolutions and extra caution is warranted.

3.13.2 When accessible, clean and inspect the tailshaft surface where the Cooper bearing inner race was mounted, for fretting, scoring, or evidence that the inner race has been creeping on the shaft. Measure and record the shaft diameters at this location under the direction of the Cooper Service Engineer. Measure three diameters, 120 degrees apart, at each of three locations, fore and aft.

3.13.3 When all inspections are completed, and when the Cooper Bearing is not assembled, protect the exposed critical shaft bearing support areas/surfaces at all times with adequate protective covers.

3.13.4 Clean and inspect the rollers, raceways, and inner race bore surfaces from heating, wear, scoring, pitting, fretting or corrosion. Protective wrap and store the removed bearing parts.

3.13.5 Perform maintenance and inspections on each line shaft bearing in accordance with CG TP IB-H2-0003-V0. Submit a CFR with the results.

3.14 Shaft coupling/shaft removal. Under the supervision of the Tech Rep, the Contractor must unbolt the couplings (propeller shaft and reduction gear output shaft).

NOTE

Draining of CCP System and removal of propeller blades are covered in the "Hubs General Maintenance"

3.14.1 Match mark coupling bolts to their respective holes.

NOTE

Do not lift the coupling with steel cables fed through the coupling flange bolt holes as this will damage the surface finish and result in a poor fit of the flange bolts for reassembly.

3.14.2 The Contractor must protect the shaft and all associated components from weather and damage during removal, storage, and reinstallation. Ensure the shaft is supported at all bearing journals during transportation and storage.

3.14.3 Prior to rigging shafting off the Cutter, wrap the open/exposed (inboard) end of propulsion shaft with plastic sheeting and taped closed to prevent contamination of the oil tubes and CPP system. Also seal the open/exposed reduction gear shaft flanges inside the Cutter to prevent contamination of the oil tubes and CPP system.

3.14.4 Remove the shaft and couplings from the cutter and transport to a suitable repair facility.

3.14.5 Exercise extreme care to ensure the shaft is not damaged in any way. Before shaft removal, the Contractor must protect the shaft tapers, journals, shaft grounding silver strip, and sleeves with canvas or leather. Protect the shaft ends with a steel cap. Obtain verification from the Coast Guard Inspector for the protection of the shaft.

3.15 Main Reduction Gear coupling removal and installation.

3.15.1 Under the supervision of the Tech Rep, the Contractor must remove the reduction gear's output shaft coupling.

NOTE

Do not lift the coupling with steel cables fed through the coupling flange bolt holes as this will damage the surface finish and result in a poor fit of the flange bolts for reassembly

3.15.2 MRG Low Speed Shaft exposed end inspection.

3.15.3 Visual. Visually inspect all shaft surfaces, including keys, key-ways, flanges, fillets, shaft ends for cracks, defects, damage, excessive wear, or other defects. . Figure 3. illustrates the subject inspection area.

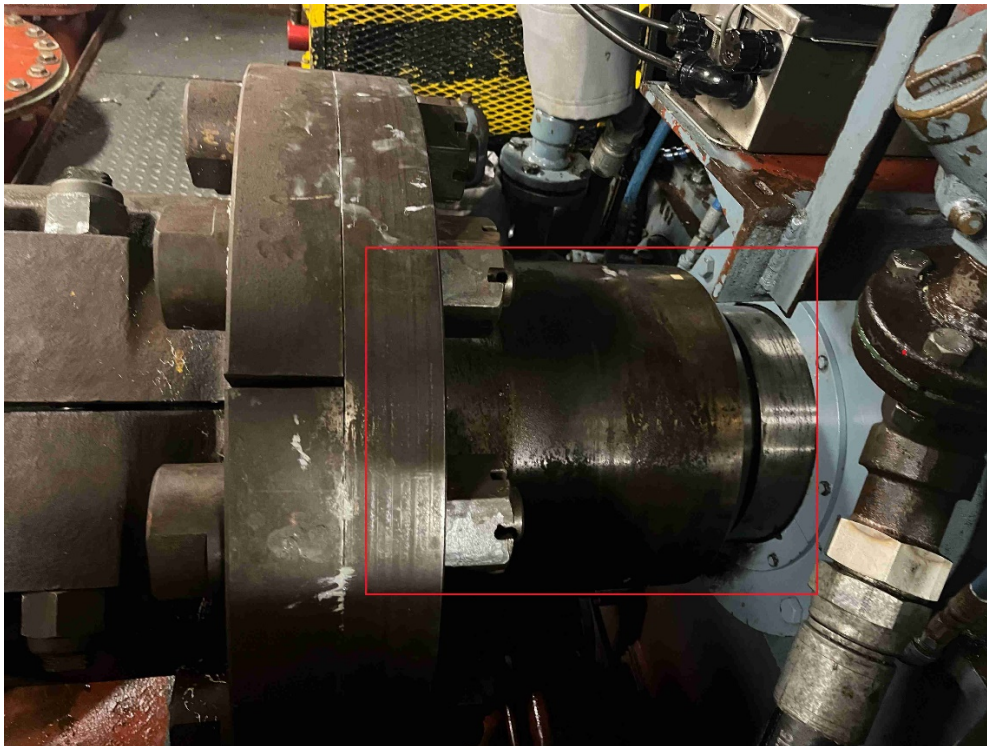


FIGURE 3. Main Reduction Gear low speed shaft area for NDE

3.15.4 Magnetic Particle NDE. The Contractor must perform Magnetic Particle (MT) NDE inspection of the entire exposed end in accordance with SFLC Std Spec 0740, Appendix C. Submit a CFR.

3.15.5 The LS shaft is hollow with 5.000" ID and the coupling resides on a 10.750" OD shaft section, the shaft that then steps to 12.000" OD after coupling and into the Gearbox.

3.15.6 Submit findings and any repair actions in a CFR.

3.15.7 Main Reduction Gear's Low Speed Shaft Aft Seal Renewals.

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3.15.7.1 Contractor must follow procedures found in CG Tech Pub IB-H2-0012-V0 Section 6.7.10.3.1 “LS AFT SEAL”. There are two seals in the seal cavity (PG Part #36000-1231) which are provided GFE.

3.15.7.2 Ensure during disassembly the orientation of the lip seals and spacer ring are carefully noted. It is expected the inner seal’s lips are facing inboard, on the other hand the outer seal lip’s are expected to be facing aft. Submit a CFR with any negative findings.

3.15.7.3 Complete the final step of greasing the seals. Ensure that NLGI #2/DOD-G-24508 grease is used and cavity is filled until grease escapes from relief fitting.

3.15.8 Main Reduction Gear coupling installation.

3.15.8 .1 With USCG concurrence reassemble the coupling onto the LS Shaft.

3.16 Main propulsion shaft inspections. The Contractor must clean the shaft and associated components, including the inside shaft bore, and all CPP oil tubes (inside and outside) free of all surface contaminants, and accomplish the following inspections: (Submit a CFR):

3.16.1 Visual. Visually inspect all shaft surfaces, including keys, key-ways, flanges, fillets, for cracks, defects, damage, excessive wear, or other defects.

3.16.2 Measurements. The Contractor must measure the dimensions of each shaft section in accordance with NAVSEA Dwg 803-2145807 and NAVSEA S9243-AW-TRS-011, using the forms from NAVSEA S9243-AW-TRS-012 to record the data. Check the run-out at every 12 inches along the shafting using dial indicators.

3.16.2.1 Measure the outer diameter of each shaft sleeve in accordance with NAVSEA Dwg 803-2145807 and NAVSEA S9243-AW-TRS-011.

3.16.2.2 Take measurements at three locations (forward, middle, and aft) along the length of each liner at the “12, 3, 6, 9, and 12 o’clock” positions. Ensure that the same individual must take all readings, in order to maintain uniformity.

3.17 Propulsion Shaft NDE. The Contractor must perform NDE of all keys, keyways, and bolts in accordance with SFLC Std Spec 0740, Appendix C. Submit a CFR.

3.18 Government’s right for changing out propulsion shaft. The Contractor must be aware that the Government reserves the right to furnish a propulsion shaft for installation in place of the existing shaft. If the Government exercises this right, the Contractor must turn over the removed existing shaft to the PA as an MTI item. Remove the Government-furnished shaft from the shipping crate and transport it to a suitable inspection facility. Perform the inspections specified in paragraph 3.5 (Inspections) and submit a CFR.

3.19 Removal, inspection, cleaning of oil tubes. Under the supervision of the Tech Rep, the Contractor must remove oil tubes from shafting and disassemble into individual oil tube sections. Be extremely cautious when unthreading couplings, thread damage has occurred in past.

3.19.1 Under the supervision of the Tech Rep, clean and inspect all the oil tubes for damage. Submit CFR with any negative findings. Use new low-lint cleaning cloths, conforming to CID A-A-59323 Type II, to clean external surfaces of oil and residue.

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3.19.2 Under the supervision of the Tech Rep, place oil tubes on lathe and measure and record straightness (TIRs). Additional instructions as follow:

3.19.3 For all outer oil tube sections, in machine shop place each oil tube section individually on lathe between center supports and inspect at each oil tube guide and coupling ends for run out measurements. For each of those outer oil tubes, label/mark/identify each oil tube guide and report in CFR its runout and circularity. Measure and report runouts on coupling ends. Recommend any necessary straightening efforts required to meet OEM requirements of .030" TIR or less.

NOTE

A consolidated CFR is acceptable.

3.19.4 For all Inner Oil Tube, in machine shop place each oil tube section individually on lathe between center supports and inspect for straightness by taking run out measurements along its length. For each of those inner oil tubes, label/mark/identify each oil tube guide and report in CFR its runout and circularity. Recommend any necessary straightening efforts required to meet OEM requirements of .030" TIR or less.

NOTE

A consolidated CFR is acceptable.

3.19.5 At conclusion of active work keep oil tubes wrapped in plastic to preclude contamination and to preserve hydraulic cleanliness.

3.20 Bearing inspections. The Contractor must, with the bearing shell removed, measure the tailshaft bearing housing inside diameter (vertical, horizontal, and at intermediate diagonal positions) at each bearing land center in the presence of the Coast Guard Inspector. Likewise (with shell halves bolted or otherwise secured together), take the corresponding outer diameter measurements on each bearing shell land. Submit a CFR.

NOTE

The intent of these measurements is to document the condition of the lands and any deformation of the bearing shells.

3.20.1 Renew all cotter pins and zincs encountered. Inspect all other parts and submit a CFR.

3.20.2 Measure the bearing inside diameter (vertical and horizontal) at the forward, middle, and after end of each bearing in the presence of the Coast Guard Inspector. The same individual must take all readings in order to maintain uniformity. Submit a CFR.

3.20.3 Bearing stave renewals, when necessary, are performed in related Item "Propulsion Shaft Bearing Stave Renewal".

3.21 Stern tube surface inspection, repair, and preservation. While the shaft is removed and prior to its return, the Contractor must perform a visual inspection of the stern tube surface existing coating, and submit a CIR.

3.21.1 Surface repair. If a Change Request has been authorized and released for surface repair, do the following:

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3.21.1.1 Prepare all stern tube surfaces by waterjetting by one or a combination of the following surface preparation methods:

- Abrasive-blasting to SSPC-SP10/NACE No. 2, using grit conforming to MIL-A-22262 (1.5 to 2.5 mil anchor profile).
- Power tool cleaning to a SSPC-SP 11 (1.0 mil anchor profile).

3.21.1.2 Repair all pitted areas with suitable metal repair compound, such as “Belzona 1311, Molecular Ceramic R Metal” or an equivalent Cement, Epoxy, Metal Repair and Hull Smoothing compound conforming to MIL-PRF-24176, Type I or Type II, in accordance with manufacturer’s recommendations. Feather repaired areas, to provide a smooth transition into intact adjacent surfaces.

3.21.1.3 After the repair compound has sufficiently cured for overcoating, in accordance with manufacturer’s instructions, coat all repaired areas with two coats of a “High Turbulence Coating” (10.0-11.0 mils DFT each), in accordance with manufacturer’s instructions.

NOTE

Roughening of the Metal Repair and Hull Smoothing Compound may be required before painting with the normal coating system. See manufacturer’s instructions.

3.21.2 Preservation. If a Change Request has been authorized and released for surface preservation, accomplish all preservation requirements, as specified in “Stern Tube Interior Surfaces, Preserve 100%” item, which is a separate work item in this specification."

3.22 Reinstall shafting and components. The Contractor must reinstall propulsion shafting and components in accordance with CG TPs IB-H2-0012-V0 and IB-H2-0003-V0, Coast Guard 225B-WLB 233-001, 225B-WLB 243-001, and 225B-WLB 243-002, and NAVSEA Dwg 803-2145807.

3.22.1 Renew in kind all seals, o-rings, lock wire, and other consumables. Renew any damaged fasteners. Fasteners subject to saltwater submersion must be monel.

3.22.2 Any o-ring (or custom o-ring made out of stock) that is cut and then requires rejoining must not be glued back together, but rather joined together by a vulcanizing process.

NOTES

- 1. This vulcanizing requirement has come about due to a rash of failed glued joints that required emergency dry-docking of numerous Cutters.**
- 2. On a case by case basis, and only on non-underwater sealing joints, and if supported by OEM, the Contractor may appeal this vulcanizing requirement.**
- 3. Coast Guard reserves the sole right to approve or disapprove such appeals.**

3.22.3 Under the supervision of the Technical Representative, reassemble and reconnect the CPP oil tubes and OD box assembly back to their original configuration with new O-rings and seals (including, but not limited to, Items 38 and 39) per CG TP IB-H2-0003-V0, Tab 245-B.

3.22.3.1 Perform pressure test of installed oil tubes per CG TP IB-H2-0003-V0, Tab 245-B paragraph 8-6.4.3. The test requires a special tool, that Contractor must provide (Contractor must coordinate with CPP Tech Rep in regards to providing special tool). Submit a CIR.

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3.22.4 Install the shaft coupling on the propeller shaft using the reference marks made prior to removal using new locking nuts (Item 29). Tighten to the required 700 ft-lbs torque. Follow applicable procedures of CG TP 3253, NAVSEA Dwg 803-2145807.

3.22.5 Install new O-rings (Item 41) and bring the shaft coupling together (propeller and reduction gear). Insert the tapered bolts (Item 45) and hex nuts (Item 46) in the same holes they were removed from and uniformly and incrementally tighten in a star pattern to the required 2360 ft-lbs torque. Install new cotter pins (Item 46).

3.22.6 Upon completion of other propeller shaft installation work, the Contractor must reinstall the line shaft bearings and components, and adjust bearing assemblies in accordance with the CG TPs referenced above.

3.22.6.1 Reassemble the Cooper bearing with the propeller shaft installed in accordance with CG TP IB-H2-0003-V0, Tab 244-A. Renew the triple labyrinth seals during reassembly. Lubricate the bearing with the manufacturer's recommended lubricant. Renew the bearing lubricant.

3.22.6.2 Reassemble the existing races and roller assemblies removed during disassembly using new Contractor-Furnished consumables (including grease, Zerk fittings, lockwire, etc.), in accordance with CG TP IB-H2-0003-V0, Tab 244-A.

3.22.6.3 Ensure the load is transferred gradually from the shaft support to the line shaft bearing.

3.22.7 After the shaft reinstallation and under the supervision of the Tech Rep, reinstall the hub assembly and restore CPP system as instructed in other related Work Items.

3.22.8 Reinstall and reassemble the stern tube seal to its original configuration per paragraph 3.6 above.

NOTE

Rope guard reinstallation is covered in the "Propulsion Shaft Rope Guard Inspect and Repair" item.

3.23 Bulkhead seal inspection and reassembly. The contractor must perform the following:

3.23.1 Disassembly. Disassemble the bulkhead shaft seals in accordance with CG TP IB-H2-0003-V0.

3.23.2 Seal inspection. After seal disassembly, clean and inspect the diaphragm, and measure the housing-to-diaphragm wear. Clean the shafting in way of the bulkhead seal to remove rust and allow proper interaction with bulkhead seal. Cleaning for stubborn rust when required, must be by careful hand dressing area with emery cloth and cleaning solution. Shaft drawings show a 63RMS micro inch surface finish at that seal journal. Submit a CIR.

3.23.2.1 Machining of housing may be required. Machining of housing, if authorized to remove grooves, must not exceed 0.020" from original dimension.

3.23.3 Alignment check. With the shaft reinstalled and cleaned in way of the seal, take and record deflection readings between the shaft and bulkhead to check for any misalignment. Submit a CIR.

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3.23.4 Reassembly. The Contractor must reassemble the bulkhead shaft seals in accordance with CG TP IB-H2-0003-V0, upon completing all inspections, measurements, cleaning and necessary repairs. Renew the housing-to-bulkhead gasket.

3.24 Shaft grounding assembly re-installation. The Contractor must reinstall the shaft grounding assembly in accordance with in accordance with CG TP 3574 section 6 titled “CAPAC Equipment Propeller Shaft Ground Assembly”. Demonstrate to Coast Guard Inspector proper operation.

3.25 Final alignment. Before proceeding with the final alignment of the propulsion system the Contractor and Consulting Engineer must ensure that the following conditions have been met:

- Cutter must have been waterborne for at least 24 hours.
- All aft tanks must be filled to normal operating levels.

NOTE

Coast Guard will arrange for fuel oil delivery.

3.25.1 Final afloat strain gauge measurements. With the cutter undocked and with the plant in the cold condition, take a final set of strain gage measurements to verify that the intended alignment did not change from the drydock to the afloat condition. Submit a CFR.

3.25.2 The Contractor must measure (by load cell) and adjust the line shaft bearing per Consulting Engineer’s instructions to achieve an optimized bearing load distribution considering the following loads (with optimal being the goal):

TABLE 1 - BEARING LOADS

BEARING	MINIMUM BEARING LOADS COLD (LBS)	OPTIMAL BEARING LOADS COLD (LBS)	MAXIMUM BEARING LOADS COLD (LBS)
Stern Tube	25,000	uniform bearing loading across entire 72” length	32,000
Line Shaft	2,000	6,000-12,000	15,750
Aft Red Gear	8,300	10,675	13,050
Fwd Red Gear	1,950	2,525	3,100

NOTE

The Cold Red Gear Loads, in above Table assumes a new stern tube bearing (.057” clearance) and would result in, during stern tube wear down until end of life (0.259”), reduction gear bearings never being outside the Philadelphia Gear HOT bearing parameters. As the stern tube bearing wears over time, the forward Red Gear bearing load will increase and the Aft Red Gear bearing load will decrease. The existing stern tube bearing wear state (clearance) is to be considered when analyzing as-measured alignment state.

3.26 Final alignment report. In addition to reports (CFRs) being submitted as required above in real time (that are necessary to quickly assess the alignment state and any required immediate action during DD) the Contractor must submit a final report. The Consulting Engineer must provide a final written report within 30 days after completion of the work covered by this Specification. The report must contain at a minimum the following:

- Introduction.

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- Project description.
- Alignment calculations (for as found AFLOAT, as found DD, post work DD, and post work AFLOAT).
- Alignment tests with strain gages.
- Actions taken during the availability.
- Conclusions.
- Recommendation for future action.
- Data sheets on shaft model used to obtain reported results e.g. stations, strain gauge locations, diameters, lengths, load points, etc.
- Data sheets from Computer runs that computed reported results e.g. stations, deflections, stresses, bearing reactions, slopes, etc.
- References.

3.27 Dock trials. The Contractor must perform dock trials, in accordance with the “Sea Trials” work item (which is a part of the specification package). Ensure that the Tech Rep is on board for dock trials. In addition to the Contractor, the CPP Tech Rep must be on board to ensure the CPP system is operating. During dock trials, check for leakage, noise, undue heating, and vibration related to the work under this specification. Adjust the stern tube seal in accordance with the manufacturer’s instructions. Correct any deficiencies and retest. Submit a CFR.

NOTE

Coast Guard personnel will operate all equipment during dock trials

3.28 Sea trials. The Contractor must perform sea trial in accordance with Definite Item “Sea Trials”. The Contractor must have a Tech Rep on board for sea trials. During trials, be aware that the Cutter will be run at various speeds and conditions, both ahead and astern. Correct any leakage, vibration, noise, and/or excessive temperatures that arise as a consequence of the work under this specification. In addition be aware that during trials, the Coast Guard will operate the Cutter and all equipment at low, mid, and high shaft speeds, and at full load. Temperatures of the line shaft bearing, thrust bearing, and the stern tube seal must be measured and recorded every five minutes. Submit a CFR and document the acceptability of the data, as necessary.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 24: Propulsion Shaft Seals, Mechanical Overhaul And Inflatable Renewal

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew the inflatable seal and to inspect, overhaul, and adjust the mechanical seal. The propulsion shaft seal is an inboard 18.000 inch Type MB Seal manufactured by Wartsila -Lips.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
N	225' WLB Major Overhaul Kit	NSN: 5330-01-520-5284	1 ea.	67,931.41
N	**225' WLB Seat (Split)	NSN: 5330-01-645-3665	1 ea.	17,913.71
Y	*Seal Compression Tool	Onboard Tool	1 ea.	200.00

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

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

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B-WLB 243-1, Rev J, Propulsion Shafting Arrangement

Coast Guard Drawing 225B-WLB 243-2, Rev G, Stern Tube and Bearing A & D

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3524, 2013, Manufacturer's Instruction Book-SWBS Group(s) 243-262

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

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

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

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

- 3.5.3 (Initial visual inspection).
- 3.6.1 (Seal face wear inspection).

3.1.2 Tech Rep. The Contractor must provide the services of a qualified Tech Rep, who is familiar with the Wartsila shaft seal system equipment/system system/equipment, to do the following, on site:

- Advise on manufacturer's proprietary information pertinent to the 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.
- Ensure compliance with manufacturer's procedures and standards during disassembly, inspection, and reassembly of the shaft seals.
- The Tech Rep must bring vulcanizing equipment to install the inflatable seal.

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

3.1.2.2 Submit a copy of the Tech Rep's résumé and a list of references to the COR.

NOTE

The Ship's Force will supply the compression tools to work on the seal.

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

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

- Location: Lower Level. Two (2) 5' by 3' deck gratings and possibly framing on the port side. To remove framing, framing and handrails need to be cut (and re-welded for reinstallation).
- Location: Lower Level. Sea water piping to the stern tube.
- Location: Lower Level. Lube Oil supply piping (head tank) to the stern tube.
- Location: Upper Level. Two (2) 5' by 3' deck gratings to facilitate removing parts from the lower level.

3.2 Initial Inspection. In the presence of the Coast Guard Inspector, inspect all affected equipment and systems (including those subject to interference/removal) to document the existing condition. Submit a Condition Found Report (CFR) noting any equipment or system discrepancies.

3.3 Major Overhaul Kit. The Major Overhaul Kit provided as GFP (Part # JCL00169-00 Rev C.) consists of the following components:

TABLE 1 - 225', MAJOR OVERHAUL KIT

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LINE #	DESCRIPTION	PART NUMBER	QTY	UOI
1.	Adapter Ring Bolts	H72579-01-1-3	18	ea
2.	Inflatable Seal	H72579-01-1-5	1	ea
3.	Main clamp Ring Butt Bolt	H72579-01-2-2	6	ea
4.	Main clamp Ring Nut	H72579-01-2-3	6	ea
5.	Support Spring Assy	H72579-01-3-1	1	ea
6.	Interlayer	H72579-01-3-2	1	ea
7.	Bridging Spring Assy	H72579-01-3-3	1	ea
8.	Backing Spring Assy	H72579-01-3-4	1	ea
9.	Splash Guard (rubber)	H72579-01-4-2	1	ea
10.	Face Insert (split) - Manetex 22	H72579-01-6-1	1	ea
11.	Face Sealing Strip	H72579-01-6-2	1	ea
12.	Seat Butt Bolts	H72579-01-7-2	4	ea
13.	Seat Dowel	H72579-01-7-3	2	ea
14.	Seat Spring Pins	H72579-01-7-4	2	ea
15.	O-cord, seal	H72579-01-7-5	2	ea
16.	Drive Clamp Butt Bolt	H72579-01-8-2	2	ea
17.	Drive Screw	H72579-01-8-3	2	ea
18.	Drive Alignment Bolt	H72579-01-8-4	2	ea
19.	Drive Screw Nut	H72579-01-8-5	2	ea
20.	Drive Clamp Shaft Screw	H72579-01-8-6	6	ea
21.	Compression Tool Assy	H72579-01-CT	4	ea

3.4 Safety. The Contractor must confirm that the inflatable seal is not pressurized. The flexible air hose should be disconnected during normal cutter operations.

CAUTION
Any of the following may lead to personnel injury or damage to equipment: Entering or reaching into the propeller shaft/stern tube seal area unless the shafting is stopped and locked in position. Rotating shafting while its inflatable seal is inflated. Adjusting the alignment of the seal unless the turning gear is engaged. During normal operation of the seal, no visible run-out of the bellows should be noted. Run-out is a result of misalignment of the seat and may result in reduced bellows life.

3.5 Equipment Removal. The Contractor must ensure that the inflatable seal is deflated and that the shaft turning gear is engaged.

3.5.1 The Contractor must disassemble seawater cooling, compressed air, and vent line piping from existing seals as necessary to perform this work item.

NOTE

A verification ship check by the Contractor prior to bidding is recommended to determine any possible interferences or other complications that may arise during the performance of this item. Some possible interferences are noted in the Table in the following paragraph. The above drawings are construction drawings. There may be discrepancies between these drawings and the actual configuration of the cutter. Therefore, use the above drawings for guidance and the general identification of the work.

3.5.2 The Contractor must remove the splash guards. Thoroughly clean the exterior of the seal. Compressed air may be used for cleaning inaccessible areas. Inspect the exterior of seal and the shaft sleeve for any defects in accordance with CG Tech Pub 3524-243-A. Submit A CIR.

3.6 Measurement of Relative Seal Face Wear. The Contractor must perform the seal face wear inspection and measurements in paragraph 7.1 in CG Tech Pub 3524-243-A. The wear limit is 0.236 inch (6 mm). Submit A CIR.

3.7 Seal Disassembly. The Contractor must clean the seal in accordance with paragraph 7.2 of tab 3 in CG Tech Pub 3524-243-A. Wrap the seat and other parts in rubber gasket material and store safely for reinstallation.

3.7.1 The Contractor must disassemble the Bellows and Face Carrier Assemblies in accordance with CG Tech Pub 3524-243-A. Inspect pieces for wear, damage, and corrosion. Wrap the pieces in rubber gasket material and store safely for reinstallation. Submit a CFR.

3.7.2 The Contractor must disassemble the Mounting Ring Assembly in accordance with CG Tech Pub 3524-243-A.

3.7.2.1 The Contractor must remove the adapter ring and discard the adapter ring bolts. Remove the inflatable seal and support ring. Store the inflatable seal until the work is complete and discard per the CG Inspector's directions.

3.7.2.2 The Contractor must inspect the pieces for wear, damage, and corrosion. Wrap the pieces in rubber gasket material and store safely for reinstallation.

3.8 Seal Reassembly. Seal Parts Preparation – The Contractor must unpack and disassemble the seal parts in accordance with CG Tech Pub 3524-243-A.

3.8.1 Prepare the shaft liner and mounting flange in accordance with CG Tech Pub 3524-243-A.

3.8.2 In the presence of the Contractor furnished Technical Representative, install the inflatable seal in accordance with Chapter 4 of CG Tech Pub 3524-243-A. Ensure that all bolts are torqued in accordance with the manufacturer's instructions.

3.8.3 Assemble the seal in accordance with Chapter 4 of CG Tech Pub 3524-243-A. Ensure that inflatable seal cavity and all butt joints are clean and butted smoothly together.

3.8.4 Assemble the face carrier in accordance with Chapter 4 of CG Tech Pub 3524-243-A. Ensure that butts of face carrier are clean, butted smoothly together, and free of nicks and burrs.

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3.8.5 Assemble the bellows in accordance with Chapter 4 of CG Tech Pub 3524-243-A.

3.8.6 Install the face insert in accordance with Chapter 4 and 7.2 (c) of CG Tech Pub 3524-243-A. Renew and/or machine parts in accordance with the guidance in the technical manual.

3.8.7 Reassemble the seal in accordance with Chapters 4 and 7.2 (c) in CG Tech Pub 3524-243-A. As necessary, install new parts in accordance with the manufacturer's instructions using the materials in the Government Furnished seal replacement kits. Machine the seat face in accordance with paragraph 7.2 (c) in CG Tech Pub 3524-243-A. Verify the proposed maximum cut with the CG Inspector prior to machining. Stow unused new parts as directed by the CG Inspector.

3.8.8 Set seal compression in accordance with Chapter 4 in CG Tech Pub 3524-243-A.

3.8.9 Check seal alignment in accordance with Chapters 4.1 (k) and 7.2 (c) in CG Tech Pub 3524-243-A. Reassemble the seal upon completion of work.

3.8.9.1 Attach a dial indicator to indicate the relative misalignment between the seat and the stationary face insert as the shaft rotates. The face of the seat, the aft side of the face carrier, or the flat side of the forward main clamp ring near the butt joint may be used as the indicator reference surface.

3.8.9.2 Engage the turning gear to rotate the shaft.

3.8.9.3 Adjust the alignment bolts and drive bolts to have a total indicator reading of 0.002" or less while the shaft is rotating. Take readings for three complete revolutions of the shaft.

3.8.9.4 Once the alignment is complete, lock the alignment bolts with their locking nuts. Recheck the alignment after locking. Disengage the turning gear and install the splash guard when work is complete.

3.9 Piping Installation. The Contractor must flush clean the seawater cooling piping and strainer with fresh water to remove salt, dirt, and debris in the cooling system. Likewise, use compressed air to clean the piping to the inflatable seal, removing any dirt, debris, and scale.

3.9.1 Reinstall seawater cooling, compressed air, and vent piping. Ensure that the seal and seawater cooling system are aligned and strain free.

3.9.2 Ensure all pipe joints are tight.

3.10 Inflatable Seal Testing. The Contractor must pressurize the stern tube seal with clean fresh water through the flanged connections at the bottom of the mounting ring to 20 psig. Inspect and correct for any leakage.

3.10.1 Perform the inflatable seal pressure drop test on the inflatable seal in accordance with Chapters 4.2 and 6 in CG Tech Pub 3524-243-A and the guidance provided by the Technical Representative. Submit a CFR.

3.10.2 Pressurize the inflatable seal to 60 psig using compressed air. Visually inspect to ensure that all piping joints are tight.

3.10.3 Inflate to seal to 75-90 psig, shut off all air valves, and monitor the air leakage. The air pressure must not drop more than 5 psig in 15 minutes. Correct any deficiencies noted.

NOTE

The sealing pressure for this cutter class is less than 40 psig.

3.10.4 When the cutter is waterborne, perform the inflatable seal water leakage test on the inflatable seal in accordance with Chapters 4.2 and 6 in CG Tech Pub 3524-243-A. Submit a CFR.

3.10.5 With the shaft stopped and locked into position, inflate the seal to its normal air pressure. Slowly open the seal drain valve and drain the seal cavity.

3.10.5.1 Measure the seal leakage. If the leakage exceeds one pint per minute, take the necessary corrective actions.

3.10.5.2 Upon completion, align the seawater cooling lines and return the shaft to normal operation.

3.11 Restoration. The Contractor must inspect and test all components in the presence of the Coast Guard Inspector. Turn over or dispose of unused parts and replaced parts as directed by the CG Inspector.

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

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

3.13.1 Observe the seal under operating condition. Ensure that there is no excessive heat, excessive leakage (more than 4 quarts per hour), or excessive vibration (more than 0.005” TIR). Also ensure that there is no visible run-out of the bellows. Check the alignment of the seal seawater cooling piping to ensure there is no undue strain.

3.13.2 In the event of any of the above conditions, use the Technical Representative and CG Tech Pub 3524-243-A for troubleshooting. The seal must perform normally in accordance with the CG Tech Pub after overhaul and renewal.

4. NOTES

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

[illegible]

DRG NO: US 72579-01		SEAL CODE: 4293062041686 226876418603FL = 982.7 4.33		ACCESS CODE: ALL		2 INCHES FULL SIZE		1ST ANGLE PROJECTION	
ITEM NO.		DESCRIPTION	QTY	PART NO.	MATERIAL	U.S. MATERIAL SPEC.	B.S. MAT'L SPEC.	VT.	COMMENTS
H72579-01-1		MOUNTING RING ASSY	1	H81826-001	GUNMETAL	ASTM B584 CU ALLOY UNS C92200	BS 1400 LG4		
H72579-01-2		MOUNTING RING	1	H81831-001	GUNMETAL	ASTM B584 CU ALLOY UNS C92200	BS 1400 LG4		
H72579-01-3		SUPPORT RING	18	H81831-005	AL BRONZE	ASTM B150 CU ALLOY UNS C83000	D66 1043-2		
H72579-01-4		SUPPORT RING	1	H81851-018	AL BRONZE	ASTM B150 CU ALLOY UNS C83000	D66 1043-2		
H72579-01-5		INFLATABLE SEAL	1	CH1138-M035	GUNMETAL	MIL-R-8855 CLASS 2	BS 1400 P81		
H72579-01-6		MAIN CLAMP RING ASSY	2	H48059-002	AL BRONZE	ASTM B148 CU ALLOY UNS C98500	BS 1400 #62		
H72579-01-7		MAIN CLAMP RING	2	H48059-005	AL BRONZE	ASTM B150 CU ALLOY UNS C83000	D66 1043-2		
H72579-01-8		BELOW ASSY	1	H48422-7-003	AL BRONZE	ASTM B150 CU ALLOY UNS C83000	D66 1043-2		
H72579-01-9		SUPPORT SPRING ASSY	1	H42930-529-1-D10	MONEL K500	NI-CU-ALLOY UNS N05500/CO-N-268	BS 3073 #618		
H72579-01-10		INTERLAYER	1	H42930-78-4-188-F-14	MANITEX 3	NI-CU-ALLOY UNS N05500/CO-N-268	BS 3073 #618		
H72579-01-11		BRIDGING SPRING ASSY	1	H43722-529-D10	MONEL K500	NI-CU-ALLOY UNS N05500/CO-N-268	BS 3073 #618		
H72579-01-12		BRIDGING SPRING ASSY	1	H42930-529-4-D10	MONEL K500	NI-CU-ALLOY UNS N05500/CO-N-268	BS 3073 #618		
H72579-01-13		CARRIER ASSY	1	H81826-001	GUNMETAL	ASTM B584 CU ALLOY UNS C92200	BS 1400 LG4		
H72579-01-14		CARRIER	1	H48072-2131-F22	NEOPRENE		BS 1400 LG4		
H72579-01-15		FACE ASSY (NON-SPLIT)	1	H87597-081	MANITEX 22		BS 1400 LG4		
H72579-01-16		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-17		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-18		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-19		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-20		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-21		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-22		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-23		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-24		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-25		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-26		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-27		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-28		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-29		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-30		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-31		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-32		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-33		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-34		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-35		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-36		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-37		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-38		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-39		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-40		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-41		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-42		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-43		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-44		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-45		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-46		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-47		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-48		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-49		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-50		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-51		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-52		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-53		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-54		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-55		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-56		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-57		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-58		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-59		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-60		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-61		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-62		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-63		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-64		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-65		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-66		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-67		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-68		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-69		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-70		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-71		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-72		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-73		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-74		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-75		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-76		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-77		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-78		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-79		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-80		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-81		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-82		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-83		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-84		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-85		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-86		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-87		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-88		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-89		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-90		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-91		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-92		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-93		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-94		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-95		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-96		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-97		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-98		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		
H72579-01-99		FACE ASSY (NON-SPLIT)	1	H86861-081	MANITEX 22		BS 1400 LG4		
H72579-01-100		FACE ASSY (NON-SPLIT)	1	H41485-1917-F03	NEOPRENE		BS 1400 LG4		

REVISIONS

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USCGC ALDER (WLB-225B) DRYDOCK AVAILABILITY FY2027

ITEM.	DESCRIPTION	GA DWG NO.	QTY	REVISION	DESCRIPTION	DATE
001	ADAPTOR RING BOLTS	H72579-01-1-3	18	A	Dwg created to reflect minimum parts req'd for service warranty	11/8/2002
002	INFLATABLE SEAL	H72579-01-1-5	1	B	Updated notes & format	5/22/2003
003	MAIN CLAMP RING BUTT BOLT	H72579-01-2-2	6	C	Face insert changed to MANETEX 22	3/25/2004
004	SUPPORT SPRING ASSY	H72579-01-3-1	1			
005	INTERLAYER	H72579-01-3-2	1			
006	BRIDGING SPRING ASSY	H72579-01-3-3	1			
007	BACKING SPRING ASSY	H72579-01-3-4	1			
008	SPLASH GUARD (RUBBER)	H72579-01-4-2	1			
009	FACE INSERT (SP LIT)	H72579-01-6-1	1			
010	FACE SEALING STRIP	H72579-01-6-2	1			
011	SEAT BUTT BOLTS	H72579-01-7-2	4			
012	SEAT DOWEL	H72579-01-7-3	2			
013	SEAT SPRING PINS	H72579-01-7-4	2			
014	O-CORD, SEAT	H72579-01-7-5	2			
015	DRIVE CLAMP BUTT BOLT	H72579-01-8-2	2			
016	DRIVE SCREW	H72579-01-8-3	2			
017	DRIVE ALIGNMENT BOLTS	H72579-01-8-4	2			
018	DRIVE SCREW NUT	H72579-01-8-5	6			
019	DRIVE CLAMP SHAFT SCREW	H72579-01-8-6	4			
020	COMPRESSION TOOL ASSY	H72579-01-CT	1			
021	SEAL DWG. OVERHAUL KIT DWG	H72579-01 REV:D JCL001169-000 REV:C	1 1			

Notes:

1. This kit contains the minimum OEM recommended parts for the complete overhaul of one seal assembly for the USCG WLB 225' CLASS ship, G/A Dwg US72579-01, Rev. D.
2. All Wartsila parts are covered under our standard Terms and Conditions and are warranted against manufacturing defects. Details available upon request.
3. A repair kit for face insert replacement or inflatable seal replacement can be provided upon request.
4. The recommended normal duty operational life of the Bellows assembly is 8 years. The bellows assembly should be replaced at regular overhauls to insure this limit is not exceeded.
5. Machining of the seat (7-1) to remove wear is required. (Refer to technical manual – Seat repair). The seat is excluded from this supply and can be supplied upon request.
6. Inflatable seal assembly requires hot vulcanizing with the appropriate fixture for proper operation
7. Contact the Wartsila Service department at 757-588-3625 for installation and warranty.

 WARTSILA Wartsila Lips, Inc. 3617 Koppers Way, Chesapeake, VA 23323 P-757-588-3625 F-757-558-3627	
CONT. NO.	
DRN-JWC	MAJOR OVERHAUL KIT
CHK-JWC	18.000" MB STERN TUBE SEAL
APP-	USCG WLB 225' CLASS (GA US72579-01)
Date:	11/8/2002
Size	DWG. NO. JCL001169-000
REV.	C

WORK ITEM 25: Propulsion Shaft Seals, Bulkhead, Overhaul**1. SCOPE**

1.1 Intent. This work item describes the requirements for the Contractor to inspect and overhaul the John Crane Type ND bulkhead shaft seals for both Main Propulsion Shaft as well as Thruster Generator's PTO shaft.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
N	**Oversized shaft seal diaphragm (Main Prop Shaft)	NSN: 2010-01-537-2301	2 ea.	9,828.00
N	**Oversized shaft seal diaphragm (PTO shaft)	PN: H74265-01-3	1 ea.	4,250.00
N	**Entire New Seal (Main Prop Shaft)	NSN: 2040-01-393-7061	2 ea.	18,883.00

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

2. REFERENCES**COAST GUARD DRAWINGS**

Coast Guard Drawing 225 WLB 243-202, Rev C, Bulkhead Type Seal

COAST GUARD PUBLICATIONS

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

Coast Guard Technical Publication (TP) 3524, May 2009, Manufacturers Instruction Book, SWBS Group(s) 243-262, 225' WLB Class Cutters, SWBS 243, Section A, Seal, Forward Stern Shaft, Manufacturer: John Crane, Model NO. MB Series, Rev. 1

Coast Guard Technical Publication (TP) 5029, 01-NOV-03, S9243-Bx-MMC-010 - Bulkhead Shaft Seal

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):

- 3.3.2 (Seal inspection).
- 3.3.3 (Alignment check).

3.1.2 Tech Rep. The Contractor must provide the services of qualified Tech Rep, who is familiar with the Wartsila Defense, Inc Type ND Seal, to accomplish the following tasks – on site:

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

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

3.1.2.2 Submit a copy of the Tech Rep's résumé and a list of references to the COR at the Arrival Conference.

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

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

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

3.2.1 Do not rotate either shaft while the bulkhead is being repaired/overhauled.

3.3 Bulkhead seal overhaul particulars. The Contractor must accomplish the following using Coast Guard Drawing 225 WLB 243-202, TP-3524 and TP-5029 as guidance:

3.3.1 Disassembly. Disassemble each of the bulkhead shaft seals. The Main propulsion shaft's bulkhead seals (two) are 14" diameter John Crane Type ND model H72609 . The PTO shaft's bulkhead seal is 4.5" diameter John Crane Type ND model H74265.

USCGC ALDER (WLB-225B) DRYDOCK AVAILABILITY FY2027

3.3.2 Seal inspection. After seal disassembly, clean and inspect the diaphragm, and measure the housing-to-diaphragm wear. Submit A CIR.

3.3.3 Machine housing. Machine housing to remove grooving in accordance with TP-3524 and TP-5029.

3.3.3.1 Machining of housing must not exceed 0.020” from original dimension, unless an oversized diaphragm is being installed.

NOTE

Obtain UCG permission prior to machining housing beyond 0.020”, because an oversized diaphragm will then be required.

3.3.4 Alignment check. Take and record deflection readings between the shaft and bulkhead to check for any misalignment. Submit A CIR.

3.3.5 Reassembly. The Contractor must reassemble the bulkhead shaft seals upon completing all inspections, measurements, cleaning and necessary repairs.

3.3.5.1 If warranted, install a new Government-furnished oversized diaphragm.

3.3.5.2 Renew the housing-to-bulkhead gasket and O-ring.

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 Seal description. The subject bulkhead seals are described in TP 3524.

4.2 Seal tech pub cross-referencing. TP 3524 supplies only minimal information on the 14” John Crane Type ND Bulkhead seals used on the 225’ Class. TP 5029 associated with the 420’ Class Icebreaker, is for the same John Crane Type ND Bulkhead seals except in a larger (23.750”) size. Because of the details found only in TP 5029 (not found in 3524), TP 5029 is intentionally cited in this work item.

4.3 Supplier information. The distributor of this equipment is John Crane – Lips USA, 3617 Koppens Way, Chesapeake, VA 23323. The telephone number is 757-385-5275; telefax is 757-487-3658.

Dwg. No.: US74285-01		REF: 65918		CODE: 70800/230			
ITEM NO.	DESCRIPTION	QTY	PART NO.	MATERIAL	U.S. MATERIAL SPEC.	B.S. WH'L SPEC.	WT.
H74285-01-1	DIPHRAGM HOUSING ASSY	1	H74285-01-1	S.G. IRON	ASTM A536 GRADE 65-45-12	B5 2789 SNG 420/12	
1-1	DIPHRAGM HOUSING	2	H74285-01-1-1	AL. BRONZE	ASTM B150 CU ALLOY UNS C63000	DGS 1043-2	
1-2	DOREL	2	H74285-01-1-2	HIGH TENSILE STEEL		HTS ANSI-STD	
1-3	SCREW	6	H74285-01-1-3				
H74285-01-2	DIPHRAGM ASSY	1	H74285-01-2	MANETEX 10		HTS ANSI-STD	
2-1	DIPHRAGM (SPECIAL)	1	H74285-01-2-1	NEOPRENE		HTS ANSI-STD	
2-2	O RING	1	H74285-01-2-2	HIGH TENSILE STEEL		DGS 1043-2	
2-3	SCREW	2	H74285-01-2-3	AL. BRONZE	ASTM B150 CU ALLOY UNS C63000	DGS 1043-2	
2-4	NUT	2	H74285-01-2-4				
2-5	WASHER	4	H74285-01-2-5	MILD STEEL		B5 970 220 M07	

86 APPROX

10

1.6 JOINT (CUSTOMER SUPPLY)

(8x) M12 CRP HEAD SCREWS EQUIPPED ON 410 P.C.D. (CUSTOMER SUPPLY) TORQUE TO 41NM

50

0.8mm

116 EXTENT OF SLEEVE

8205 $\pm$ 0.5 SHIFT

8440

8350 BORE MIN

VIEW ON ARROW 'A' SHOWING BUTT SCREW

SEE NOTE 7

1-1

1-2

2-1

2-2

2-3

2-4

H74285-01-1

H74285-01-2

SEE NOTE 7

NOTES

- ALL DIMENSIONS IN MM.
- ALL COMPONENTS MAY BE REMOVED WITHOUT DISTURBING THE SHIFT.
- AXIAL MOVEMENT IS ONLY RESTRICTED BY THE EXTENT OF SEALING SURFACE OF THE SHAFT.
- FOR THE SEAL TO FUNCTION THE BULKHEAD SHOULD BE PERPENDICULAR TO THE SHAFT AXIS WITHIN THE GIVEN LIMITS -
ON FITTING : 0.2"
FOLLOWING SHOCK/FLOODING : 1.5"
- RADIAL MOVEMENT : 10 MM
- AXIAL MOVEMENT : 10 MM
- ITEMS 1-3 AND 2-4 TO BE SECURED USING AN LIQUID THREADLOCKER (SUPPLIED WITH H74285-01-2 ASSY) AT INSTALLATION.
- THE SHIFT ADJACENT TO THE SEAL MUST BE FREE FROM PRINT, GREASE AND DEBRIS.
- FOR FACTORY TEST/ASSEMBLY CRITERIA SEE T.D.S. 16/024.
- FOR FAILURE ANALYSIS OF THE SEAL AND SHIFT AND DOMEL IN POSITION. OPTIM. TOLES ARE PROVIDED.
- SEAL MUST OPERATE ON A METALLIC SHIFT OR SLEEVE.

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(Rev-0)

WORK ITEM 26: Strain Gage Alignment, Check

1. SCOPE

1.1 Intent. The intent of this item is for the Contractor to perform a strain gage alignment check prior to the Cutter entering the drydock to document the existing alignment of the propulsion shaft.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B-WLB 233-001, Rev F, Propulsion Train Installation Drawing

Coast Guard Drawing 225B-WLB 243-001, Rev J, Propulsion Shafting Arrangement

Coast Guard Drawing 225B-WLB 243-002, Rev G, Stern Tube and Bearing a & D

Coast Guard Drawing 225-WLB 244-203, Rev E, Stern Tube Split Dovetail Carrier Casting

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3523-241-A&B, 225 WLB MIB, VOL 5, SWBS 241, GEAR, REDUCTION, MMC PN 241-01-01

Coast Guard Technical Publication (TP) 3523-242-A-C, 225 WLB MIB, SWBS 242, Coupling, Torsional, MMC PN 242-01-01 & 242-01-02

Coast Guard Technical Publication (TP) 3524-244-A, 225 WLM MIB, SWBS 244-A, Bearing, Line Shaft, MMC PN 244-01-03, TP 244-A

Coast Guard Technical Publication (TP) 3524-245-A&B, 225 WLB, SWBS 245-A & 245-B, Propeller System, CPP, MMC PN 245-01-01,, 0

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

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

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

3.2 Strain Gage Alignment Check. The Contractor must provide the services of a Consulting Engineer who is an expert in propulsion shafting alignment using strain gage alignment method to perform the propulsion shafting alignment check. The intent of the strain gage alignment check is to document the state of the existing alignment of the propulsion shafting, to ensure existing alignment is correct, and to collect baseline data.

NOTE

This alignment section of the specification is a performance specification. The performance specification describes the end result of work that the Contractor must accomplish, and the criteria by which this work will be measured. The Contractor is left on his own to achieve the specified end result, as long as he complies with the “measures of performance” that are specified.

3.2.1 The Contractor must ensure that the Consulting Engineer has performed similar propulsion shaft alignments of like (or greater) horsepower, length and configuration. Contractor must provide proof of this experience to the Contracting Officer at the arrival conference.

3.2.2 The Consulting Engineer must develop a 225' WLB propulsion mathematical model that is based on transfer matrix theory using the referenced documents.

3.2.3 The Contractor must be responsible for developing and recommending an acceptable shaft alignment in accordance with the requirements in this specification. An acceptable alignment is defined as the vertical and athwartships positioning of all shafting system bearings, such that satisfactory bearing loads and wear patterns on all bearings are achieved, including reduction gear bearings.

3.2.4 The Consulting Engineer must develop a mathematical model. As a minimum, the model must take into account the following characteristics of the shafting system:

- The characteristics of stern tube and bearings. Use manufacturer's recommended clearance and compression (crush) data
- Dimensions of the propeller, propulsion shaft, couplings, thrust bearing, and reduction gear
- Limitation on the reduction gear bearing loading
- Bearing wear down
- Difference between docked and afloat conditions

USCGC ALDER (WLB-225B) DRYDOCK AVAILABILITY FY2027

- Bearing crush and radial clearance
- Permissible loads on all bearings

NOTE

For the purposes of this specification, any reports generated, and/or any negotiated growth work, "optimal alignment" is 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, and the shaft slope through long bearings matches the bearing slope within a reasonable range. It is understood that altering alignment, other than adjusting line shaft bearing (e.g. realigning the reduction gears or re-boring the stern tube) is outside the scope of this specification.

3.2.5 For consistency with past alignments, the aft stern tube bearing (72" Thordon) must be modeled as two bearings. Half the bearing hall be modeled at a point 9" aft of the stern bearings forward end. The other half must be modeled at a point 9" forward of the stern bearings aft end.

3.2.6 The Consulting Engineer must undertake the appropriate numerical investigations, using the referenced documents. The shafting alignment analysis must provide, as a minimum, the following information:

- Straightline bearing reactions
- Optimum bearing reactions with associated slopes and deflections
- Influence Number Table
- Shaft slope, stress, and deflection at each bearing, flange, and concentrated load
- Location of maximum shaft stresses and deflections
- Whirling critical RPM
- Bearing wear down analysis

3.2.7 For alignment purposes, the Contractor must instrument and measure, using the strain gauge method, the static alignment of shaft with the cutter afloat pre-drydock under the guidance of the Consulting Engineer. This must be accomplished prior to the cutter arrival at the Contractor's facility. The cutter must not be drydocked until the completion of this work in accordance with Definite Item "Drydocking Accomplish". The plant must be in the cold condition. The Contractor and the CG Inspector must ensure that the aft tanks are 80% full. The CG personnel will rotate the shaft. The CG Inspector will witness the readings.

3.2.8 The Consulting Engineer must carry out conversion of strain gauge readings to bearing reactions and offsets. The Contractor must submit a CFR within 24 hours.

3.3 Load cell measurements. Prior to drydock (afloat), the Contractor must measure the line shaft bearing loads using the load cell method.

3.3.1 The line shaft bearing is a 19-1/4" diameter Cooper Split Roller Bearing. Details may be found in CG Tech Pub 3524.

3.3.2 Using a calibrated load cell and a hydraulic jack measure the load on the lineshaft bearing while the Cutter is waterborne.

USCGC ALDER (WLB-225B) DRYDOCK AVAILABILITY FY2027

- 3.3.2.1 Center the hydraulic jack below the shaft and just forward of the lineshaft bearing.
- 3.3.2.2 Place calibrated load cell on top of jack.
- 3.3.2.3 Mount a dial indicator above the shaft, with the dial stylus contacting the top of the shaft just forward of the bearing.
- 3.3.2.4 Jack the shaft up in 0.001” increments to 0.016” total travel. Record the load on the jack at each 0.001” increment.
- 3.3.2.5 Lower the jack in 0.001” increments, again recording loads at each increment. At completion of readings, move jack/load cell and dial indicator out of contact with shaft.
- 3.3.2.6 Request Cutter’s personnel to rotate shaft 180o..
- 3.3.2.7 Repeat jacking and weighing procedure (up to 0.016” total travel and back down).
- 3.3.3 Tabulate and plot the data. Determine graphically from plot the zero lift point’s load for the shaft.
- 3.3.4 Provide as deliverable to the Coast guard a copy of the plot.
- 3.3.5 Retain data and results in Contractor’s required historic file for the Cutter whose load was measured.

4. NOTES

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

WORK ITEM 27: Propulsion Shafting, Optical or Laser Alignment Check

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to survey propulsion system alignment in drydock using optical or laser instrumentation.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225 WLB 243-206, Rev E, CPP Propeller Shaft

Coast Guard Drawing 225B WLB 243-001, Rev J, Propulsion Shafting Arrangement

Coast Guard Drawing 225B WLB 243-002, Rev G, Stern Tube and Bearings A&D

COAST GUARD PUBLICATIONS

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

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

USCGC ALDER (WLB-225B) DRYDOCK AVAILABILITY FY2027

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 Alignment survey personnel. The Contractor must provide the services of an Alignment Engineer who is an expert in propulsion shafting alignment using optical sighting or laser alignment method to perform the propulsion shafting alignment check on all bearings between the propeller and reduction gear.

3.3 Work coordination and preparation. The Contractor must coordinate surveys with all other work items detailed in the specification, to include work items for propulsion shaft removal and bearing renewals, to ensure the alignment survey does not necessitate a work stoppage. Abide by the following:

3.3.1 Conduct survey between the hours of 2200 and 0700 to minimize hull deflection that may occur during the day due to heating of cutter from the sun.

3.3.2 Erect any staging required to provide access to bearing locations.

3.4. Survey particulars. Using 3.2.3.3 Perform NDE of all bearing sleeves, shaft tapers, coupling bolts, keyways, and weld repaired surfaces in accordance with SFLC Std Spec 0740, Appendix C.. as guidance, the Contractor must conduct two alignment surveys for each propulsion shaft line. The first survey must be accomplished prior to performing hot work or structural repairs and the final survey must be accomplished after all hot work has been completed.

3.4.1 Establish a reference line or line of sight (LOS) perpendicular to the reduction gear output flange and concentric with the centerline.

3.4.2 Install two targets, at a minimum, at each propulsion shaft bearing location between the reduction gear output flange and propeller, including line shaft bearings where feasible. Install targets at forward and aft ends of the bearing housing. Record horizontal and vertical offsets of each target location from the established LOS, as well as longitudinal or axial distance of the target from the center of the reduction gear output flange along the LOS.

3.4.2.1 Targets must be installed with old bearings removed, so that the measurements obtained represent the center of the housing or chocking/bedding compound. Alternatively, survey may be conducted with new, unworn bearings installed. Identify the surface actually measured in the report submission (e.g. bearing housing, chocking bed, or new bearing).

3.5 Final Report. Provide a CFR of the findings and the Alignment Engineer's recommended solutions to Coast Guard Inspector. This report must describe procedures used and an analysis of the obtained data including any identified movement of bearing positions, as well as recommendations for realignment (if necessary).

4. NOTES

This section is not applicable to this work item.

WORK ITEM 28: Propulsion Tail Shaft Sleeve, Skim Cut

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to minimally skim cut the tail shaft bearing sleeve, to restore the cylindrical finish on the tail shaft liner.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 243-001, Rev J, Propulsion Shaft Arrangement

Coast Guard Drawing 225B WLB 243-002, Rev G, Stern Tube and Bearings A&D

COAST GUARD PUBLICATIONS

None.

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

3.1.4 Interferences. The Contractor must handle all interferences in accordance with SFLC Std Spec

0000, paragraph 3.3.5 (Interferences).

3.2 Shaft sleeve particulars. The following table describes the shaft sleeves in way of the waterborne bearings:

TABLE 1- SHAFT SLEEVE PARTICULARS

NAME	LENGTH OF LINER	ORIGINAL JOURNAL DIAMETER	MINIMUM CONDEMNING JOURNAL DIAMETER	MINIMUM INITIAL DIAMETRIC CLEARANCE	DIAMETRIC CLEARANCE FOR BEARING RENEWAL
Aft Liner	10'-1"	18.000"	17.690"	0.057"	0.259"

NOTE

For the purpose of this specification, the terms “shaft liner” and “shaft sleeve” have the same meaning. The term “liner O.D” and “sleeve O.D.” means journal diameter.

3.3 Special requirements for fwd stern tube liner (in way of stern tube seal).

3.3.1 The stern tube’s shaft seal shares same liner as the stern tube bearing. Only the aft (stern tube bearing area) area must be skim cut. The forward end must be left uncut at original diameter (18.000”) to work properly with the shaft seal that requires the original diameter be preserved. See Figure, “Further Instructions for Skim Cutting of Liner” at end of this specification.

3.4 Skim cut shaft sleeves. The Contractor must refer to Coast Guard Drawings 225B WLB 243-001 and 225B WLB 243-002 for guidance and perform the following:

3.4.1 Prior to taking a skim cut, the maximum depth of cut as measured from original design size diameter must be proposed to the Coast Guard Inspector for approval. The depth of the cut must be such that the sleeve damage, such as wear, pitting, roughness, or scoring must be removed and the journal surface restored and refinished to the design surface requirements. The overlying principal must be minimal metal removal consistent with removing the damage.

3.4.1.1 As an example of this, a proposal would be: “Skim cut on the aft stern tube bearing liner of no more than 0.050” depth is proposed, which will result in a new outside diameter (O.D.) liner of no less than 17.600” (this example assumes the liner had been previously cut to 17.700”) and was no longer at design diameter. For damage that would require skim cut greater than 0.155” (from original design size shown and listed as condemning journal size in the above table), the entire sleeve would require renewal.

NOTE

Do not cut beyond 0.155” for any reason, except for liner removal/renewal

3.4.2 Upon approval of the skim cut proposal, the final skim cut diameter must be polished to an outside journal surface finish of 32 micro-inches (RMS). Ensure the final sleeve runout of 0.001” is maintained; however, it is important to avoid needless excessive liner material solely to achieve this runout.

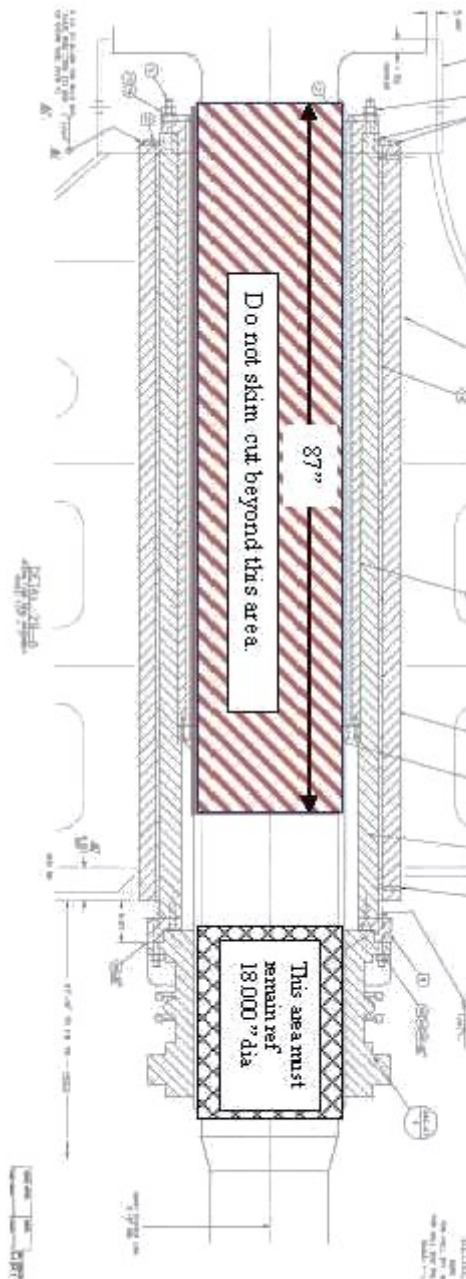
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3.5 Report. The Contractor must submit a CFR with the results and the new outside diameter measurements for the completed final skim cut of the shaft sleeve.

4. NOTES

This section is not applicable to this work item.

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Note 1: Radius inside corner of cut 1/8R

Note 2: Remove sharp edges form outside corner of cut

Note 3: 87" is measured from start of liner at propeller end

Figure; Further Instructions for Skim Cutting of Liner

WORK ITEM 29: Propulsion Shaft Bearings, External, Check Clearances

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to inspect and measure clearances for the stern tube bearing for the propulsion shafting.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B-WLB 243-2, Rev G; Stern Tube and Bearing A & D

COAST GUARD PUBLICATIONS

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

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

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

- 3.2 (Propeller shaft bearing inspection).

3.1.2 Tech Rep.

None.

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

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

3.2 Propeller shaft bearing inspection. The Contractor must accomplish the following tasks, and submit a CIR.

3.2.1 Remove the stave bearing retaining rings and any other bearing components, as necessary, to facilitate bearing groove cleaning, bearing inspection, and clearance measurements.

NOTE

The rope guards are removed in the related item, “Propulsion Shaft Rope Guard Inspect and Repair”.

3.2.2 Clean all grooves between the staves by rodding, using a suitable soft bronze rod to prevent shaft sleeve damage. See Coast Guard Drawing 225B-WLB 243-002 for guidance.

3.2.3 Provide a borescope and inspect the condition of the shaft sleeve and the middle of each stave. Inspect the condition of each shaft sleeve for pitting, cracking, and abnormal wear.

3.2.4 In the presence of the Coast Guard Inspector, take the shaft bearing clearances in accordance the enclosed Figure “WLB-225 Propeller Shaft Bearing Clearance” for the propulsion shaft.

3.2.5 Ensure that the same individual must take all readings in order to maintain uniformity, record the clearances for the propulsion shafts on the enclosed Figure “WLB-225 Propeller Shaft Bearing Clearance.”

3.2.6 Inspect for any missing hardware. Reinstall any removed components such as bearing retaining rings.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 30: Propulsion Shaft Bearing, Stave Renewal

1. SCOPE

1.1 Intent. The intent of this item is to renew all the staves on one (1) waterborne propulsion shaft staved 72" bearing.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225-WLB 244-203, Rev E, Stern Tube Split Dovetail Carrier Casting

Coast Guard Drawing 225B-WLB 243-2, Rev G, Stern Tube and Bearing A & D

NAVSEA Dwg 803-1385664, Bearings, Stern Tube & Strut

COAST GUARD PUBLICATIONS

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

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

None

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

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

NOTE

Removal of the shaft stern tube bearing shell is covered under Definite Item “Propulsion Shafting Remove, Inspect and Reinstall.”

3.2 Stave Removal. The Contractor must remove all the staves from the waterborne propulsion shaft bearing by pushing them out of the dovetailed slots. They may be driven out with a hand-held, air driven impact hammer. Cooling the staves with dry ice may also aid in removing staves. Take care to avoid damaging the dovetailed slots.

3.2.1 Coordinate this Item with related Items “Propulsion Shaft Bearings Check Clearances” and “Skim Cut Propulsion Tailshaft Sleeve” since action in those items may influence the stave dimensions (procurement sizes) of this Item.

3.2.2 Renew bearing strips/staves (Pc No 4 of CG Dwg 225 WLB 243-2) on stern tube bearing in accordance with CG Dwg 225B WLB 243-2, 225 WLB 243-203, and NAVSEA Dwg 803-1385664.

3.3.2.1 New Thordon XL bearing stave in-shop machining. A Thordon Bearing Technical Representative must be consulted to establish the correct bore dimensions of the bearing depending on ambient temperatures, water swell, and thermal expansion, and liner’s OD (after any cuts have been made). Thordon uses a program that determines initial sizing that will result in the correct installed/operating running clearance. Thordon Bearing Technical Representative must be on scene during bearing installation. Provide CG Inspector with programs output and calculated initial (dry) bore diameter as well as final wet/swollen running diameter. Running diametrical clearance minimum is 0.057”.

3.3.2.2 Following Thordon’s technical guidance (with new staves installed in dovetails and shell halves bolted together) center bore the bearing bore (ID) to the calculated dimension in a suitable machine shop and in accordance with the bearing manufacturer’s recommendations.

3.3.2.3 At conclusion of center boring, take fwd, middle, and aft of each propeller shaft bearing IDs (vertical and horizontal) in the presence of the Coast Guard Inspector. The same individual must take all readings in order to maintain uniformity. Submit a CFR.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 31: Stern Tube Interior Surfaces, Preserve, 100 Percent

- **SCOPE**

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

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 243-001, Rev J, Propulsion Shafting Arrangement
Coast Guard Drawing 225B WLB 243-002, Rev G, Stern Tube and Bearings A&D

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022,
General Requirements
Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022,
Requirements for Preservation of Ship Structures

OTHER REFERENCES

MIL-A-22262, Mar 1996, Abrasive Blasting Media Ship Hull Blast Cleaning
MIL-PRF-24647, Jan 2018, Paint System, Anticorrosive and Antifouling, Ship Hull
The Society for Protective Coatings (SSPC)/NACE-International (NACE) Joint Surface
Preparation Standard SSPC-SP 10/NACE No. 2, 2007, Near-White Metal Blast Cleaning
The Society for Protective Coatings (SSPC) Surface Preparation Specification No.11 (SSPC-SP
11), 2012, Power-Tool Cleaning to Bare Metal
The Society for Protective Coatings (SSPC)/NACE International (NACE) Joint Surface
Preparation Standard SSPC-SP 12/NACE No.5, 2002, Surface Preparation and Cleaning of
Metals by Waterjetting Prior to Recoating

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

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

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

- Inboard cooper bearing.
- John Crane Type ND bulkhead seals.
- Rope guard
- Fairwater.

3.2 Preservation requirements. Using Coast Guard drawings 225B WLB 243-001 and 225B WLB 243-002 as guidance, the Contractor must preserve 100% of the interior tube surfaces as follows:

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

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

TABLE 1 – SURFACE PREPARATION

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

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

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

NOTE

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

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

NOTE

Surfaces being preserved are considered “critical-coated surfaces”.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 32: 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

None.

COAST GUARD PUBLICATIONS

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

Coast Guard Technical Publication (TP) 3524, SWBS 245-B, Aug 2005, Instruction Manual for
the Model 102 B Class Controllable Pitch Propeller and Shafting System

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).

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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 CG TP-3524 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 33: Controllable Pitch Propeller, System Maintenance, Perform

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to open and inspect the Controllable Pitch Propeller (CPP) System, inspect and perform maintenance on the servo-box, and inspect and perform maintenance on the servo pumps.

NOTE

Propeller blade removal, draining and filling of the system, and blade seal renewal are not part of this specification.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
N	Stat-O-Seal Washers	NSN: 5310-01-212-5987 PN: 0-4-3-5	12 ea.	55.61
N	O-Ring, Hub Flange Bolt Cover	NSN: 5331-00-983-9878 PN: 0-2-2-5	12 ea.	50.00

2. REFERENCES

COAST GUARD DRAWINGS

None

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3524, Jan 1997, Manufacturer's Instruction Book-SWBS Group(s) 243-262

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

Surface Forces Logistics Center Standard Specification 5000 (SFLC Std Spec 5000), 2022, Auxiliary Machine Systems

OTHER REFERENCES

Commercial Item Descriptions (CID) A-A-59323, Rev A; Cloths, Cleaning, Low-Lint

3. REQUIREMENTS

3.1 General.

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

- 3.3.1 (Servo Box negative finding report).
- 3.3.2 (HOPM negative finding report).

3.1.2 Tech Rep. The Contractor must provide the services of an OEM authorized/ licensed Tech Rep for the Rolls Royce CPP System to accomplish the following on site:

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

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

3.1.2.2 Submit the name of the Tech Rep to the COR at the Arrival Conference.

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

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

NOTE

Plastic bags may be used only when arrangement or configuration prevents the use of the other sealing methods specified above.

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

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

NOTES

1. The entire CPP system is drained, tanks cleaned, system filled, blades removed and reinstalled, and pressure and operating tests are performed in Definite Item, "Hubs General Maintenance."

2. Any o-ring (or custom o-ring made out of stock) that is cut and then requires rejoining must not be glued back together, but rather joined together by a vulcanizing process. This vulcanizing requirement has come about due to a rash of failed glued joints that required emergency dry-docking of numerous Cutters. On a case by case basis, and only on non-underwater sealing joints, and if supported by OEM, the Contractor may appeal this vulcanizing requirement.

3.3 OD Box inspections & hydraulic oil power module clean and inspections.

3.3.1 Visually inspect the Oil Distribution (OD) Box for signs of abnormal leakage or damage. Submit A CIR with any negative findings. Clean OD Box's external surfaces of oil and residue. Use new low-lint cleaning cloths, conforming to Commercial Item Description (CID) A-A-59323 Type II.

3.3.2 Visually inspect the Hydraulic Oil Power Module (HOPM) including Hydraulic Manifold, Heat Exchanger, and Pitch Control Manifold for signs of abnormal leakage or damage. Submit A CIR with any negative findings. Clean external surfaces of oil and residue. Use new low-lint cleaning cloths, conforming to Commercial Item Description (CID) A-A-59323 Type II.

3.3.3 Clean and inspect the Emergency Pitch Positioner for signs of abnormal leakage or damage. Submit CFR with any negative findings. Use new low-lint cleaning cloths, conforming to Commercial Item Description (CID) A-A-59323 Type II, to clean external surfaces of oil and residue.

NOTE

The OEM Technical Representative need not be present for the hydraulic pump overhauls.

3.3.4 With OD Box reassembled take baseline run-out measurement of the extension tube. Figure 1, "Final Run outs Measurements at Full Ahead" depict where to take measurements. Record readings and submit a CFR.

PITCH AT FULL AHEAD

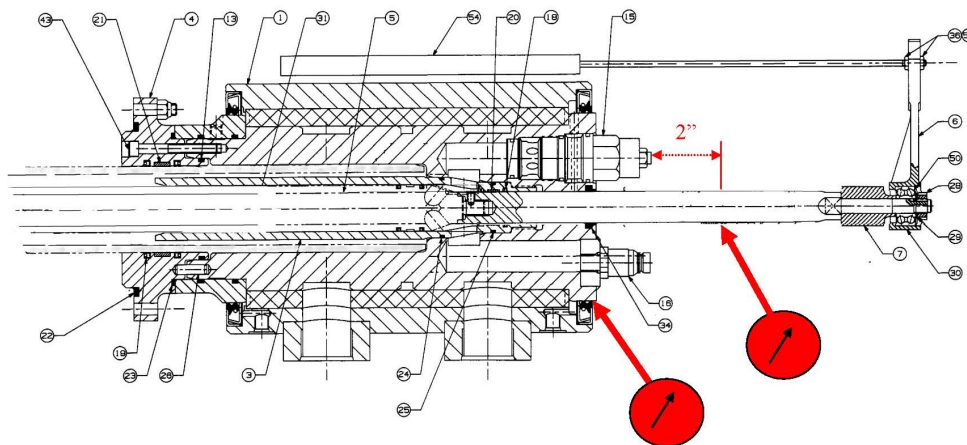


FIGURE 1. FINAL RUN-OUT MEASUREMENTS AT FULL AHEAD

3.4 Hydraulic pump maintenance and inspection. The Contractor must, in accordance with CG Tech Pub 3524, Section 245 and the instructions of this paragraph disassemble for inspection both the Main (reduction gear driven) and the Standby (electric motor driven) hydraulic pumps.

3.4.1 Uncouple the pumps from drive unit.

3.4.1.1 Check the electric motor resistance reading and submit a CFR. Inspect motor visually for any apparent physical damage. The electric motor is not being overhauled, it must remain in place.

3.4.2 Remove the pumps to a clean accessible area and disassemble. Cover, plug, or blank flange all pipe openings.

3.4.2.1 The following are general guidelines that set the minimum requirements for inspections. Whenever possible, all parts should be thoroughly cleaned then visually inspected under strong light and magnification.

3.4.2.1.1 Check all parts for discoloration (caused by overheating), fractures, and corrosion.

3.4.2.1.2 Examine all parts for deformation, pitting, scoring, scratches, nicks, and accumulation of hardened dirt deposits and other contaminants.

3.4.2.1.3 Inspect all valve seating surfaces for cracks, pits, scoring, scratches, uneven wear, and failure of parts to seat evenly.

3.4.2.1.4 Inspect all threaded areas for stripped threads and evidence of cross threading; examine areas adjacent to threads for cracks.

3.4.2.1.5 Inspect bearings for flat spots and corrosion, verify smooth operation.

3.4.2.1.6 Inspect retainers and seals for nicks, scratches, and burrs, or breaks.

3.4.2.1.7 Check drive shafts for flat spots and uneven wear.

3.4.2.1.8 Check all springs for cracks and bends; verify uniform expansion/retraction capability.

3.4.2.1.9 Inspect passages for corrosion and blockages.

3.4.2.1.10 Inspect rotor for scores or marring on the wear face.

3.4.2.1.11 Measure and record the sizes and clearances of the wearing parts and fit areas.

3.4.3 Upon completion of this inspection Contractor must submit a Condition Found Report to the Coast Guard Inspector documenting the results of the inspection and any recommended corrective actions.

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

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3.4.5 After all necessary work is completed reassemble in accordance with manufacturer's instructions. During reassembly lubricate internals with hydraulic oil and renew all o-rings, gaskets, seals, bearings and packing.

3.4.6 Due to the close tolerances and clearances required on these pumps it is important that parts are not forced together or foreign material be allowed to enter pump.

3.4.7 After reassembly rotate each pump by hand and make sure pump rotates freely.

3.4.8 Reinstall the hydraulic pumps on the Cutter.

3.4.9 Check alignment, align per manufacturer's recommendations.

3.4.10 Remove temporary caps, plugs, covers, etc. from piping and reconnect to pumps.

3.4.11 During CPP system operational checks, check pumps for normal operation and for leaks.

3.5 Flushing. The Contractor must flush the CPP hydraulic system in accordance with SFLC Std Spec 5000, Appendix C, Paragraph C2.8.1 (Flushing).

3.5.1 After successful pressure test and with all test equipment removed, the Contractor must flush CPP system per procedure 6-2.1 "Flushing the CPP System" of CG Tech Pub 3524, Section 245.

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

NOTE

Do not drain ANY Fluids (including fresh water) into any space, bilge, or exterior location.

3.6 Verification of propeller to shaft (hub flange) bolt torque. The Contractor must verify that the 12 (ea) hub flange bolts are torqued per procedure 4-4.2 "Verify Hub Flange Bolt Torque" of CG Tech Pub 3524, Section 245.

NOTE

Do not install covers (item #12) until conclusion of final satisfactory pressure testing.

3.7 Final Pressure Testing Preservation. The Contractor must after each of the twelve flange bolts has been reinstalled and final torqued, perform pressure testing. Examine each flange bolt for leakage over a 30 minute pressurized time period followed by a 30 minute unpressurized period. Zero leakage is permitted.

3.8 Installation of Flange Bolt covers. The Contractor must, after satisfactory pressure testing, (and prior to rope guard reinstallation) reinstall the flange bolt covers (item #12). Renew the o-rings (#35) and the stat-o-seal washers (#31) as well as the hex screw (item 30). Torque to 75 ft-lb.

3.9 Rope Guard Installation. The Contractor must reinstall removed rope guards, in accordance with related Work Item.

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

3.11 CPP final adjustments. The Contractor must adjust the pitch scale for design pitch position per procedure 6-3.1 “Dry-dock Adjustment Procedure” of CG Tech Pub 3524, Section 245.

3.11.1 After undocking while afloat, adjust the pitch scale for Full ahead pitch position per procedure 6-3.2 “Afloat Adjustment Procedure” of CG Tech Pub 3524, Section 245.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

3.12 Sea trials. The Contractor must perform sea trial in accordance with Definite Item “Sea Trials”. During trials, the Cutter will be run at various speeds and conditions, both ahead and astern. The Contractor must be responsible for correcting any leakage, vibration, noise, abnormal pressures, and/or excessive temperatures that arise in the CP propeller system as a consequence of the work under this specification. During trials, the Coast Guard will operate the Cutter and all equipment at low, mid, and high shaft speeds, and at full load.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 34: Controllable Pitch Propeller Hub, General Maintenance with EAL, Perform

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to perform general maintenance for the Controllable Pitch Propeller (CPP) system hubs with EAL lubricant installed.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
Y	**Blade Bolts	NSN: 5306-01-410-6893	4 ea.	1,854.12
N	Blade Bolt O-rings	NSN: 5330-01-408-7251 PN: 0-3-2-1	48 ea.	2.25
N	Blade Seal	NSN: 5331-01-623-0621 PN: 2-472 KA174-75	4 ea.	55.00
Y	*Lifting Device, Propeller Blade	NSN: 2020-01-F02-6825	1 ea.	100.00

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

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

2. REFERENCES

COAST GUARD DRAWINGS

None

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3524, Jan 1997, Manufacturer's Instruction Book-SWBS Group(s) 243-262

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

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

OTHER REFERENCES

Commercial Item Descriptions (CID) A-A-59323, Rev A; Cloths, Cleaning, Low-Lint

3. REQUIREMENTS

3.1 General.

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

- 3.4.3 (Initial visual survey for damage).

3.1.2 Tech Rep. The Contractor must provide the services of an OEM authorized/ licensed Tech Rep for the Rolls Royce CPP System to accomplish the following on site:

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

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

3.1.2.2 Submit the name and résumé of the Tech Rep to the COR at the Arrival Conference.

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

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

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

3.3 CPP system draining. The Contractor must perform the following tasks:

3.3.1 The CPP fluid in use is Shell Biodegradable Hydraulic Fluid 68 (previously named Neptune AW 68).

3.3.2 The Contractor must drain the propeller hub per procedure 6-5.1 "Draining the Hydraulic Oil" of TP-3524, Section 245. Figure 6-1 "Draining, Charging, Testing" of same Tech Pub illustrates draining setup. Approximately 60 gallons of fluid is contained within the hub.

3.3.2.1 Contractor must catch and collect all Shell Biodegradable Hydraulic Fluid 68 drained from the propeller hub. Fluid must be saved in hydraulically clean containers for re-use.

3.3.3 The Contractor must drain the head tank (15 gallons) to the sump tank.

3.3.3.1 After the CPP head tank has been drained, open and clean to dry bare metal removing all condensation residue using new low-lint cleaning cloths, conforming to CID A-A-59323, Type II. The

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tanks must be inspected and verified by the Coast Guard Inspector prior to closing. All gasket material must be renewed.

3.3.4 The sump tank must remain filled, since it has clean fluid that will be continue to be used. USCG may use a special filter cart, to clean and remove water from the sump tank's fluid

3.4 Propeller hub polishing. The Contractor must perform the following tasks:

3.4.1 Before the existing blades are removed for blade seal renewal, the Contractor must polish the entire hub exterior to a 63 RMS finish. The blades themselves are polished after their removal in another part of this specification.

NOTE

The reason for polishing at this point (pre blade seal renewal) is so that the generated debris from polishing the hub does not collect and foul the new blade seals.

Contractor may request a waiver if scheduling or conflicts with other drydock work makes the desired polishing sequence difficult to follow. State in waiver the reason, when hub polishing is proposed to occur, and how polishing debris will be prevented from entering the blade seal areas.

3.4.2 After polishing, the Contractor must vacuum or air gun loose debris from the hub surface and from the gap between blade palm and hub. This will prevent dirt from falling into the crank ring when blades are later removed.

3.4.3 The Contractor must visually inspect the surface of hub for any sign of damage, e.g. cracks. Submit a CIR.

3.4.4 The Contractor must perform NDI of the hub between blade ports, in accordance with SFLC Std Spec 0740, Appendix C. Submit a CFR.

3.5 Blade seal renewal. The Contractor must perform the following tasks:

3.5.1 The Contractor must renew all the blade seals on the propeller hubs. Ensure that hubs and blades are adequately marked to identify original blade locations, which will ensure each blade is returned to the same hub port in which it was removed. Mark hub and blades if existing marks are not adequate. Be aware that the Coast Guard Inspector will verify the cleanliness of the area including staging and rigging prior to the commencement of disassembly. Renewal must be as follows:

3.5.2 The Contractor must rotate the propeller so that the propeller blade to be removed is in the position specified by the Tech Rep.

CAUTION

The next paragraph is a very important step and may prevent the galling of blade bolts during removal.

3.5.3 The Contractor must clean all bolt heads and the spaces between the bolt shoulder and the blade palm to insure complete cleanliness. This will prevent dirt from falling into the crank ring threads while removing the bolts. Blow out with air.

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3.5.4 The Contractor must remove each propeller blade per procedure 6-6.1 “Propeller Blade Removal” of TP-3524, Section 245.

NOTE

Coast Guard has obtained Blade Lifting Arrangement and will supply as GFP.

3.5.5 The Contractor must use exclusively the blade lifting rig as shown in Figure 7-15 of TP-3524, Section 245. “Blade Lifting Arrangement” to remove and reinstall blades. At the completion of drydock, the lifting rig will be returned to the Coast Guard.

3.5.5.1 Remove, by wrench, one bolt at a time. Use the wrench with extreme care when encountering hard spots to prevent/mitigate seizing or thread damage. Mark each blade bolt hole where the bolt was not smoothly removed for further investigation and for cleaning with a tap. When a bolt is removed cover the opening with a clean rag. Verify each bolt is marked to ensure it will be reinstalled in same hole.

3.5.5.2 Lift each blade from the hub with caution to ensure the blades are lifted straight up. Ensure the blade does not hit anything during rigging. The most critical area for damage is the o-ring seal area of the palm of blade. Immediately cover the crank ring with clean lint free rags to contain residual fluid leakage and prevent damage or contamination.

3.5.5.3 Once a blade is removed, each opening must be protected whenever unattended by wrapping with plastic sheets and taping seams.

3.5.6 The Contractor must safeguard the blades until reassembly on the hub.

3.5.7 The Contractor must clean all mating surfaces on the blade and the hub. Clean the blade palm on the inner-side (between hub and blade), as well as the o-ring surface. Make sure all salt residue is removed but with care ensuring the o-ring contact area is not scratched. Clean the blade bolt landings and inspect for damage.

3.5.8 The Contractor must clean and perform NDI of all blade bolts in accordance with SFLC Std Spec 0740, Appendix C. Submit a CFR.

3.5.9 The Contractor must inspect the blade bolt’s threaded holes (located in the crank ring) which had difficult to remove bolts. Inspect for of thread damage and/or debris. Clean threaded hole as required and directed by Technical representative.

3.5.10 The Contractor must remove the lint free rags from crank ring remove old seal ring and clean the surface making sure nothing drops into the thread holes. Inspect the threads for damage and contamination.

3.5.10.1 In the presence of the Coast Guard Inspector, the Contractor must make a visual inspection of the condition of the entire hub and record any findings/observations in the form of a condition found report. Contractor must also assist the technical representative, as necessary, in inspecting and assessing propeller condition. This assistance may involve supplying calibrated measuring tools, strongbacks, chainfalls, and manpower. Inspection must measure “G” and any other hub clearance listed in Figure 6-2 “Hub Clearance” of TP-3524, Section 245. The purpose of inspection is to assess the wear condition of hub internals and to identify any impending wear problems/trends.

NOTE

An example of inspection data collected on other CPP systems that may also be applicable here might be a thrust measurement of each blade while the blade port is at Top Dead Center (TDC). A couple of blade bolts would be threaded in then the crank is pulled up (via the blade bolts) with lifting gear (“thrust out” position) and the difference in measurement between normal resting “thrust in” would be then determined.

3.5.11 The Contractor and Coast Guard Inspector must jointly inspect new Government furnished blade sealing o-rings (item #43 of Figure 7-1) of TP-3524, Section 245 to ensure they are undamaged and cure date has not expired. Install the o-ring (item #43).

3.5.12 While the blades are removed and prior to propeller reassembly, the Contractor must polish all four (4) propeller blades to 63 RMS finish. Dress down edges of blade tips smooth. Ensure they are free of burrs and scratches. Report any discovered blade damage in a Condition Found Report.

3.5.12.1 Polishing must be performed as soon as practical after blade removal to allow maximum time to rectify any discovered indications. Polishing must be performed only by qualified individuals. Only minimal metal must be removed during polishing and the leading edge contour and blade profile must not be altered

3.5.13 The Contractor must perform NDI of the entire removed blades (after polishing and prior to reinstallation) from the palm to the tip on both pressure and suction sides, in accordance with SFLC Std Spec 0740, Appendix C. Submit a CFR.

3.5.14 The Contractor must reinstall the propeller blades per procedure 8-6.5.2 “Blade Installation” of TP-3524, Section 245.

3.5.14.1 Set the propeller blade on the crank ring; ensure no dirt is allowed to fall into hub during this evolution from anywhere.

3.5.14.2 Try each bolt (uncoated) in its original holes, using markings from paragraph 3.5.5.1, to ensure it threads in and out easily. Then remove the bolt and coat it and the bolt landing with DEPAC antiseize or equivalent. For each bolt install the two, Government-furnished, blade bolt o-rings (item #42 of Figure

7-1 of TP-3524, Section 245). Thread each blade bolt into its hole by wrench only until it bottom out. If there is any resistance the bolt must be removed and the threads inspected for damage or dirt.

3.5.14.3 Tighten blade bolts in the presence of CG Inspector and Technical representative. Incrementally tighten blade bolts to 5,444 ft-lbs in the following pattern: 1, 4, 6, 3, 5, and 2. This is in accordance with paragraph 8-6.5.2.i of TP-3524, Section 245.

3.5.14.4 If pressure testing of blades is not scheduled to occur within 24 hours, a protective measure (e.g. tape) must be utilized across the gap between blade palm and hub to protect new blade seals from contamination.

3.6 System Restoration.

3.6.1 Contractor must procure and provide a single 55 gallon drum of new Shell Biodegradable Hydraulic Fluid 68.

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3.6.1.1 For assistance in ordering as well as any other contact with Shell regarding this oil, they have identified the following as their point of contact:

- Ceili A. Colletti
- Shell Marine
- Sales Manager North America
- Tel: +1 832 337 6234 Mobile: +17132401162
- Email: ceili.colletti@shell.com Internet: www.shell.com/business-customers/marine

3.6.2 With the CPP system fully assembled, (including all other related CPP work in other Work Items) the Contractor must fill the hub with the new hydraulic fluid (new 55 gallon drum) per procedure 6-5.2 “Charging the system with Oil” of CG Tech Pub 3524, Section 245. Figure 6-1 “Draining, Charging, Testing” of same Tech Pub.

3.6.3 The Contractor must filter all the Shell Biodegradable Hydraulic Fluid 68 both new and saved fluid (from earlier draining) through a non-bypass filter assembly, as specified above in paragraph 3.1.5, prior to entering the CPP system.

3.6.4 During hub filling ensure containment of inadvertent fluid spills is provided. In the event of small fluid leaks, it is important fluid spillage is not permitted to migrate into blade seal area (gaps between blade and blade port). This will make pressure testing leak detection problematic i.e. determining if fluid is observed during testing if it was from spillage or from a true blade seal leak.

3.6.5 At conclusion of charging, crack open the drain plugs for the piston chamber to allow all air to escape, be careful to collect/divert and minimal fluid that escapes during this venting.

3.6.6 The remaining fluid required to refill the hub and then completely fill the CPP system, must come from the collected and saved Shell Biodegradable Hydraulic Fluid 68 drained from hub.

3.6.7 When the entire CPP system has been refilled, transfer any remaining collected and saved fluid (drained earlier from CPP system) to the 55 gallon drum that the new Shell Biodegradable Hydraulic Fluid 68 arrived in. Seal and deliver the drum to USCG for disposition.

3.6.8 Renew the 3000 psi (H.P. filter item #16, of Figure 7-7) duplex filter elements per procedure 4-3.5.1 of CG Tech Pub 3524, Section 245. Renew any gaskets, seals, or o-rings disturbed.

3.6.9 Renew the 200 psi (L.P. filter item #15, of Figure 7-7) duplex filter elements and 4-3.5.2 of CG Tech Pub 3524, Section 245. The L.P. filter must be 40 micron size, not the 10 micron previously used. The 10 micron size was found to cause an undesirable increase in hub back pressure. One Parker Hannifan, Part Number 932562, 40 micron filter will be required in each filter housing (2 per duplex filter). Renew any gaskets, seals, or o-rings disturbed.

3.6.10 Renew the reservoir return line filter. This is item #30, of Figure 7-12. Renew any gaskets, seals, or o-rings disturbed.

3.7 Pressure Testing. The Contractor must remove any protection (e.g. tape) that may have been installed over the gap between blade palm and hub before testing and undocking.

3.7.1 With system restored, the Contractor must pressure test the propeller per procedure 6-5.3.1 “Pressure Test the Propeller Hub and Shafting System.” The system must be inspected for fluid leaks

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while full pressure is maintained. Provide staging for access to hub bolts. The Coast Guard Inspector will witness the operational test.

3.8 Operational test – post repairs. After successful pressure test, the Contractor must test the CPP system per procedure 6-5.3.2 “Operational Test of CPP System” of CG Tech Pub 3524, Section 245.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.8.1 After operational testing, the Contractor must ensure head tank is at full level, then inspect the sump tank fluid level and add new/clean fluid if required to bring level to full mark.

3.9 CPP Final Adjustments. The Contractor must remove any protection (e.g. tape) that may have been installed over the gap between blade palm and hub before any system operation and before undocking.

3.9.1 The Contractor must perform procedure 4-3.6 “Verify Proper Operation of Vented and Main Relief Valve” of CG Tech Pub 3524, Section 245.

3.9.2 The Contractor must adjust the pitch scale for design pitch position per procedure 6-3.1 “Dry-dock Adjustment Procedure” of CG Tech Pub 3524, Section 245.

3.9.3 The Contractor must, after undocking while afloat, adjust the pitch scale for full ahead pitch position per procedure 6-3.2 “Afloat Adjustment Procedure” of CG Tech Pub 3524, Section 245.

3.10 Sea Trials. The Contractor must perform sea trial in accordance with Definite Item “Sea Trials”. During trials, the Cutter will be run at various speeds and conditions, both ahead and astern. The Contractor and OEM Technical Representative must be responsible for correcting any leakage, vibration, noise, abnormal pressures, and/or excessive temperatures that arise in the CP propeller system as a consequence of the work under this specification. During trials, the Coast Guard will operate the Cutter and all equipment at low, mid, and high shaft speeds, and at full load. During sea trials (while underway), perform procedure 4-3.7 “Verify Proper Operation of the Unloading Valve” of CG Tech Pub 3524, Section 245.

3.10.1 After sea trials, the Contractor must ensure head tank is at full level, then inspect the sump tank fluid level and add new/clean fluid if required to bring level to full mark. This will be important for future reference should loss of system fluid be suspected.

4. NOTES

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

WORK ITEM 35: Controllable Pitch Propeller Hub, Remove and Reinstall

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to remove and reinstall the propeller hub from the propeller shaft.

1.2 Government-furnished property.

None.

2. REFERENCES

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
N	Item #9, Flange Bolt	NSN: 5306-01-515-9158	2 ea.	1306.38

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

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) IB-H2-0003-V0, Nov 2024, PROPELLER SYSTEM – CPP – MODELS 102 & 110251007 – INSTRUCTION MANUALS

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

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

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

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None.

3.1.2 Tech Rep. The Contractor must provide the services of an OEM authorized/ licensed Tech Rep for the Rolls Royce CPP System to accomplish the following on site:

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

3.1.2.1 Ensure the Tech Rep is an OEM Certified Representative for the system/equipment stated above 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.

3.1.2.3 Submit a copy of the Tech Rep's résumé and a list of references to the COR at the Arrival Conference.

NOTE

The requirement to use a Technical Representative is called for in Definite Item "Controllable Pitch Propeller System Repairs". In the bid for this item, only charge for the extra hours of Technical Representative's services unique to this Definite Item.

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

3.1.3.1 Protective measures, hydraulic system(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).

NOTE

The propeller blades have already been removed, the propeller hub has been removed with the propeller shaft, and the shafts measured and inspected in other work items. Skim cutting or replacement of the propeller shaft liners (if required) will necessitate removal of the propeller from the propeller shaft.

Cleanliness is of prime importance. If cleanliness is not maintained at all times, work may be suspended by the Contracting Officer on the advice of the Technical Representative.

The absolute necessity of keeping the hydraulic openings of the controllable pitch propeller system contamination free cannot be over emphasized. The cleanliness must be maintained and ceaselessly pursued. Contamination of the hydraulic system would be catastrophic to performance and reliability.

3.1.5.3 Only workers with clean clothes and tools must be assigned to work around the propeller's open hub mechanism.

3.1.5.4 All lifting equipment, chain blocks, rope, nylon slings, and other equipment/tools must be washed clean prior to use on the CPP system to prevent dirt from falling into the system.

3.2 Propeller Hub Removal And Reinstallation (All part numbers in paragraph 3.2 refer to Figure 7-1 of TAB 245-A, CG Tech Pub IB-H2-0003-V0)

3.2.1 In accordance with Procedure 6-6.2 "Hub Assembly Removal" of Tab 245A of CG Tech Pub IB-H2-0003-V0 perform the following steps:

3.2.1.1 Table 1 is a list of known Contractor furnished parts to be renewed (regardless of damage) with contractor furnished the following by Contractor. The below Table represents the minimal and is not warranted to be complete. Table is not guaranteed to be all inclusive for all parts, materials, consumables required to perform the work item.

TABLE 1 – LIST OF PARTS TO BE RENEWED

PART NUMBER (FROM TP'S FIGURE 7-1)	OEM PART #	QUANTITY	DESCRIPTION
34	0-10-2-14	1	hub flange o-ring
44	2-332	24	hub flange bolts o-ring
31	728446-5/8 (NSN: 5310-01-212-5987)	12	hub bolt cover stat-o-seal
35	2-244 (NSN: 5331- 00-983-9878)	12	hub bolt cover
33	K-4-2-23	6	Cap Screws
30	K-8-3-18	12	hub cover bolts

3.2.1.2 Although CPP system oil is drained in other related work items, be prepared to collect any residual oil that may drain when the propeller hub to shaft flange is broken. Capture and dispose of this residual oil in accordance with all applicable local, state, and federal laws and regulations.

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3.2.1.3 Attach Contractor lifting gear to the propeller hub. Install lifting bolts (Item 2 of Figure 7-16) into top blade port. Install cone end lifting bracket (Item 1 of Figure 7-16) and associated socket head cap screws ((Item 3 of Figure 7-16). Consult the Technical Representative for the design and availability of lifting items 1 & 2 of Figure 7-16. Support Propeller Hub for removal with fixtures and rigging, weight of hub assembly is 7857 pounds.

3.2.1.4 Ensure rigging is supporting the entire weight of hub and remove flange bolts (item 9).

3.2.1.5 Prior to unbolting the propeller shaft, mark and record the original positions of the shaft and coupling flanges to ensure they will be properly reinstalled at the same positions. Provide support to the adjoining shaft coupling flange to prevent it from sagging.

3.2.1.6 Following the Bird-Johnson's Technical Representative guidance, disconnect the linkage in the servo box. This will include bearing locknut, bearing lock washer, retaining ring, ball bearing, follow-up arm, and follow up arm spacer as shown in Figure 7-4 of CG Tech Pub IB-H2-0003-V0.

NOTE

Under the supervision of the Technical Representative, propeller blade pitch manipulation at the propeller hub will move the oil tubes fore-aft and may be of assistance to access oil tube joints.

3.2.1.7 Flange Separation. Jack the hub aft approximately 1" to separate the coupling registers. Then jack the hub aft only as necessary to permit disassembly of the forward oil tube coupling. Do not allow the oil tubes to support any weight during rigging of hub.

NOTE

Even if the propeller hub has been drained, an additional amount of oil can be expected to spill out when separating the coupling flanges. Catch, clean up and dispose of spilled oil in accordance with applicable federal, state, and local regulations.

3.2.1.8 Disconnect CPP oil tubes (inner and outer) at the first oil tube joint that becomes accessible. Figure 7-1 of CG Tech Pub IB-H2-0003-V0 depicts the oil tube arrangement.

3.2.1.9 Keep all openings covered and clean to prevent contamination.

3.2.2 Upon completion of liner repairs reinstall propeller to the propeller shaft in accordance with Procedure 8-6.5.1 "Propeller Hub Installation" of Tab 245A, CG Tech Pub IB-H2-0003-V0.

3.2.2.1 Clean and inspect all bolts, pins, and fasteners for damage.

3.2.2.2 For the twelve (12) propeller to propeller shaft flange bolts (item 9) and the four (4) guide pins (item 13) test for cracks using dye penetrant. Inspect for damage, the bolt landings (on propeller shaft) for these bolts.

NOTE

The USCG reserves the right to replace any damaged flange bolt with a GFE replacement.

3.2.2.3 Rig the hub assembly to within approximately 18 inches of propeller shaft face. Then using a straight edge adjust rigging to bring hub assembly into precise alignment with propeller shaft.

3.2.2.4 Renew any seals, o-rings, or gaskets that are disturbed.

3.2.2.5 Install new spring pin (item 32) into the hub oil tube (item 22).

3.2.2.6 Install new o-ring (item 37) on aft end of inner oil tube (item 17) and install inner oil tube.

3.2.2.7 Install new o-ring (item 36) on aft end of outer oil tube (item 21) and rig outer tube aft until it mates with the oil tube adapter.

3.2.2.8 Lubricate and install the guide pins (item 13), new o-ring (item 34) and all mating surfaces.

3.2.2.9 Rig the hub assembly forward onto the guide pins (item 13) and flush against the propeller shaft face. The flange bolts may be used to draw the hub in against the shaft face.

3.2.2.10 Install the flange bolts (item 9) with two new o-rings (item 44) per bolt. Tighten the twelve (12) flange bolts in a progressive alternating pattern to final torque of 2711 ft-lbs.

3.3 Final pressure test. The Contractor must coordinate this CPP testing with other related CPP work.

3.3.1 After each of the twelve flange bolts has been reinstalled and final torqued, perform pressure testing.

3.3.2 Examine each flange bolt for leakage over a 30 minute pressurized time period followed by a 30 minute unpressurized period. Zero leakage is permitted.

3.4 Install flange bolt covers. After satisfactory pressure testing (and prior to rope guard reinstallation) the Contractor must reinstall the flange bolt covers (item #12). Renew the o-rings (#35) and the stat-o-seal washers (#31) as well as the hex screw (item 30). Torque to 75 ft-lb.

3.5 Rope guard installation. Reinstall removed rope guards, in accordance with related Work Item.

3.6 Touch-up preservation. 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 Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs.)

NOTE

The shafts must be installed, the bearings reinstalled, propeller blades reinstalled, system filled and tested, and other related shaft work performed in other work items. This item's bid must reflect the work of this item only.

4. NOTES

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

WORK ITEM 36: Propeller Blade, Removal and Installation

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to remove and install the four propeller blades on the Controllable Pitch Propeller. All four (4) blade seals must be renewed.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
Y	*Lifting Device, Propeller Blade	NSN: 2020-01-F02-6825	1 ea.	100.00
N	Blade Bolt O-rings	NSN: 5330-01-408-7251 PN: 0-3-2-1	48 ea.	2.25
N	Blade Seal	NSN: 5331-01-623-0621 PN: 2-472 KA174-75	4 ea.	55.00

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

2. REFERENCES

COAST GUARD DRAWINGS

None

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3524, Jan 1997, Manufacturer's Instruction Book-SWBS Group(s) 243-262

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

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

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

OTHER REFERENCES

Commercial Item Descriptions (CID) A-A-59323, Rev A; Cloths, Cleaning, Low-Lint

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 Rolls Royce CPP System to accomplish the following on site:

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

3.1.2.1 Ensure the Tech Rep is an OEM Certified Representative for the system/equipment stated above 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.

NOTE

The requirement to use a Technical Representative is called for in Definite Item “Controllable Pitch Propeller System Repairs”. In the bid for this item, only charge for the extra hours of Technical Representative’s services unique to this Definite Item.

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

3.1.3.1 Protective measures, hydraulic system(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.

3.1.3.1.1 Cleanliness is of prime importance. If cleanliness is not maintained at all times, work may be suspended by the Contracting Officer on the advice of the Technical Representative.

3.1.3.1.2 Only workers with clean clothes and tools must be assigned to work around the propeller’s open hub mechanism.

3.1.3.1.3 All lifting equipment, chain blocks, rope, nylon slings, and other equipment/tools must be washed clean prior to use on the CPP system to prevent dirt from falling into the system.

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3.1.3.1.4 Any o-ring (or custom o-ring made out of stock) that is cut and then requires rejoining must not be glued back together, but rather joined together by a vulcanizing process. This vulcanizing requirement has come about due to a rash of failed glued joints that required emergency dry-docking of numerous Cutters. On a case by case basis, and only on non-underwater sealing joints, and if supported by OEM, the Contractor may appeal this vulcanizing requirement. Coast Guard reserves the sole right to approve or disapprove such appeals.

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

3.2 Oil Sampling. Within the first four hours of drydocking, the Contractor must remove the plug item 19 of Figure 7-2, CG Tech Pub 3524, and Section 245 and draw two samples of the oil from the hub. Replace item 19 after sample is drawn. The Contractor must provide one sample from the hub to the Coast Guard Inspector. The other sample from the hub must be sent out for spectrographic analysis and a report submitted to the Coast Guard Inspector of the findings within 72 hours of drawing the sample.

3.3 Draining the CPP System. The Contractor must drain the CPP System per procedure 6-5.1 “Draining the Hydraulic Oil” of CG Tech Pub 3524, Section 245. Figure 6-1 “Draining, Charging, Testing” of same Tech Pub illustrates draining setup. Approximately 60 gallons of oil is contained within the hub.

3.3.1 Contractor must drain all CPP hydraulic system fluid from head tank (15 gallons) and sump tank (200 gallons).

3.3.1.1 After the CPP head tank and sump tank have been drained, they must be opened and cleaned to dry bare metal removing all condensation residue using new low-lint cleaning cloths, conforming to Commercial Item Description (CID) A-A-59323, Type II. The tanks must be inspected and verified by the Coast Guard Inspector prior to closing. All gasket material must be renewed.

3.3.2 Used oil from the CPP system (approximately 275 gallons) must be disposed of in accordance with all applicable local, state, and federal laws and regulations.

3.4 Blade Removal, Installation, and Seal Renewal. The Contractor must perform the following tasks.

3.4.1 Renew all the blade seals on the propeller hubs. Ensure that hubs and blades are adequately marked to identify original blade locations, which will ensure each blade is returned to the same hub port in which it was removed. Mark hub and blades if existing marks are not adequate. The Coast Guard Inspector will verify the cleanliness of the area including staging and rigging prior to the commencement of disassembly. Renewal must be as follows:

3.4.2 Rotate the propeller so that the propeller blade to be removed is in the position specified by the Technical Representative.

3.4.3 Clean all bolt heads and the spaces between the bolt shoulder and the blade palm to insure complete cleanliness. This will prevent dirt from falling into the crank ring threads while removing the bolts. Blow out with air.

NOTE

Above paragraph is a very important step and may prevent the galling of blade bolts during removal.

3.4.4 Remove each propeller blade per procedure 6-6.1 “Propeller Blade Removal” of CG Tech Pub 3524, Section 245.

3.4.5 Coast Guard has obtained (and will supply as GFE) the blade lifting rig as shown in Figure 7-15 of CG Tech Pub 3524, Section 245. “Blade Lifting Arrangement.” It must be used by Contactor exclusively to remove and reinstall blades. At the completion of drydock, the lifting rig will be returned to the Coast Guard.

3.4.5.1 Remove, by wrench, one bolt at a time. Use the wrench with extreme care when encountering hard spots to prevent/mitigate seizing or thread damage. Mark each blade bolt hole where the bolt was not smoothly removed for further investigation and for cleaning with a tap. When a bolt is removed cover the opening with a clean rag. Verify each bolt is marked to ensure it will be reinstalled in same hole.

3.4.5.2 Lift each blade from the hub with caution to ensure the blades are lifted straight up. Ensure the blade does not hit anything during rigging. The most critical area for damage is the o-ring seal area of the palm of blade. Immediately cover the crank ring with clean lint free rags to contain residual oil leakage and prevent damage or contamination.

3.4.5.3 Once a blade is removed, each opening must be protected whenever unattended by wrapping with plastic sheets and taping seams.

3.4.6 Safeguard the blades until reassembly on the hub.

3.4.7 Clean all mating surfaces on the blade and the hub. Clean the blade palm on the inner-side (between hub and blade), as well as the o-ring surface. Make sure all salt residue is removed but with care ensuring the o-ring contact area is not scratched. Clean the blade bolt landings and inspect for damage.

3.4.8 Clean blade bolts and test for cracks using dye penetrate. Inspect mating surfaces of the bolts and the blade. Perform all NDT in the presence of CG inspector. Fluorescent penetrate examination is acceptable.

3.4.9 With the Coast Guard Inspector present, a properly sized Contractor furnished tap must be used to chase those blade bolt’s threaded holes (located in the crank ring) which had difficult to remove bolts, show signs of thread damage, or which the technical representative otherwise desires to be cleaned. Extreme care must be exercised in performing this evolution, so as not to damage (i.e. cross thread) threaded hole. The purpose is to clean any debris from between threads, not to remove metal.

3.4.10 Remove the lint free rags from crank ring, remove old seal ring and clean the surface making sure nothing drops into the thread holes. Inspect the threads for damage and contamination.

3.4.10.1 In the presence of the Coast Guard Inspector, make a visual inspection of the condition of the entire hub and record any findings/observations in the form of a condition found report. Contractor must also assist the technical representative, as necessary, in inspecting and assessing propeller condition. This assistance may involve supplying calibrated measuring tools, strongbacks, chainfalls, and manpower. Inspection must measure “G,” “J”, and any other hub clearance listed in Figure 6-2 “Hub Clearance” of

CG Tech Pub 3524, Section 245. The purpose of inspection is to assess the wear condition of hub internals and to identify any impending wear problems/trends.

NOTE

An example of inspection data collected on other CPP systems that may also be applicable here might be a thrust measurement of each blade while the blade port is at Top Dead Center (TDC). A couple of blade bolts would be threaded in then the crank is pulled up (via the blade bolts) with lifting gear (“thrust out” position) and the difference in measurement between normal resting “thrust in” would be then determined.

3.4.11 Contractor and Coast Guard Inspector must jointly inspect new GFE blade sealing o-rings (item #43 of Figure 7-1) of CG Tech Pub 3524, Section 245. Check with micrometer and have the Coast Guard Inspector record minimum and maximum reading. Pull and stretch new o-ring to assure it is flexible and crack free. Install the (item #43) o-ring.

3.4.12 While the blades are removed and prior to propeller reassembly, polish all four (4) propeller blades to 63 RMS finish. Dress down edges of blade tips smooth. Ensure they are free of burrs and scratches. Report any discovered blade damage in a CFR.

NOTE

Polishing must be performed as soon as practical after blade removal to allow maximum time to rectify any discovered indications. Polishing must be performed only by qualified individuals. Only minimal metal must be removed during polishing and the leading edge contour and blade profile must not be altered.

3.4.13 Dye penetrant test the entire removed blades (after polishing and prior to reinstallation) from the palm to the tip on both pressure and suction sides. Dye penetrant testing must be performed by a qualified inspector in accordance with NAVSEA T9074-AS-GIB-010/271. Perform all NDT in the presence of CG inspector.

3.4.14 Reinstall the propeller blades per procedure 8-6.5.2 “Blade Installation” of CG Tech Pub 3524, Section 245.

3.4.14.1 Set the propeller blade on the crank ring, ensure no dirt is allowed to fall into hub during this evolution from anywhere.

3.4.14.2 Try each bolt (uncoated) in its original holes, using markings from paragraph 3.5.5.1, to ensure it threads in and out easily. Then remove the bolt and coat it and the bolt landing with DEPAC antiseize or equivalent. For each bolt install the two, GFE blade bolt o-rings (item #42 of Figure 7-1 of CG Tech Pub 3524, Section 245). Thread each blade bolt into its hole by wrench only until it bottom out. If there is any resistance, the bolt must be removed and the threads inspected for damage or dirt.

3.4.14.3 Tighten blade bolts in the presence of CG Inspector and Technical representative. Incrementally tighten blade bolts to 5,444 ft-lbs in the accordance with paragraph 8-6.5.2.i of CG Tech Pub 3524, Section 245.

3.4.14.4 If pressure testing of blades is not scheduled to occur within 24 hours, RTV must be re-applied to the gap between blade palm and hub to protect new blade seals from contamination.

3.5 System Restoration. The Contractor must perform the following tasks.

3.5.1 With the CPP system fully reassembled (including all other related CPP work in other Work Items) fill the system with new Mobil DTE 10 Excel 46 hydraulic oil (approximately 330 gallons) per procedure 6-5.2 “Charging the system with Oil” of CG Tech Pub 3524, Section 245. Figure 6-1 “Draining, Charging, Testing” of same Tech Pub illustrates draining setup.

3.5.2 Fluid must be filtered through a non-bypass filter assembly, as specified above in paragraph 3.1.5, prior to entering the system.

3.5.2.1 Renew the 3000 psi (H.P. filter item #16, of Figure 7-7) duplex filter elements per procedure 4-3.5.1 of CG Tech Pub 3524, Section 245. Renew any gaskets, seals, or o-rings disturbed.

3.5.2.2 Renew the 200 psi (L.P. filter item #15, of Figure 7-7) duplex filter elements and 4-3.5.2 of CG Tech Pub 3524, Section 245. Renew any gaskets, seals, or o-rings disturbed.

3.5.2.3 Renew the reservoir return line filter. This is item #30, of Figure 7-12. The return filter must be 40 micron size, not the 10 micron previously used. The 10 micron size was found to cause an undesirable increase in hub back pressure. One Parker Hannifan, Part Number 932562, 40 micron filter will be required. Renew any gaskets, seals, or o-rings disturbed.

3.6 Pressure Testing And Operational Testing . The Contractor must perform the following tasks.

3.6.1 Remove any RTV that may have been installed over the gap between blade palm and hub before testing and undocking.

3.6.2 With system restored pressure test the propeller per procedure 6-5.3.1 “Pressure Test the Propeller Hub and Shafting System.” The system must be inspected for oil leaks while full pressure is maintained. Provide staging for access to hub bolts. The Coast Guard Inspector will witness the operational test.

3.6.3 After successful pressure test, test the CPP system per procedure 6-5.3.2 “Operational Test of CPP System” of CG Tech Pub 3524, Section 245.

3.7 Flushing. After successful pressure test and with all test equipment removed, flush CPP system per procedure 6-2.1 “Flushing the CPP System” of CG Tech Pub 3524, Section 245.

3.8 CPP Final Adjustments. The Contractor must perform the following tasks.

3.8.1 Remove any RTV that may have been installed over the gap between blade palm and hub before any system operation and before undocking.

3.8.2 Perform procedure 4-3.6 “Verify Proper Operation of Vented and Main Relief Valve” of CG Tech Pub 3524, Section 245.

3.8.3 Adjust the pitch scale for design pitch position per procedure 6-3.1 “Dry-dock Adjustment Procedure” of CG Tech Pub 3524, Section 245.

3.8.4 After undocking while afloat, adjust the pitch scale for Full ahead pitch position per procedure 6-3.2 “Afloat Adjustment Procedure” of CG Tech Pub 3524, Section 245.

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3.9 Sea Trials. Perform sea trial in accordance with Definite Item “Sea Trials”. During trials, the Cutter will be run at various speeds and conditions, both ahead and astern. The Contractor and OEM Technical Representative must be responsible for correcting any leakage, vibration, noise, abnormal pressures, and/or excessive temperatures that arise in the CP propeller system as a consequence of the work under this specification. During trials, the Coast Guard will operate the Cutter and all equipment at low, mid, and high shaft speeds, and at full load. During sea trials (while underway), perform procedure 4-3.7 “Verify Proper Operation of the Unloading Valve” of CG Tech Pub 3524, Section 245.

4. NOTES

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

WORK ITEM 37: Sea Water System Piping, Clean and Flush

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean and flush the sea water system piping, including the heat exchanger(s).

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 256-001, Rev P, Seawater Cooling System Diagram

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

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3.1.3.1 Install blanks on the open ends of piping to prevent any contamination or foreign debris from entering the affected systems. Ensure that all cleaning equipment or media used in the cleaning process do not cause any damage to cooler components.

3.1.3.2 Upon completion of work, remove protective material and inspect for the presence of contamination. Clean all equipment and spaces, contaminated due to improper protection, to original condition of cleanliness.

3.1.4 Interferences. 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:

- Piping and hoses.
- Filters.
- Deck plating and associated framing.
- Electrical cables.
- Thermal insulation.

3.2 Pipe flushing. After all authorized work is completed, the Contractor must accomplish the following, using Coast Guard Drawing 225B WLB 256-001 as guidance:

3.2.1 Flush all sea water system piping with clean fresh water for a sufficient amount of time to remove all foreign debris and marine growth from piping. Ensure that 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 verification of piping cleanliness.

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

CAUTION

Do not drain ANY Fluids (including fresh water) into any space, bilge, or exterior location.

3.3 Hydrostatic test. After all authorized repairs, the Contractor must hydrostatically test all sea water system in accordance with SFLC Std Spec 0740, Appendix C, "Hydrostatic Test". Be aware that no leakage or permanent deformation of pressure-containing parts is permissible. Repair all leaks and discrepancies found. Submit a CFR.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 38: Heat Exchangers, Clean, Inspect And Hydro**1. SCOPE**

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

TABLE 1 – HEAT EXCHANGERS

DESCRIPTION	LOCATION	QTY
MDE Jacket Water	3-61-0-E	2
CPP hydraulic oil	4-66-0-E	1
Reduction Gear Lube Oil	4-66-0-E	1
SSDG Jacket Water	3-61-0-E	2
Fuel Oil	FS-F-E7-1 and -2	2
Thruster Generator		1

1.2 Government-furnished property.

None.

2. REFERENCES**COAST GUARD DRAWINGS**

Coast Guard Drawing 225B WLB 201-001, Rev D, Machinery Spaces Arrangement
 Coast Guard Drawing 225B WLB 256-001, Rev P, Seawater Cooling System Diagram
 Coast Guard Drawing 225B WLB 541-001, Rev J, Fuel Oil System Diagram
 Coast Guard Drawing 225B WLB 556-001, Rev F, Hydraulic System Diagram

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3518, Oct 2007, MDE Model 3608/1
 Coast Guard Technical Publication (TP) 3523, SWBS 241-B, Nov 2007, Reduction Gear - Model 96DHCMGH-CP

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Coast Guard Technical Publication (TP) 3524, SWBS 245-B, May 2009, Propeller System, CPP - Model 110251007

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

Surface Forces Logistics Center Standard Specification 5000 (SFLC Std Spec 5000), 2022, Auxiliary Machine Systems

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

Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2022, Temporary Hull Accesses

OTHER REFERENCES

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

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor 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 Install blanks on the open ends of piping to prevent any contamination or foreign debris from entering the affected systems. Ensure that all cleaning equipment or media used in the cleaning process do not cause any damage to cooler components.

3.1.4 Interferences. The Contractor 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:

- Piping and hoses
- Filters
- Deck plating and associated framing
- Electrical cables
- Thermal insulation.

3.1.5 Temporary access openings. Due to limited access to work areas, the Contractor may, with express permission of the KO (via submission of a CFR), cut access holes to facilitate accomplishment of the

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work specified herein. Perform all work required to open and close the access openings in accordance with SFLC Std Spec 8636.

3.2 Environmental compliance. The Contractor must dispose of all waste fluids in accordance with all Federal, state and local regulations. Document a complete chain of custody record of the removed tank contents and generated wastes, from the vessel to the point of final destination or delivery. Submit document to the COR upon completion of work.

3.3 Disassemble. The Contractor must drain and disassemble the designated heat exchangers (see paragraph 1.1 (Intent)) to the extent necessary to perform all work specified herein. Refer to Coast Guard Drawings 225B WLB 201-001, 225B WLB 256-001, 225B WLB 541-001, and 225B WLB 556-001, TP 3518, TP 3523 and TP 3524 for guidance.

3.3.1 Perform all disassembly and reassembly in accordance with manufacturer-recommended procedures using manufacturer-recommended tooling to ensure parts are reinstalled in proper sequence and configuration.

3.4 Inspection. Before cleaning is begun, the Contractor must visually inspect all heat exchanger surfaces for excessive deterioration and any other defects. Submit a CFR.

3.5 Cleaning requirements. The Contractor must clean all interior and exterior heat transfer surfaces to a state free of all debris, scale and surface contaminants in accordance with the heat exchanger manufacturer's recommendations, and in compliance with all Federal, state, and local environmental regulations.

3.5.1 Ensure that chemical cleaners do not damage the environment, heat exchanger or the vessel.

NOTE

Historically, chemical cleaning has been necessary to thoroughly clean most heat exchanger tubes.

3.6 Reassembly. After authorized repairs, if any, the Contractor must reassemble each heat exchanger.

3.6.1 Renew all software (seals, gaskets, O-rings, lantern rings).

3.6.2 Renew isolation fittings/mounts and fasteners if disturbed. Apply silicone rubber sealant conforming to CID A-A-59588 around all fasteners, nozzles or gaskets that penetrate the hull.

3.6.3 Renew all hoses, thermostats and anodes as applicable.

3.6.4 Refill all heat exchanger fluid levels in accordance with manufacturer and vessel specifications. Prior to recirculation through the engines, the Contractor must test the jacket water for chloride and nitrite concentrations in accordance with manufacturer recommendations in the presence of the Coast Guard Inspector. Submit a CFR.

3.7 Reinstallation. After completion of testing and all authorized repairs, if any, the Contractor must reinstall each cooler (if previously removed). Where applicable, renew all zinc electrode plates, gaskets, and recessed hex-head bolts in accordance with the manufacturer's specifications. Apply a copper-based anti-seize compound on all bolts, and torque in accordance with manufacturer's specifications.

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

3.9 Cleanliness requirement. The Contractor must ensure that all cleaned surfaces are one hundred percent free of debris and surface contaminants. Submit a CFR.

CAUTION

Extreme precaution must be taken to not exceed manufacturer's recommended test pressure during hydrostatic testing.

3.10 Pressure test. After all authorized work is complete and prior to reconnecting the heat exchanger(s), the Contractor must pressure test each heat exchanger to the manufacturer's recommended test pressure in accordance with the applicable Coast Guard drawing listed under Section 2 (References). In the absence of a specified test pressure noted in the Coast Guard drawing, the Contractor must pressure test each heat exchanger in accordance with paragraph C2.7 (Heat exchangers and fluid coolers) of SFLC Std Spec 5000. Ensure zero leakage from or permanent deformation of pressure-containing parts by repairing all leaks, deformations, and discrepancies. Submit a CFR.

3.11 Label plates. The Contractor must attach an anodized aluminum test data plate to each heat exchanger using epoxy resin cement. Ensure that each plate is engraved with ¼-inch high letters, stating the following:

- Test pressure.
- Test date.
- Testing facility.

NOTE

If the heat exchanger design makes mounting a test data plate impractical, the Government reserves the right to request written documentation of the above-listed testing data in lieu of a test data plate, at no additional cost to the Government.

3.12 Leak test. After reconnecting the heat exchanger(s) on the vessel (and post undocking, if applicable), the Contractor must perform an operational test of the heat exchanger and associated system piping for one hour using the system fluid at normal operating pressure. Ensure zero visible leakage from or deformation of mechanical parts by repairing all leaks and discrepancies. Submit a CFR.

4. NOTES

4.1 Contractor furnished equipment. The following parts list is provided to assist the Contractor in identifying some of the parts that may be required to accomplish the work detailed above for this plate-type heat exchanger. This list may not reflect the most recent part number changes by the manufacturer; and this list is not fully comprehensive of the parts required to accomplish this work item. The Contractor must verify all part numbers and quantities with the manufacturer, prior to ordering. The Contractor is cautioned to verify the cost of all materials required to complete this work item prior to submitting a bid price.

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ITEM DESCRIPTION	NSN/PN	QTY
Gasket M10B NBR/C	Alpha Laval P/N: 3233016546	420
Gasket Connector M10B	Alpha Laval P/N: 3233065146	4
Collar, M10 TI-0, 8	Alpha Laval P/N: 3232473672	4

WORK ITEM 39: Main Diesel Engine, MDE, Exhaust Piping, Commercial Clean

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean the Main Diesel Engine (MDE) exhaust piping system, including the associated stack uptakes.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 259-001, Rev D, Combustion Intake & Exhaust Diagram

Coast Guard Drawing 225B WLB 259-005, Rev C, Combustion Intake & Exhaust A&D Hull
Block 940

Coast Guard Drawing 225B WLB 259-006, Rev D, Combustion Intake & Exhaust A&D Hull
Blocks 970 & 975

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

Code of Federal Regulations (CFR) Title 29, Part 1915, 2014, Occupational Safety and Health
Standards for Shipyard Employment

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. (Interferences). Known interferences include, but are not limited to the following:

- Access covers
- Exhaust stack
- MDE
- Piping
- Pipe insulation
- Vent ducting
- Wiring
- Exhaust pipe expansion joints
- Exhaust insulation blankets

3.1.5 Work site access. The Contractor shall gain access to both MDE exhaust stacks via existing Access 02-79-2.

3.2 Staging or scaffolding, netting. The Contractor must erect suitable staging or scaffolding in accordance with 29 CFR 1915, Subpart E (Scaffolds, Ladders and Other Working Surfaces) to facilitate work, as required.

3.2.1 Rig suitable safety netting, to protect workers during possible falls, and to protect the Engine Room and machinery from falling tools.

3.3 Work plan. The Contractor must develop and submit, to the COR, a plan for collecting and disposing of waste extracted during cleaning process. Ensure that the proposed plan must detail how and where exhaust piping will be disconnected, how entire length of exhaust piping will be divided/sectioned for cleaning, and precautions to protect the MDE. The Contractor must perform this work upon receiving Coast Guard approval of the plan.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

3.5 Cleaning. The Contractor must clean the interior surfaces of the exhaust piping and stack uptakes to

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the MDE, shown on Coast Guard Drawings 225B WLB 259-001, 225B WLM 259-005, and 225B WLB 259-006, to a condition free from soot, tar, and any other foreign matter as follows:

3.5.1 Disconnect the exhaust piping as necessary to facilitate cleaning.

3.5.2 Thoroughly sweep, mechanically clean, and vacuum the interior of each exhaust pipe system, including the mufflers, from the exhaust outlet to the topmost location outside the vessel. Clean all adjacent stack uptake surfaces. Ensure that all tar deposits, soot deposits, and all other surface contaminants are removed.

3.5.3 Remove all debris from the pipe surfaces, stack deck, and Engine Room areas by vacuuming. Dispose of all cleaning materials and generated debris in accordance with all applicable Federal, state, and local regulations.

3.5.4 Reassemble exhaust piping; renew all disturbed flange connection gaskets with suitable high temperature, non-asbestos-containing gasket materials; and renew all disturbed fasteners.

3.6 Inspection and report. The Contractor must perform a visual inspection of the following components; submit a CFR:

- Exhaust stack access hatches, including all associated studs and nuts.
- All cleaned exhaust stack surfaces.
- All exhaust expansion joints, including associated bolts.

3.6.1 Following cleaning of the interior of each exhaust pipe system, the Contractor must demonstrate completeness of the cleaning process to the Coast Guard Inspector, showing that the entire length of exhaust piping cleaned according to the work plan.

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

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

4. NOTES

This section is not applicable to this work item.

WORK ITEM 40: Ship Service Diesel Generator, SSDG, Exhaust Piping, Commercial Clean

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean the exhaust piping system for the following diesel generators: #1 SSDG, #2 SSDG, and the EDG of the Ship Service Diesel Generator (SSDG) piping, including the associated stack uptakes.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 259-001, Rev D, Combustion Intake & Exhaust Diagram

Coast Guard Drawing 225B WLB 259-005, Rev C, Combustion Intake & Exhaust A&D Hull Block 940

Coast Guard Drawing 225B WLB 259-006, Rev D, Combustion Intake & Exhaust A&D Hull Blocks 970 & 975

COAST GUARD PUBLICATIONS

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

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

Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2022, Temporary Hull Accesses

OTHER REFERENCES

Code of Federal Regulations (CFR) Title 29, Part 1915, 2022, Occupational Safety and Health Standards for Shipyard Employment

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:

- Access covers
- Exhaust stack
- SSDG
- Vent ducting
- Wiring
- Exhaust pipe expansion joints
- Exhaust insulation blankets

3.2 Staging or scaffolding. The Contractor must erect suitable staging or scaffolding in accordance with 29 CFR 1915, Subpart E (Scaffolds, Ladders and Other Working Surfaces) to facilitate work, as required.

3.3 Safety precaution. The Contractor must rig suitable safety netting, to protect workers during possible falls, and to protect the Engine Room and machinery from falling tools.

3.3.1 Temporary safety railing. To promote safety, the Contractor must limit existing safety railing removals to an area where new safety railing can be installed during the same workday. During periods when not actively working on new safety railing, secure any gaps between existing safety railing with a substantial temporary lifeline arrangement similar to that currently installed on the vessel. Remove and dispose of all temporary lifelines upon completion of work.

3.4 Work plan. The Contractor must develop and submit to the COR, a plan for collecting and disposing of waste extracted during cleaning process. Ensure that the proposed plan must detail how and where exhaust piping will be disconnected, how entire length of exhaust piping will be divided/sectioned for cleaning, and precautions to protect the SSDG. The Contractor must perform this work upon receiving Coast Guard approval of the plan.

3.4.1 Temporary access openings. With express permission of the KO via submission of a CFR and in accordance with SFLC Std Spec 8636, the Contractor may perform all work required to cut open and close temporary access openings to facilitate accomplishment of the work specified herein.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

3.6 Cleaning. The Contractor must clean the interior surfaces of the exhaust piping and stack uptakes to the SSDG, shown on Coast Guard Drawing(s) 225B WLM 259-001, 225B WLM 259-005, and 225B WLM 259-006, to a condition free from soot, tar, and any other foreign matter as follows:

3.6.1 Disconnect the exhaust piping as necessary to facilitate cleaning.

3.6.2 Thoroughly sweep, mechanically clean, and vacuum the interior of each exhaust pipe system, including the mufflers, from the exhaust outlet to the topmost location outside the vessel. Clean all adjacent stack uptake surfaces. Ensure that all tar deposits, soot deposits, and all other surface contaminants are removed.

3.6.3 Remove all debris from the pipe surfaces, stack deck, and Engine Room areas by vacuuming. Dispose of all cleaning materials and generated debris in accordance with all applicable Federal, state, and local regulations.

3.6.4 Reassemble exhaust piping; renew all disturbed flange connection gaskets with suitable high temperature, non-asbestos-containing gasket materials; and renew all disturbed fasteners.

3.7 Inspection and report. The Contractor must perform a visual inspection of the following components; submit a CFR:

- Exhaust stack access hatches, including all associated studs and nuts.
- All cleaned exhaust stack surfaces.
- All exhaust expansion joints, including associated bolts.

3.7.1 Following cleaning of the interior of each exhaust pipe system, the Contractor must demonstrate completeness of the cleaning process to the Coast Guard Inspector, showing that the entire length of exhaust piping has been cleaned according to the work plan.

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, (Touch-ups and minor coating repairs.)

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

4. NOTES

This section is not applicable to this work item.

WORK ITEM 41: Fathometer Transducer, Renew**1. SCOPE**

1.1 Intent. This work item describes the requirements for the Contractor to renew the transducer(s).

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
N	*** Fathometer Transducer, shallow water, 50-200 kHz (Airmar Technology SS505)	NSN: 5845-01-518-7231 PN: SS505	2 ea.	343.63
Y	***Fathometer Transducer, Deep Water, 24kHz	NSN: 5845-01-496-9770 PN: TH28/20-41-516CG	1 ea.	\$7,709.21

***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 225 WLB 184-001, Rev B, CRP-V850 Transducer Adapter Ring

Coast Guard Drawing 225B WLB 601-001, Rev N, GENERAL ARRANGEMENTS INBOARD AND OUTBOARD PROFILES

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

Federal Specification (Fed Spec) HH-P-151, Mar 1991, Packing; Rubber-Sheet, Cloth-Insert
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 Transducer and lines. Protect all exposed ends of transmission lines, control lines, connectors, and cables from weather, moisture, and physical damage while they are disconnected from the transducer. Take all necessary measures to protect transducer from damage during the performance of work. Inform the COR, in writing, of all damage, if any, that is incurred by the transducer.

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

3.2 Transducer renewal particulars. The Contractor must accomplish the following tasks using ODOM Echotrac Technical Manual and Coast Guard Drawing 225 WLB 184-001 for guidance:

3.2.1 Transducer removal. Disconnect and remove the existing shallow and deep water fathometer transducers. Retain the mounting hardware for reinstallation. Dispose of the shallow water transducer; turn over the deep water (ODOM Echotrac MKII) transducer assembly to the Coast Guard PA as a MTI item.

NOTE

Do not discard any hull ring adapter(s). They are to be reused with the new transducer(s).

3.2.2 New transducer installation. Install new Government-furnished transducer(s), in place of the removed. Reinstall each hull ring adapter and transducer in accordance with the applicable drawing listed in Section 2 (References) using new gaskets, mold release coating, and adhesive sealants. Apply mold release aerosol coating to both adaptor orifice and transducer to facilitate future removal of the transducer from the adaptor ring.

NOTE

A piece of neoprene or a washer may need to be placed at the bottom of the hull ring adaptor to facilitate transducer and bottom of hull ring flushness.

3.2.2.1 Using chocking compound as transducer bedding material, install transducer into hull ring adaptor. After the chocking compound has cured, paint the bottom half of the hull ring adaptor and transducer in accordance with drawing notes.

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3.2.2.2 Renew the transducer head to hull ring gasket with new gasket conforming to HH-P-151, Class 4. Using appropriate thickness gasket, place gasket on adaptor plate of transducer; apply ½” bead of marine adhesive on adaptor plate along the inside edge of the gasket. Install transducer flush with hull.

3.2.2.3 Reconnect each transducer cable to its terminal board in the adjacent connection box. Renew all stuffing tube packing and seals. Inspect the connection in the presence of the Coast Guard Inspector. Submit a CFR. If cable renewal is authorized via approved Change Request, cut the transducer cable to length leaving 2-foot service loop in the cable. Ensure cables are installed in a manner to prevent any chaffing which may require new cable way clamps and stuffing tubes.

3.2.2.4 Following completion of transducer installation, fabricate a ¾” × 3” × ¼” aluminum label plate, engraved with ¼-inch high numbers stating the installation date. Affix a label plate, using suitable epoxy cement. Ensure that the label plate is visible and legible, without the need to move equipment or cables.

3.2.2.5 Thoroughly clean the transducer radiating surfaces with a strong solution of household detergent to remove any oil, dirt, and all other surface contaminants.

3.3 Transducer seal. If not waterborne, the Contractor must inspect the transducer to ensure that its outer circumference is installed flush to the hull ring and the transducer cover plate forms a tight seal with the hull ring. Submit CFR.

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

3.4.1 Preliminary leak test. If not waterborne, inspect and perform a water hose test of all affected boundaries in accordance with SFLC Std Spec 0740, Appendix C. If waterborne, slowly back off the emergency cover plate bolts and allow seawater to flood the transducer well. No leakage allowed. Submit a CFR.

3.4.2 Not waterborne. Replace the hull ring set screws with new Monel fasteners, coating the threads with anti-seize compound. Recess the set screws ⅛” and cover with beeswax tallow.

3.4.3 Waterborne. Using a diver, remove and retain the hull ring set screws. Install an emergency cover plate and gasket over the transducer to be renewed. If available, the vessel’s emergency cover plate may be used; otherwise a new cover plate must be fabricated and turned over to the vessel at the completion of the work.

3.4.3.1 Slowly back off the fasteners that normally maintain the transducer pressure boundary to sea. Ensure that any leakage through the emergency cover plate pressure boundary is minor prior to proceeding with transducer removal.

3.4.3.2 Upon completion of work and preliminary leak testing, completely remove the emergency cover plate. Clean all vacated tapped holes of anti-seize compound and beeswax tallow. Chase all threads. Install new Monel set screws in each hull ring, coating the threads with anti-seize compound. Recess the set screws ⅛” and cover with beeswax tallow.

3.5 Leak repairs. The Contractor must observe each transducer for leaks during the vessel re-floating process (if dry docked) or emergency cover plate removal (if waterborne). Repair all leaks detected. Submit a CFR.

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3.6 Operational test – post repairs. After completion of work, the Contractor must thoroughly test and prove the transducer(s) to be in satisfactory operating condition. Submit a CFR.

4. NOTES

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

WORK ITEM 42: Vent Ducts, Engine And Motor Room, All, Commercial Cleaning

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean and inspect the designated shipboard ventilation systems.

1.2 Government-furnished property.

None.

2. REFERENCES

USER:

Drawings may change if galley hood is not being cleaned. Ensure they are correct.

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 512-001, Rev K, HVAC Diagram

Coast Guard Drawing 225B WLB 512-007, Rev B, HVAC A&D, Fr 66-92, Innerbtm & 1st Platform

Coast Guard Drawing 225 WLB 259-005, Rev C, Combustion Intake & Exhaust A&D Hull Block 940

COAST GUARD PUBLICATIONS

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

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

Coast Guard Technical Publication (TP) 3796, Section A, Aug 2006, Galley Hood – Model NBDL-60 (13'-4")

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 Install filter medium at the terminal ends of all supply vent ducting to prevent any residual foreign mater from blowing into the engine room spaces.

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:

- Ducting screens.
- Electric pre-heaters.
- Overhead sheathing/panels.
- Ventilation covers..

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.2 Operational test, initial. Prior to commencement of work, the Contractor must witness Coast Guard personnel perform an initial operational test of the ventilation systems included in this work item, to demonstrate existing operational condition. Submit a CFR.

3.3 Cleaning requirements. The Contractor must clean and inspect the following ventilation systems, shown on Coast Guard Drawings 225B WLB 512-001, 225B WLB 512-007, and 225 WLB 259-005, in accordance with SFLC Std Spec 5100. Submit a CFR.

TABLE 1 – ENGINE ROOM

SYSTEM LOCATION	TYPE
4-66-0-E (MMR)	Exhaust
4-66-0-E (MMR)	Supply
4-82-0-E (AMR)	Exhaust
4-82-0-E (AMR)	Supply

3.3.1 The Contractor must clean the exhaust ventilation ducting up to and including the discharge of the engine room exhaust fans. The Contractor is not expected to clean the exhaust stack plenum area.

NOTE

Past experience has shown that the engine room exhaust ventilation systems have accumulated oils and greases and systems are coated with a very sticky and very thick sludge. Take this into consideration in the bid.

3.3.2 Disassemble the exhaust system as required to clean all sections of the exhaust system.

3.3.2.1 After cleaning, reassemble vent ducting using new gaskets and fasteners.

3.3.3 Prior to reassembling the vent systems, visually inspect the systems in the presence of the Coast Guard Inspector. Verify that the vent systems are clean and oil and build up free. The Contractor must use video probe equipment to allow viewing the internal surfaces of all vent ducting.

3.4 Notification. The Contractor must give written notification to the COR 48 hours before starting ventilation cleaning work.

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 the ventilation systems disturbed to be in satisfactory operating and balanced condition as per CG Drawings. Submit a CFR.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 43: Vent Ducts, Galley and Pantry Room, All, Commercial Cleaning

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean and inspect the designated shipboard ventilation systems.

1.2 Government-furnished property.

None.

2. REFERENCES

USER:

Drawings may change if galley hood is not being cleaned. Ensure they are correct.

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 512-001, Rev K, HVAC Diagram

Coast Guard Drawing 225B WLB 512-007, Rev B, HVAC A&D, Fr 66-92, Innerbtm & 1st Platform

Coast Guard Drawing 225 WLB 259-005, Rev C, Combustion Intake & Exhaust A&D Hull Block 940

COAST GUARD PUBLICATIONS

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

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

Coast Guard Technical Publication (TP) 3796, Section A, Aug 2006, Galley Hood – Model NBDL-60 (13'-4")

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

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

- Ducting screens.
- Electric pre-heaters.
- Overhead sheathing/panels.
- Ventilation covers..

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.2 Operational test, initial. Prior to commencement of work, the Contractor must witness Coast Guard Personnel perform an initial operational test of the ventilation systems included in this work item, to demonstrate existing operational condition. Submit a CFR.

NOTE

It is recommended that the Contractor conduct a ship check to verify dimensions in the table below.

3.3 Cleaning requirements. The Contractor must clean and inspect the following ventilation systems, shown on Coast Guard Drawings 225B WLB 512-001, 225B WLB 512-007, and 225 WLB 259-005, in accordance with SFLC Std Spec 5100. Submit a CFR.

TABLE – 1 SYSTEM LOCATION

SYSTEM LOCATION	TYPE
Gaylord Hood	Exhaust

3.4 Additional requirements. In addition to the above, the Contractor must accomplish the following:

3.4.1 Notification. Give written notification to the COR, 48 hours before starting ventilation cleaning work.

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3.4.2 Additional protective covering. In addition to providing protective covering as specified in SFLC Std Spec 5100, subsection 3.1.3 (Protective measures), provide additional protective covering for all food preparation and serving surfaces in the immediate work area, as applicable, to prevent contamination.

3.4.3 Avoidance of meal preparation and service. Ensure that cleaning of galley ventilation systems is scheduled between 1900 and 0530 so that it WILL NOT interfere with meal preparation and service.

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 the ventilation systems disturbed to be in satisfactory operating and balanced condition as per CG Drawings. Submit a CFR.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 44: Vent Ducts, Laundry Exhaust, Commercial Cleaning

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean and inspect the designated shipboard ventilation systems.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 512-001, Rev K, HVAC Diagram

Coast Guard Drawing 225B WLB 512-007, Rev B, HVAC A&D, Fr 66-92, Innerbtm & 1st Platform

Coast Guard Drawing 225 WLB 259-005, Rev C, Combustion Intake & Exhaust A&D Hull Block 940

COAST GUARD PUBLICATIONS

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

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

Coast Guard Technical Publication (TP) 3796, Section A, Aug 2006, Galley Hood – Model NBDL-60 (13'-4")

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

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

- Ducting screens.
- Electric pre-heaters.
- Overhead sheathing/panels.
- Ventilation covers..

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.2 Operational test, initial. Prior to commencement of work, the Contractor must witness Coast Guard Personnel perform an initial operational test of the ventilation systems included in this work item, to demonstrate existing operational condition. Submit a CFR.

3.3 Cleaning requirements. The Contractor must clean and inspect the following ventilation systems, shown on Coast Guard Drawings 225B WLB 512-001, 225B WLB 512-007, and 225 WLB 259-005, in accordance with SFLC Std Spec 5100. Submit a CFR.

TABLE 1 – SYSTEM LOCATIONS

SYSTEM LOCATION	TYPE
1-57-4-Q (Laundry)	Exhaust
1-106-2-Q (Laundry)	Exhaust

3.4 Notification. The Contractor must give written notification to the COR, 48 hours before starting ventilation cleaning work.

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 the ventilation systems disturbed to be in satisfactory operating and balanced condition as per CG Drawings. Submit a CFR

4. NOTES

This section is not applicable to this work item.

WORK ITEM 45: Vent Ducts, All Other, Commercial Cleaning

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean and inspect the designated shipboard ventilation systems.

1.2 Government-furnished property.

None.

2. REFERENCES

USER:

Drawings may change if galley hood is not being cleaned. Ensure they are correct.

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 512-001, Rev K, HVAC Diagram

Coast Guard Drawing 225B WLB 512-007, Rev B, HVAC A&D, Fr 66-92, Innerbtm & 1st Platform

Coast Guard Drawing 225 WLB 259-005, Rev C, Combustion Intake & Exhaust A&D Hull Block 940

COAST GUARD PUBLICATIONS

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

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

Coast Guard Technical Publication (TP) 3796, Section A, Aug 2006, Galley Hood – Model NBDL-60 (13'-4")

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

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

- Ducting screens.
- Electric pre-heaters.
- Overhead sheathing/panels.
- Ventilation covers.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.2 Operational test, initial. Prior to commencement of work, the Contractor must witness Coast Guard Personnel perform an initial operational test of the ventilation systems included in this work item, to demonstrate existing operational condition. Submit a CFR.

3.3 Cleaning requirements. The Contractor must clean and inspect the following ventilation systems, shown on Coast Guard Drawings 225B WLB 512-001, 225B WLB 512-007, and 225 WLB 259-005, in accordance with SFLC Std Spec 5100. Submit a CFR.

TABLE 1 – SYSTEM LOCATIONS

SYSTEM LOCATION	TYPE
Paint Locker	Exhaust
Paint Locker	Supply
Deck Berthing	Supply
Deck Berthing	Exhaust
Main Deck	Supply

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Main Deck	Exhaust
01-Deck	Supply
01-Deck	Exhaust

3.4 Notification. The Contractor must give written notification to the COR, 48 hours before starting ventilation cleaning work.

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 the ventilation systems disturbed to be in satisfactory operating and balanced condition as per CG Drawings. Submit a CFR.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 46: Sea Strainers, All Sizes, Renew**1. SCOPE**

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

TABLE 1 – STRAINERS

SERVICE	SIZE (inches)	TYPE (Duplex/Simplex)	QTY	MANUFACTURER
Sea Chest	14	Simplex	2	Fabrotech

1.2 Government-furnished property.

SERVICE	SIZE (inches)	TYPE (Duplex/Simplex)	QTY	MANUFACTURER
Sea Chest	14	Simplex	2	Fabrotech

2. REFERENCES**COAST GUARD DRAWINGS**

Coast Guard Drawing 225B WLB 256-001, Rev P, Seawater Cooling System Diagram

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

ASTM International (ASTM) D1330, 2022, Standard Specification for Rubber Sheet Gaskets

Society of Automotive Engineers (SAE) Aerospace Material Specification (AMS) G-6032, 2020 Grease, Plug Valve, Gasoline and Oil Resistant, NATO Code Number G-363, Metric

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor 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:

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

3.2 Renewal. The Contractor must renew and test the designated strainers (see paragraph 1.1 (Intent)), shown on Coast Guard Drawing 225B WLB 256-001. The Contractor must accomplish the following for each sea strainer in accordance with manufacturer's recommendations:

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

3.2.2 Plug valve testing. Where applicable, lubricate the valves with plug valve grease conforming to AMS-G-6032. Hydrostatically test the plug valves of all duplex strainers for each strainer chamber, at a test pressure of XX 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 Installation. After completion and acceptance by the Coast Guard Inspector, the Contractor must install all new strainers to the original locations, as shown on Coast Guard Drawing 225B WLB 256-001. Renew all gaskets with material conforming to ASTM D1330 of the same size and configuration as those gaskets removed. Renew all hardware with nickel-copper alloy (Monel) fasteners.

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

3.5 Leak test. After completing all authorized mechanical (i.e. threaded, bolted, etc.) joint repairs, the Contractor must test the seawater system's operation using the system fluid at normal operating pressure.

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Ensure zero visible leakage from or deformation of mechanical parts by repairing all leaks and discrepancies. Submit a CFR.

3.6 Surface preservation. The Contractor 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

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

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

WORK ITEM 47: Sea Strainers, Duplex, All Sizes, Overhaul**1. SCOPE**

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

SERVICE	SIZE (INCHES)	QTY	MANUFACTURER
Stern Tube Supply	2	1	
Reverse Osmosis Unit	1	1	Hayward

1.2 Government-furnished property.

None.

2. REFERENCES**COAST GUARD DRAWINGS**

Coast Guard Drawing 225B WLB 256-001, Rev P, Seawater Cooling System Diagram

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

ASTM International (ASTM) D1330, 2022, Standard Specification for Rubber Sheet Gaskets

Society of Automotive Engineers (SAE) Aerospace Material Specification (AMS) G-6032, 2020
Grease, Plug Valve, Gasoline and Oil Resistant, NATO Code Number G-363, Metric

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

3. REQUIREMENTS

3.1 General.

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

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

- Deck plates 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 225B WLB 256-001. 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 Renewal. Any strainer baskets, covers, and packing gland fasteners that require renewal as determined by the CIR must be addressed on a Change Request.

3.2.4 Reassemble. Reassemble each strainer. Lubricate the valves with plug valve grease conforming to AMS-G-6032.

3.2.5 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 50 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.

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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 225B WLB 256-001. 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 changing out strainers. The Contractor must be aware that the Government reserves the right to furnish new sea strainer(s) for installation in place of the existing strainer(s). If the Government exercises this right, the Contractor must dispose of the old strainer(s) in accordance with all applicable Federal, state, and local regulations.

3.6 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.

WORK ITEM 48: Sea Bay, Preserve - Partial

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to perform partial preservation of interior surfaces of the Sea Bay System.

1.2 Government-furnished property.

None

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 601-001, Rev P; General Arrangement Inboard & Outboard Profiles

Coast Guard Drawing 225B-WLB 633-002, Rev A, Cathodic Protection Passive

COAST GUARD PUBLICATIONS

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

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

Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2022, Temporary Hull Accesses

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None

3.1.2 Tech Rep.

Not applicable.

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

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

- Seawater piping.
- Chlorinator unit.
- Temperature sensor.

3.1.5 Temporary access openings. With express permission of the KO via submission of a CFR and in accordance with SFLC Std Spec 8636, the Contractor may perform all work required to cut open and close temporary access openings to facilitate accomplishment of the work specified herein.

3.2 Sea Bay and piping preservation. The Contractor shall prepare and coat up to 33 % of interior surfaces of the Sea Bay, including all accessible associated piping, using the coating system specified for “Underwater Water (U/W) Body and Boot-Top (U/W Body and Boot-Top, Icebreaker <235’, in Fresh Water (Excluding Sea Chest)” in SFLC STD SPEC 6310, Appendix A (Cutter and Boat Exterior Painting Systems). Submit a CFR for preservation additional surfaces up to 33% of the Sea Bay.

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

NOTE

Surfaces being preserved are considered “critical-coated surfaces”.

4. NOTES

This section is not applicable to this work item

WORK ITEM 49: Sea Bay, Clean and Inspect

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean and inspect the Sea Bay System.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

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

3. REQUIREMENTS

3.1 General.

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

- 3.2.3 Inspections.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures - general. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces in the vicinity of the

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

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

- Seawater piping.
- Chlorinator unit.
- Temperature sensor.

3.1.5 Piping isolation. If this item is scheduled to be accomplished while the cutter is pier side, the Contractor shall submit a piping isolation plan to the COTR, within 24 hours before work is begun. Upon approval of isolation plan, proceed with isolating the piping system.

NOTE

Piping isolation is required to prevent compartment flooding. Additionally, due to space limitations, it may be necessary to remove/reinstall piping to facilitate access.

3.2 Requirements. The Contractor shall accomplish the following tasks using Coast Guard Drawing 225B WLB 601-001, Rev P; General Arrangement Inboard & Outboard Profiles

Coast Guard Drawing 225B-WLB 633-002, Rev A, Cathodic Protection Passive as guidance:

3.2.1 Content removal. Remove the manhole cover and drain all fluids within the sea bay and the associated piping. Dispose of all removed fluids in accordance with all applicable Federal, state, and local regulations.

3.2.2 Cleaning.

3.2.2.1 Clean all interior surfaces of the sea bay (including all accessible interior and exterior piping surfaces) to completely remove all visible marine growth, loose rust, loose mill scale, loose coatings, and other foreign materials such as sediment or sludge. Remove all persistent residues, taking care not to damage the coating system.

3.2.2.2 Remove cleaning media and residues continuously from the sea bay during the washing process. Remove all residual wash media and wipe up residual moisture with clean cloths. Collect, contain, and dispose of all wash media, residues, and cleaning materials in accordance with all Federal, state, and local regulations.

3.2.2.3 After cleaning, visually inspect all sea bay and associated piping surfaces; submit a CFR.

3.2.2.4 Renew all disturbed gaskets and seals.

3.2.3 Inspection. Visually inspect all sea bay interior surfaces and manhole cover surfaces for damage and deterioration using as guidance; and submit a CIR, to include but not be limited to, the following:

- Degree of fouling; quantity of marine growth present.
- Structural condition.

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- Condition of manhole cover (to include fasteners and gasket seating surfaces).
- Piping condition.
- Coating system condition.
- Inaccessible areas, if any.
- Percent deterioration of zinc anodes.

3.2.3.1 Ultrasonic thickness (UT) measurement. The Contractor shall take a total of 50 UT measurements in accordance with SFLC Std Spec 0740, Appendix C in locations designated by the Coast Guard Inspector and using Coast Guard Drawing 225B WLB 601-001, Rev P; General Arrangement Inboard & Outboard Profiles

Coast Guard Drawing 225B-WLB 633-002, Rev A, Cathodic Protection Passive as guidance. Submit a CIR.

3.2.3.1.1 In addition to the UT measurements, take a total of 40 pit-depth measurements, using a suitable pit depth gauge

3.3 Sea bay closing. After all authorized repairs, in the presence of the Coast Guard Inspector, the Contractor shall reinstall the sea bay manhole cover with new gasket material conforming to ASTM D1330.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 50: Sea Bay, Preserve 100%

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to preserve 100% of the interior surfaces of the Sea Bay , Compartment 4-80-0-W.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 601-001, Rev P; General Arrangement Inboard & Outboard Profiles

Coast Guard Drawing 225B-WLB 633-002, Rev A, Cathodic Protection Passive

COAST GUARD PUBLICATIONS

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

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

Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2022, Temporary Hull Accesses

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

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

- Seawater piping.
- Chlorinator unit.
- Temperature sensor.

3.1.5 Temporary access openings. With express permission of the KO via submission of a CFR and in accordance with SFLC Std Spec 8636, the Contractor may perform all work required to cut open and close temporary access openings to facilitate accomplishment of the work specified herein.

3.2 Sea Bay and piping preservation. The Contractor shall prepare and coat all interior surfaces of the Sea Bay, including all accessible associated piping, using the coating system specified for “Underwater Water (U/W) Body and Boot-Top (U/W Body and Boot-Top, Icebreaker <235’, in Fresh Water (Excluding Sea Chest)” in SFLC STD SPEC 6310, Appendix A (Cutter and Boat Exterior Painting Systems).

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

NOTE

Surfaces being preserved are considered “critical-coated surfaces”.

4. NOTES

This section is not applicable to this work item

WORK ITEM 51: Potable Water Pneumatic Tanks, Clean and Inspect**1. SCOPE**

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

TABLE 1 – TANKS

SERVICE	LOCATION	CAPACITY (GALLONS)	PRESSURE (PSIG)
Hydro-Pneumatic	2-57-4-E	25	30-70

1.2 Government-furnished property.

None.

2. REFERENCES**COAST GUARD DRAWINGS**

Coast Guard Drawing 225B WLB 532-002, Rev D, Potable Water Sys Dia

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

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

American National Standards Institute/American Water Works Association (ANSI/AWWA)
C652, 2019, Disinfection of Water-Storage Facilities

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech rep.

None.

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

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

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

- Piping.

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

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

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

3.2 Preparation. The Contractor must depressurize and drain the designated tank(s) (see paragraph 1.1 (Intent)) before performing any work on them. Dispose of all fluids in accordance with all applicable Federal, state, and local environmental regulations.

NOTE

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

3.3 Cleaning requirements. For all tanks designated in paragraph 1.1 (Intent), the Contractor must clean all tank interior surfaces free of all foreign materials, sediment, and sludge. Remove all persistent residues, taking care not to damage the tank coating system, where present. Remove cleaning media and residues continuously from the tank during the washing process. Remove any residual wash media and wipe up residual moisture with clean lint-free cloths. Collect, contain, and dispose of all wash media, residues, and cleaning materials in accordance with all Federal, state, and local regulations.

3.4 Inspection. The Contractor must, using Coast Guard Drawing 225B WLB 532-002 for guidance, accomplish the following for all designated tank(s) (see paragraph 1.1 (Intent)):

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3.4.1 Visual inspection. Clean and visually inspect the internal and external surfaces of each tank for signs of corrosion, pitting, and other damage. If required by the pneumatic tank's construction, the Contractor must provide and use a borescope during the visual inspection. Submit a CFR.

3.5 Surface preservation. If a Change Request has been authorized and released, the Contractor must prepare and coat each tank's interior surfaces using the system specified for "Tanks and Voids (Potable Water Tanks)" in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems). If preservation is for less than 100 percent of tank interior surfaces, power tool clean all affected surfaces to "bare metal" in lieu of using abrasive blasting, and feather edges of existing intact coating to the prepared areas in order to provide a smooth transition with the new paint.

3.6 Tank closing. The Contractor must notify the COR at least 24 hours prior to closing the tank(s) and ensure tank closure is accomplished in the presence of the Coast Guard Inspector. After satisfactory inspection by the Coast Guard Inspector, and completion of all authorized repairs, close the manhole cover(s) with new gasket material conforming to ASTM D1330.

3.6.1 Renew 100% of nylon insert/nylock nuts and washers.

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

3.7 Leak test. After tank reinstallation and completing all authorized mechanical (i.e. threaded, bolted, etc.) connections, the Contractor must test the potable water 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 Tank disinfecting. After all other work involving the potable water system and tank closing have been completed, the Contractor must disinfect and treat the affected potable water tank(s), as necessary to meet or exceed the requirements of AWWA C652. After tank disinfecting, remove and dispose of all treated water in accordance with all Federal, state and local regulations. Ensure that no one enters the tanks once disinfection is completed. Submit CFR providing confirmation that disinfection of tank(s) and associated potable water system disturbed piping and components has been completed and certifying that all sampling and testing is negative for coliform organisms.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

4. NOTES

This section is not applicable to this work item.

WORK ITEM 52: Compressed Air Receivers and System Valves, All, Clean, Inspect, Hydro and Lift

1. SCOPE

1.1 Intent. The work item describes the requirements for the Contractor to clean, inspect, lift test and hydrostatically test the below designated air receivers and system valves:

TABLE 1: AIR RECEIVERS

SERVICE	DESIGNATION	LOCATION	QTY	OPERATING PRESSURE (psi)
Starting Air	SA-F-E2-1, SA-F-E2-2	4-82-0-E	2	250
Ship's Whistle	ALP-F-E3-1	03-61-0-D	1	125
Ship's Service	ALP-F-E4-1	2-87-0-E	1	125

TABLE 2: SYSTEM VALVES

TYPE	SIZE	DESIGNATION	QTY	SET PRESSURE (psi)	Location/SYSTEM
Relief	½"	ALP-V-V1-1	1	90	STERN TUBE
Relief	½"	ALP-V-V2-1	1	40	SEA CHEST BLOW DOWN
Relief	½"	ALP-V-V2-2	1	40	SEA CHEST BLOW DOWN
Relief	1"	ALP-V-V3-1	1	138	STERN THRUSTER/REDUCING STATION
Relief	1"	ALP-V-V3-2	1	138	STERN THRUSTER/SS RECEIVER
Relief	1"	ALP-V-V3-3	1	138	SHIPS WHISTLE
Relief	½"	ALP-V-V920-1	1	175	UPPER LEVEL MMR/CLUTCH
Relief	1 ½"	SA-V-V4A-1	1	185	NR 1 MDE

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Relief	1 ½"	SA-V-V4A-2	1	185	NR 2 MDE
Relief	1 ¼"	SA-V-V10-1	1	275	START AIR NR 3 COMPRESSOR
Relief	1 ¼"	SA-V-V10-2	1	275	START AIR NR 2 COMPRESSOR
Relief	1 ¼"	SA-V-V10-3	1	275	START AIR NR 1 COMPRESSOR
Relief	½"	SA-V-V5-4	1	275	AMR/NR 1 RECEIVER
Relief	½"	SA-V-V5-5	1	275	AMR/NR 2 RECEIVER
Reducing	½"	ALP-V-V6-1	1	125-75	EMERGENCY SHAFT SEAL
Reducing	1"	SA-V-V7-1	1	250-125	AMR/START AIR - LP REDUCING STA
Reducing	1 ½"	SA-V-V8-1	1	250-165	NR 1 MDE PRESSURE REDUCING VLV
Reducing	1 ½"	SA-V-V8-2	1	250-165	NR 1 MDE PRESSURE REDUCING VLV
Reducing	½"	SA-V-V9-1	1	250-150	UPPER LEVEL MMR/CLUTCH

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 551-001, Rev G, Compressed Air System Diagram

COAST GUARD PUBLICATIONS

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

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

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

OTHER REFERENCES

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

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American Society for Testing and Materials (ASTM) International F1508, 2016, Standard Specification for Angle Style, Pressure Relief Valves for Steam, Gas, and Liquid Services
Manufacturers Standardization Society of the Valve and Fittings Industry (MSS) SP-61, 2019 Edition, Pressure Testing Of 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, 2010 Edition, Ball Valves with Flanged or Butt-Welding Ends for General Service
Manufacturers' Standardization Society of the Valve and Fittings Industry (MSS) SP-80, 2019 Edition, Bronze Gate, Globe, Angle and Check Valves

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 Hydrostatic test.
- 3.3 NDE
- 3.5.1 Relief valves

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:

- Piping system.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.1.5 Operational test - initial. Prior to commencement of work, the Contractor must witness Coast Guard personnel perform an initial operational test of the compressed air system, to demonstrate existing operational condition. Submit a CFR.

3.2 Air receiver cleaning and inspection. The Contractor must clean and inspect each designated air receiver in paragraph 1.1 (Intent) as follows.

3.2.1 Blowdown the air receivers and collect the blowdown (condensate) into a separate container for inspection.

3.2.2 Visually inspect the blowdown (condensate) under a bright white light for oil or particulate contamination. Clean and visually inspect the internal and external surfaces of the air receiver for signs of corrosion, pitting, and other damage. Submit a CFR.

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3.3 Hydrostatic test. The Contractor must perform a hydrostatic test of the designated air receiver(s) in accordance with SFLC Std Spec 0740, Appendix C and manufacturer's recommended procedures. In the event a test pressure is not listed on the applicable drawing, test to 1-1/2 times the nominal operating pressure and hold for five minutes. Refer to Coast Guard Drawing 225B WLB-551-001 for guidance. Submit a CIR.

3.3.1 To hydrostatic test, isolate the air receiver by disconnecting all piping, relief valves, and pressure switches. Install pipe plugs/caps, to prevent backflow into compressors and other system components.

3.3.2 Hydrostatically test the air receiver(s) using clean fresh water. Ensure zero leakage from or permanent deformation of pressure-containing parts by repairing all leaks, deformations, and discrepancies.

3.3.3 Instruments and equipment that might be damaged by clean fresh water must be excluded from hydrostatic pressure test.

3.3.4 After testing, drain and thoroughly dry the air receivers with warm air. Dispose of testing fluids in accordance with all applicable Federal, state, and local regulations. Reconnect all disconnected piping and restore system. Renew any disturbed gaskets.

WARNING

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

3.3 NDE. The Contractor must perform NDE of the designated air receiver(s) in accordance with SFLC Std Spec 0740, Appendix C, and the following. Submit CIR.

3.3.1 Magnetic particle (MT) inspection. For carbon steel receivers, perform magnetic particle (MT) inspection on external weld connections in two directions with an AC yoke. Extent of inspection must be minimum 90% of total weld length. For non-ferrous receivers, perform dye penetrant (PT) inspection instead of MT.

3.3.2 Ultrasonic (UT) inspection. Perform ultrasonic thickness measurements at the intersections of a 6-inch by 6-inch grid over the entire surface of the air receiver, including the heads. Any area of visible corrosion on the receiver must be measured near the center of the area. Localized areas of wall thinning must be continuously scanned to their extremities to ensure that the deepest area of thinning has been measured. Submit sketch and data sheet detailing all UT thickness locations and measurements.

3.4 Contractor's option for valve renewal. The Contractor may, at no additional cost to the Government, opt to renew valves designated for inspection and testing if preferable for the Contractor. If the Contractor elects to renew valves, the Contractor must ensure the following:

- 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.

TABLE 1 - VALVE STANDARDS

VALVE TYPE	INDUSTRY STANDARD
Steel Valves	MSS SP-61

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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
Angle Style. Pressure Relief Valves	ASTM F1508
All others	ASME B16.34

3.4.1 Visually inspect the piping and mounting arrangements; and submit a CIR detailing any required modifications to accommodate the new valve(s).

3.4.2 Provide original documentation to the COR certifying each valve has been satisfactorily shop-tested. Documentation must include the set pressure, date of inspection / test, and testing facility.

3.5 Valve inspection and testing. The Contractor must inspect and test each designated air system valve as follows. Refer to Coast Guard Drawing 225B WLB-551-001 for guidance.

3.5.1 Relief valves. Disassemble as required, and visually inspect all parts for defects and deterioration. Submit a CIR.

3.5.1.1 Perform a lifting test on each relief valve in accordance with manufacturer's recommendations and ASME PTC 25. Ensure that each valve seats cleanly after pressure relief (without simmering), and with no allowable leakage.

3.5.1.2 Adjust the relief pressure on the designated relief valve as necessary to obtain the specified lifting pressure. After adjustment, perform a final check to confirm each relief valve's lifting pressure in the presence of the Coast Guard Inspector. After successful confirmation, install the relief valves. Renew all O-rings and gaskets. Submit a CFR.

3.5.2 Pressure reducing valves. Disassemble as required, and visually inspect all parts for defects and deterioration. Submit a CFR.

3.5.2.1 Adjust the setting on the designated reducing valve as necessary to obtain the specified pressure setting.

3.5.2.2 After adjustment, perform a final check to confirm each reducing valve's ability to maintain set pressure in the presence of the Coast Guard Inspector. After successful confirmation, install the pressure reducing valves. Renew all O-rings and gaskets. Submit a CFR.

3.6 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.

3.7 Touch-up preservation, general. 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.)

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3.8 Data plates- valve. The Contractor must affix an anodized aluminum test data plate with lock wire to each valve. The data plate must be engraved with ¼-inch high letters, stating the following:

- Valve number / designation
- Set pressure (if applicable)
- Date of inspection / test.

3.9 Documentation. The Contractor must provide documentation to the Coast Guard Inspector certifying each valve tested. Documentation must include the valve number / designation, set pressure, date of inspection / test, and testing facility.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.10 Operational test – post repairs. After completion of work, the Contractor must thoroughly test, in the presence of the Coast Guard Inspector and demonstrate the compressed air system to be in satisfactory operating condition. Submit a CFR.

3.11 Surface preservation. The Contractor must prepare and coat the receiver exterior surfaces, using the system specified for “Machinery, Operating Temperatures Under 200 °F” in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems). Select finish/top coat color to match previous paint scheme.

3.12 Data plates- air receiver. The Contractor must affix an anodized aluminum test data plate with epoxy resin cement to each air receiver. The data plate must be engraved with ¼-inch high letters, stating the following:

- Receiver name / number.
- Hydrostatic test pressure (if applicable).
- Date of inspection / test.
- Testing facility.

3.13 Documentation. The Contractor must provide documentation to the Coast Guard Inspector certifying each air receiver tested. Documentation must include the receiver name / number, method of testing, hydrostatic test pressure (if applicable), date of inspection / test, and testing facility.

4. NOTES

4.1 Air receiver definition. An air receiver is a pressure vessel for the storage of air at 600 psig and below.

WORK ITEM 53: Fixed CO2 FF Bottles, Inspect and Hydrostatic Test**1. SCOPE**

1.1 Intent. This work item describes the requirements for the Contractor to inspect and hydrostatically test Carbon Dioxide (CO2) System bottles and flexible connections, located as follows:

TABLE 1 – CYLINDERS

COMPARTMENT	LOCATION	SIZE (LBS)	QUANTITY
4-92-0-E	Stern Thruster Mach RM	100	6
01-92-0-L	Companioway	100	2
1-61-A	SOR Mach. RM	100	1
2-48-0-E	SOR Mach RM	100	12
1-57-1-Q	Galley APC*	3	1

* APC Wet Chem Cylinder

1.2 Government-furnished property.

None.

2. REFERENCES**COAST GUARD DRAWINGS**

Coast Guard Drawing 225B WLB 555-005, Rev D, CO2 System A/D, Fr 48 Aft, Block 930, 940, 950, 960A

Coast Guard Drawing 225B WLB 555-006, Rev A, CO2 System, A/D, Flammable Liquid Storeroom, Blk 901, 910

Coast Guard Drawing 225B WLB 555-007, Rev B, CO2 System, A/D, Emergency Generator Rm, Block 970

COAST GUARD PUBLICATIONS

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

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

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

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep. The Contractor must provide the services of a Qualified Technical Representative who is familiar with the fixed fire protection systems 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.
- Conduct annual servicing of the fire protection systems.
- Test the system for proper operation and provide certification of inspection.

3.1.2.1 Ensure the Tech Rep has experience with the system/equipment stated above and demonstrated on their resume.

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

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

3.1.4 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:

- Piping
- Electrical Cable
- Galley Equipment

3.2 Temporary fire protection. The Contractor must provide a temporary replacement CO₂ cylinder and any associated CO₂ components (i.e. flexible discharge hose, etc.) and install them in-place of the removed items. The replacement items will provide temporary fire protection to affected spaces. Remove temporary replacement CO₂ cylinder and any associated CO₂ components after completion of work. The replacement cylinder and associated components must be the same specification as the removed cylinder and components.

3.3 Hydrostatic Test. The Contractor must ensure the following for the designated CO₂ cylinders (see paragraph 1.1 (Intent)), as shown on Coast Guard Drawings 225B WLB 555-005, 225B WLB 555-006, and 225B WLB 555-007:

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3.3.1 Remove the CO₂ cylinder from its respective fire extinguishing system and transport it to an approved test facility.

3.3.2 Inspect cylinder straps, cradles and attaching hardware for loose, damaged, or broken parts, corrosion, oil, grease, grime, and etc. Tighten loose hardware. Submit CFR.

3.3.3 Remove dirt from metallic parts using a lint-free cloth moistened with dry cleaning solvent. Dry parts with clean, dry, lint-free cloth or air blow dry. Wipe non-metallic parts with clean, dry, lint-free cloth. Remove corrosion with crocus cloth.

3.3.4 In the test facility, discharge the cylinder. Hydrostatically test the CO₂ cylinder to _____ psig in accordance with SFLC Std Spec 0740. Stamp the date of hydrostatic testing on the neck of each cylinder tested. Refill each cylinder. Weigh and record the weight of each cylinder.

3.3.5 Return the cylinders to the ship and reinstall each cylinder from their parent location.

3.3.6 A cylinder must be rejected if any of the following exist:

- Leaks.
- Dented, bulging, severely corroded, or otherwise in a weakened condition.
- Has lost more than five percent of its tare weight.
- Has been involved in a fire.

3.3.7 Provide a CFR to the Coast Guard Inspector showing the cylinder weight, both before testing and after testing.

3.4 Flexible Hose Connection Testing. The Contractor must ensure the following:

3.4.1 Remove the CO₂ flexible discharge hose associated with the removed CO₂ cylinder for inspection and test.

3.4.2 Inspect flexible discharge hose for loose fittings, damaged threads, cracks, rust, kinks, and distortion, dirt and frayed wire braid. Tighten loose fittings. Submit a CFR.

3.4.3 Remove dirt from metallic parts using a lint-free cloth moistened with dry cleaning solvent. Dry parts with clean, dry, lint-free cloth or air blow dry. Wipe non-metallic parts with clean, dry, lint-free cloth. Remove corrosion with crocus cloth.

3.4.4 In a suitable facility, pressure test each flexible hose at a pressure of one and one-half times the cylinder service pressure as marked on the cylinder. Acceptance Criteria: At test pressure, the pressure must not drop at a rate greater than 150 psi (1.03 MPa) per minute for a two (2) minute period.

3.4.5 Provide and install a metal tag on the hose showing the test date, test pressure, and test facility.

3.4.6 Return the hose to the ship and reinstall each hose with its CO₂ cylinder.

3.4.7 Provide a CFR to the Coast Guard Inspector showing the hydrostatic test pressure and test date.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 54: Rudders, Preserve, 100 Percent

1. SCOPE

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

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 562-002, Rev D, Rudder Structural A&D

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

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- U/W Body hull surfaces.
- Rudder bearing surfaces.
- Propeller surfaces.

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

3.2 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 particulars). 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.

3.3 Preservation particulars. The Contractor must prepare and coat the rudders with the system specified for “Underwater Water (U/W) Body and Boot-Top (U/W Body and Boot-Top, Icebreaker <235’, in Salt Water)”, in SFLC Std Spec 6310, Appendix A (Cutter and Boat Exterior Painting Systems). Use Coast Guard Drawing 225B WLB 562-002as guidance

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).

4. NOTES

This section is not applicable to this work item.

WORK ITEM 55: Rudder Stock Bearings, Check Clearances

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to inspect and check the clearances of the upper, lower, and pintle rudder bearings.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B-WLB 561-003, Rev B; STEERING GEAR ARRANGEMENT

Coast Guard Drawing 225B-WLB 562-001, Rev H; STEERING COMPONENTS A/D

Coast Guard Drawing 225B-WLB 562-002, Rev D; RUDDER - STRUCT A & D

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

The Society for Protective Coatings SSPC-SP 10/NACE No.2, Rev 7; Near-White Blast
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):

- 3.3.2 (Lower Bearing)
- 3.3.3 (Pintle Bearing)

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 Pre-Docking Operational Test of Rudder Angle Indicator

3.2.1 Prior to drydocking, The Contractor and Coast Guard Inspector must jointly perform an operational test of the rudder angle indicator system..

3.2.2 The Contractor must measure and record the time to swing the rudder from left 35 degrees to right 30 degrees using each of the two steering gear pumps. Measure and record the time to swing the rudder from right 35 degrees to left 30 degrees using each of the two steering gear pumps.

3.3 Rudder Bearing Clearances

3.3.1 Rudder/steering arrangement is depicted in CG Dwg 225B-WLB 562-1 and CG Dwg 225B-WLB 561-3. Additional information is shown in CG Dwg 225B-WLB 562-2.

3.3.2 Lower Bearing. The Contractor must unbolt and lower the seal retainer plate (Item 18, CG Dwg 225B-WLB 562-1) and the contained o-ring seal (Item 14, CG Dwg 225B-WLB 561-3) to allow access to the lower bearing. Take the lower bearing (Thordon) clearance measurements. Measurements must be taken with a long feeler gauge, in four locations (90-degrees apart) around the rudder stock. Take clearances in the presence of the Coast Guard Inspector. Submit A CIR within 24 hours of taking clearances. The journal is 18.500” and the diametrical clearance should be between a minimum of 0.021” and a maximum of 0.090”.

3.3.3 Pintle Bearing. The Contractor must take the pintle bearing (Thordon) clearance measurements. Measurements must be taken with a long feeler gauge, in four locations (90-degrees apart) around the rudder stock. Take clearances in the presence of the Coast Guard Inspector. Submit A CIR within 24 hours of taking clearances. The journal is 14.000” and the diametrical clearance should be between a minimum of 0.016” and a maximum of 0.080”.

3.3.4 Upper Bearing. The Contractor must carefully measure vertical movement of the rudderstock. Remove retainer ring from the carrier bearing and replace after inspecting the carrier bearing. Submit a CFR.

3.4 Rudder Bearing Assembly

3.4.1 The Contractor must renew the o-ring seal, Item 14, CG Dwg 225B-WLB 561-3.

3.4.2 After all work has been completed, the Contractor must reinstall the seal retainer plate (Item 18, CG Dwg 225B-WLB 562-1) renewing the gasket (Item 25, CG Dwg 225B-WLB 561-3). Renew all other disturbed seals, locks, and gaskets.

3.5 Acceptance Testing

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3.5.1 Test Performance. The Contractor must ensure all acceptance tests are performed in the presence of the Coast Guard Inspector. Provide a written report to the Coast Guard Inspector of all test results within one week of test completion.

3.5.2 Operability Test. The Contractor must cycle each new component affected by this work item to verify operability. Verify that check, globe, and relief valves are installed in the proper flow orientation.

3.5.3 While the cutter is still in drydock, the Contractor must witness an operational test of the rudder. Ensure there is no binding through the full swing of the rudder. Verify mechanical rudder angle indicator against all remote indicators on the bridge. Ensure all linkages are properly connected with cotter pins.

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

3.5.4.1 After the cutter is undocked, the Contractor must witness an operational test of the rudder. Ensure there is no binding through the full swing of the rudder. Verify mechanical rudder angle indicator against all remote indicators on the bridge. Ensure all linkages are properly connected with cotter pins.

3.5.4.2 The Contractor must measure and record the time to swing the rudder from left 35 degrees to right 30 degrees using each of the two steering gear pumps. Measure and record the time to swing the rudder from right 35 degrees to left 30 degrees using each of the two steering gear pumps. Compare these measurements to the previously recorded times.

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

4. NOTES

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

WORK ITEM 56: Rudder, Inspect And Repair

1. SCOPE

1.1 Intent. The intent of this item is to inspect the cutter's rudder.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B-WLB 562-002, Rev D; RUDDER - STRUCT A & D

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

MIL-S-22473 , Rev E(8); Sealing, Locking, and Retaining Compounds: (Single Component),
01/21/04

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 (Air Test Rudder).

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).

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

3.2 Rudder Inspection.

NOTE

Coordinate the performance of this item with Definite Item “Rudder Stock Bearings, Check Clearances”.

3.2.1 The Contractor must check the general condition, and conditions around, the drain plugs, and pitting, if any, on the leading and trailing edges. Submit a Condition Found Report. CG Dwg 225B-WLB 562-002 depicts the rudder construction and details.

3.2.2 In the presence of the Coast Guard Inspector, the Contractor must remove all fill and drain plugs from rudder and check for the presence of water. Submit a Condition Found Report if water is detected draining from a void.

3.2.3 The Contractor must air test the rudder in the presence of the Coast Guard Inspector. The test must be performed early in the morning or at the end of a swing shift while it is still cool. Test with air supplied via a reducing valve with a duplex gauge (graduated in ounces) to measure the pressure drop across the valve, and a relief valve set at 2 psig above the test pressure. Test pressure must be 2 psig. There must be no pressure drop allowed over a test period of ten minutes. Identify location of all leaks. Submit A CIR on all test.

3.2.4 Following completion of work, the Contractor must chase the hull insert threads of all drain and vent plugs. Install new stainless steel, Type 316, or Monel drain plugs. Coat the new plugs with sealing compound conforming to MIL-S-22473, Grade AV or a pipe joint compound such as Permatex #2 before installation.

3.2.5 The Contractor must inspect the portion of rudder stock and stock nut exposed to sea water for damage to the protective synthetic liquid rubber compound. Submit CFR if damage is discovered.

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

4. NOTES

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

WORK ITEM 57: Rudder and Rudder Stock, Remove and Inspect**1. SCOPE**

1.1 Intent. This work item describes the requirements for the Contractor to remove and inspect the rudder and the rudder stock.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
N	**Upper bearing	NSN: 3110-01-466-9924	1 ea.	10,525.45
N	Rudder Seal Kit	NSN: 5330-01-565-8083	1 ea.	2,433.76

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

2. REFERENCES**COAST GUARD DRAWINGS**

Coast Guard Drawing 225B-WLB 561-003, Rev B; Steering Gear Arrangement
 Coast Guard Drawing 225B-WLB 562-001, Rev H; Steering Components A/D
 Coast Guard Drawing 225B-WLB 562-002, Rev D; Rudder - Struct A & D
 Coast Guard Drawing 225B-WLB 562-003, Rev -; Thordon Lower Rudder Stock Bearing
 Coast Guard Drawing 225B-WLB 562-004, Rev -; Pintle Bearing
 Coast Guard Drawing FL 1204-3. Rev A, Welded Padeyes and Links
 NAVSEA Drawing 803-5001104, Rev -; Rudder Stock Bearings and Seals

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements
 Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2022, Welding and Allied Processes
 Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, Requirements for Preservation of Ship Structures

OTHER REFERENCES

ASTM International (ASTM) D5363, 2008, Standard Specification for Anaerobic Single Component Adhesives (An)

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MIL-PRF-16173, 2006, Corrosion Prevention Compound, Solvent Cut-Back, 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(s):

- 3.9.1 Leak test.

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 Pre-docking operational test of rudder angle indicator. Prior to drydocking, the Contractor must witness Coast Guard Personnel perform an initial operational test of the rudder angle indicator system and the steering system.

3.2.1 The Contractor must measure and record the time to swing the rudder from left 35 degrees to right 30 degrees using each of the two steering gear pumps. Measure and record the time to swing the rudder from right 35 degrees to left 30 degrees using each of the two steering gear pumps. Submit a CFR.

3.3 Rudder stock vertical clearance check. Prior to removal of the rudder stock, the Contractor must measure and record the rudder stock for vertical movement. Using a chain fall and a dial indicator, carefully lift up on the rudder stock. Measure and record the vertical clearance of the rudder stocks. Ensure that the carrier housing is not deflecting while lifting the rudder stock.

3.3.1 Normal expected axial movement is 0.050" to 0.070". Readings outside that range must be investigated by Contractor by checking the shimming arrangement of the rudder carrier bearing, in addition to the health of carrier bearing itself.

3.4 Pad eyes/lifting points. The Contractor must furnish and weld temporary lifting pad eyes to the ship's hull and on the rudder, as required to facilitate removal of rudder, using Coast Guard Drawings 225B WLB 562-001 and 225B WLB 562-002. Upon completion of pad eye installation, pull-test all pad eyes, using Coast Guard FL 1204-003 as guidance.

NOTE

NDI may be performed, in lieu of pull-testing, for pad eyes, determined by the COR, as not easily accessible for pull-testing.

3.5 Removal and disassembly. The Contractor must accomplish the following:

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3.5.1 In the presence of the Coast Guard Inspector, scribe mark the location of the rudder on the rudder stock. This mark must be used to ensure that the rudder stock is properly fit back into the rudder.

3.5.2 Rig the rudders to the lifting pads and block up the rudder.

3.5.3 Disconnect and remove the upper rudder nut and pins. Prior to removal of the upper rudder nut, scribe and mark the location of the nut on the rudder stock to ensure proper reassembly.

3.5.4 Disconnect and remove the tiller pins, keys, and the bolts locking the tiller arms to the rudder stock. Match mark all parts to ensure that they are reassemble in their proper location.

3.5.4.1 Remove the tiller keys and inspect the keys and keyways. Check keys and keyway clearances as cited in 225B WLB 562-001. Submit a CFR.

3.5.4.2 Hand stone and thoroughly clean the tiller arm bushing housing surface prior to reassembly. Submit a Condition Found Report. Coast Guard inspector will witness and log measurements.

3.5.5 Disassemble the upper rudder bearing housing and remove the upper bearing for cleaning and inspection. Inspect bearing housing for dimensional tolerance using 225B WLB 562-001. Submit a CFR.

3.5.6 Remove the keeper retaining rings and lower bearing keepers on the rudder.

3.5.7 Support the rudder stock from the overhead using contractor supplied chain hoist and existing padeye in the overhead of the compartment.

NOTE

The rudder and stock arrangement is of a unique design which was necessary to protect from grounding and damage when backing into ice. The unique design provides for difficulty in the removal and reinstallation of the rudder, rudder stock and all associated components. Extreme care must be taken in handling the rudder due to its odd shape and center of gravity.

3.5.8 Remove the locking pins and loosen the lower rudder nut. Prior to loosening of the lower rudder nut, scribe and mark the location of the nut on the rudder stock to ensure proper reassembly.

3.5.9 Break the rudder stock free from the rudder and raise the rudder stock as required to clear the rudder and allow removal of the rudder. Loosen the lower rudder nut as required to lift the rudder stock.

3.5.9.1 Be aware that the rudder stock will often break loose from the rudder blade when lifting the rudder stock from above. Other times a 3'6" access needs to be cut out of the rudder blade, to allow for a hydraulic jack to push the rudder stock upward from below. Using a 30 ton hydraulic jack supported in the rudder stock opening, position the hydraulic jack against the bottom of the rudderstock. Apply pressure against the bottom of the stock to dislodge the rudder from the rudderstock. Care must be taken not to bend or distort the rudder stiffener upon which the jack is placed. To prevent damage and to distribute the load produced by the hydraulic jack, place wood blocking directly beneath the jack.

3.5.9.2 See photograph of hydraulic jack being used to push rudder stock from below:



3.5.10 Once free, lift the rudder stock to allow removal of the rudder. Remove the lower rudder nut and lower rudder stock keys and set aside for later inspection. Remove the rudder and set it aside in a protected location on the drydock floor.

3.5.11 The rudder stock must be rigged up through the steering compartment and out the manhole on the aft deck. Remove the rudder stock from the Cutter. Wrap the rudder bearing sleeve on the rudder stock to protect it from damage and transport the rudder stock to a machine shop.

3.6 Inspection and preservation of rudder stock tube prior to rudder reassembly. While the rudder stock is removed - and prior to reassembly of the rudder, the Contractor must accomplish the following:

3.6.1 Conduct ultrasonic thickness measurements in 5 locations, designated by the Coast Guard Inspector, in way of deteriorated areas of the rudder tubes, in accordance with SFLC Std Spec 0740, Appendix C. Submit a CFR.

3.6.2 Prepare and coat the interior of the housing around the lower rudder bearing and the rudder tube between the lower rudder bearing and the upper rudder bearing, using the system specified for “Inaccessible Areas, Steel; Option II”, in SFLC Std Spec 6310, Appendix A (Cutter and Boat Exterior Painting Systems).

3.7 Rudder bearing grease line maintenance. The Contractor must flush all rudder bearing grease lines with solvent to remove old grease and deposits. Renew all zerk fittings.

3.8 Routine inspections. The Contractor must clean all removed and disassembled components, and accomplish below-specified inspections.

3.8.1 Rudder stock. The Contractor must perform the following:

3.8.1.1 Clean the rudder stock to bare metal.

3.8.1.2 Place the rudder stock in a lathe. Take runout readings at the ends on each rudder stock. Inspect the bearing and packing seal surfaces on the rudder sleeve.

3.8.1.3 In the presence of the Coast Guard Inspector, inspect the lower end of the sleeve and rudder stock for corrosion and for fit between the rudder stock and the sleeve. If there is any indication of cracking or damage, submit a CFR within 24 hours to the Coast Guard Inspector.

3.8.1.4 Measure and record the fit of the lower rudder stock torque keys to the rudder stock. Verify that keyway fits are tight as described in 225B WLB 562-001.

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3.8.1.5 Sound the bearing sleeve. Stone the bearing and packing seating surfaces on the sleeve. Remove rough areas to achieve 32 RMS finish all over on the sleeve.

3.8.1.6 Stone the bearing seating surfaces on the pintle bearing journal area of the rudder stock. Remove rough areas to achieve 32 RMS finish all over on the journal area.

NOTE

Do not machine the rudder sleeve or pintle journal surface without prior permission from the Coast Guard Inspector.

3.8.1.6.1 After stoning, measure and record the outside diameter (OD) of the rudder stock sleeve and the pintle journal. Measurements must consist of 4 measurements at 90 degree intervals on both the sleeve and the pintle journal. Take three sets of readings on the sleeve, one reading within 1" of the top of the rudder sleeve, one reading within 1" of the bottom of the rudder sleeve, and one reading at the center of the rudder sleeve. Take three sets of readings on the pintle journal, one reading within 1" of the top of the journal, one reading within 1" of the bottom of the journal, and one reading at the center of the journal.

3.8.1.6.2 Record above readings for comparison to the lower rudder bearing and journal bearing measurements.

3.8.2 Securing components. Conduct NDI of the following components, in accordance with SFLC Std Spec 0740, Appendix C, and submit a CFR:

- All rudder and tiller arm keyways.
- All threaded areas of the rudder stock and on the rudder sleeve (all other areas must be visually inspected).
- Each rudder retaining nut, retaining pin and rudder and tiller arm torque keys.

3.8.3 Lower rudder bearing. Perform the following inspections, and submit a CFR.

NOTE

The lower rudder bearing is THORDON SXL material as described in Coast Guard Drawing 225B WLB 562-003.

3.8.3.1 Inspect the existing lower rudder bearing. Inspect the bearing housing and note any indications of damage.

3.8.3.1.1 Measure and record the inside diameter (ID) of the lower rudder bearing. Measurements must consist of 4 measurements at 90 degree intervals on the bearing. Take three sets of readings on the rudder bearing, one reading within 1" of the top of the bearing, one reading within 1" of the bottom of the bearing, and one reading at the center of the bearing. Record these readings for comparison to the rudder stock sleeve measurements.

3.8.3.2 Compare the readings of the lower rudder bearing to the rudder stock sleeve. Calculate bearing clearances using rudder stock data previously taken and following the calculations shown in Coast Guard Drawing 225B WLB 562-003.

3.8.4 Pintle bearing Perform the following inspections, and submit a CFR.

NOTE

The pintle bearings is THORDON XL material as described in 225B WLB 562-004.

3.8.4.1 Inspect the existing pintle bearing. Inspect the bearing housing and note any indications of damage.

3.8.4.1.1 Measure and record the inside diameter (ID) of the pintle bearing. Measurements must consist of 4 measurements at 90 degree intervals on the bearing. Take three sets of readings on the pintle bearing, one reading within 1" of the top of the bearing, one reading within 1" of the bottom of the bearing, and one reading at the center of the bearing.

3.8.4.1.2 Record above readings for comparison to the rudder stock measurements.

3.8.4.2 Compare the readings of the lower rudder bearings to the rudder stock sleeves. Calculate bearing clearances using rudder stock data previously taken and following the calculations shown in 225B WLB 562-004.

3.8.5 Upper rudder bearing inspection. Perform the following inspections, and submit a CFR.

3.8.5.1 After removal of the upper rudder bearings, clean the grease from the bearings.

3.8.5.2 Inspect the bearings in the presence of the Coast Guard Inspector. Check for any indication of damage in the bearing races.

3.8.5.3 Measure and record the radial clearance on the bearings.

3.8.5.4 Measure and record the bearing outer diameter. Compare this reading to the radial clearance on the bearing housing. Ship's force will maintain this reading in ship's files for future reference.

3.8.5.5 After completion of measurements, return the upper rudder bearings and reinstall in bearing housings.

3.9 Rudder void inspection and preservation. The Contractor must accomplish the following tasks for the rudder, using Coast Guard Drawing 225B WLB 562-2 as guidance.

3.9.1 Leak test.

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

CAUTION

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

3.9.2 Plug renewal.

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- Chase the hull insert threads of all plugs.
- Install new stainless steel, Type 316, or Monel drain 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.

3.9.3 Air test. If a Change Request is authorized and released, do the following:

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

3.9.4 Rudder void preservation.

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

3.10 Rudder reassembly. The Contractor must accomplish the following:

3.10.1 Rudder to rudder stock blue check.

3.10.1.1 Return the rudder stock to the ship.

3.10.1.2 Check the taper fit of the rudder stock to the rudder by bluing.

3.10.1.2.1 Blue the inside of the rudder taper and insert the rudder stock into the rudder.

3.10.1.2.2 Torque the lower rudder stock nuts until it sounds. Verify that the rudder stock has advanced into the rudder to the original match mark made on the stock prior to disassembly.

3.10.1.2.3 Remove the rudder stock from the rudder.

3.10.1.2.4 Inspect the contact area between the rudder stock and the rudder in the presence of the Coast Guard Inspector.

3.10.1.3 Verify that the rudder stock to the rudder contact area is at least 70% contact.

3.10.2 Reassemble the rudder and rudder stock in its original locations. Provide and install all new gaskets, o-rings and seals as described in the paragraphs above under Parts and Description.

3.10.3 Reassemble the upper bearing on the rudder stock.

3.10.3.1 Attach a dial indicator on to the rudder stock above the top of the rudder. Measure the rudder stock draw into the rudder upon nut hardening.

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3.10.3.2 Install and torque the rudder nuts. Insert the rudder nut retaining pins and tack weld the retaining pins in place. The Coast Guard Inspector must witness nut hardening and welding of locking pin.

3.10.4 Ensure that the rudders return to their original scribe marked locations on each rudder stock.

3.10.5 Reinstall the tillers arms and the pins into marked places.

3.10.6 Install rubberized sealant on the rudder stock prior to reassembly, using Coast Guard Drawing 225B WLB 562-001.

3.11 Post reassembly rudder vertical clearance check. After reassembly of the rudder stock, the Contractor must measure and record the rudder stock for vertical movement. Using a chain fall and a dial indicator, carefully lift up on the rudder stock. Measure and record the vertical clearance of the rudder stocks. Ensure that the carrier housing is not deflecting while lifting the rudder stock.

3.11.1 The Contractor must compare above measurement to the pre-disassembly measurement and ensure that the rudder vertical movement is not excessive and had not significantly changed as a check to ensure proper reassembly of the rudder and rudder stock.

3.12 Padeye removal. The Contractor must crop and dispose of all temporary lifting pad eyes, as designated by the Coast Guard Inspector. Grind flush all remaining weldments.

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

3.13 Acceptance testing. The Contractor must perform the below test, in the presence of the Coast Guard Inspector. Submit a CFR.

3.13.1 Rudder testing in drydock. Cycle the rudder prior to undocking the vessel. Verify that the rudders swing from hard over to hard over with no indications of binding and appear smooth during operation.

3.13.2 Lubricate the lower bearings with water from a garden hose during rudder testing.

3.13.3 Rudder testing after undocking. After undocking the vessel conduct the following tests of the rudder and steering system. Verify that the rudders swing from hard over to hard over with no indications of chattering or binding and appear smooth during operation.

3.13.3.1 Cycle the rudders from 35 degrees left rudder to 30 degrees right rudder. Measure and record the amount of time it takes the rudders to complete the cycle.

3.13.3.2 Cycle the rudders from 35 degrees right rudder to 30 degrees left rudder. Measure and record the amount of time it takes the rudders to complete the cycle.

4. NOTES

4.1 Rudder seal kit contents. The Rudder Seal Kit provided as GFP (NSN 5330-01-565-8083) consists of the following components:

TABLE 1 - RUDDER SEAL KIT

LINE #	DESCRIPTION	PART NUMBER	QTY
1	Lip Seal; 16" X 17" X .350" Nominal Size	MMC P/N 80195-00 Alternate P/N SKF P/N HD1 NO. 511202	1 ea.
2	Lip Seal; 16" X 17.5" X .875" Nominal Size	MMC P/N 81095-002 Alternate P/N SKF P/N HDSA2 NO. 1600926.	1 ea.
3	Gasket; Commerical Grade 1/16" Thick Neoprene Rubber, 70 Durometer. Dimensions: 25" Od X 18.75" Id Nominal Size. Bolts Holes: Eight Each 11/16" Diameter On 22.62" Bolt Circle Equally Spaced,	MMC P/N 81079-002	1 ea.
4	Gasket; Commerical Grade 1/16" Thick Neoprene Rubber, 70 Durometer. Dimensions: 25" Od X 18.62" Id Nominal Size. Bolts Holes: Eight Each 25/64" Diameter On 22.00" Bolt Circle Equally Spaced.	MMC P/N 81079-003	1 ea.
5	Gasket; Commerical Grade 1/16" Thick Neoprene Rubber, 70 Durometer. Dimensions: 35" Od X 30" Id Nominal Size, Bolt Holes: Eight Each 1 1/16" On 32.00 Bolt Cirle.	MMC P/N 81079-001	1 ea.
6	O-Ring; Buna-N, 70 Dur0meter. Dimensions: 19.50" X 18.50" X .50" Nominal.	MMC P/N 81096-004	1 ea.
7	O-Ring; Buna-N, 70 Dur0meter. Dimensions: 19.00" X 18.50" X .25" Nominal.	MMC P/N 81096-003	1 ea.
8	O-Ring; Buna-N, 70 Dur0meter. Dimensions: 19.00" X 18.00" X .50" Nominal.	MMC P/N 81096-002	1 ea.
9	O-Ring; Buna-N, Shore A Harness 70 Dur0meter. Dimensions: 14.50" X 14.00" X .25" Nominal.	MMC P/N 81096-001	1 ea.

WORK ITEM 58: Rudder Bearings, Renewal

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to remove the existing Thordon SXL bearings from the lower bearing housing and the Pintle bearing Housing and install new Thordon SXL in their place.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
N	Lower bearing	NSN: 3120-21-912-7635	1 ea.	6,661.26
N	Pintle bearing	NSN: 3120-21-912-7634	1 ea.	3,380.38

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B-WLB 562-001, Rev J; STEERING COMPONENTS A/D
 Coast Guard Drawing 225B-WLB 562-002, Rev D; RUDDER - STRUCT A & D
 Coast Guard Drawing 225B-WLB 562-003, Rev -; Thordon Lower Rudder Stock Bearing
 Coast Guard Drawing 225B-WLB 562-004, Rev -; Pintle Bearing

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022,
 General Requirements
 Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022,
 Requirements for Preservation of Ship Structures

OTHER REFERENCES

The Society for Protective Coatings (SSPC)-SP 3, Power Tool Cleaning, 11-1-2004

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

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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 Removal of Existing Thordon SXL Bearings. The Contractor must accomplish the following:

3.2.1 Prior to removing existing bearings ensure any inspections, measurements, or other data collection has completed.

3.2.2 Remove and dispose of the Rudder's existing lower rudder bearing and Pintle rudder bearings (2 bearings). Rudder bearings details and arrangements are found in CG Dwgs 225B-WLB 562-1, 225B-WLB 562-2, 225B-WLB 562-3, and 225B-WLB 562-4.

3.2.3 Abrasive blast to near white finish in accordance with SSPC-SP-10, the rudder lower bearing housing and its associated rudder tube and gland housing. Ensure prior to sandblasting that an airtight closure at the top of the housing is installed. Inspect the rudder stock housing and its associated rudder tube and gland housing in the company of the Coast Guard Inspector directly after abrasive blasting. Submit Condition Found Report.

3.2.4 Prepare and paint the IDs of the rudder stock bearing housing and rudder tube (do not paint gland housing ID) with two coats each of Mare Island Epoxy formula 150 primer. Each coat must have a MDFT of 3 mils. When Primer is dry, take ID measurements at three places along the length of the bearing housings and provide a Condition Found Report to the Coast Guard Inspector within 24 hours.

3.3 Lower Bearing Renewal. The Contractor must accomplish the following:

3.3.1 The Coast Guard will supply a rough cut GFM Lower Rudder Stock bearing made of THORDON SXL bearing material. The contractor will be required to finish machine the internal and external bearing diameters to suit the recommendations of the THORDON bearing technical representative.

3.3.2 Measure and record the rudder stock liner diameters in way of the lower bearing at three locations along the length of the lower rudder bearing. Design journal dimension is 18.500"

3.3.3 When primer is dry, measure and record the diameter of the lower rudder bearing housing in way of the lower rudder bearing. Take ID measurements at three places along the length of the bearing housings.

3.3.4 Measure and record the diameter of the lower rudder bearing housing.

3.3.5 Provide a Condition Found Report with measurement data to the Coast Guard Inspector within 24 hours.

3.3.6 Provide the measurements on the Condition Found Report to a THORDON BEARING Technical

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Representative. THORDON BEARING will calculate the correct inner and outer diameters for the new bearing. Use 113 degree Fahrenheit water for thermal swell calculations. Use -13 degree Fahrenheit water for interference fit calculations. Use 0.021 for initial (new) running clearance.

3.3.7 Machine the new GFM THORDON bearing in accordance with the guidance given by the technical representative.

3.3.8 Install the Thordon SXL bearings in accordance with manufacturer's guidance and CG Dwg 225B-WLB 562-3. CG Dwg 225B-WLB 562-3 has generic Thordon sizing calculations, they may be used as a checkpoint only, custom calculations are required per above paragraph 3.3.6.

3.3.9 After installation measure bearing's ID to confirm targeted clearance will be obtained. The measured dry ID, minus anticipated thermal swell, minus anticipated water swell, plus journal OD ... must be 0.021" or greater.

3.4 Pintle Bearing Renewal. The Contractor must accomplish the following:

3.4.1 The Coast Guard will supply a rough cut GFM Pintle Rudder Stock bearing made of THORDON SXL bearing material. The contractor will be required to finish machine the internal and external bearing diameters to suit the recommendations of the THORDON bearing technical representative.

3.4.2 Measure and record the rudder stock liner diameters in way of the Pintle bearing at three locations along the length of the Pintle rudder bearing. Design journal dimension is 14.000".

3.4.3 When primer is dry, measure and record the diameter of the Pintle rudder bearing housing in way of the Pintle rudder bearing. Take ID measurements at three places along the length of the bearing housings.

3.4.4 Measure and record the diameter of the Pintle rudder bearing housing.

3.4.5 Provide a Condition Found Report with measurement data to the Coast Guard Inspector within 24 hours.

3.4.6 Provide the measurements on the Condition Found Report to a THORDON BEARING Technical Representative. THORDON BEARING will calculate the correct inner and outer diameters for the new bearing. Use 113 degree Fahrenheit water for thermal swell calculations. Use -13 degree Fahrenheit water for interference fit calculations. Use 0.016 for initial (new) running clearance.

3.4.7 Machine the new GFM THORDON bearing in accordance with the guidance given by the technical representative.

3.4.8 Install the Thordon SXL bearings in accordance with manufacturer's guidance and CG DWG 225B-WLB 562-4. CG Dwg 562-4 has generic Thordon sizing calculations, they may be used as a checkpoint only, custom calculations are required per above paragraph 3.4.6.

3.4.9 After installation measure bearing's ID to confirm targeted clearance will be obtained. The measured dry ID, minus anticipated thermal swell, minus anticipated water swell, plus journal OD ... must be 0.016" or greater.

3.5 Rudder Reassembly. The Contractor must accomplish the following:

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3.5.1 Continue with reassembly of rudder in accordance with Definite item, “Rudder and Rudder Stock Removal and Inspection”.

4. NOTES

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

WORK ITEM 59: Thruster Units (Bow And Stern), Overhaul**1. SCOPE**

1.1 Intent. This work item describes the requirements for the Contractor to perform overhaul of the Bow and Stern Thruster Units.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
N	Seal Kit, Thruster	NSN: 2010-01-555-9048	2 ea.	4376.00
N	Anode, Zinc	NSN: 5365-01-495-5350	18 ea.	113.75
N	**Seal Spacer (B125SM44178)	NSN: 2010-01-495-6823	2 ea.	700.00
N	**Shaft Sleeve	NSN: 2010-01-495-2638	2 ea	5702.40

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

2. REFERENCES**COAST GUARD DRAWINGS**

Coast Guard Drawing 225B-WLB 568-1, Rev A, Bow Thruster A & D

Coast Guard Drawing 225B-WLB 568-2, Rev A, Stern Thruster Arrangement and Detail

Coast Guard Drawing 225-WLB 568-202, Rev N, Bow & Stern Thruster

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3556, Manufacturer's Instruction Book-SWBS Group(s) 568, Bow and Stern Thruster – Model 125/3 STAY/FP

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

Surface Forces Logistics Center Standard Specification 5000 (SFLC Std Spec 5000), 2022, Auxiliary Machine Systems

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Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022,
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OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep. The Contractor must provide the services of an OEM authorized/licensed Tech Rep for the Rolls Royce (formerly Bird Johnson) equipment/system, to accomplish the following on site:

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

3.1.1.1 The Contractor must ensure that the Tech Rep is a certified representative of Rolls Royce.

3.1.1.2 The Contractor must submit the Tech Rep's name and résumé to the COR at the Arrival Conference.

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

3.1.3.1 Hydraulic system. The Contractor must 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 below-listed:

- Grid Cover on port thruster tube.
- Grid Cover on starboard thruster tube.

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

3.3 Hydraulic fluid sampling and testing. The Contractor must sample and test the system hydraulic fluid in accordance with SFLC Std Spec 5000, Appendix C, Paragraph C2.1 (Fluids).

3.4 Fluid disposal. The Contractor must drain and dispose of all oil from the gear case, approximately 30 gallons, in accordance with all applicable Federal, state and local regulations.

3.5 Maintenance. The Contractor must perform the following maintenance requirements to the thruster units in accordance with TP 3556 and as shown on Coast Guard Drawing 225B WLB 568-001, 225B-WLB 568-002 and 225-WLB 568-202.

3.5.1 Polish each propeller to a 63 RMS surface finish. Visually inspect each propeller for pitting, erosion, and bending. Submit a CFR. Include in the report the condition of the blade roots and tips and any recommendations for repair.

3.5.2 Visually inspect the magnetic plug to the gear box for the presence of any metal particles. Remove all metal particles from the plug. Thoroughly clean each lubrication oil head tank and gear box free of sludge and any other foreign particles. Submit a CFR.

3.5.3 In the presence of the Coast Guard Inspector, renew the system oil in accordance with TP 3556, and SFLC Std Spec 5000, Appendix C, Paragraph C2.1 (Fluids).

3.5.4 Remove and dispose of each existing propeller shaft seal. Clean and visually inspect each shaft surface for excessive wear.

3.5.5 Reassemble and reinstall all removed components, with new Contractor-furnished propeller shaft seal and associated O-rings.

3.5.6 Visually check for any excessive wear or damage to the teeth of the gears. Check the wear pattern on the spiral bevel gears to diagnose any problems. Submit a CFR.

3.5.7 Measure the shaft runout to inspect for bends. Take gear backlash readings on each gear set and compare results with the number etched on the back of the gear. Submit a CFR.

3.5.8 Renew the pinion gear seal in accordance with TP 3556.

3.6 Zinc renewal. The Contractor must renew zincs located on the thruster gearbox with Contractor supplied zinc anodes..

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

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

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3.8.1 Test both Thrusters at dockside and at sea trials.

3.8.2 Operate thrusters over entire range of RPM in both directions.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 60: Hull Fittings (Weight Handling Rigging Hardware), Inspect and Test

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to inspect and test designated hull fittings, listed in Table 1.

TABLE 1 - DESIGNATED ATON HULL FITTINGS

QTY	DESCRIPTION	LOCATION
4	Pad Eye and D-Ring, Flush Deck (CGDR50T01)	Buoy Deck, 20'-9" Off CL, P/S
10	Pad Eye and D-Ring, Flush Deck (CGDR50T01)	Buoy Deck, 19' Off CL, P/S
2	Pad Eye and D-Ring, Flush Deck (CGDR50T01)	Buoy Deck, Frame 37, P/S
14	Pad Eye and D-Ring, Flush Deck (CGDR50T01)	Buoy Deck, 15' Off CL, P/S
2	Pad Eye and D-Ring, Flush Deck (CGDR50T01)	Buoy Deck, Frame 54, P/S
16	Pad Eye and D-Ring, Flush Deck (CGDR50T01)	Buoy Deck, 108" Off CL, P/S
2	Pad Eye and D-Ring, Flush Deck (CGDR50T01)	Buoy Deck, Frame 52, P/S
8	Pad Eye and D-Ring, Flush Deck (CGDR50T01)	Buoy Deck, 36" Off CL, P/S
8	Pad Eye, Flush Deck (S-A S299)	Buoy Deck, 36" Off CL, P/S
10	Pad Eye, Flush Deck (S-A S299)	Cargo Hold, Frame 31, P/S
10	Pad Eye, Flush Deck (S-A S299)	Cargo Hold, Frame 33, P/S
10	Pad Eye, Flush Deck (S-A S299)	Cargo Hold, Frame 35, P/S
9	Pad Eye, Flush Deck (S-A S299)	Cargo Hold, Frame 37, P/S
36	D-Ring w/ Hold Down Strap (Austin 982-0046)	Cargo Hold, Bulkheads
6	Pad Eye, Flush Deck (S-A S299)	SORS Hold, Frame 41, P/S
6	Pad Eye, Flush Deck (S-A S299)	SORS Hold, Frame 43, P/S

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6	Pad Eye, Flush Deck (S-A S299)	SORS Hold, Frame 45, P/S
6	Pad Eye, Flush Deck (S-A S299)	SORS Hold, Frame 47, P/S

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 573-11, Rev G, ATON Tie Downs

Coast Guard Drawing 225B WLB 672-001, Rev C, Storerooms, Cargo Stowage and Ship Store Arrangement and Details

COAST GUARD PUBLICATIONS

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

Surface Forces Logistics Center Standard Specification 5000 (SFLC Std Spec 5000), 2022, Auxiliary Machine Systems

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

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

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equipment, components, and spaces to original condition of cleanliness.

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

3.2 Inspection and test particulars. The Contractor shall accomplish the following for each hull fitting designated in paragraph 1.1, using Coast Guard Drawings 225B WLB 573-11 and 225 WLB 672-001, as guidance., and submit a CFR:

3.2.1 Visual inspection. Visually inspect all fittings for excessive damage, wear, corrosion, distortion, elongation of holes, gouges, pits, and cracks.

3.2.2 Measurements. Perform below measurement tasks and record percent wastage. Be aware that a 10% reduction in the original dimensions shall be cause for removal from service.

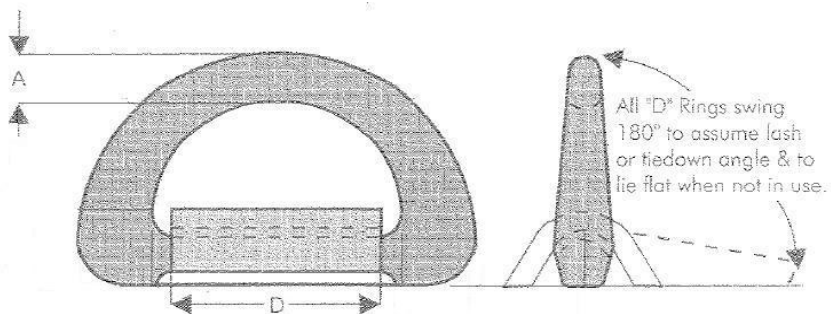
3.2.2.1 D-Ring. Using a suitable micrometer, measure the diameter (measurement A) at 90-degrees to the horizontal (top dead center). See Table 2 and the sketches provided in this work item as guidance, as applicable.

3.2.2.2 Flush deck tie-downs. Using a suitable micrometer, measure the diameter (measurement A) at center of bar of the S301 and S299 fittings. See Table 2 and the sketches provided in this work item as guidance, as applicable.

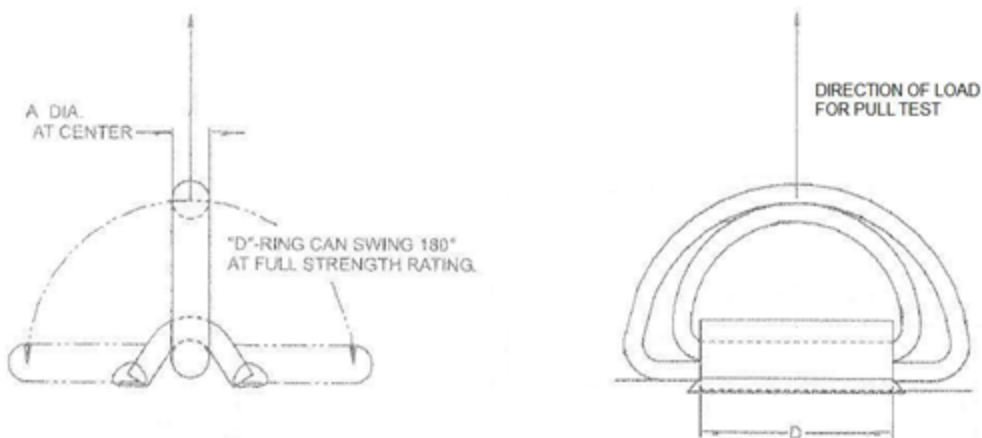
TABLE 2 - HULL FITTING MEASUREMENTS

MANUFACTURER	MODEL/MANUFAC. PART NUMBER		RING/BAR DIAMETER (MEASUREMENT A) (INCHES)
	DESIGNATOR	STRAP LENGTH (MEASUREMENT D) (INCHES)	
US Coast Guard	CGDR50T01	5.13	1.00
Schoellhorn-Albrecht	S113-50 (Generation 1)	5.0	1.00*
	S113-50 (Generation 2)	4.00	1.08
	S113-50 (Generation 3)	5.13	1.00
	S301		1.5
	S299		1.0
Peck and Hale	F654		0.91
Peck and Hale	F187	2.38	0.50
Austin Hardware and Supply	982-0046		0.625

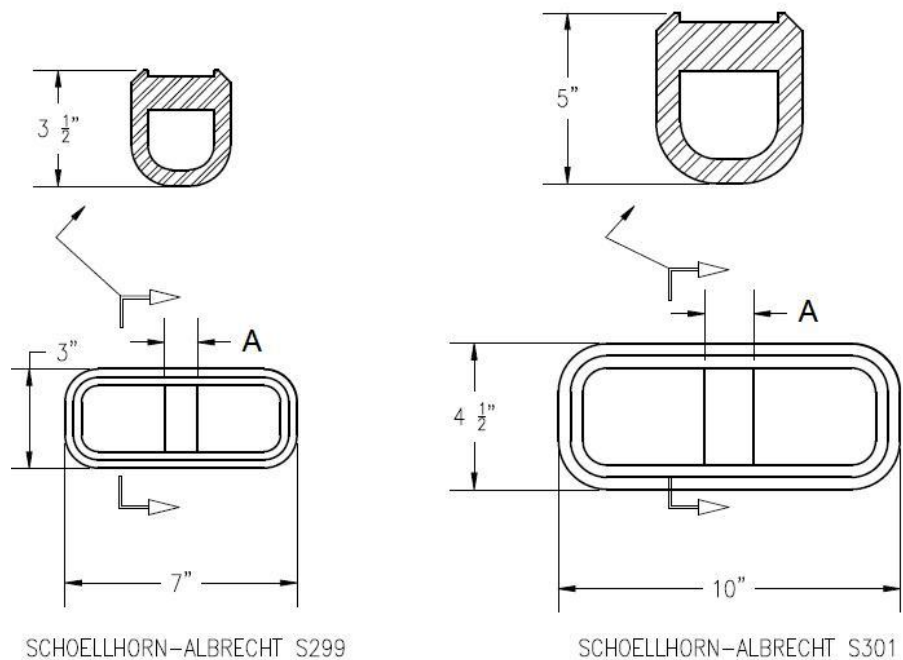
*D-Ring has a tapered cross section. Measurement is only valid in the vertical. See Sketch 1.



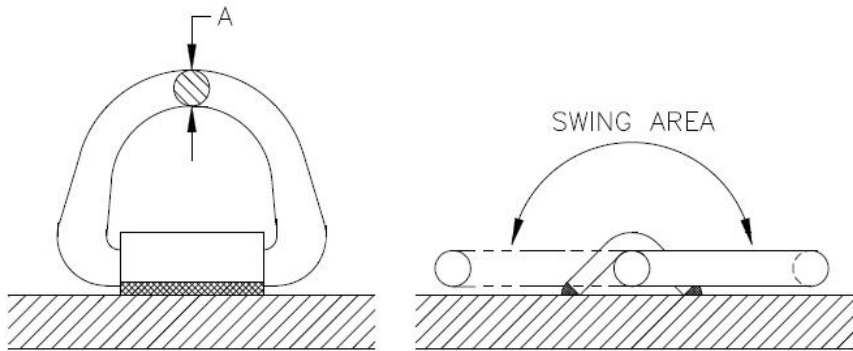
Sketch 1. Schoellhorn-Albrecht S113-50 (Generation 1) D-Ring and Strap.



Sketch 2. Schoellhorn-Albrecht S113-50 (Generation 2 and 3) & Coast Guard CGDR50T01 D-Ring & Strap



Sketch 3. Schoellhorn-Albrecht S299 and S301 Flush Deck Tie Downs.



Sketch 4. Peck and Hale F187 D-Ring and Strap.



Sketch 5. Austin Hardware and Supply 982-0046 Heavy Duty Tie Down Rings with Clip.

3.2.3 Pull-test. Pull test all pad eyes and tie-downs in accordance with paragraph 3.2.7 (Pull test) of SFLC Std Spec 5000 , using Coast Guard Drawings 225B WLB 573-11 and 225 WLB 672-001, as guidance..

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

4. NOTES

This section is not applicable to this work item.

USCGC ALDER (WLB-225B) DRYDOCK AVAILABILITY FY2027

57301_HydChnStprInspctSrvc_ACC_0721_IBCT
REC_57301_HydChnStppr_IBCT_225' WLB ('B' Class: Hulls 206-216) (0721)

WORK ITEM 61: Hydraulic Chain Stoppers, Inspect And Service

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to inspect and service the Marinete Marine Corp. Model 573-009 Rising Sheave Chain Stoppers (RSCS).

1.2 Government-furnished property.

A Team: Cylinder assembly prices have dropped below the price of the repair kits and are readily available from supply. For this reason, the cylinders are now renewed rather than repaired. If this changes, task 4 can be changed from 'Renew' to 'Disassemble and Inspect' and the GFE cylinder below replaced with:

N Repair Kit, Cylinder NSN: 3040-01-485-3997 2 ea. 2,484.27.

M T I	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMAT ED COST (\$/UNIT)
N	Repair Kit Assembly	NSN: 2040-01-496-9418	2 ea.	1,968.67
N	Rod Seal Repair Kit (FL-2605-29 PC#37)	NSN: 2040-01-496-9422	2 ea.	3,030.07
N	Repair Kit, Cable Chain (Includes Pads) (FL-2605-29 PC#36)	NSN: 3020-01-538-0684	16 ea.	257.99
N	**Cylinder Assembly Actuating, Linear	NSN: 3040-01-496-9424	4 ea.	1,969.24

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 573-009, Rev E, Bi-Dir Ch Stopper With Retractable Roller Stopper

Coast Guard Drawing 225B WLB 573-012, Rev -, Rising Sheave Chain Stopper Ripout Incidental to Upgrade

Coast Guard Drawing 225B WLB 573-013, Rev B, Rising Sheave Chain Stopper Mechanical Mods Incidental to Upgrade

Coast Guard Drawing 225B WLB 573-014, Rev -, Rising Sheave Chain Stopper Hydraulic Mods Incidental to Upgrade

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3750, SWBS 573-A, Dec 2012, Rising Sheave Chain Stopper

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

Surface Forces Logistics Center Standard Specification 5000 (SFLC Std Spec 5000), 2022, Auxiliary Machine Systems

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR. The Contractor shall submit a CIR for the inspections listed in the following task(s) in Table 1:

- Task #1.
- Task #2.
- Task #3.
- Task #4.

3.1.2 Tech Rep.

Not applicable.

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

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

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Immediately after disconnecting or removing components from the hydraulic system, seal all openings to the rest of the system using caps for externally threaded connection points, bolt-on blanks, or taped-on discs/covers made of durable plastic or sheet-metal that is no less than 1/16-inch thick.

NOTE

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

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

3.2 Inspection and repair tasks. The Contractor shall refer to Coast Guard Drawing 225B WLB 573-009 and TP-3750 as guidance. Perform all work in Table 1 below accordance with SFLC Std Spec 5000.

TABLE 1 - TASKS

				ADDITION REQUIREMENTS	
#	TASK TYPE (SFLC STD SPEC 5000 PARA. REF.)	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
1	Operate and Inspect	2	Hydraulic Chain Stopper Assembly	3.2.1 (Operate and Inspect)	Additional inspections: 1. Check the hydraulic stopper mechanical foundation and all mounting hardware. 2. Inspect hydraulic hoses, ensuring that hose tags match hose log installation dates. 3. Verify the relief valve; adjust settings to 2150 PSI. 4. Visually inspect the seal gland; check for signs of water intrusion. 5. Visually inspect the stopper roller. 6. Verify proper speed of raise and lower (3 - 6 seconds each way). 7. Submit a CIR.
2	Disassemble and Inspect	2	Directional Control Valve Assembly	C2.4 (Valves and manifolds)	Submit a CIR.
3	Disassemble and Inspect	2	Rising Sheave Assembly (Sheave Pin Assembly)	3.2.3 (Disassemble and Inspect)	1. Renew all fasteners exposed to weather. 2. Lubricate in accordance with references. 3. Reassemble with provided GFE. 4. Submit a CIR.

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				ADDITION REQUIREMENTS	
#	TASK TYPE (SFLC STD SPEC 5000 PARA. REF.)	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
4	CYLTASK	All	Hydraulic Cylinder	3.2.3 (Disassemble and Inspect)	1. Disassemble and Inspect 2. Submit a CIR. 3. Reassemble with provided GFE. Inspect extension rods (Pc 27 of DWG FL-2605-029) for drilled through-hole. If hole is not present, drill as directed by DWG FL-2605-029, Detail 51- C
5	NDE	2	Hydraulic Chain Stopper Assembly and Machinery Foundation	3.2.5 (NDE)	Areas to NDE: 1. Entire stopper structure and all weld joints attaching chain stoppers to deck. 2. Foundation of the hydraulic rams and holdback blocks. 3. Submit a CIR.
6	Preserve	2	Hydraulic Chain Stopper Assembly, including Foundation and Chain Stopper Pockets.	3.2.4 (Preservation)	Finish coat color: 1. Chain stopper: Black (17038) 2. Foundation: Gray (16099).
7	Groom and Lubricate	2	Hydraulic Chain Stopper Assembly	3.2.6 (Groom and lubricate)	
8	Final Test	2	Hydraulic Chain Stopper Assembly	B2.2 (Hydraulic chain stoppers)	Operational Load Test Weight: 16,500 (+0 -825) pounds Submit a CFR.
9	Fabricate and Install	2	Label Plate	B2.9 (Label plates)	Weight: 16,500 (+0 -825) pounds

3.3 Special requirements for various components. If a Change Request has been authorized for additional work on any of the components listed in Table 2 below, the Contractor shall refer to the corresponding Appendix or paragraph of SFLC Std Spec 5000.

TABLE 2 – SPECIAL REQUIREMENTS

COMPONENT	APPENDIX & PARAGRAPH IN SFLC STD SPEC 5000
Fluids	C2.1
Hose assemblies	C2.2
Piping and tubing	C2.3
Valves and manifolds	C2.4
Gages	C2.5
Gas charged accumulators	C2.6
Heat exchangers and fluid coolers	C2.7
Systems	C2.8

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Fastener assemblies	D2.1
Wire rope assemblies	D2.2
Brakes and clutches	D2.3
Open gearing and gear reducers	D2.4

4. NOTES

This section is not applicable to this work item.

WORK ITEM 62: Crossdeck Winches, Inspect and Service**1. SCOPE**

1.1 Intent. This work item describes the requirements for the Contractor to inspect and service the crossdeck winch assemblies and flag block assemblies, listed in Table 1.

TABLE 1 - EQUIPMENT

EQUIPMENT	LOCATION
Crossdeck Winch (PFW) – Model BMD-471L	Port Fwd
Crossdeck Winch (SFW) – Model BMD-471R	Stbs Fwd
Crossdeck Winch (PAW) – Model BMD-471R	Port Aft
Crossdeck Winch (SAW) – Model BMD-471L	Stbd Aft
Flag Block – Model -420	Port Fwd
Flag Block – Model -420	Stbd Fwd

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
N	Hand Pump SS	NSN: 4320-01-517-1444	1 ea	1,499.66
N	Pressure Gauge - Model BMD-471	NSN: 6685-01-437-2519	4 ea	43.79
N	Wire Rope Assembly	NSN: 4010-01-643-2077	4 ea	900.00
N	Hydraulic Brake Repair Kit - Model BMD-471	NSN: 3950-01-526-9090	4 ea.	913.00
N	Counterbalance Valve - Model BMD-471	NSN: 4810-01-353-0586	4 ea.	150.00
N	Shuttle Valve - Model BMD-471	NSN: 4820-01-317-2748	4 ea.	35.00
N	Hydraulic Motor Seal Kit - Model BMD-471	NSN: 5330-01-475-4566	8 ea.	84.00
N	Clutch Shoe - Model BMD-471	NSN: 4910-01-475-4125	4 ea.	56.90
N	Drum Bushing - Model BMD-471	NSN: 3950-01-631-0884	8 ea.	272.00
N	Shaft Bushing - Model BMD-471	NSN: 3950-01-631-0771	4 ea.	298.00
N	Gearbox Seal Kit (For Winch Gearbox Assemblies) - Model BMD-471	NIIN: XFC343225 PN: YMD-8194-R	4 ea.	70.00
N	Control Station Repair Parts. Kit	NSN: 6110-01-644-9898	4 ea.	438.00

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N	Flag Block Pivot Bearing	NSN: 3110-01-644-9905	4 ea.	675.00
N	Flag Block Bearing Cup, Sheave	NSN: 3110-01-644-9670	4 ea.	231.00
N	Flag Block Bearing Cone, Sheave	NSN: 3110-01-013-4036	4 ea.	182.00
N	Seal	NSN: 5330-01-287-2826	4 ea.	104.00
N	Manifold Repair Kit	PN: YMD-8192-R	4 ea.	551.00

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

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing FL-1702-11, Rev -, Inspection of Sheaves
 Coast Guard Drawing 225B-WLB 549-1, Rev -, Onboard Lubrication Requirements
 Coast Guard Drawing 225B-WLB 556-1, Rev B, Hydraulic System Diagram
 Coast Guard Drawing 225B-WLB 573-1, Rev -, Buoy Handling System Arrangement
 Coast Guard Drawing 225B-WLB 573-2, Rev -, Weight Handling System Arrangement

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3558, Apr 2008, Manufacturer's Instruction Book-SWBS Group(s) 573, Section B, Cross Deck Winch – Model BMD-471
 Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements
 Surface Forces Logistics Center Standard Specification 5000 (SFLC Std Spec 5000), 2022, Auxiliary Machine Systems

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR. The Contractor must submit a CIR. for the following inspections listed in Table 2:

- Tasks #1.
- Task #2.
- Task #3.
- Task #4.
- Task #6.
- Task #7.
- Task #8.

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- Task #9.
- Task #11.
- Task #12.
- Task #17.

3.1.2 Tech Rep.

Not applicable.

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

3.1.3.1 Protective measures, hydraulic system(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).

3.2 Brake lining. The Contractor must be aware that the brake lining contains asbestos. Handle and dispose of the friction disks, in accordance with all applicable federal, state, and local regulations.

3.3 Contractor-furnished parts. The Contractor must furnish and renew all snap rings, bearings, thrust buttons, seals, o-rings, gaskets, seal washers, keys, shims, lockwashers, dowel pins, thrust washers, cotter pins, rope clamp, foundation bolts and nuts, as applicable, in accordance CG TP 3558, SWBS 573, Sections A and B.

3.4 Tasks. The Contractor must perform the tasks designated in Table 2, using SFLC Std Spec 5000, Coast Guard Drawings 225B-WLB 549-1, 225B-WLB 556-1, 225B-WLB 573-1, 225B-WLB 573-2, and CG TP 3558, SWBS 573, Sections A and B as guidance.

TABLE 2 – RECURRING TASKS

#	TASK TYPE (SFLC STD SPEC 5000 PARA. REF.)	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
1	Operate and Inspect	4	Crossdeck Winch Assembly	3.2.1 (Operate and Inspect)	Submit a CIR.
2	Disassemble and Inspect	4	Crossdeck Winch Assembly	3.2.3 (Disassemble and Inspect)	Winch Main Drum Shaft Assembly, Clutch Assembly, And Warping Head Assembly

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#	TASK TYPE (SFLC STD SPEC 5000 PARA. REF.)	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
					Submit a CIR.
3	Disassemble and Inspect	4	Hydraulic Brake Assembly	3.2.3 (Disassemble and Inspect), D2.3 (Brakes and clutches)	Submit a CIR. GFP.
4	Disassemble and Inspect	4	Gear Box Assembly	3.2.3 (Disassemble and Inspect)	Renew GFP seals, Flush the gear box and renew oil. Submit a CIR.
5	Renew	4	Hydraulic Cartridge Valve Assemblies	C2.4 (Valves and manifolds)	GFP Counter balance valve GFP Needle valve GFP Shuttle valve
6	Disassemble and Inspect	4	Winch Hydraulic Motor Assembly	3.2.3 (Disassemble and Inspect)	GFP. Submit a CIR.
7	Disassemble and Inspect	4	Control Station	3.2.3 (Disassemble and Inspect)	GFP. Submit a CIR.
8	Disassemble and Inspect	4	Winch Assembly	3.2.3 (Disassemble and Inspect)	Submit a CIR. GFP drum and shaft bushing. Renew all bearings and seals.
9	Disassemble and Inspect	4	Band Brake	3.2.3 (Disassemble and Inspect)	Submit a CIR. Renew Brake lining and fasteners. 6.5 ft Scan-Pac Green Gripper 5/8" x 4 Wide brake lining and 43 set fasteners.
10	Renew	4	Wire Rope Assembly	D2.2 (Wire Rope Assemblies)	GFP Wire rope assembly. Note, the GFP wire rope is not lubricated.
11	Disassemble and Inspect	4	Directional Control Valve	3.2.3 (Disassemble and Inspect)	Submit a CIR. Renew seals.
12	Disassemble and Inspect	4	Clutch assembly	3.2.3 (Disassemble and Inspect)	Submit a CIR. GFP.
13	Renew	4	Pressure Gage	Renew	GFP
14	NDE	4	Cross Deck Winch Foundations	3.2.5 (NDE)	Areas to NDE: all weld

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#	TASK TYPE (SFLC STD SPEC 5000 PARA. REF.)	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
					joints connecting winch foundations to the deck. Submit a CFR.
15	Renew	4	Foundation Fasteners	D2.1 (Fastener assemblies)	Provide, All foundation bolts must be 3/4 - 10NC Grade 8. Tighten all loose bolts to the torque recommended by the TP 3558, SWBS 573, Sections A and B.
16	Preserve	4	Winch Assembly and associated foundation	3.2.4 (Preservation)	Surfaces to be preserved include, but are not limited to: inside and outside surfaces of foundations, and all winch exterior surfaces that are accessible with no disassembly. Select the following top coat colors: - Spar (10371) for equipment surfaces. - Black (17038) for foundation surfaces.
17	Disassemble and Inspect	2	Flag Block, Bulkhead-Mounted Sheave Assembly	3.2.3 (Disassemble and Inspect)	Submit a CIR. GFP, Fleet Drawing FL-1702-11 Renew bearings and seals.
18	Groom and Lubricate	4	Crossdeck Winch Assembly	3.2.6 (Groom and lubricate)	
19	Weight Test	4	Crossdeck Winch Assembly	B2.3 (Winches)	See CG TP 3558, SWBS 573, Submit a CFR.
20	Fabricate and Install	4	Label Plate	B2.9 (Label plates)	

3.5 Additional tasks. The Contractor must perform the task(s) marked with an “X” in Table 3. Combine or group CFRs, as required, to minimize administrative burden and maximize efficiency.

TABLE 3 – ADDITIONAL TASKS

DESIGNATED EQUIPMENT	TASK TYPE (SFLC STD SPEC 5000 PARA. REF.)	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000*	OTHER
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USCGC ALDER (WLB-225B) DRYDOCK AVAILABILITY FY2027

X PFW X SFW X PAW X SAW	Renew	Hose Assembly - Externally Installed (Set Of 6 Per Winch)	C2.2 (Hose assemblies)	
X	Disassemble and Inspect	Hand Pump Assembly	3.2.3 (Disassemble and Inspect)	See CG TP 3558, SWBS 573, Sections A and B. Submit CFR
X	Renew	Hand Pump Assembly	N/A	See CG TP 3558, SWBS 573, Sections A and B.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 63: Hydraulic Inhaul Winch, Inspect And Service**1. SCOPE**

1.1 Intent. This work item describes the requirements for the Contractor to inspect and service the hydraulic inhaul (buoy chain) winch.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
N	Roller bearing Unit	NSN: 3130-01-504-4363	2 ea.	4,012.00
N	Grease seal	NSN: 5330-01-462-5544	4 ea.	79.25
N	Level wind pivot bushing	NSN: 3120-01-621-2293	1 ea.	1,139.00
N	Level wind thrust bearing	NSN: 3120-01-621-2300	2 ea.	483.30
N	Rexroth DCV	NSN: 4810-01-507-0037	1 ea.	208.29
N	Rexroth Sandwich Flow Control	NSN: 4810-01-505-9289	1 ea.	250.00
N	Sun Sandwich Relief Valves	NSN: 4820-01-439-2451	2 ea.	900.00
Y	Level Wind Hydraulic Cylinder	NSN: 3040-01-441-3721	1 ea.	7,423.00
N	3:1 Pilot Ratio, Vented Counterbalance Valve Assembly	NSN: 4820-01-563-5841	1 ea	98.70
N	Fully Adjustable Needle Valve	NSN: 4820-01-416-0579	1 ea	48.75
N	Wire Rope Assembly	NSN: 4010-01-646-6972	1 ea.	500.00
Y	**Hydraulic Motor	NSN: 4320-01-445-2248	1 ea	23,998
N	**Pump, Hydraulic Ram, Hand Driven	NSN: 4320-01-286-4065	1 ea.	419.77
N	**Cylinder Pin	NSN: 5315-01-515-9847	1 ea	500.00
N	**Cylinder Pin	NSN: 5315-01-515-9912	1 ea	520.00

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

2. REFERENCES**COAST GUARD DRAWINGS**

Coast Guard Drawing 225B WLB 549-001, Rev A, Onboard Lubrication Requirements

Coast Guard Drawing 225B WLB 556-001, Rev F, Hydraulic System Diagram

Coast Guard Drawing 225B WLB 573-001, Rev E, Buoy Handling System Arrangement

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Coast Guard Drawing 225B WLB 573-002, Rev -, Weight Handling System Arrangement
Coast Guard Drawing FL 7101-573, Rev L, Buoy Chain Winch Assy Model CW1

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3498, Section A, Jul 2015, Buoy Chain Winch
Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022,
General Requirements
Surface Forces Logistics Center Standard Specification 5000 (SFLC Std Spec 5000), 2022,
Auxiliary Machine Systems
Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022,
Requirements for Preservation of Ship Structures

OTHER REFERENCES

ASTM International (ASTM) D5363, 2008, Standard Specification for Anaerobic Single
Component Adhesives (AN)
MIL-S-45180, 1998; Sealing Compound, Gasket, Hydrocarbon Fluid and Water Resistant
MIL-PRF-24176 , Oct 2004, Cement, Epoxy, Metal Repair And Hull Smoothing (Metric)
The Society for Protective Coatings (SSPC)/NACE International (NACE) Joint Surface
Preparation Standard SSPC-SP 10/NACE No.2, 2007, Near-White Blast Cleaning

3. REQUIREMENTS

3.1 General.

3.1.1 CIR. The Contractor must submit a CIR for the inspections listed in the following task(s) in Table 1:

- Task#1

3.1.2 Tech Rep.

Not applicable.

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

3.1.3.1 Protective measures, hydraulic system(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).

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3.1.5 General hydraulic system requirements. The Contractor must perform all work in accordance with paragraph 3.1 of SFLC Std Spec 5000, as applicable.

3.1.6 Contractor-furnished parts. The Contractor must furnish all snap rings, bearings, thrust buttons, seals, o-rings, gaskets, seal washers, keys, shims, lockwashers, bushings, dowel pins, thrust washers, cotter pins, rope clamp, foundation bolts and nuts, as applicable, in accordance with Coast Guard Drawings 225B WLB 549-001, 225B WLB 556-001, 225B WLB 573-001, and 225B WLB 573-002.

3.2 Recurring maintenance requirements. The Contractor must perform the tasks in Table 1 below.

TABLE 1 – RECURRING MAINTENANCE REQUIREMENTS

				ADDITION REQUIREMENTS	
#	TASK TYPE (SFLC STD SPEC 5000 PARA. REF.)	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
1	Operate and Inspect	1	Buoy Chain In-haul Winch and Level Wind Arm Assembly	3.2.1 (Operate and Inspect)	Inspection particulars: 1. Inspect hydraulic hoses, ensuring that hose tags match hose log installation dates. 2. Visually inspect level wind arm, and hydraulic cylinder. 3. Inspect roller chock bearings, to ensure compliance with Coast Guard Drawing FL 7101-573. 4. Inspect foundation mounting bolts. 5. Visually inspect pillow block bearings, seals, and mounting bolts; check for proper bearing alignment. 6. Inspect wire rope, hook termination, and lubrication. 7. Inspect pinion and drum drive gears. Check for proper lubrication. 8. Check gear train backlash, to ensure whether backlash is between .020 and .030 inch. 10. Check hydraulic motor for proper alignment, Check all hardware and pinion seals for leakage 11. Inspect hydraulic controls for corrosion and freedom of

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				ADDITION REQUIREMENTS	
#	TASK TYPE (SFLC STD SPEC 5000 PARA. REF.)	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
					operation/adjustment (including emergency brake components). 12. Check chain winch speed; document whether satisfactory or not. 13. Check level wind speed; document whether satisfactory or not. 14. Verify level wind arm relief valve settings. 15. Inspect chain winch remote's handle and rubber boot. 16. Check and operate chain winch and level wind arm controls from remove (crane booth or shack). 17. Inspect the winch ratchet pawl for proper operation of the pawl and lock pin. Submit a CIR.
2	Service and Inspect	1	Ratchet Pawl Assembly	3.2.2 (Service and inspect)	Submit a CFR.
3	Service and Inspect	1	Bull and Pinion Gears	D2.4 (Open Gearing And Gear Reducers)	Submit a CFR.
4	Inspect and Preserve	1	Winch Drum and Shaft Assembly (External Surfaces)	3.2.4 (Preserve)	1. Visual inspection of inspection of the load bearing ends of the shaft for cracks. Submit a CFR. 2. Abrasive-blast drum shaft to "Near-White", in accordance with SSPC-SP 10. 3. Coat blasted surfaces with one coat 3.0-4.0 mils DFT Inorganic Zinc (See SFLC Std Spec 6310, Appendix C).
5	Preserve		Winch Drum (Internal Surfaces)	N/A	1. Fill interior winch drum with 10 gallons of rust preventive compound conforming to MIL-PRF- 16173, Class II, Grade 3, and rotate drum for 5 minutes to coat all interior

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				ADDITION REQUIREMENTS	
#	TASK TYPE (SFLC STD SPEC 5000 PARA. REF.)	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
					surfaces and then drain. 2. Drain, collect, and dispose of drained 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. 3. Renew each plug with a new stainless steel, Type 316, or Monel drain plug. 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.
6	Service and Inspect	1	Roller Chock Shaft Assembly	3.2.2 (Service and inspect)	GFP. Submit a CFR.
7	Service and Inspect	1	Level Wind Arm Pivot Pin Assembly	3.2.2 (Service and inspect)	GFP. Submit a CFR.
8	Renew and Preserve	1	Level Wind Arm Hydraulic Cylinder	3.2.4 (Preserve)	GFP.
9	Renew		Wire rope assembly	D2.2 (Wire Rope Assemblies)	GFP.
10	Renew	1	Level Wind Cylinder Control Block	C2.4 (Valves And Manifolds)	GFP
11	Service and Inspect	1	Chain Winch Control Block	C2.4 (Valves And Manifolds)	GFP Submit a CFR.
12	Renew	1	Level Wind Hydraulic Cylinder.		GFP
13	Renew	18	Buoy Chain In-haul Winch Foundation Bolts	D2.1(Fastener Assemblies)	Type: 1"-8UNC-2A x 4-1/2" LG, SS 316 Torque value: See Table 6-1 in TP-3498.
14	NDE	1	Buoy Chain In-haul Winch and Level Wind Arm Assembly Foundations	3.2.5 (NDE)	Weld joints to NDE: all joints attaching winch foundations to deck and 'donut' in pawl-side drum flange (identified as PN 4A in Section 99-E of drawing FL 7101-573). Submit a CFR.

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				ADDITION REQUIREMENTS	
#	TASK TYPE (SFLC STD SPEC 5000 PARA. REF.)	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
15	Preserve	1	Buoy Chain In-haul Winch Assembly and Level Wind Arm Assembly	3.2.4 (Preservation)	Surfaces to be preserved include, but are not limited to: winch drum shaft assembly, ratchet pawl assembly, level wind arm hydraulic cylinder, and all previously coated surfaces.
16	Renew	1	Counterbalance Valve Assembly, and Fully Adjustable Needle Valve	C2.4 (Valves And Manifolds)	GFP, Adjust Counterbalance manifold setting Appendix F of Tech Pub 3498.
17	Renew	1	Hydraulic motor		GFP
18	Align	1	Buoy Chain In-haul Winch Assembly		Perform alignment per Appendix E of Tech Pub 3498, Chain Winch Realignment Instructions. Submit a CFR
19	Renew	1	Hand Pump		GFP
20	Groom and Lubricate	1	Buoy Chain In-haul Winch and Level Wind Arm Assembly	3.2.6 (Groom and Lubricate)	Perform all adjustments in Chapter 6-2 of TP-3498.
21	Weight Test	1	Buoy Chain In-haul Winch and Level Wind Arm Assembly	N/A	Perform all weight testing In accordance TP-3498, Chapter 6, paragraph 8-6.4, Inspection and test procedures for the Buoy Chain Winch Model CW-1 onboard 175WLM, 225 WLB, and 240 WLBB class cutters. See Table 2 below. Submit a CFR.
22	Fabricate and Install	1	Label plate	B2.9 (Label Plates)	

NOTE

Coast Guard personnel will operate all machinery during testing.

TABLE 2 – TEST WEIGHTS

	MAIN HOIST TEST WEIGHTS
Static	24,750 (+5% - 0%) lbs
Rated	16,500 (+5% - 0%) lbs
Emergency Brake Release	5,000 (+0% - 5%) lbs

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3.3 Additional maintenance requirements. The Contractor must perform tasks in Table 3 below marked with an “X”. Submit a CFR to document all inspections and recommended additional repairs. Combine or group CFR, as required, to minimize administrative burden and maximize efficiency.

NOTE

Tasks not initially marked with an “X” must be exercised via authorized and released Change Requests (CR), when determined to be necessary by inspection results.

TABLE 3 – ADDITIONAL MAINTENANCE REQUIREMENTS

				ADDITIONAL REQUIREMENTS	
X	TASK TYPE (SFLC STD SPEC 5000 PARA. REF.)	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
X	Preserve	1	Winch Drum (Internal Surfaces)	N/A	1. Drill and tap two one- inch drain and fill holes, in locations designated by the CG Inspector. 2. Preserve internal surfaces, as specified in Task # 5 of Table I. 3. Plug each hole with a new stainless steel, Type 316, or Monel plug. 4. 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.
X	Renew	All	All Externally Installed Hose Assemblies	C2.2 (Hose Assemblies)	
X	Disassemble and Inspect	1	Ratchet Pawl Assembly	3.2.3 (Disassemble and Inspect)	Submit a CIR.
X	Disassemble and Inspect	1	Bull and Pinion Gears	D2.4 (Open Gearing And Gear Reducers)	Submit a CIR.
X	Disassemble and Inspect	1	Roller Chock Shaft Assembly	3.2.3 (Disassemble and Inspect)	Submit a CIR. GFP.
X	Disassemble and Inspect	1	Level Wind Arm Pivot Pin Assembly	3.2.3 (Disassemble and Inspect)	Submit a CIR. GFP.

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X	Disassemble and Inspect	1	Level Wind Cylinder Control Block	C2.4 (Valves And Manifolds)	Submit a CIR.
X	Disassemble and Inspect	1	Chain Winch Control Block	C2.4 (Valves And Manifolds)	Submit a CIR.
X	Disassemble and Inspect	1	Brake Control Block	C2.4 (Valves And Manifolds)	Submit a CIR.
X	Disassemble and Inspect	1	Hydraulic motor	3.2.3 (Disassemble and Inspect)	Perform alignment per Appendix E of Tech Pub 3498, Chain Winch Realignment Instructions. Submit a CIR.
X	Renew	1	Hand Pump and Isolation Valves	C2.4 (Valves And Manifolds)	GFP.
X	Renew	1	Hydraulic motor	3.2.4 (Preservation)	GFP. Return the original hydraulic motor to the CG PA as a MTI. Perform alignment per Appendix E of Tech Pub 3498, Chain Winch Realignment Instructions.
X	Renew and Preserve	1	Level Wind Arm Hydraulic Cylinder	3.2.4 (Preservation)	GFP.
X	Disassemble and inspect	1	Winch Drum Shaft Assembly	3.2.3 (Disassemble and inspect)	Submit a CIR. GFP.
X	Disassemble and Inspect	1	Roller Chock Shaft Assembly	3.2.3 (Disassemble and inspect)	Submit a CIR. GFP.
X	Disassemble and Inspect	1	Level Wind Arm Pivot Pin Assembly	3.2.3 (Disassemble and inspect)	Submit a CIR. GFP.
X	Renew	1	Hand Pump and Isolation Valves	C2.4 (Valves And Manifolds)	GFP.
X	Renew	1	Level Wind Arm Hydraulic Cylinder	3.2.4 (Preserve)	GFP.
X	Renew	1	Wire rope assembly	D2.2 (Wire Rope Assemblies)	Nominal diameter: 1-1/8 inch Nominal strength: XIPS Total length of rope required: 150 ft. End fitting type: Fiege OR poured spelter.

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X	Renew	18	Buoy Chain In-haul Winch Foundation Bolts	D2.1(Fastener Assemblies)	Type: 1"-8UNC-2A x 4-1/2" LG, SS 316 Torque value: See Table 6-1 in TP-3498.
X	Renew	1	Counterbalance Valve Assembly, and Fully Adjustable Needle Valve	C2.4 (Valves And Manifolds)	GFP, Adjust Counterbalance manifold setting Appendix F of Tech Pub 3498.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 64: Mechanical Chain Stoppers, Inspect and Service**1. SCOPE**

1.1 Intent. This work item describes the requirements for the Contractor to inspect and service the port and starboard mechanical chain stoppers.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
N	Hardware Kit, Pins	NSN: 2030-01-485-7209	2 ea.	528.47
N	Hardware Kit, Mechanical	NSN: 2030-01-485-7215	2 ea.	538.91

2. REFERENCES**COAST GUARD DRAWINGS**

Coast Guard Drawing FL 2605-031, Rev D, Mechanical Chain Stopper, 1-7/8" Buoy Chain

Coast Guard Drawing FL 2605-034, Rev D, Mechanical Chain Stopper Repair Kit: 1-7/8", 1-5/8" & 1-1/4"

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3749, 26-APR-05, 1-7/8 Inch ATON Mechanical Chain Stopper

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

Surface Forces Logistics Center Standard Specification 5000 (SFLC Std Spec 5000), 2022, Auxiliary Machine Systems

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR. The Contractor shall submit a CIR for the inspections listed in Table 1, as follows:

- Task #1.
- Task #2.

3.1.2 Tech Rep.

Not applicable.

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

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

3.2 Repair particulars. The Contractor shall use FL2605-31, FL 2605-034, and TP 3749 for reference, and perform all tasks in Table 1.

TABLE 1 – REPAIR TASKS

				ADDITIONAL REQUIREMENTS	
#	TASK TYPE (SFLC STD SPEC 5000 PARA. REF.)	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
1	Operate and Inspect	2	Mechanical Chain Stopper Assembly	3.2.1 (Operate and Inspect)	Submit a CIR.
2	Disassemble and Inspect	2	Mechanical Chain Stopper Assembly	3.2.3 (Disassemble and Inspect)	Submit a CIR. Reassemble chain stoppers with GFP. Refer to paragraph 3.2.1 for materials.
3	NDE	2	Mechanical Chain Stopper Assembly	3.2.5 (NDE)	NDE task is limited to chain stopper welds.
4	Preserve	2	Mechanical Chain Stopper Assembly and foundation	3.2.4 (Preservation)	Select the following top coating colors: Black (17038) for the chain stopper surfaces. Gray (16099) for the foundation surfaces.
5	Groom and Lubricate	2	Mechanical Chain Stopper Assembly	3.2.6 (Groom and Lubricate)	
6	Weight Test	2	Mechanical Chain Stopper Assemblies	B2.1 (Mechanical Chain Stoppers)	Operational test load: 25,000 lbs. Submit a CFR.

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				ADDITIONAL REQUIREMENTS	
#	TASK TYPE (SFLC STD SPEC 5000 PARA. REF.)	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
7	Fabricate and Install	2	Label plate	B2.9 (Label plates)	

3.2.1 Breakdown GFP kit. For full kit parts list, refer to Coast Guard Drawing FL 2605-034. Pin and bushing kits contain the following parts, typically: spring assembly pin, SS washers, SS hex bolt, end hinge pins, middle hinge pins, lock hinge pin, grease fittings and bronze bushings. At the installation of each bronze bushing, the Contractor shall drill a hole to line up with grease fitting in accordance with «DWG1» and FL 2605-034. Clean each bushing after drilling.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 65: Anchor Windlass, Inspect and Service

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to inspect and service the port and starboard Appleton Model BMD-478 Anchor Windlasses.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 581-001, Rev C, Anchor Handling System Arrangement

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3559, SWBS 581B, Anchor Windlass, P/S - Model BMD-478

Surface Forces Logistics Center Standard Specification 5000 (SFLC Std Spec 5000), 2022, Auxiliary Machine Systems

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR. The Contractor must submit a CIR for the inspections listed in Table 1:

- Task # 1.
- Task # 2.
- Task # 3.
- Task # 7.
- Task # 9.

3.1.2 Tech Rep.

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Not applicable.

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

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

- Port and starboard anchors (remove at the swivel shot).
- Port and starboard anchor chains.

NOTE

Each anchor weighs 2,250 pounds and each chain is 1-1/8 inch Stud-Link, Grade III with a length of 7 shots.

3.2 Inspection and repair. The Contractor must accomplish the tasks specified in Table 1, in accordance with SFLC Std Spec 5000, TP 3559 SWBS 581B, and Coast Guard Drawing 225B WLB 581-001.

TABLE 1 – RECURRING MAINTENANCE REQUIREMENTS

#	TASK TYPE	QTY	COMPONENT OR ASSEMBLY	ADDITIONAL REQUIREMENTS	
				APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
1	Operate and Inspect	2	Anchor Windlass Assembly	3.2.1 (Operate and inspect)	Submit A CIR.
2	Disassemble and Inspect	2	Hydraulic Disc Brake Assembly	D2.3 (Brakes and clutches)	Submit A CIR.
3	«GEARBOX_TAS K»	2	Planetary Gear Box Assembly	D2.4 (Open gearing and gear reducers)	Submit A CIR.
4	Renew	2	Main Planetary Gear Box Oil	D2.4 (Open gearing and gear reducers)	See CG TP 3559 SWBS 581B.
5	Service and Inspect	2	Band Brake Assembly	D2.3 (Brakes and clutches)	Submit a CFR.
6	Service and Inspect	2	Band Brake Handwheel, Bevel Gear Box, and Linkage Assemblies up the Band Brake Assembly	D2.3 (Brakes and clutches)	Submit a CFR.
7	Disassemble and Inspect	2	Directional Control Valve assembly	C2.4 (Valves and manifolds)	Submit A CIR.
8	Service and Inspect	2	Hand Pump assembly	3.2.2 (Service and inspect)	Submit a CFR.
9	Disassemble and Inspect	2	Holding Valve assembly	C2.4 (Valves and manifolds)	Submit A CIR.
10	NDE	2	Anchor windlass assembly and foundation	3.2.5 (NDE)	Weld joints to NDE: all joints attaching winch foundations to deck. Submit a CFR.
11	Preserve	2	Anchor Windlass	3.2.4 (Preservation)	Preserve all previously

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				ADDITIONAL REQUIREMENTS	
#	TASK TYPE	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
			Assembly Components		coated components. Anchor windlasses are considered “critical-coated surfaces”, as defined in SFLC Std Spec 0000.
12	Renew	All	Snap Rings, Bearings, Thrust Buttons, Seals, O-Rings, Gaskets, Seal Washers, Keys, Shims, Lockwashers, Bushings, Dowel Pins, Thrust Washers, Cotter Pins, Rope Clamp, Foundation Bolts And Nuts .		Perform all renewals during reassembly and reinstallation, in accordance with CG TP 3559 SWBS 581B.
13	Groom and Lubricate	2	Anchor windlass assembly	3.2.6 (Groom and lubricate)	
14	Final Operational and/or weight test	2	Anchor Windlass	B2.5 (Anchor windlass)	Submit CFR.
15	Fabricate and Install	2	Label plate	B2.9 (label plates)	System: Anchor Windlass

3.3 Additional maintenance requirements. The Contractor must perform only the additional tasks marked with an “X” in Table 2 below.

TABLE 2 – ADDITIONAL MAINTENANCE REQUIREMENTS

#	TASK TYPE	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
X	Renew	1	Hydraulic Motor	N/A	See CG TP 3559 SWBS 581B
X	Renew	1	Directional Control Valve assembly	C2.4 (Valves and manifolds)	
X	Renew	1	Main Shaft	N/A	See CG TP 3559 SWBS 581B
X	Renew	All	Hoses	C2.2 (Hose Assemblies)	See CG TP 3559 SWBS 581B

4. NOTES

This section is not applicable to this work item.

WORK ITEM 66: Anchor Chains and Ground Tackle, Inspect and Repair

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to perform inspection, preservation and repairs to the anchor chain assemblies (port and starboard), including associated ground tackle.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 581-001 Rev C, Anchor Handling System Arrangement

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

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

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

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

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

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

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

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:

- Port and starboard anchors.

3.2 Required work particulars. The Contractor must use the chain description (see 4.1 (Component characteristics)) and Coast Guard Drawing 225B WLB 581-001 for guidance, for accomplishing the tasks specified below for each anchor chain assembly.

3.2.1 Removal. Disconnect and remove the anchor and anchor chain assembly and fake out the chain on the drydock floor or in a suitable location, to facilitate the performance of the tasks specified herein.

NOTE

The use of Coast Guard equipment (e.g. anchor windlass) for off-loading and on-loading of anchors and anchor chain is authorized. Coast Guard personnel will operate all Government equipment.

3.2.2 Pre-inspection surface preparation.

3.2.2.1 Pressure wash the anchor, anchor chain and other components with fresh water and a fire hose to remove any mud, salts, or other contaminants adhering to the chain

3.2.2.2 Prepare the anchor and all shots of chain to a “Commercial Blast” standard, in accordance with SSPC-SP 6.

3.2.3 Inspections. Perform the following inspections and submit a CIR:

3.2.3.1 Visual inspection. Visually inspect the following:

- All swivels, outboard swivel shots, pelican hook and shackles, and cats paw (if applicable).
- Entire length of Shot 1, Shot 2, Shot n-1, and Shot n.
-

NOTES

1. For the purpose of reference in this item, the shots will be referred to by numbers. Mark each shot with a removable tag. Moving inboard from the anchor, the shots will be referred to as follows: ANCHOR, Shot 1, Shot 2, Shot 3...Shot n-2, Shot n-1, Shot n, and BITTER END. These shot numbers are designated in the order existing prior to work, and will not change - although the shot order itself will change.

2. Number n in the paragraph above is equal to the number of shots per chain.

3.2.3.2 Measurements – and condemning criteria.

3.2.3.2.1 Determine the suitability for continued service of the anchor chain assembly, by checking wire diameter dimension, using information provided in Table 1 (Dimensions for Condemning Anchor Chain) as guidance, as applicable. Gage the wire diameter of ten links per shot of chain, ensuring that each link must be separated by approximately 10% of the shot length.

NOTE

For commercial grade chain, use 90 percent of the link diameter for condemning criteria.

3.2.3.2.2 If a Change Request has been released, perform six-link dimension, as specified in “Note 2” in Table 1 (Dimensions for Condemning Anchor Chain).

NOTE

Change Request will only be authorized to perform six link inspection only if ship's force has reported that the anchor chain has been jumping the capstan.

TABLE 1 - DIMENSIONS FOR CONDEMNING ANCHOR CHAIN

SIZE OF CHAIN (INCHES)	90 PERCENT OF LINK DIAMETER(1) (INCHES)	SIX-LINK DIMENSION(2) (INCHES)
1	0.90	26-3/4
1-1/8	1.013	30-1/16
1-1/4	1.125	33-7/16
1-3/8	1.238	36-3/4
1-1/2	1.35	40-1/8
1-5/8	1.463	43-7/16
1-3/4	1.575	46-13/16
1-7/8	1.688	50-1/8
2	1.80	53-1/2
2-1/8	1.913	56-13/16
2-1/4	2.025	60-3/16
2-3/8	2.138	63-1/2
2-1/2	2.25	66-7/8
2-5/8	2.363	70-3/16
2-7/8	2.475	73-9/16
3	2.558	76-7/8

1. Use a micrometer, caliper or GO/NO-GO gage* to check wire diameter dimension. Gage is to be made by Contractor/repair facility in accordance with the dimensions shown in Table 1 above. Check the diameters at right angles to the link. When measuring with a micrometer or caliper take one-half the sum of the two diameters as representing the link diameter.

2. Take six-link measurements with a load applied to the chain in order to take all slack out of the chain. Use a bar gauge to check the six-link dimension. When the gauge will not fit over six links, the chain has been stretched beyond allowable limit. Measure six links for the entire length of each shot, measuring from every third link.

*When using a GO/NO-GO gage, a failed check is to be verified by measuring with a micrometer or caliper. Measure the diameter at right angles and take one-half the sum of the two diameters as representing the link diameter. Take measurements on clean, bare metal.

3.2.4 Detachable link assemblies maintenance.

NOTE

Detachable link components are not interchangeable.

3.2.4.1 Renew all detachable taper pin and link assemblies and associated link plugs.

3.2.4.2 Assemble detachable links, swivels and shackles; and repack with molybdenum disulfide grease (MIL-DTL-23549).

3.2.4.3 Change the relative position of the shots, as designated by the Coast Guard Inspector, to distribute the wear on the chain, ensuring that shot must be rotated end for end upon reinstallation, as follows: ANCHOR, Shot 3... Shot n-2, Shot n-1, Shot n, Shot 1, Shot 2, BITTER END.

3.2.4.4 Renew shackle at bitter end of chain.

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3.2.5 Chain renewal. If a Change Request has been released, renew designated section of chain with material conforming to MIL-C-24633. See paragraph 4.2 (Supply Information).

3.2.6 Surface coating. Using the coating system specified for “Anchor/Anchor Chain” in SFLC Std Spec 6310, Appendix A (Cutters and Boats Exterior Painting Systems), do the following:

3.2.6.1 Perform solvent cleaning of all surfaces specified to be coated (see below), in accordance with SSPC-SP 1.

3.2.6.2 Coat the anchors and all shots of chain Black (17038).

3.2.6.3 Color-coat the following shots:

- Shot n-1: Black (17038).
- Shot n: Black (17038).
- Shot 1: Yellow (13538).
- Shot 2: Red (11105).

3.2.6.4 Color coat/mark all detachable links, adjacent chain links, shackles, and swivels as follows and in accordance with attached Figure “Painting and Markings On Mooring Chain”.

3.2.6.4.1 Remove all existing stainless steel wire prior to the installation of new markings.

3.2.6.4.2 Paint first shot detachable link (15 fathom mark) red (11105).

3.2.6.4.3 Paint second shot detachable link (30 fathom mark) white (17925).

3.2.6.4.4 Paint third shot detachable link (45 fathom mark) blue (15182).

3.2.6.4.5 Repeat pattern of red, white and blue for all subsequent detachable links up to the next to last shot.

3.2.6.4.6 The first link on each side of the 15 fathom detachable link must be painted white (17925). The first link at each side of the detachable link must also be marked by one turn of stainless steel wire around the stud. The first two links on each side of the 30 fathom (second shot) detachable link must be painted white (17925). The second link at each side of the detachable link must also be marked by two turns of wire around the stud. Repeat pattern for all subsequent shots up to the next to last shot.

3.2.7 Chain restowing. When directed by the Coast Guard Inspector, reassemble the anchor and anchor chain; restow the anchor chain in its chain locker, free for running, with the anchor properly housed and secured with the chain stopper set.

3.2.7.1 Lead the bitter ends down and through the deck bolts in the chain locker and secure to the chain locker pad eye.

3.2.7.2 Back out the chains to ensure the chain stopper is set properly.

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3.2.7.3 Ensure that:

- the bitter ends of the chain are securely fastened in the chain locker with new bitter end shackles, conforming to Fed Spec RR-C-271, Type IV-A, Class 3, Grade A.
- the ground tackle is kept ready for use.
- nothing interferes with a readiness to veer or slip the anchors.
- the detachable links located just inboard of the riding stopper and the detachable link tool set are readily accessible for use in slipping the anchor chains in an emergency.
- the anchor has a crown buoy attached, with sufficient length of rope to facilitate indicating the depths of water in which moored.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.3 Operational test, post repairs. After completion of work, the Contractor must, in the presence of the Coast Guard Inspector, thoroughly test the anchor chain assembly to prove satisfactory operating condition, by releasing the chain stoppers and lowering both anchors under power to the drydock floor (or waterline, as applicable), letting out one additional shot, and raising again to ensure chains run on the wildcats without binding.

3.3.1 Correct any discrepancies, house the anchors and set the anchor chain pelican hooks.

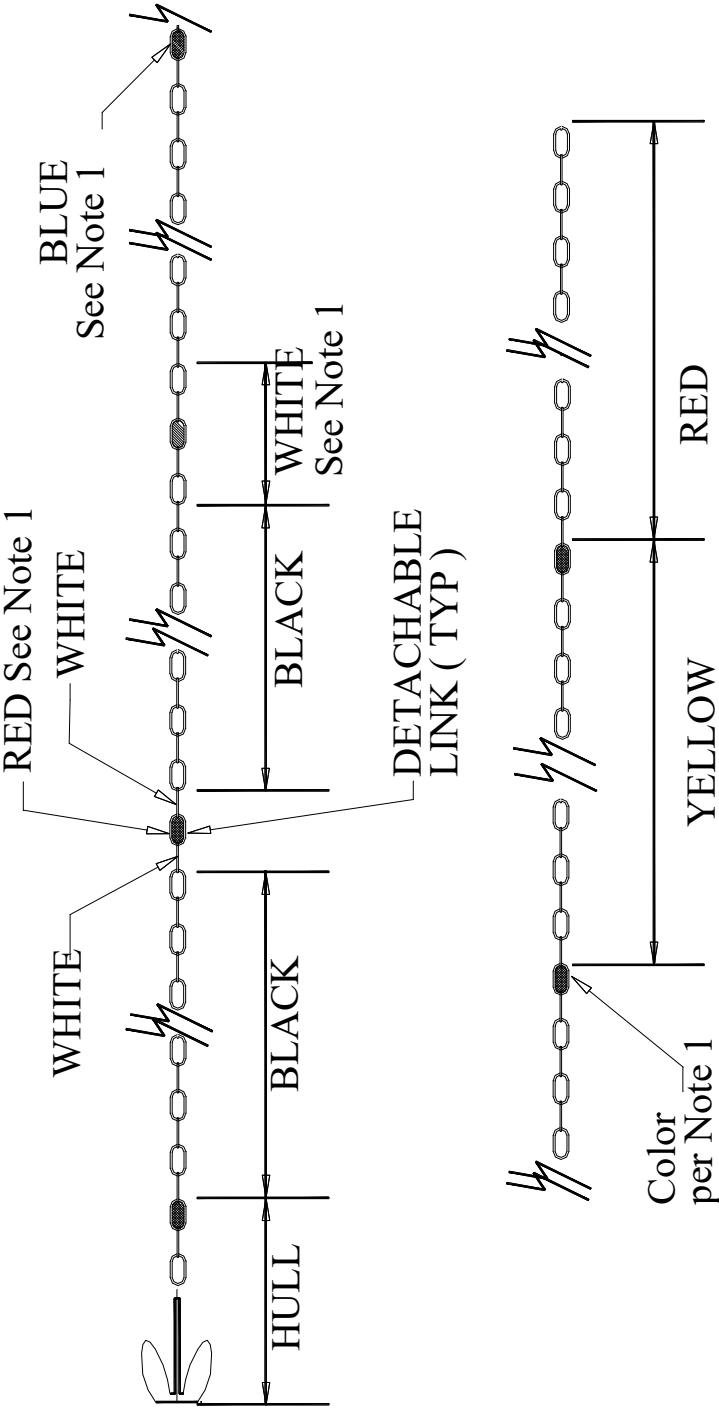
3.3.2 Submit a CFR.

3.4 Touch-up preservation. The Contractor 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).

4. NOTES

4.1 Component characteristics. Each anchor weighs 4,000 pounds and each chain is 1¼-inch Stud Link, with a length of 8 shots. All shots of anchor chain include the corresponding detachable link(s).

PAINTING AND MARKINGS
ON MOORING CHAIN



(1) NOTE: Repeat red, white, blue marking of detachable links until next to last inboard shot.

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4.2 Supply information. An ABS approved list of chain manufacturers may be found at the following website: <http://ww2.eagle.org/en/rules-and-resources/approved-manufacturers-and-products.html>

WORK ITEM 67: Anchor Chain and Ground Tackle, Preserve

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to preserve the anchor chain assemblies (port and starboard), including associated ground tackle.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 581-001 Rev C, Anchor Handling System Arrangement

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

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

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

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

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

- Port and starboard anchors.

3.2 Required work particulars. The Contractor must ensure the following using the chain description (see 4.1 (Component characteristics)) and Coast Guard Drawing 225B WLB 581-001 for guidance, for each anchor chain assembly.

3.2.1 Removal. Disconnect and remove the anchor chain assembly and transport from the vessel to a suitable location, to facilitate the performance of the tasks specified herein.

NOTE

The use of Coast Guard equipment (e.g. anchor windlass) for off-loading and on loading of anchors and anchor chain is authorized.

3.2.1.1 The contractor is responsible for operation of the equipment, bears full responsibility for unloading and offloading anchors, and must not request, direct, or allow cutter personnel to assist in the evolution.

3.2.2 Surface preparation. Prepare the below-listed surfaces to a “Commercial Blast” standard, in accordance with SSPC-SP 6:

- All detachable links (including detachable link interior surfaces), swivels, outboard swivel shots, cats paw, pelican hook and shackles.
- Entire length of Shot 1, Shot 2, Shot n-1, and Shot n.
- 10 links per shot, each 15 links apart, on Shot 3 through Shot n-2 (for the purposes of wire diameter test - see Table I below).

3.2.3 Surface coating.

3.2.3.1 Perform solvent cleaning of all prepared anchor chain surfaces, in accordance with SSPC-SP 1, prior to coating application. Collect all debris from solvent cleaning for proper disposal.

3.2.3.2 Using the coating system specified for “Anchor/Anchor Chain” in SFLC Std Spec 6310, Appendix A (Cutters and Boats Exterior Painting Systems), do the following:

3.2.3.2.1 Coat the following shots:

- Shot n-1 Black
- Shot n Black
- Shot 1 Yellow
- Shot 2 Red

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3.2.3.2.2 Prime, color coat, and wire (CRES wire) all detachable links (red, white, and blue), adjacent chain links, shackles, and swivels in accordance with Attached Figure “Painting and Markings On Mooring Chain”, using the , and SFLC Std Spec 6310.

3.2.3.2.3 Remove all existing CRES wire prior to the installation of new markings.

3.2.4 Chain restowing. When directed by the Coast Guard Inspector, reassemble the anchor and anchor chain; restow the anchor chain in its chain locker, free for running, with the anchor housed and secured with the chain stopper set. Ensure that (1) the bitter ends of the chain are fastened in the chain locker with new bitter end shackles, conforming to Fed Spec RR-C-271, Type IV-A, Class 3, Grade A; (2) the ground tackle is kept ready for use, (3) nothing interferes with a readiness to veer or slip the anchors, (4) the detachable links located just inboard of the riding stopper and the detachable link tool set are readily accessible for use in slipping the anchor chains in an emergency, and (5) the anchor has a crown buoy attached, with sufficient length of rope to facilitate indicate the depths of water in which moored. In addition, do the following:

- Lead the bitter ends down and through the deck bolts in the chain locker and secure to the chain locker pad eye.
- Back out the chains to ensure the chain stopper is set.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.3 Operational test – post repairs. After completion of work, the Contractor must, in the presence of the Coast Guard Inspector, thoroughly test the anchor chain assembly to prove satisfactory operating condition, by releasing the chain stoppers and lower both anchors under power to the drydock floor (or waterline, as applicable), letting out one additional shot, and raising again to ensure chains run on the wildcats without binding.

3.3.1 The Contractor must correct any discrepancies, house the anchors and set the anchor chain pelican hooks.

3.3.2 The Contractor must Submit a CFR.

4. NOTES

4.1 Component characteristics. Each anchor weighs 4,000 pounds and each chain is 1¼-inch Stud Link, with a length of 8 shots., as shown on Coast Guard Drawing 225B WLB 581-001. All shots of anchor chain include the corresponding detachable link(s).

PAINTING AND MARKINGS
ON MOORING CHAIN

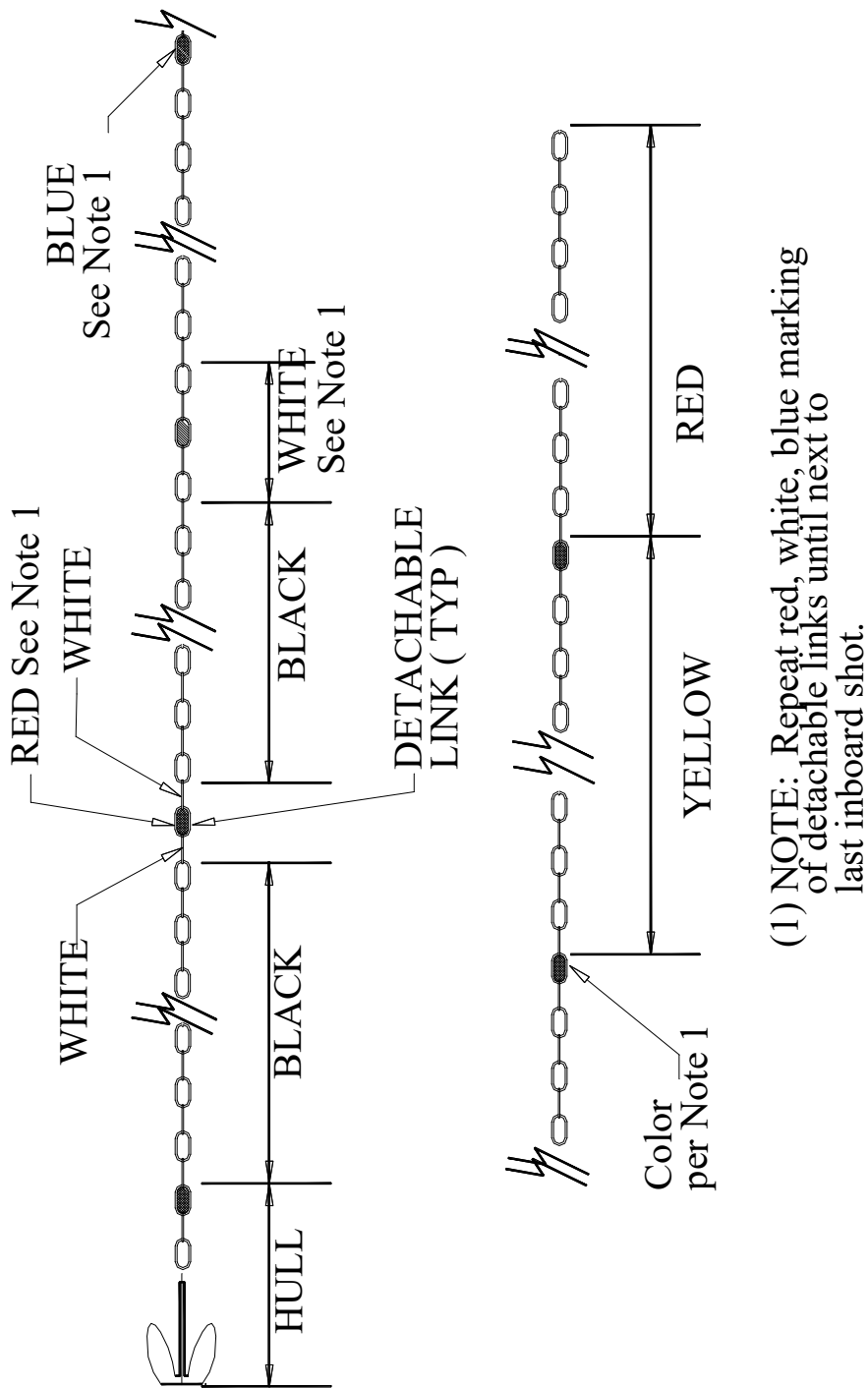


FIGURE 1. PAINTING AND MARKINGS ON MORRING CHAIN

WORK ITEM 68: Anchors, Preserve

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to preserve the Port and starboard anchors.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 581-001 Rev C, Anchor Handling System Arrangement

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

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

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

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

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

- anchor chain assemblies (port and starboard).

3.2 Required work particulars. The Contractor must use the description (see 4.1 (Component characteristics)) and Coast Guard Drawing 225B WLB 581-001 for guidance, for accomplishing the tasks specified below for Port and starboard anchors.

3.2.1 Removal. The Contractor must disconnect and remove the anchor from anchor chain assembly and transport from the vessel to a suitable location, to facilitate the performance of the tasks specified herein.

NOTE

The use of Coast Guard equipment (e.g. anchor windlass) for off-loading and on-loading of anchors and anchor chain is authorized. Coast Guard personnel will operate all Government equipment.

3.2.2 Anchor preservation. The Contractor must prepare and coat the anchor surfaces with the system specified for “Anchor/Anchor Chain” in SFLC Std Spec 6310, Appendix A (Cutters and Boats Exterior Painting Systems). Select color coat in accordance with paragraph 11.B.1 (Anchors, Anchor Chains) in SFLC Std Spec 6310, Appendix A (Cutters and Boats Exterior Painting Systems).

4. NOTES

4.1 Component characteristics. Each anchor weighs 4,000 pounds and each chain is 1¼-inch Stud Link, with a length of 8 shots. All shots of anchor chain include the corresponding detachable link(s).

WORK ITEM 69: Hawse Pipes, Preserve

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to preserve the hawse pipes.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 581-001 Rev C, Anchor Handling System Arrangement

COAST GUARD PUBLICATIONS

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

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

Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2022,
Temporary Hull Accesses

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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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:

- anchor chain assemblies (port and starboard)

3.2 Temporary access openings. With express permission of the KO via submission of a CFR and in accordance with SFLC Std Spec 8636, the Contractor may perform all work required to cut open and close temporary access openings to facilitate accomplishment of the work specified herein.

3.3 Surface preservation. The Contractor must prepare and coat all the port and starboard hawse pipes and chain pipes using the system specified for “Chain Lockers”, in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems). Use Coast Guard Drawing Coast Guard Drawing 225B WLB 581-001 for guidance.

3.4 Inspection. After surface preparation and before paint application, the Contractor must perform a visual inspection of all prepared surfaces. Submit a CFR.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 70: Towing Bitts, Chocks, and Fairleads, Inspect and Test

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to inspect the below designated deck fittings:

TABLE 1 – DECK FITTINGS

QTY	DESCRIPTION	LOCATION
3	Chock, Bulwark Mounted (Panama Type) 12-1/2" x 10"	Forepeak, Centerline, Port, and Starboard
1	Bitt, Double, 12"	Frame -1, Centerline
2	Bitt, Double, 12"	Frame 3, Port and Starboard
2	Chock, Closed Railing, 6" x 12"	Frame 5, Port and Starboard
2	Bitt, Double, 12"	Frame 18, Port and Starboard
2	Chock, Bulwark Mounted (Panama Type) 12-1/2" x 10"	Frame 21, Port and Starboard
2	Bitt, Double, 8"	Frame 46, Port and Starboard
2	Chock, Closed Railing, 6" x 12"	Frame 46, Port and Starboard
2	Chock, Closed Railing, 6" x 12"	Frame 62, Port and Starboard
2	Bitt, Double, 8"	Frame 65, Port and Starboard
2	Chock, Bulwark Mounted (Panama Type) 12" x 10"	Frame 95, Port and Starboard
2	Bitt, Double, 12"	Frame 99, Port and Starboard
1	Towing Bitt	Frame 104, Centerline
2	Towing Pad, 5-1/2"	Frame 106, Port and Starboard
1	Towing Pad, 8"	Frame 108, Centerline
2	Bitt, Double, 12"	Frame 107, Port and Starboard
2	Tow Rail Post	Frame 110, transom corners
3	Chock, Deck Mounted (Panama Type), 12" x 10"	Frame 110, Centerline, Port, and Starboard
1	Tow Rail, 10" Sch 120 pipe	Along Transom

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 582-001, Rev -, Mooring and Towing A & D

COAST GUARD PUBLICATIONS

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

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

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

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

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

3.2 Inspection particulars. The Contractor must accomplish the following for each of the components designated in paragraph 1.1 (Intent) herein, using Coast Guard Drawing 225B WLB 582-001 as guidance:

3.2.1 Visual. Visually inspect the component for excessive damage, wear, corrosion, coating condition, and any coating failures.

3.2.2 NDI. The Contractor must perform NDI of the component, associated welds (including but not limited to deck mounting and foundation welds), and applicable mounting hardware in accordance with SFLC Std Spec 0740, Appendix C. Submit a CFR.

3.3 Touch-up preservation. The Contractor must prepare and touch-up coat all disturbed surfaces to match existing adjacent surfaces, in accordance with SFLC Std Spec 6310, Appendix A (Cutter and Boat Exterior Painting Systems).

4. NOTES

This section is not applicable to this work item.

WORK ITEM 71: Warping Capstan, Inspect and Service

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to inspect and service the hydraulic warping the capstan.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

None.

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3559, Section 582B, Apr 2009, Aft Capstan, 21” - Model BMD-475

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

Surface Forces Logistics Center Standard Specification 5000 (SFLC Std Spec 5000), 2022, Auxiliary Machine Systems

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

3.1.1 CIR. The Contractor must submit a CIR for the inspections listed in Table 1:

- Task #1.
- Task #2.
- Task #4.
- Task #5.

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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 Tasks to be accomplished. The Contractor must perform the tasks designated in Table 1 below, in accordance with SFLC Std Spec 5000 and CG TP-3559, SWBS 582B

TABLE 1 – RECURRING TASKS

				ADDITION REQUIREMENTS	
#	TASK TYPE	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
1	Operate and Inspect	1	Warping Capstan	3.2.1 (Operate and inspect)	Submit a CIR.
2	Disassemble and Inspect	1	Capstan Head Shaft Assembly	3.2.3 (Disassemble and inspect)	Submit a CIR.
3	Service and Inspect	1	Gear Reducer	D2.4 (Open gearing and gear reducers)	Submit a CFR.
4	Disassemble and Inspect	1	Disc Brake	D2.3 (Brakes and clutches)	Submit a CIR.
5	Disassemble and Inspect	1	Control Valve	C2.4 (Valves and manifolds)	Submit a CIR.
6	NDE	1	Warping Capstan Assembly And Foundation	3.2.5 (NDE)	NDE: All joints attaching capstan foundations to deck. Submit a CFR.
7	Preserve	1	Warping Capstan Assembly And Foundation	3.2.4 (Preservation)	Surfaces to be preserved include entire capstan assembly, head shaft assembly, control valve and stand, gear reducer, foundation, and all other previously coated surfaces.
8	Groom and lubricate	1	Warping Capstan Assembly	3.2.6 (Groom and lubricate)	
9	Operational and Weight Test	1	Warping Capstan	B2.6 (Capstans)	Submit a CFR.
10	Fabricate and Install	1	Label Plates	B2.9 (Label plates)	

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Developer: Delete paragraphs 3.3 and 3.4, and Table 2, if not applicable/needed.

3.3 Additional maintenance requirements. The Contractor must perform the task below, if marked with an "X".

TABLE 2 – additional tasks

ADDITIONAL TASK		TASK TYPE	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
—	1	Renew	6	Hose Assemblies	C2.2 (Hose assemblies)	Submit a CFR.

4. NOTES

This section is not applicable for this work item.

WORK ITEM 72: Hull Fittings (Mooring and Towing), Inspect and Test

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to inspect the below designated hull fittings:

QTY	DESCRIPTION	LOCATION	APPLICABLE REFERENCE
3	Chock, Bulwark Mounted (Panama Type) 12-1/2" x 10"	Focsle Deck, Forepeak, CL, P/S	Coast Guard Drawing 225B WLB 582-001
1	Bitt, Double, 12"	Focsle Deck, Frame -1, CL	Coast Guard Drawing 225B WLB 582
2	Bitt, Double, 12"	Focsle Deck, Frame 3, P/S	Coast Guard Drawing 225B WLB 582
2	Chock, Closed Railing, 6" x 12"	Focsle Deck, Frame 5, P/S	Coast Guard Drawing 225B WLB 582
4	Tow Pad Eye	Focsle Deck, Frame 7, P/S	Coast Guard Drawing 225B WLB 901-003
2	Bitt, Double, 12"	Focsle Deck, Frame 18, P/S	Coast Guard Drawing 225B WLB 582
2	Chock, Bulwark Mounted (Panama Type) 12-1/2" x 10"	Focsle Deck, Frame 21, P/S	Coast Guard Drawing 225B WLB 582
2	Bitt, Double, 8"	Buoy Deck, Frame 46, P/S	Coast Guard Drawing 225B WLB 582
2	Chock, Closed Railing, 6" x 12"	Buoy Deck, Frame 46, P/S	Coast Guard Drawing 225B WLB 582
2	Chock, Closed Railing, 6" x 12"	Frame 62, P/S	Coast Guard Drawing 225B WLB 582
2	Bitt, Double, 8"	Frame 65, P/S	Coast Guard Drawing 225B WLB 582

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2	Chock, Bulwark Mounted (Panama Type) 12" x 10"	Frame 95, P/S	Coast Guard Drawing 225B WLB 582
2	Bitt, Double, 12"	Frame 99, P/S	Coast Guard Drawing 225B WLB 582
1	Towing Bitt	Frame 104, CL	Coast Guard Drawing 225B WLB 582
2	Towing Pad, 5-1/2"	Frame 106, P/S	Coast Guard Drawing 225B WLB 582
1	Towing Pad, 8"	Frame 108, CL	Coast Guard Drawing 225B WLB 582
2	Bitt, Double, 12"	Frame 107, P/S	Coast Guard Drawing 225B WLB 582
2	Tow Rail Post	Frame 110, transom corners	Coast Guard Drawing 225B WLB 582
3	Chock, Deck Mounted (Panama Type), 12" x 10"	Frame 110, CL, P/S	Coast Guard Drawing 225B WLB 582
1	Tow Rail, 10" Sch 120 pipe	Along Transom	Coast Guard Drawing 225B WLB 582

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 582-001, Rev -, Mooring and Towing A & D

Coast Guard Drawing 225B WLB 901-003, Rev A, Hull Block 901 Block Assembly

COAST GUARD PUBLICATIONS

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

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

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

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

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

3.2 Inspection and test particulars. The Contractor must accomplish the following for designated fitting designated in paragraph 1.1, and submit a CFR.

3.2.1 Visual. Visually inspect all cleaned surfaces for excessive damage, wear, corrosion, distortion, elongation of holes, gouges, pits, and cracks.

3.2.2 NDE. Perform nondestructive examination (NDE) of all designated fittings, including all components and associated welds (including but not limited to deck mounting and base/foundation welds) or other mounting hardware, in accordance with SFLC Std Spec 0740, Appendix C.

3.3 Touch-up preservation. 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 Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs).

4. NOTES

This section is not applicable to this work item.

WORK ITEM 73: Single Point Davit, Inspect and Service

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to inspect and service the Single Point Davit (SPD) - Model RAD30-15.5.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
N	Swing Brake Seal Kit	NSN: 5330-01-390-3514 PN: 90-016-2011	2 ea	68.45
N	Swing Brake Disc Kit	NSN: 3010-01-464-1040 PN: 90-016-2131	2 ea	187.20
N	Swing Holding Valve	NSN: 4820-01-466-4918 PN: CBEA-LHV-YHL (Sun Hydraulics)	1 ea	251.50
N	Wire Rope Assembly	NSN: 4010-01-620-9604 PN: JWCG062100PL	1 ea	660.00

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

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

***Government-furnished property, which is to be supplied by either the vessel or the C4IT Service Center.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 556-005, Rev D, Aft Hydraulic System A/D, Fr 66 Aft, Block 950, 970

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 11101, SWBS 583, Section A (SWBS 583A), Davit, Single Point Slewing Arm Model - RAD30 - 15.5 (BMD-710)

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

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

Surface Forces Logistics Center Standard Specification 5000 (SFLC Std Spec 5000), 2022, Auxiliary Machine Systems

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):

- Task #1.
- Task #2.
- Task #3.
- Task #4.
- Task #5.
- Task #7.

3.1.2 Tech Rep.

Not applicable.

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

3.1.3.1 Protective measures, hydraulic system(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:

- Small Boat

3.2 Inspect and service task particulars. The Contractor must refer to CG TP-11101 as guidance during the performance of the tasks specified in Table 1. Perform all designated tasks in accordance with SFLC Std Spec 5000, as applicable.

TABLE I – RECURRING TASKS

	ADDITION REQUIREMENTS
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USCGC ALDER (WLB-225B) DRYDOCK AVAILABILITY FY2027

#	TASK TYPE	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM 5000 STD	OTHER
1	Operate and Inspect	1	SPD System	3.2.1 (Operate and Inspect) Appendix A	Submit a CIR
2	Disassemble and Inspect	1	Fall Sheave Pin Assembly	3.2.3 (Disassemble and inspect)	Submit a CIR Renew bearing and seals.
3	Service and Inspect	1	Accumulator Assembly	C2.4 (Valves and manifolds)	Submit a CIR.
4	Service and Inspect	1	Accumulator Charging Hand Pump Assembly	C2.4 (Valves and manifolds)	Submit a CIR
5	Service and Inspect	1	Control Valve Assembly	C2.4 (Valves and manifolds)	Submit a CIR
6	Renew	1	Counterbalance Valve	C2.4 (Valves and manifolds)	GFP
7	Service and Inspect	1	Winch Assembly	3.2.2 (Service and inspect)	Submit a CFR.
8	Service and Inspect	2	Swing Drive Brake	D2.3 (Brakes and clutches)	GFP
9	Renew	3	External Hose Assembly	C2.2 (Hose assemblies)	Submit a CFR.
10	Renew	1	Wire Rope Assembly	D2.2 (Wire rope assemblies)	GFP.
11	Renew	All	System Hydraulic Fluid	C2.1 (Fluids)	
12	Preserve	1	SPD System	3.2.4 (Preservation)	Preservation to include all previously-coated surfaces.
13	Groom and Lubricate	1	SPD System	3.2.6 (Groom and Lubricate)	Perform all maintenance specified in TP-11101, Chapter 4.
14	Final Operational And Weight Tests	1	SPD System	B2.7 (Davits)	After completion of all other work, perform the operational and weight testing for this system. Main Hoist test weights are as follows: • Static: 9,000 (+450 -0) pounds • Dynamic: 7,500 (+375 -0) pounds • Rated: 6,000 (+0 -300) pounds • CT Operational test: 1,500 (+75 - 000) pound. Submit a CFR.
15	Fabricate and Install	1	Label plate	B2.9 (Label Plates)	
16	Weatherize	All	Hose fittings	C2.2.1.2.2 (Weatherization).	

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3.3 Special requirements for various components. If a Change Request has been authorized for additional work on any of the components listed in Table II below, the Contractor must refer to the corresponding Appendix or paragraph of SFLC Std Spec 5000, as applicable.

TABLE II – SPECIAL REQUIREMENTS

COMPONENT	APPENDIX & PARAGRAPH IN SFLC STD SPEC 5000
Fluids	C2.1
Hose assemblies	C2.2
Piping and tubing	C2.3
Valves and manifolds	C2.4
Gages	C2.5
Gas charged accumulators	C2.6
Heat exchangers and fluid coolers	C2.7
Systems	C2.8
Fastener assemblies	D2.1
Wire rope assemblies	D2.2
Brakes and clutches	D2.3
Open gearing and gear reducers	D2.4

4. NOTES

This section is not applicable to this work item.

WORK ITEM 74: Welin Lambie Dual Point Davit TWPIV 5.0B, Inspect, Test, and Overhaul

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to inspect, test, and overhaul the Welin Lambie Dual Point Davit Model TWPIV 5.0B.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
N	4 Year Davit In-Place Overhaul Kit	NSN: 3950-01-F18-5354 P/N: 892-02053	1 ea.	130,816.35
Y	Cylinder Assembly	NSN: 3040-99-239-4845 P/N: 5727-1501	2 ea.	20,718.88
Y	Hook, Release, Boat Davit	NSN: 4030-01-467-1005 P/N: APR-356-CBH	2 ea.	5,858.19
Y	Accumulator, Complete Assembly	NSN: 3040-99-355-4929 P/N: 885-02012	2 ea.	13,750.83

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225-WLB 583-004, Rev D, MMA Installation of Dual Point Davit
Coast Guard Drawing 225B-WLB 583-002, Rev E, MMA Installation of Dual Point Davit

COAST GUARD PUBLICATIONS

«TECHPUBS»Coast Guard Technical Publication (TP) CP-H5-0001-V0, Twin Pivot Arm Davit -
TYPE TW.PIV 5.0B - Ref. No. 5558-1 Thru 5558-15

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

Surface Forces Logistics Center Standard Specification 5000 (SFLC Std Spec 5000), 2022,
Auxiliary Machine Systems

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR. The Contractor must submit a CIR for the following inspections listed in Table 1:

- Task #1.

3.1.2 Tech Rep. The Contractor must provide the services of a certified Welin-Lambie Tech Rep, to be on-site during final operational and weight testing, to commission the overhauled davit.

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

3.1.3.1 Protective measures, hydraulic system(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 below-listed:

- Small Boat.

3.1.5 Receipt report. Upon receipt of the government-furnished overhaul kit and parts identified from Welin Lambie Pre-Inspection Report, the Contractor must inspect and inventory the government-furnished overhaul kit and parts identified from Welin Lambie Pre-Inspection Report and submit a CFR on the following:

- Missing or damaged parts/components with photographs of each.

3.2 Tasks to be accomplished. The Contractor must perform the tasks designated in Table 1 below in accordance with SFLC Std Spec 5000 and TP CP-H5-0001-V0.

NOTE

Disassemble assemblies only to the extent required to renew GFP components. Minimize unnecessary disassembly steps, such as removal of equipment from foundations or full equipment teardown when not required to access GFE components. Inspection to consist of all surfaces and components accessible during this disassembly. Do not further disassemble parts solely to facilitate inspection.

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TABLE 1 – RECURRING TASKS

#	TASK TYPE (SFLC STD SPEC 5000 PARA. REF.)	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
1	Operate and Inspect	1	Twin Pivot Arm Davit	3.2.1 (Operate and Inspect)	Submit a CIR.
2	Fluid Sampling	1	Twin Pivot Arm Davit	C2.1 (Fluids)	Submit a CFR.
3	Disassemble and Inspect	All	Twin Pivot Arm Davit Structure and Rigging	3.2.3 (Disassemble and inspect)	NOTE: Disassemble assemblies only to the extent required to renew GFP components. Minimize unnecessary disassembly steps, such as removal of equipment from foundations or full equipment teardown when not required to access GFE components. Inspection to consist of all surfaces and components accessible during this disassembly. Do not further disassemble parts solely to facilitate inspection. Includes, but is not limited to: Cranston Eagle hook assemblies, sheave assemblies, and both forward and aft davit arm hinge pin assemblies. GFP. Submit a CFR.
4	Disassemble and Inspect	2	Boat Block Assembly	3.2.3 (Disassemble and inspect)	NOTE: Disassemble assemblies only to the extent required to renew GFP components. Minimize unnecessary disassembly steps, such as removal of equipment from foundations or full equipment teardown when not required to access GFE components. Inspection to consist of all surfaces and components accessible during this disassembly. Do not further disassemble parts solely to facilitate inspection. GFP. Submit a CFR.
5	Disassemble and Inspect	1	Main Winch	3.2.3 (Disassemble and inspect)	NOTE: Disassemble assemblies only to the extent required to renew GFP components. Minimize unnecessary disassembly steps, such as removal of equipment from foundations or full equipment teardown when not required to access GFE components. Inspection to consist of all surfaces and components accessible during this disassembly. Do not further disassemble parts solely to facilitate inspection.

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#	TASK TYPE (SFLC STD SPEC 5000 PARA. REF.)	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
					GFP. Submit a CFR.
6	Disassemble and Inspect	2	Falls Tension Winch	3.2.3 (Disassemble and inspect)	NOTE: Disassemble assemblies only to the extent required to renew GFP components. Minimize unnecessary disassembly steps, such as removal of equipment from foundations or full equipment teardown when not required to access GFE components. Inspection to consist of all surfaces and components accessible during this disassembly. Do not further disassemble parts solely to facilitate inspection. GFP. Submit a CFR.
7	Disassemble and Inspect	All	Control Station	3.2.3 (Disassemble and inspect)	NOTE: Disassemble assemblies only to the extent required to renew GFP components. Minimize unnecessary disassembly steps, such as removal of equipment from foundations or full equipment teardown when not required to access GFE components. Inspection to consist of all surfaces and components accessible during this disassembly. Do not further disassemble parts solely to facilitate inspection. GFP. Submit a CFR.
8	Disassemble and Inspect	All	Hydraulic Assembly	3.2.3 (Disassemble and inspect) C2.2 (Hose assemblies) C2.3 (Piping and tubing) C2.4 (Valves and manifolds) C2.5 (Gages)	NOTE: Disassemble assemblies only to the extent required to renew GFP components. Minimize unnecessary disassembly steps, such as removal of equipment from foundations or full equipment teardown when not required to access GFE components. Inspection to consist of all surfaces and components accessible during this disassembly. Do not further disassemble parts solely to facilitate inspection. GFP. Submit a CFR.
9	Disassemble and Inspect	1	Hydraulic Reservoir	3.2.3 (Disassemble and inspect) C2.4 (Valves and manifolds)	NOTE: Disassemble assemblies only to the extent required to renew GFP components. Minimize unnecessary disassembly steps, such as removal of equipment from foundations or full equipment teardown when not required to access GFE components.

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#	TASK TYPE (SFLC STD SPEC 5000 PARA. REF.)	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
					Inspection to consist of all surfaces and components accessible during this disassembly. Do not further disassemble parts solely to facilitate inspection. GFP. Submit a CFR.
10	Disassemble and Inspect	All	Hydraulic Panel	3.2.3 (Disassemble and inspect) C2.4 (Valves and manifolds)	NOTE: Disassemble assemblies only to the extent required to renew GFP components. Minimize unnecessary disassembly steps, such as removal of equipment from foundations or full equipment teardown when not required to access GFE components. Inspection to consist of all surfaces and components accessible during this disassembly. Do not further disassemble parts solely to facilitate inspection. GFP. Submit a CFR.
11	Disassemble and Inspect	2	Accumulator	3.2.3 (Disassemble and inspect) C2.4 (Valves and manifolds) C2.6 (Gas charged accumulators)	NOTE: Disassemble assemblies only to the extent required to renew GFP components. Minimize unnecessary disassembly steps, such as removal of equipment from foundations or full equipment teardown when not required to access GFE components. Inspection to consist of all surfaces and components accessible during this disassembly. Do not further disassemble parts solely to facilitate inspection. GFP. Submit a CFR.
12	Calibrate	All	Pressure Gauges	C2.5 (Gages)	Submit a CFR as described in SFLC Std Spec 5000 paragraph C2.5.2 (Calibration).
13	NDE	1	Forward and Aft Davit Arms	3.2.5 (NDE)	Submit a CFR.
14	Preserve	1	Twin Pivot Arm Davit and foundation	3.2.4 (Preservation)	
15	Groom and Lubricate	1	Twin Pivot Arm Davit	3.2.6 (Groom and Lubricate)	Renew equipment lubrication in accordance with TP 3943, paragraph 4.5.
16	Operational and Weight Test	1	Twin Pivot Arm Davit	3.2.8 (Operational and weight test) B2.7.2 (Dual point davits)	Perform tests in accordance with SFLC Std Spec 5000 and paragraph 3.3 of this work item.
17	Weatherize	All	Hose fittings	C2.2.1.2.2	

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#	TASK TYPE (SFLC STD SPEC 5000 PARA. REF.)	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
				(Weatherization)	

3.3 Test requirements - Post Overhaul.

3.3.1 Test plan. The Contractor must submit a test plan to the KO for approval, to include the tests prescribed herein, prior to commencement of testing.

3.3.2 Test notification. The Contractor must give Coast Guard personnel 07 days' notice prior to testing.

3.3.3 Operational and weight tests. After completion of work and in the presence of Coast Guard personnel and a qualified Tech Rep, who is certified/authorized by Welin Lambie on Model TW.PIV 5.0B davit, the Contractor must conduct the following operational tests of the davit system, on a level plane to prove satisfactory operating condition in accordance with SFLC Std Spec 5000 and as specified herein. Submit a CFR summarizing all test results.

3.3.3.1 No Load Test. Conduct an operational test of the davit using no load over the entire range of motion.

3.3.3.2 Winch Brake / Modified Static Load Test. Conduct a static brake test using 150% of the Safe Working Load (SWL) of 11,000 lbs (16,500 lbs plus or minus 25 lbs). Hold the load for a minimum of 5 minutes and inspect the brake for slippage or creep. Conduct test with a 50-50 weight distribution.

3.3.3.3 Dynamic Load tests. Conduct the following dynamic test using 125% of the Safe Working Load (SWL) of 11,000 lbs (13,750 lbs plus or minus 25 lbs) while the system is operated in the normal power mode and the hydraulically-stored energy mode (emergency operation). Conduct test with a 50-50 weight distribution for each operation mode.

3.3.3.3.1 Luffing speed test at 125% SWL. Record luffing speeds from the fully-retracted to the fully-extended positions and then from the fully-extended to fully-retracted positions at 125% SWL (13,750 lbs plus or minus 25 lbs).

NOTE

Both luffing speed tests in normal operation mode must meet a 30 to 33 second nominal luff-in and 41 to 43 second nominal luff-out time, plus or minus 3 seconds.

NOTE

Both luffing speed tests in emergency operation mode must meet a 24 to 28 second nominal luff-in and 24 to 28 second nominal luff-out time, plus or minus 3 seconds.

3.3.3.3.2 Dynamic test (at SWL) data recording. During the SWL dynamic test, record the following:

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3.3.3.3.2.1 Main winch running speed test - gravity lower, measure and record the main winch speed

NOTE

The minimum speed must be 73.3 RPM rope drum speed.

3.3.3.3.2.2 Main winch hoist test - demonstrate variable speed, measure and record fast and slow hoist under power.

NOTE

The minimum fast speed and low hoist speeds must be 55 RPM and 19.5 RPM rope drum speed, respectively.

3.3.3.3.2.3 Main winch lower test - demonstrate variable speed, measure and record fast and slow lowering under power.

NOTE

The minimum fast speed and low lowering speeds must be 56.2 RPM and 20.7 RPM rope drum speed, respectively.

3.3.3.3.3 Emergency hand hoisting at 110% SWL (12,100 lbs). The hand hoist must be operated satisfactorily at 110% SWL (12,100 lbs).

3.3.3.4 Safety and emergency feature testing. Operate the davit and test all emergency stop(s), limit switch activation, brake turning handle, and emergency luffing mode (using accumulators).

3.3.4 Test certification. The Contractor must provide a test certification, identified by davit serial number and date of completion, upon successful completion of all testing.

3.3.5 Label plate. The Contractor must install a label plate(s) to document satisfactory test completion in accordance with SFLC Std Spec 5000, Appendix B, Paragraph B2.9 (Label Plates).

4. NOTES

4.1 Davit information:

- National Stock Number (NSN): 2030-99-454-8999
- Item name: Dual Point Davit
- Part Number (PN): TW.PIV5.0B
- Original Equipment Manufacturer (OEM): Welin LambieLTD

4.2 Partial list of Government-furnished property. The following is a list of parts/components the Coast Guard requires to be renewed but may not be all-inclusive of parts that may need to be renewed. Additional parts recommended by the Contractor for renewal must be done via CFR.

NOTE

Contents of Overhaul Kit may change slightly over time. Known changes to kit in the near future:

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- Accumulator items will be removed due to addition of complete accumulator assemblies in GFE list.
- Limit switches to be added to kit for renewal due to record of failures in the field.

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PART NUMBER	DESCRIPTION	QTY
892-02053	4 YEAR DAVIT IN-PLACE OVERHAUL KIT	
BOAT BLOCK ASSEMBLY DRAWING 5650-5601		
5201-8711	Sheave Bush	2
5201-8611	Isolating Bush	4
675-05035	Tension Pin	2
7300-0120	Thrust Washer	2
7300-0121	Sleeve Bearing	2
651-10015	External Circlip	2
5440-5511	Rubbing Strip	4
5440-5711	Rubbing Strip	4
5440-5611	Rubbing Strip	4
616-02056	Slotted CSK HD Screw	16
616-02048	Hex HD Screw	8
616-02051	Plain Washer	8
616-02050	Hex HD Setscrew	8
616-02053	Hex Nut	8
616-02046	Plain Washer	16
DAVIT ASSEMBLY DRAWING 5631-4601		
5204-5211	Ann Pivot Bush	4
639-01070	Locknut	4
5202-8411	Cylinder Pin Bush	4
5191-4711	Roller	8
7500-1225	Self-Lubricating Bearing	32
679-40032	Split Cotter Pin	32
5191-4611	Roller	8
5418-1631	Striker Arm	2
679-38032	Split Cotter Pin	8
800-02033	Main Rope- FWD	1
800-02034	Main Rope – AFT	1
889-01048	Grease Nipple	28
889-01049	Grease Nipple	2
7967-0702	Oil Seal	32
5202-7211	Sleeve	32
7004-0055	Deep Groove Ball Bearing	32
652-00100	Internal Circlip	16
859-03343	Incremental Rotary Incoder	2
WINCH GEARBOX ASSEMBLY DRAWING 5508-7002		

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5405-6911	Gasket	1
5062-0611	Bearing Housing	1
7967-0453	Oil Seal	L
5201-6111	Sleeve	1
7004-0045	Deep Groove Ball Bearing	L
889-02105	Sealing Washer	2
889-02006	Flanged Plug	2
859-01333	Miniature Immersion Heater	L
679-40030	Split Cotter Pin	2
647-00820	Plain Washer	2
7500-1220	Self-Lubricating Bearing	2
5727-0801	Brake Cylinder	1
677-40045F	Split Cotter Pin	1
651-10065	External Circlip	2
7960-0603	O-Ring	1
7967-0401	Oil Seal	1
5520-6301	Main Brake Shoe Assembly	1
2520-1901	Centrifugal Brake Shoe Assembly	6
7960-0453	O-Ring	1
7967-0551	Oil Seal	1
652-10052	Internal Circlip	1
5425-6331	Cylinder Plate	1
5204-5011	Bush	1
679-38020	Split Cotter Pin	L
647-00810	Plain Washer	1
7500-0612	Self-Lubricating Bearing	2
5421-8011	Pivot Plate	1
629-00016	Hex Nut	L
609-16150	Hex HD Setscrew	L
894-01706	Bonded Washer	1
683-00327	Compression Spring	4
647-00816	Plain Washer	4
651-10030	External Circlip	4
647-00830	Plain Washer	4
5492-6011	Motor Terminal Box Gasket	1
651-10045	External Circlip	L
677-40025F	Split Cotter Pin	6
FALLS TENSION WINCH ASSEMBLY DRAWING 5503-3902		
5142-6911	Anchor Pin	2
5590-1411	Modified Nut	2
679-39050	Split Cotter Pin	2

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5492-601 1	Motor Terminal Box Gasket	2
5293-231 1	Gasket	2
7960-1543	O-Ring	2
891-05524	Brake Lining	2
CONTROL STATION ASSEMBLY DRAWING 5694-4701		
830-00110	PVC Strip Seal	1
5405-7111	Gasket	1
HYDRAULIC ASSEMBLY DRAWING 5631-4602		
5726-6101	Pressure Hose Assembly	2
5726-5901	Pressure Hose Assembly	2
5726-6001	Pressure Hose Assembly	4
890-90204	Equal Tee	L
890-90203	Elbow Fitting	1
HYDRAULIC RESERVOIR ASSEMBLY DRAWING 5735-1001		
5405-7911	Reservoir Gasket	L
894-00915	Suction Strainer	2
894-00836	Oil Heater	1
894-01709	Bonded Washer	1
894-00835	Air Bag	1
894-00913	Pressure Filter Assembly	2
894-00822	Desiccant Breather	1
894-00834	Desiccant Breather Adaptor	1
894-00813	Breather	1
894-00321	Relief Valve	2
891-00601	Pressure Filter Element	2
5492-6011	Motor Terminal Box Gasket	2
894-10213	Male Stud Coupling	2
894-10215	Male Stud Coupling	4
894-11355	Reducer	2
5425-8911	Bell Housing Gasket	2
5433-7811	Pump Gasket	2
894-00226	Coupler Spider	2
894-00206	Hydraulic Pump	2
HYDRAULIC PANEL ASSEMBLY DRAWING 5733-1301		
894-00319	Solenoid Coil	1
5406-4511	Hydraulic Panel Gasket	1
891-00449	Water Filter Element	1
894-00908	Return Filter Element	1
Misc.		
885-02061	Accumulator Gas Valve	2

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885-02059	Accumulator Bladder Kit	2
885-02072	Accumulator Bleed Valve	2
891-00460	Accumulator Cushion Ring	2
885-02025	Accumulator Safety Block	1
885-02073	Accumulator Burst Disk	2
892-01013	Cylinder Seal Kit	2
891-00451	Overcenter Valve	4

WORK ITEM 75: Commissary Hoist, Inspect and Service

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to inspect and service the Commissary Hoist system.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

None.

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3562, Sep 2013, SWBS 589, Section C, Dumbwaiter, Model –F-WK-806

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

Surface Forces Logistics Center Standard Specification 3020 (SFLC Std Spec 3020), 2022, Overhaul AC Electrical Motors

Surface Forces Logistics Center Standard Specification 5000 (SFLC Std Spec 5000), 2022, Auxiliary Machine Systems

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 tasks in Table 1:

- Task #1.
- Task #2.
- Task #3.

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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 Inspection and service particulars. The Contractor must perform the tasks listed in Table 1 below in accordance with TP 3562, SWBS 589C; and using SFLC Std Spec 5000 as guidance.

TABLE 1 – TASK PARTICULARS

				ADDITIONAL REQUIREMENTS	
#	TASK TYPE	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM 5000 STD	OTHER
1	Operate and Inspect	1	Commissary Hoist	3.2.1 (Operate and inspect	Refer to TP 3562, SWBS 589C Submit a CIR.
2	Disassemble and Inspect	1	Electric brake	D2.3(Brakes and clutches)	Submit a CIR
3	Overhaul and Preserve	1	Electric Motor	3.2.4 (Preservation)	Perform requirements in paragraphs 3.1 thru 3.4.3 of SFLC Std Spec 3020. Submit a CIR for all inspections required
4	Service and Inspect	1	Hoist Sheave Assembly	3.2.2 (Service and inspect)	Submit a CFR.
5	Service and Inspect	1	Deflection Sheave Assembly	3.2.2 (Service and inspect)	Submit a CFR.
6	Service and Inspect	2	Carriage Guide Roller and Side Roller Assemblies	3.2.2 (Service and inspect)	Submit a CFR.
7	Service and Inspect	1	Carriage Sheave Assembly	3.2.2 (Service and inspect)	Submit a CFR.
8	Service and Inspect	1	Carriage Broken Rope Safety Device Assembly	3.2.2 (Service and inspect)	Submit a CFR.
9	Service and Inspect	1	Slack Rope Safety Device Assembly	3.2.2 (Service and inspect)	Submit a CFR.
10	Service and Inspect	1	Wire Rope Drum and Drum Shaft Assembly	3.2.2 (Service and inspect)	Submit a CFR.
11	Service and Inspect	1	Sprockets and Sprocket Shaft Assemblies, Roller Chain, and Chain Tension Assembly	3.2.2 (Service and inspect)	Submit a CFR.
12	Service and Inspect	1	Door Assembly	3.2.2 (Service and inspect)	Submit a CFR.
13	Service and Inspect	1	Control Station	3.2.2 (Service and inspect)	Submit a CFR.

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				ADDITIONAL REQUIREMENTS	
#	TASK TYPE	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM 5000 STD	OTHER
14	Service and Inspect	1	Door Switch Assembly	3.2.2 (Service and inspect)	Submit a CFR.
15	Service and Inspect	1	Hold Level Door Assembly	3.2.2 (Service and inspect)	Submit a CFR.
16	Service and Inspect	1	Hold Level Deck Control Station	3.2.2 (Service and inspect)	Submit a CFR.
17	Service and Inspect	1	Hold Level Deck Door Switch Assembly	3.2.2 (Service and inspect)	Submit a CFR.
18	Service and Inspect	All	Guide Rail Assemblies	3.2.2 (Service and inspect)	Submit a CFR.
19	Service and Inspect	1	Carriage Assembly	3.2.2 (Service and inspect)	Submit a CFR.
20	Service and Inspect	1	Up Over Travel Limit Switch Assembly	3.2.2 (Service and inspect)	Submit a CFR.
21	Service and Inspect	1	Down Stop Limit Switch Assembly	3.2.2 (Service and inspect)	Submit a CFR.
22	Service and Inspect	1	Up Stop Limit Switch Assembly	3.2.2 (Service and inspect)	Submit a CFR.
23	Service and Inspect	1	Slack Rope Safety Device Limit Switch Assembly	3.2.2 (Service and inspect)	Submit a CFR.
24	Service and Inspect	1	Worm Gear Reducer	3.2.2 (Service and inspect)	Submit a CFR.
26	Renew	1	Wire Rope Assembly	D2.2 (Wire Rope Assemblies)	Refer to TP 3562, SWBS 589C
27	Preserve	1	Commissary Hoist Assembly	3.2.4 (Preservation)	Preservation to include: capstan assembly housing and foundation and the motor casing, and gear reducer, and all other previously painted associated components surfaces. Select the following top coat colors: Grey (26307)
28	Adjust and Align	1	Rails and Car Guide		Refer to TP 3562, SWBS 589C
29	Groom and lubricate	1	Commissary Hoist	3.2.6 (Groom and lubrication)	Refer to lubrication table in TP 3562, SWBS 589C

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

4. NOTES

This section is not applicable to this work item.

WORK ITEM 76: Buoy Crane, Appleton EB600-60-40, Inspect and Service

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to inspect and service the Appleton EB600-60-40 Crane.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
N	Main Fall Wire Rope	NSN: 4010-01-486-0047 PN: JWCG13001919PL	1	2,642.00
N	Aux Fall Wire Rope	NSN: 4010-01-594-2228 PN: JWCG75200637PL	1	805.32

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

2. REFERENCES

COAST GUARD DRAWINGS

None.

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 10512, Section 573-A, July 2018, Buoy Handling Crane
– Model EB600-60-40

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

Surface Forces Logistics Center Standard Specification 5000 (SFLC Std Spec 5000), 2022,
Auxiliary Machine Systems

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022,
Auxiliary Machine Systems

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

3.1.1 CIR. The Contractor must submit a CIR for the inspections required in the following Table 1 tasks:

- Task# 1.
- Task# 2.
- Task# 3.
- Task# 4.
- Task# 5.
- Task# 6.

3.1.2 Tech Rep. The Contractor must provide the services of a Qualified Technical Representative who is familiar with the Appleton EB600-60-40 equipment/system, to accomplish the following on site:

- Advise on manufacturer's proprietary system information.
- Ensure compliance with manufacturer's procedures and standards during system disassembly, inspection, and reassembly as applicable.

3.1.2.1 Ensure the Tech Rep has experience with the system/equipment stated above and demonstrated on their résumé.

3.1.2.2 Submit the name and résumé of the Tech Rep to the COR at the Arrival Conference.

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

3.1.3.1 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).

3.2 Tasks. The Contractor must perform the tasks specified in Table 1, for the buoy crane, in accordance with SFLC Std Spec 5000 and CG TP 10512. Install all Government-furnished equipment and components, as applicable, during equipment/component reassembly.

TABLE 1 - RECURRING TASKS

#	TASK TYPE	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
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#	TASK TYPE	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
1	Operate and Inspect	1	Buoy Crane Assembly	3.2.1 (Operate and inspect)	Submit a CIR.
2	Service and Inspect	1	Buoy Crane Assembly	3.2.2 (Service and inspect)	Submit a CIR.
3	Disassemble and Inspect	1	Main Winch Brake Cylinder Assembly	3.2.3 (Disassemble and inspect) D2.3 (Brake and clutch)	Renew friction discs. Submit a CIR.
4	Disassemble and Inspect	1	Aux Winch Brake Cylinder Assembly	3.2.3 (Disassemble and inspect) D2.3 (Brake and clutch)	Renew friction discs. Submit a CIR.
5	Disassemble and Inspect	4	Slew Drive Brake Assemblies	3.2.3 (Disassemble and inspect) D2.3 (Brake and clutch)	Renew friction discs. Submit a CIR.
6	Service and Inspect	All	Fwd HPU Assemblies	3.2.2 (Service and inspect) C2.1 (Fluids)	Submit a CIR. Renew reservoir oil.
7	Renew	1	Main Hoist Wire Rope Assembly	D2.2 (Wire rope assemblies)	GFP. See 4.1 (Retention of wire rope manufacturer's Test Certification and Serial Number)
8	Renew	1	Aux Hoist Wire Rope Assembly	D2.2 (Wire rope assemblies)	GFP. See 4.1 (Retention of wire rope manufacturer's Test Certification and Serial Number).
9	Partially to Full Preserve	All	Crane Exterior Surfaces	3.2.4 (Preservation)	Surfaces to be preserved are all previously-painted surfaces, including but not limited to: boom, cylinder bodies, turret, hydraulic motor case, pedestal/foundation, winch body, control stand, foundation bolts and flange, etc. Disconnect components, as necessary, to facilitate partial to full -preservation.
10	Groom and Lubricate	1	Buoy Crane Assembly	3.2.6 (Groom and lubricate) C2.4 (Valves and manifolds)	Perform all tasks in TP 10512, paragraph 4-23. Set and tag in place all system pressure control valves (e.g. relief valves, etc.).

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#	TASK TYPE	QTY	COMPONENT OR ASSEMBLY	APPENDIX AND PARA. FROM SFLC STD SPEC 5000	OTHER
11	Final test	1	Buoy Crane Assembly	B2.4.1 (Functional / No-load test) B2.4.3 (Winch Brake / Modified static load test) B2.4.4 (Dynamic Overload test) B2.4.5 (Rated load test)	Perform operational and weight testing. Use Paragraph 6-10 and Appendix W of TP 10512 for guidance. Refer to Table 2 for required test weights. Submit a CFR.
12	Fabricate and Install	1	Label plate	B2.9 (Label plates)	
13	Weatherize	All	Hose fittings	C2.2.1.2.2 (Weatherization).	

TABLE 2 - TEST WEIGHTS

	TEST WEIGHTS – AUX HOIST
Modified Static Test	15,000 (+5% - 0%)lbs
Dynamic	12,500 (+5% - 0%)lbs
Rated	10,000 (+0% - 5%)lbs at rated speed
	TEST WEIGHTS – MAIN HOIST
Modified Static Test	60,000 (+5% - 0%)lbs
Dynamic	45,000 (+5% - 0%)lbs
Rated	40,000 (+0% - 5%)lbs at rated speed

NOTE

Coast Guard Personnel will operate equipment.

3.3 Filtering hydraulic system using Contractor filter cart. The Contractor must furnish a minimum 5gpm filtering cart/rig equipped with a three-micron absolute filter, a water separator, and a pressure differential gage across the filter element assembly. Connect the supply and discharge lines of the filtering cart/rig to the hydraulic system.

NOTE

The best connection points will minimize filtering time and will maximize the rate at which previously unfiltered fluid passes through the rig/cart. Select points at opposite ends of the reservoir if possible.

3.3.1 Continuously circulate system hydraulic fluids through the filtering cart/rig. The Coast Guard Inspector must cycle all system actuators four separate times as described in the notice below during the filtering process. Upon conclusion of actuator cycling, take a hydraulic oil sample.

NOTE

To dislodge and suspend particulate contamination and to heat the fluid to a maximum, constant, steady state temperature, the Coast Guard inspector will cycle all actuators associated with the hydraulic system for a minimum of 20 minutes at the start of the filtering process. The Coast Guard Inspector will repeat this process a minimum of three additional times, equally spaced through the filtering period.

3.3.2 The Contractor must renew the filter element as required and whenever the pressure differential across the filter element exceeds the filter element manufacturer's specifications.

3.3.3 The Contractor must furnish a portable oil sample particle counting analyzer. All oil samples must be immediately tested with the portable analyzer onboard the Cutter. Submit CFR.

3.3.4 Whenever a noticeable increase in the pressure drop across the filter cart is observed, the filter must be renewed. Be aware that this may occur as frequently as 15 min intervals.

3.3.5 During filtering, constant monitoring of the filtering oil must be maintained in order to determine the contamination level. Filtering must continue until the fluid entering the return filter meets the particle population ISO cleanliness code of 19/17/14, in accordance with ISO 4406. In addition, the Contractor must visually inspect return filter for contamination and submit CFR.

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3.3.6 The Contractor must furnish return filters as required and whenever the pressure differential across the filter element exceeds the filter element manufacturer's specifications. The Contractor must dispose all used filters in accordance with all rules and regulations.

3.3.7 Take a representative sample of oil from the hydraulic system in accordance with Std Spec 5000 paragraph C2.1.3. Send sample out to a laboratory for oil analysis. Analysis must include viscosity, moisture, total acid number, particle size and population in sufficient detail to determine ISO cleanliness code of 19/17/14, in accordance with ISO 4406. Submit CFR.

4. NOTES

4.1 Retention of wire rope manufacturer's Test Certification and Serial Number. Ship's crew will retain both main and aux wire rope manufacturer's test certification and serial numbers.

WORK ITEM 77: Grey Water Holding Tanks, Clean and Inspect**1. SCOPE**

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

TABLE 1 – TANKS

TYPE OF TANK	LOCATION	CAPACITY - 95% (Gallons)	LOW SUCTION (Gallons)
Grey Water Tank	4-82-1-W	11,160	
Grey Water Tank	4-82-2-W	11,160	

1.2 Government-furnished property.

None.

1. REFERENCES**COAST GUARD DRAWINGS**

Coast Guard Drawing 225B WLB 593-001, Rev D, Sewage and Waste Water System Diagram
Coast Guard Drawing 225B WLB 593-009, Rev B, Sewage Holding Tank

COAST GUARD PUBLICATIONS

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

OTHER REFERENCES

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

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

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

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

- Piping.
- Pump(s).
-

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

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

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

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

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

3.5 Cleaning. The Contractor must accomplish the following for the tank(s) listed. The Contractor must refer to Coast Guard drawings 225B WLB 593-001 and 225B WLB 593-009 for guidance.

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

3.5.2 Cleaning requirements. Remove manhole cover(s). Clean all tank structure's interior surfaces free of all foreign materials, sediment, and sludge. Remove all persistent residues, taking care not to damage the tank coating system. Remove cleaning media and residues continuously from the tank during the washing process. Remove any residual wash media and wipe up residual moisture with clean lint-free cloths. Collect, contain, and dispose of all wash media, residues, and cleaning materials in accordance with all Federal, state, and local regulations. Clean all tank vent lines. Remove and clean the eductors and level

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switches inside of the tank(s). Reinstall the eductors and level switches upon completion of tank cleaning. Use new gaskets and o-rings to install/reinstall all removed/disturbed components.

3.6 Inspection. The Contractor must visually inspect all interior surfaces, including, but not limited to bulkheads, floor and overhead plating, structural members, manhole cover surfaces, fasteners and gasket seating surfaces. Submit the “Tank and Void Assessment Form” via CFR (see paragraph 4.2 of the Work Item titled “General Requirements”). Electronic PDF version of this form will be furnished by the COR upon request. Include the following, as applicable:

- Tank structural condition.
- Inaccessible areas.
- Condition of tank coating, including measurements taken, percentage, location, and type of coating failure (not applicable for stainless steel tanks).
- Tank level indicator (TLI), vacuum and/or float switch condition.
- Suction and discharge piping and vent line condition.
- Fastener material (stainless steel) and condition.
- Zinc anode condition (remaining percentage).

3.7 Control panel assembly. The Contractor must open and vacuum clean the control panel assembly. Inspect the control panel assembly for any indications of overheating or loose wiring or connections. Submit a CFR

3.8 Closing. The Contractor must notify the COR at least 24 hours prior to closing the tank(s) and ensure tank closure is accomplished in the presence of the Coast Guard Inspector. After satisfactory inspection by the Coast Guard Inspector, and completion of all authorized repairs, close the manhole cover(s) with new gasket material conforming to ASTM D1330.

3.8.1 Renew 100% of nylon insert/nylock nuts and washers.

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

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

3.9.1 The Contractor must adjust the set point on each of the vacuum pressure switches (as applicable) to the set points noted previously.

3.9.2 The Contractor must verify operation of the low and high level switches/alarms and that the pumps cycle from lead to lag status during operation. Demonstrate proper operation of tank TLIs to prove satisfactory operating condition.

3.9.3 Upon completion of testing and, in the presence of the Coast Guard Inspector, the Contractor must pump tank(s) to the limit of the ship’s installed pumps.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 78: Sewage Holding Tanks, Clean and Inspect

1. SCOPE

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

TABLE 1 – TANKS

TYPE OF TANK	LOCATION	CAPACITY - 95% (Gallons)	LOW SUCTION (Gallons)
Sewage Holding Tank	4-82-2-W	1,772	
Sewage Atmospheric Tank	4-82-0-E	600	

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 593-001, Rev D, Sewage and Waste Water System Diagram
Coast Guard Drawing 225B WLB 593-009, Rev B, Sewage Holding Tank

COAST GUARD PUBLICATIONS

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

OTHER REFERENCES

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

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

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

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

- Piping.
- Pump(s).
-

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

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

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

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

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

3.5 Cleaning and inspection requirements. The Contractor must accomplish the following for the tank(s) listed in paragraph 1.1 (Intent), referring to Coast Guard drawings 225B WLB 593-001 and 225B WLB 593-009 for guidance:

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

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3.5.2 Cleaning requirements. Remove manhole cover(s). Clean all tank structure's interior surfaces free of all foreign materials, sediment, and sludge. Remove all persistent residues, taking care not to damage the tank coating system. Remove cleaning media and residues continuously from the tank during the washing process. Remove any residual wash media and wipe up residual moisture with clean lint-free cloths. Collect, contain, and dispose of all wash media, residues, and cleaning materials in accordance with all Federal, state, and local regulations. Clean all tank vent lines. Remove and clean the eductors and level switches inside of the tank(s). Reinstall the eductors and level switches upon completion of tank cleaning. Use new gaskets and o-rings to install/reinstall all removed/disturbed components.

3.5.3 Inspection. Visually inspect all interior surfaces, including, but not limited to bulkheads, floor and overhead plating, structural members, manhole cover surfaces, fasteners and gasket seating surfaces. Submit the "Tank and Void Assessment Form" via CFR (see paragraph 4.2 of the Work Item titled "General Requirements"). Electronic PDF version of this form will be furnished by the COR upon request. Include the following, as applicable:

- Tank structural condition.
- Inaccessible areas.
- Condition of tank coating, including measurements, percentage, location, and type of coating failure (not applicable for stainless steel tanks).
- Tank level indicator (TLI), vacuum and/or float switch condition.
- Suction and discharge piping and vent line condition.
- Fastener material (stainless steel) and condition.
- Zinc anode condition (remaining percentage).

3.5.4 Control panel assembly. Open and vacuum clean the control panel assembly. Inspect the control panel assembly for any indications of overheating or loose wiring or connections. Submit a CFR

3.6 Closing. The Contractor must notify the COR at least 24 hours prior to closing the tank(s) and ensure tank closure is accomplished in the presence of the Coast Guard Inspector. After satisfactory inspection by the Coast Guard Inspector, and completion of all authorized repairs, close the manhole cover(s) with new gasket material conforming to ASTM D1330.

3.6.1 The Contractor must renew 100% of nylon insert/nylock nuts and washers.

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

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.7 Operational test, post repairs. After completion of work, the Contractor must accomplish the following in the presence of the Coast Guard Inspector, and submit a CFR:

3.7.1 Adjust the set point on each of the vacuum pressure switches (as applicable) to the set points noted previously.

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3.7.2 Verify operation of the low and high level switches/alarms and that the pumps cycle from lead to lag status during operation. Demonstrate proper operation of tank TLIs to prove satisfactory operating condition.

3.7.3 Upon completion of testing and, in the presence of the Coast Guard Inspector, pump tank(s) to the limit of the ship's installed pumps.

4. NOTES

4.1 Atmospheric tank. The atmospheric sewage tank is a standalone tank and is not a part of the ship's structure.

WORK ITEM 79: Grey Water Piping, Clean and Flush

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean the grey water piping system.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 528-001, Rev G, Plumbing and Interior Deck Drains

Coast Guard Drawing 225B WLB 593-001, Rev E, Sewage and Waste Water System

COAST GUARD PUBLICATIONS

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

OTHER REFERENCES

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).

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

- Grey water pumps
-

3.2 Contamination prevention. The Contractor must take all precautions to prevent contamination of personnel and spaces in accordance with all applicable Federal, state, and local regulations.

3.3 Personnel qualification. The Contractor must ensure that personnel accomplishing this work are qualified and experienced in operating the pressurized water system and handling the chemicals. For each operator/cleaning technician, submit documentation of applicable experience and training obtained within the last twelve months along with the Cleaning Plan (see paragraph 3.5.6.2).

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

3.5 Piping hydrojet cleaning. The Contractor must perform the following work:

3.5.1 The Contractor must clean and flush approximately 350 linear feet of grey water piping, shown on Coast Guard Drawings 225B WLB 593-001 and 225B WLB 528-001.

3.5.2 Prior to commencing work, coordinate with the Coast Guard Inspector. Determine required down times for affected piping system. Determine the feasibility/need for the piping system to be split to minimize system down time.

3.5.3 With the aid of ship's force, split the plumbing drain system fore and aft by closing isolation valves in the drainage system. Work on only one section of the plumbing drain system at a time to allow use of toilet and shower facilities in the other section of the system by the ship's duty section.

3.5.4 Using the referenced Coast Guard drawings as guidance, hydro blast the internal surfaces of all of the plumbing drain piping. Hydro blast pressure must be at least 2500 psig at the discharge nozzle in all piping to ensure removal of all salts and scale from piping internal surfaces.

NOTE

Ship's force will provide an assistant to the Contractor to show the Contractor the location of clean-out connections within the plumbing drain system.

3.5.4.1 Open each of the clean out connections as required to clean and hydro blast all of the internal piping within the system. Catch any fluid that drains from the clean out connections when it is opened and clean up any spills using bleach to disinfect the spill after cleaning.

3.5.4.2 It may be necessary for the Contractor to install additional clean-out connections to access all portions of the plumbing drain system. If additional clean-out connections are needed, a separate

specification item in this specification package must be authorized to install additional clean-out connections.

3.5.4.3 Empty and clean all connected grease traps, and dispose of waste in accordance with all Federal laws and regulations.

3.5.4.4 Hydro blast cleaning water may be collected in the ship's sewage system and disposed of via the ship's sewage shore tie connections.

3.5.5 Clean until all of the following conditions are met:

- All visible calcium carbonate deposits, solid deposits, grease and build-up are removed from pipe walls.
- Discharge water from the piping being cleaned is free of all visible scale and deposits.

3.5.5.1 Inspect the piping interior using a borescope in the presence of the COR, to verify that all solid deposits visible to the unmagnified eye have been removed. Continue the cleaning process until all visible solid deposits are removed from the pipe walls.

3.5.6 In the event that hydroblasting alone does not clean piping to required conditions, Contractor must use chemical cleaning methods.

3.5.6.1 Ensure that chemical cleaners do not damage the environment, heat exchanger or the vessel.

3.5.6.2 Submit the written plan for chemical cleaning to the COR for approval 96 hours before work is to commence. The procedure must include products to be used, safety precautions, disposal requirements, sequence of events, etc. Submit a MSDS to the COR for all chemicals proposed for use. Changes to the chemical cleaning plan as written, need to be approved by the COR (and Facilities).

3.5.6.3 Chemical cleaning waste water disposal. Dispose of all cleaning fluids and debris in accordance with all applicable Federal, state, and local regulations. Remove all unused chemicals from USCG property immediately upon completion of work item. Do not drain any fluids (including fresh water) into any space, bilge, or exterior location.

- Sequence of each location that ensures all piping sections will be cleaned and all foreign debris removed.
- Flush twice the volume of the system cleaned with water to include 3 repeated pH tests between 6 and 8. The flushing water shall be collected and disposed by the Contractor.

3.6 Pumps and valves. The Contractor must replace system tank valve(s) with temporary spool piece(s). Visually inspect system pumps and valve(s); and submit a CFR. Upon completion of work, reinstall the removed tank valve(s) with new gaskets.

3.7 Gasket renewal. The Contractor must reinstall all removed valves and fittings with new gasket material conforming to applicable referenced drawings.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

3.8.1 Leak test. After all system components are reinstalled, the Contractor must test all disturbed piping for leaks, as follows, and submit a CFR:

- Plug all system openings (except the highest) and fill system with water to the point of overflow. Ensure that the water level does not go down (without adding any water) for sufficient time to inspect the entire system (no less than 15 minutes).
- Closely monitor the system for leaks. Repair all leaks detected.
- Repeat test and inspection until no leaks are detected.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 80: Sewage Piping, Clean and Flush

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to clean the sewage piping system.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 528-001, Rev G, Plumbing and Interior Deck Drains

Coast Guard Drawing 225B WLB 593-001, Rev E, Sewage and Waste Water System

COAST GUARD PUBLICATIONS

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

OTHER REFERENCES

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

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

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

- Sewage pumps
- Toilets

3.2 Contamination prevention. The Contractor must take all precautions to prevent contamination of personnel and spaces in accordance with all applicable Federal, state, and local regulations.

3.3 Personnel qualification. The Contractor must ensure that personnel accomplishing this work are qualified and experienced in operating the pressurized water system and handling the chemicals. For each operator/cleaning technician, submit documentation of applicable experience and training obtained within the last twelve months along with the Cleaning Plan.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

3.5 Cleaning plan. Submit the written plan for chemical cleaning to the COR before work is to commence. The procedure must include products to be used, safety precautions, disposal requirements, sequence of events, etc. Submit a MSDS to the COR for all chemicals proposed for use. Changes to the chemical cleaning plan as written, need to be approved by the COR (and Facilities).

CAUTION

Although the Coast Guard prefers pressurized water as the cleaning fluid, the Contractor may propose chemical cleaning as an alternative, providing that the proposed chemical cleaning agent is environmentally safe, suitable for use in marine sewage piping application, and pre-approved by the COR.

The chemicals used in the cleaning (including cleaning chemicals, neutralizing compounds, and defoaming chemicals) must not cause any significant detrimental effects to the sewage piping system or any other system components. Due to the fact that system piping has historically been difficult to clean by pressure washing only, chemical cleaning is usually required to successfully complete the cleaning process.

3.5.1 Procedure requirements. The Contractor must ensure that the procedure includes the following:

- Methods of cleaning.
- All safety precautions required during cleaning operations.
- List of qualified personnel who will operate machinery or handle chemicals (see paragraph 3.3 (Personnel qualification) herein).
- Locations in the sewage piping where cleaning will take place, and any additional fittings necessary.

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- Sequence of each location that ensures all piping sections will be cleaned and all foreign debris removed.

3.5.2 Plan submittal. The Contractor must submit the written plan to the COR for approval at least 96 hours prior to commencing cleaning operations. Changes to the chemical cleaning plan as written, need to be approved by the COR (and local Facilities).

3.6 Clean and flush. The Contractor must clean and flush approximately 1,400 linear feet of sewage system piping, shown on Coast Guard Drawings 225B WLB 593-001 and 225B WLB 528-001.

3.6.1 Pumps and valves. Replace system tank valve(s) with temporary spool piece(s) before cleaning. Visually inspect system pumps and valve(s); and submit a CFR. Upon completion of work, reinstall the removed tank valve(s) with new gaskets.

3.6.2 Cleaning. Continue cleaning until all of the following conditions are met:

- All visible calcium carbonate deposits, solid deposits and build-up are removed from pipe walls.
- Discharge water from the piping being cleaned is free of all visible scale and deposits.

3.6.3 Inspect the piping interior using a borescope in the presence of the COR, to verify that all solid deposits visible to the unmagnified eye have been removed. Continue the cleaning process until all visible solid deposits are removed from the pipe walls.

3.6.4 Flush twice the volume of the system cleaned with water to include 3 repeated pH tests between 6 and 8. The flushing water shall be collected and disposed by the Contractor.

3.7 Waste disposal. The Contractor must dispose of all cleaning fluids and debris in accordance with all applicable Federal, state, and local regulations. Remove all unused chemicals from USCG property immediately upon completion of work item. Do not drain any fluids (including fresh water) into any space, bilge, or exterior location.

3.8 Gasket renewal. The Contractor must reinstall all removed valves and fittings with new gasket material conforming to ASTM D1330.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

3.9.1 Leak test. After all system components are reinstalled, the Contractor must test all disturbed piping for leaks, as follows, and submit a CFR:

- Plug all system openings (except the highest) and fill system with water to the point of overflow. Ensure that the water level does not go down (without adding any water) for sufficient time to inspect the entire system (no less than 15 minutes).
- Closely monitor the system for leaks. Repair all leaks detected.

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- Repeat test and inspection until no leaks are detected.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 81: SORS Cargo Rail Remove

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to rip out the rail system in the Spilled Oil Recovery System (SORS) cargo hold.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225-WLB-597-020, Rev B, SORS Hold Stowage and Rail System

Coast Guard Drawing 225B-WLB-597-051, Rev A, SORS Hold Stowage and Handling Fittings

COAST GUARD PUBLICATIONS

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

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

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

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General. The intent of this work item is to rip out the rail system in the SORS cargo hold.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

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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:

- Hangers
- Staircase

3.2 Removal. The Contractor must remove and dispose of all rails, strongbacks, foundations, and padeyes in accordance with Coast Guard Drawings 225-WLB-597-020 and 225B-WLB-597-051, as applicable.

3.2.1 Cut and remove the following support rails from the deck and grind remaining surfaces flush to deck.

- Forward Skimmer Stowage Crate Support Rail
- Aft Skimmer Stowage Crate Support Rail
- Forward FSB Container Support Rail
- Aft FSB Container Support Rail

3.2.2 Cut and remove the following from the deck and grind remaining surfaces flush to deck.

- Strongback for Skimmer Stowage Crate
- Strongback for FSB Stowage Container
- Centerline Padeye for FSB Container Lashing
- Outboard Padeye for FSB Container Lashing

3.2.2 Cut and remove the following, if existing, from the deck and grind remaining surfaces flush to deck.

- Centerline Padeye for Skimmer Cage Lashing
- Outboard Padeye for Skimmer Cage Lashing

3.3. Modification. Stencil hold deck load rating of 138 lbs/square foot on aft and forward bulkheads in 4” text.

3.4 Gas freeing. When entering a tank, compartment, confined space, or conducting hot work, refer to and comply with SFLC Std Spec 0000, General Requirements.

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

3.6 Material disposal. The Contractor shall dispose of all removed material not designated for reinstallation in accordance with all Federal, State, and Local requirements.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 82: Accessible Voids, Preserve, 100 Percent**1. SCOPE**

1.1 Intent. This work item describes the requirements for the Contractor to prepare and coat 100% of the following:

TABLE 1 - VOIDS

TYPE OF STRUCTURE	LOCATION	CAPACITY - 95% (GALLONS)
Void	*4-17-2-V	1,854
Void	4-37-2-V	1,396
Void	4-39-0-V	
Void	3-51-0-V	
Void	4-98-0-V	

*There are there are two accesses for 4-17-2- Void.

1.2 Government-furnished property.

None.

2. REFERENCES**COAST GUARD DRAWINGS**

Coast Guard Drawing 225B-WLB 111-001, Rev A, Shell Expansion
 Coast Guard Drawing 225B WLB 601-002, Rev L, Booklet off General Drawings
 Coast Guard Drawing 225B-WLB 801-013, Rev B, Midship Section & Typical Sections
 Coast Guard Drawing 225B-WLB 801-015, Rev B, Scantling, Decks, & Platforms
 Coast Guard Drawing 225B-WLB 801-016, Rev -, Scantlings, Watertight Bulkheads

COAST GUARD PUBLICATIONS

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

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

Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2022,
Temporary Hull Accesses

OTHER REFERENCES

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

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor 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).

3.2 Temporary access openings. With express permission of the KO via submission of a CFR and in accordance with SFLC Std Spec 8636, the Contractor may perform all work required to cut open and close temporary access openings to facilitate accomplishment of the work specified herein.

3.3 Tank content removal. The Contractor must remove and dispose of all tank contents in accordance with all applicable Federal, State, and local regulations.

3.4 Surface preservation. The Contractor must accomplish the following tasks for the voids listed in paragraph 1.1 (Intent). The Contractor must refer to Coast Guard Drawing 225B WLB 601-002 for guidance.:

3.4.1 Remove and retain the manhole cover(s).

3.4.2 Prepare and coat all interior void surfaces (including internal surfaces of manhole cover(s), manhole cover hull ring(s) extending outward to the weld line that ties the hull ring into the tank plating on the tank exterior) using the system specified for " Tanks and Voids, General; Option I " in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems). Select finish/top coat color to match existing.

3.5 In-process quality control measures. The Contractor must abide by all the safety, preservation, and quality control requirements specified in SFLC Std Spec 0000, paragraph 3.2.4.2 (In-process QC

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measures for “critical-coated surfaces). Surfaces being preserved are considered “critical-coated surfaces”.

3.6 Inspection. After surface preparation and before coating application, the Contractor must visually inspect all interior surfaces; including, but not limited to bulkheads, floor and overhead plating, structural members, access cover surfaces, fasteners and gasket seating surfaces. Submit a CFR including the following, as applicable:

- Structural condition.
- Inaccessible areas.
- Tank level indicator (TLI) and/or float switch condition.
- Sounding tube and striker plate condition.
- Suction and discharge piping.
- Fastener condition.

3.7 Tank closing. The Contractor must ensure that the tank(s) remain open for at least 24 hours after completion of the tasks specified above. Notify the COR at least 24 hours prior to closing the tank(s). After satisfactory inspection by the Coast Guard Inspector and after all authorized repairs, accomplish the following:

- Reinspect all TLIs, as applicable, to verify proper operation. Submit CFR.
- Close tank manhole cover(s) with new gasket material conforming to ASTM D1330 and new cotton stud grommets (as applicable).
- Renew 100% of nylon insert/nylock nuts and washers.

3.8 Ultrasonic thickness (UT) measurement. If a Change Request has been authorized and released by the KO, the Contractor must take a total of 100 UT measurements of the exposed void plating in locations designated by the Coast Guard Inspector, 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 83: Tanks, Ballast, Preserve, Partial**1. SCOPE**

1.1 Intent. This work item describes the requirements for the Contractor to prepare and coat part of the surfaces of the following tank(s) up to the percentage indicated, in locations designated by the Coast Guard Inspector:

TABLE 1 – TANKS

TYPE OF STRUCTURE	LOCATION	CAPACITY - 95% (GALLONS)	LOW SUCTION (GALLONS)	% OF TANK COATING REPAIR
Forepeak Ballast	4-0-0-W	9,142	274	
Ballast	4-6-0-W	11,525	350	
Ballast	4-21-0-W	17,711	560	
Ballast	4-30-3-W	4,108	130	
Ballast	4-30-4-W	4,108	130	
Ballast	4-48-0-W	22,528	711	
Ballast	4-57-0-W	27,117	856	

1.2 Government-furnished property.

None.

2. REFERENCES**COAST GUARD DRAWINGS**

Coast Guard Drawing 225B-WLB 111-001, Rev A, Shell Expansion
 Coast Guard Drawing 225B WLB 601-002, Rev L, Booklet off General Drawings
 Coast Guard Drawing 225B-WLB 801-013, Rev B, Midship Section & Typical Sections
 Coast Guard Drawing 225B-WLB 801-015, Rev B, Scantling, Decks, & Platforms
 Coast Guard Drawing 225B-WLB 801-016, Rev -, Scantlings, Watertight Bulkheads

COAST GUARD PUBLICATIONS

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

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

Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2022,
Temporary Hull Accesses

OTHER REFERENCES

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

3. REQUIREMENTS

3.1 General. The Contractor must accomplish the work specified herein for all tanks listed in paragraph 1.1 (Intent). The Contractor must refer to Coast Guard Drawing 225B WLB 601-002 for guidance..

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

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

3.2 Temporary access openings. Due to limited access to work areas, the Contractor may, with express permission of the KO (via submission of a CFR), cut access holes to facilitate accomplishment of the work specified herein. Perform all work required to open and close the access openings in accordance with SFLC Std Spec 8636.

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

3.4 Surface preservation. The Contractor must remove and retain the manhole covers for all tanks listed under paragraph 1.1 (Intent); prepare and coat designated interior tank surfaces (see paragraph 1.1 (Intent)) using the system specified in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Paint Systems) for "Tanks and Voids, Ballast Tanks; Option I or II". Power tool clean all affected surfaces to

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“bare metal”, in lieu of using abrasive blasting; and feather edges of existing intact coating to the prepared areas in order to provide a smooth transition with the new paint. Select top coat color to match existing adjacent surfaces.

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

3.6 Inspection. After surface preparation and before coating application, the Contractor must visually inspect all interior surfaces and manhole surfaces; including, but not limited to bulkheads, floor and overhead plating, structural members, manhole cover surfaces, fasteners and gasket seating surfaces. Submit a CFR including the following, as applicable:

- Structural condition.
- Inaccessible areas.
- Tank level indicator (TLI) and/or float switch condition.
- Sounding tube and striker plate condition.
- Suction and discharge piping.
- Fastener condition.

3.7 Tank closing. The Contractor must ensure that the tank(s) remain open for at least 24 hours after completion of the tasks specified above. Notify the COR at least 24 hours prior to closing the tank(s). After satisfactory inspection by the Coast Guard Inspector and after all authorized repairs, accomplish the following:

- Reinspect all TLIs, as applicable, to verify proper operation. Submit CFR.
- Close tank manhole cover(s) with new gasket material conforming to ASTM D1330 and new stud cotton grommets (as applicable).
- Renew 100% of nylon insert/nylock nuts and washers.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 84: Chain Locker, Preserve, 100 Percent

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to prepare and preserve 100% of the Chain Locker surfaces.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225 WLB 581-001, Rev E, Anchor Handling System Arrangement

COAST GUARD PUBLICATIONS

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

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

Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2022,
Temporary Hull Accesses

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech rep.

Not applicable.

3.1.3 Protective measures. The Contractor 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:

- Eductor strainer.
- Anchors and chains.
- Float switch bilge alarm.

3.2 Temporary access openings. With express permission of the KO via submission of a CFR and in accordance with SFLC Std Spec 8636, the Contractor may perform all work required to cut open and close temporary access openings to facilitate accomplishment of the work specified herein.

3.3 Surface preservation. The Contractor must notify the Coast Guard Inspector 48 hours prior to beginning surface preparation. Remove access cover(s); prepare and coat all the port and starboard chain locker surfaces, including the sump, bellmouths, hawse pipes, chain pipes, bulkhead padeye and all structural members, and including the internal surfaces of the access cover(s), using the system specified for “Chain Lockers”, in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems). Select finish/top coat color to match existing adjacent surfaces.

NOTE

High pressure waterjetting is not acceptable for surface preparation on surfaces to be coated with inorganic zinc.

3.4 Inspection. After surface preparation and before paint application, the Contractor must perform a visual inspection of all prepared surfaces and sounding tubes in accordance with Coast Guard Drawing 225 WLB 581-001. Submit a CFR.

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

4. NOTES

This section is not applicable to this work item.

WORK ITEM 85: Chain Lockers, Preserve, Partial

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to preserve 33% of the Chain Locker surfaces, as designated by the Coast Guard Inspector.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225 WLB 581-001, Rev E, Anchor Handling System Arrangement

COAST GUARD PUBLICATIONS

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

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

Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2022,
Temporary Hull Accesses

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

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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, (Interferences). Known interferences include, but are not limited to the following:

- Eductor strainer.
- Anchors and chains.
- Float switch bilge alarm.

3.2 Temporary access openings. Due to limited access to work areas, the Contractor may, with express permission of the KO (via submission of a CFR), cut access holes to facilitate accomplishment of the work specified herein. Perform all work required to open and close the access openings in accordance with SFLC Std Spec 8636.

3.3 Surface preservation. The Contractor must notify the Coast Guard Inspector 48 hours prior to beginning surface preparation. Remove access cover(s) and prepare and coat 33% of the port and starboard chain locker surfaces, including the sump, bellmouths, hawse pipes, chain pipes, bulkhead padeye and all structural members, as designated by the Coast Guard Inspector, using the system specified for “Chain Lockers”, in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems). Select finish/top coat color to match existing adjacent surfaces.

3.4 Inspection. After surface preparation and before paint application, the Contractor must perform a visual inspection of all prepared surfaces and sounding tubes in accordance with Coast Guard Drawing 225 WLB 581-001. Submit a CFR.

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

4. NOTES

This section is not applicable to this work item.

WORK ITEM 86: Accessible Void(s), Preserve, Partial,**1. SCOPE**

1.1 Intent. This work item describes the requirements for the Contractor to prepare and coat the following:

TABLE 1 – VOIDS

TYPE OF STRUCTURE	LOCATION	CAPACITY - 95% (GALLONS)
Void	*4-17-2-V	1,854
Void	4-37-2-V	1,396
Void	4-39-0-V	
Void	3-51-0-V	
Void	4-98-0-V	

*There are there are two accesses for 4-17-2- Void.

1.2 Government-furnished property.

None.

2. REFERENCES**COAST GUARD DRAWINGS**

Coast Guard Drawing 225B-WLB 111-001, Rev A, Shell Expansion
 Coast Guard Drawing 225B WLB 601-002, Rev L, Booklet off General Drawings
 Coast Guard Drawing 225B-WLB 801-013, Rev B, Midship Section & Typical Sections
 Coast Guard Drawing 225B-WLB 801-015, Rev B, Scantling, Decks, & Platforms
 Coast Guard Drawing 225B-WLB 801-016, Rev -, Scantlings, Watertight Bulkheads

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022,
 General Requirements
 Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2022,
 Welding and Allied Processes
 Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022,
 Requirements for Preservation of Ship Structures

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Surface Forces Logistics Center Standard Specification 8636 (SFLC Std Spec 8636), 2022,
Temporary Hull Accesses

OTHER REFERENCES

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

3. REQUIREMENTS

3.1 General. The Contractor must refer to Coast Guard Drawing 225B WLB 601-002 for guidance..

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, (Interferences).

3.1.5 Temporary access openings. With express permission of the KO via submission of a CFR and in accordance with SFLC Std Spec 8636, the Contractor may perform all work required to cut open and close temporary access openings to facilitate accomplishment of the work specified herein.

3.1.6 Tank content removal. The Contractor must remove and dispose of all tank contents in accordance with all applicable Federal, State, and local regulations.

3.2 Surface preservation. The Contractor must remove and retain the tank manhole cover(s). Prepare and coat the designated tank interior surfaces, using the system specified for "Tanks and Voids, Tanks and Voids, General, Option I)" in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems). Power tool clean all affected surfaces to "bare metal", in lieu of using abrasive blasting, and feather the edges of existing intact coating to the prepared areas, in order to provide a smooth transition with the new paint. Select finish/top coat color to match existing adjacent surfaces.

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

3.4 Inspection. After surface preparation and before coating application, the Contractor must visually inspect all interior surfaces; including, but not limited to bulkheads, floor and overhead plating, structural members, manhole cover surfaces, fasteners and gasket seating surfaces. Submit a CFR including the following, as applicable:

- Structural condition.

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- Inaccessible areas.
- Tank level indicator (TLI) and/or float switch condition.
- Sounding tube and striker plate condition.
- Suction and discharge piping.
- Fastener condition.

3.5 Tank closing. The Contractor must ensure that the tank(s) remain open for at least 24 hours after completion of the tasks specified above. Notify the COR at least 24 hours prior to closing the tank(s). After satisfactory inspection by the Coast Guard Inspector and after all authorized repairs, accomplish the following:

- Reinspect all TLIs, as applicable, to verify proper operation. Submit CFR.
- Close tank manhole cover(s) with new gasket material conforming to ASTM D1330 and new cotton stud grommets (as applicable).
- Renew 100% of nylon insert/nylock nuts and washers.

3.6 Ultrasonic thickness (UT) measurement. If a Change Request has been authorized and released by the KO, the Contractor must take a total of 100 UT measurements of the exposed void plating in locations designated by the Coast Guard Inspector, 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 87: Decks - Exterior, Preserve, Non-Skid Broadcast Grit System

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to preserve the following exterior deck surfaces:

TABLE 1 – NON-SKID

Non-skid Area	Length	Width	SQFT
Foc'sle Bull nose area Port and Starboard side	9.5	10	95
Area in between Anchor chain and Catspaws	14	4	56
Area in between Capstans	3.5	2.5	9
Starboard side near Bosn 2 Scuttle and Blast shield	17	9	153
Starboard side around Line 2 Bitts	14.5	5	73
Port Side Aft near Railing for buoy deck outboard	15	3.5	53
Port Side Aft near Railing for buoy deck in board	16.5	8.5	140.5
Port side aircastle near Ladder	7	4	28

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Port Side Fantail near door to first class P-way	14	11	154
Port side Fantail next to H-Bit and Picnic table	11.5	9	103.5
Port side Fantail next to bitts for line 4	9.5	8	76
Port side Fantail next to the centerline chock	9.5	9	86
Port side boat deck next to incinerator	9.5	13.5	128
Port side Flybridge forward and outboard	10	9	90
Port side Flybridge forward and inboard	6	9	54
Total square footage			1299

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225 WLBB 601-002, Rev G Booklet of General Drawings

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

None..

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor must protect non-affected vessel's equipment, components, and spaces during surface preparation and coating application procedures, as specified in SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection). Specific areas/ equipment/ components to be protected include, but are not limited to:

- Adjacent vertical (beyond what is specified in paragraph 3.2.1 (System particulars)).
- Deck fittings.
- Deck equipment.

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

3.2 Preservation requirements particulars. The Contractor must accomplish the following tasks. Use Coast Guard Drawing 225G WLB 601-002 as guidance.

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

3.2.2 Surface preparation and coating application. Prepare and coat the weather deck surfaces designated in paragraph 1.1 (Intent), including bitt and chock foundations, machinery rack guards and machinery foundations, hatches and hatch guards, stanchion sockets, vent pipes, angle coaming area, and approximately six inches up all adjacent vertical surfaces (as applicable); select and use the "Option I" in SFLC Std Spec 6310, Appendix A (Cutter and Boat Exterior Painting Systems).

3.2.2.1 Surface preparation optional methods. The Contractor must have the option of using either high/ultrahigh pressure water Jetting, abrasive blasting, or a combination of the two, to achieve the required surface preparation. 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.

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

3.2.2.3 Color selection. Select and use authorized paint as specified in SFLC Std Spec 6310, Appendix A, note 28. Use CG Dark Gray (16099) as the finish/top coat color.

3.2.2.4 Nonskid exclusion. Do not apply non-skid aggregate over vertical surfaces, and the following areas:

- Within two inches of deck fittings, hatches, welds, and protrusions.
- Within six inches of deck coaming, bulkheads, and deck edges.
- Within six inches of all deck edges and bulkheads.
- Within two inches of deck foundations (two inches measured from outermost portion of foundation, for example, foundation brackets on anchor windlass).
- Over deck fittings.
- Over waterways.
- Over welds.

NOTES

1. Surfaces being preserved are considered “critical-coated surfaces”.

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

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

b. Coatings must be applied by brushing or rolling.

3.2.2.5 Non-skid surface appearance and texture. Ensure that the non-skid surface must show continuous and reasonably uniform profile. Aggregate must present a rough uniformly coarse appearance over the entire surface with no loosely bound clumps of particles.

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

4. NOTES

4.1 Definition of coaming. Vertical raised sections of deck plating around an opening that provide a frame and/or deflect water, such as around a hatch or gooseneck.

WORK ITEM 88: Decks – Exterior (Buoy or Construction Deck), Preserve 100%

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to preserve the Buoy Deck surfaces, shown on Coast Guard Drawing 225 WLB 601-002 (see 4.1 (Definitions)).

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 601-002 Rev K, Booklet of General Drawings

COAST GUARD PUBLICATIONS

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

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

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

OTHER REFERENCES

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

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

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor must furnish and install all protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3 (Vessel component, space, and equipment protection). Specific areas/equipment/components to be protected include, but are not limited to:

- Buoy crane.
- Adjacent bulkhead surfaces.
- Deck fittings.

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:

- P-100
- Bin Box
- Oxygen acceding bottles
- Ladder
- Deck drains and sounding caps
- Cross deck winches.
- In-haul winch.
- Level Wind Arm
- Mechanical chain stoppers.
- Hydraulic chain stoppers

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

3.2.1 Remove all Deck Machinery. Large deck equipment listed in paragraph 3.1.4 shall be unbolted from their foundations and removed in order to accomplish this work.

- Cross deck winches
- In-haul winches
- Level Wind Arm
- Mechanical chain stoppers
- Hydraulic chain stoppers

Hydraulic chain stoppers 3.2.2 Pre-surface preparation wash. Accomplish low-pressure (less than 5,000 psi) fresh water wash of all affected surfaces, to remove soluble chlorides and other surface contaminants. Capture, contain, and dispose of wash water for proper disposal in accordance with all Federal, state and local regulations.

3.2.3 Surface preparation. Prepare all designated deck surfaces (see 4.1 (Definition) by abrasive-blasting to SSPC-SP10/NACE No. 2, using grit conforming to MIL-A-22262 (1.5 to 2.5 mil anchor profile).

3.2.4 Substrate inspection. After completion surface preparation and before coating application, the Contractor must perform a visual inspection of the prepared substrate, in the presence of the Coast Guard Inspector. Submit a CFR.

3.2.5 Surface coating. Coat all prepared surfaces with the coating system specified for “Weather Decks (Weather Deck, Buoy Tender Working Deck)”, in SFLC Std Spec 6310, Appendix A (Cutter and Boat Exterior Painting Systems). Select a Gray (36231) inorganic zinc coating.

CAUTION

1. Unless a containment system is used during pier side/dockside preservation, the following must be adhered to:

a) All surface preparation tools/equipment must be vacuum-shrouded or close-looped systems, to contain surface preparation dust and debris.

b) Extreme precaution must be taken while spraying the inorganic zinc coating, to prevent coating application overspray.

2. Organic zinc coating may not be substituted for inorganic zinc for Buoy Deck surfaces.

3.3 In-process quality control measures. The Contractor 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”.

3.4 Weight tests. After reinstallation of inhaul winch and crossdeck winches, the Contractor must accomplish the following (Coast Guard personnel will operate all equipment):

3.4.1 Inhaul winch. Perform all weight test requirements in accordance with CG TP-3498, Chpt 8, Para 8-6.4 (Static Load Test Weight: 24,750 (+1,238 -0) pounds; Rated Load Test Weight: 16,500 (+0 -825) pounds; and Emergency Brake Release Test Weight: 5,000 (+0 -250) pounds). Submit CFR.

3.4.2 Crossdeck winches. Perform weight tests in accordance with paragraph B2.3 (Winches).of SFLC Std Spec 5000 (Static Load Test Weight: 15,600 (+780 -0) pounds; Rated Load Test Weight: 10,400 (+0 -520) pounds). Submit CFR.

4. NOTES

4.1 Definitions.

4.1.1 Buoy Deck. The Buoy Deck surfaces are defined as horizontal surfaces, Main Deck, between frames 25 and 57; also included are all vertical and horizontal edges on the mating surfaces of the two buoy deck cargo hatches, including knife edge channels, channel support plate, bitt and chock foundations, machinery rack guards and machinery foundations, hatches and hatch guards, stanchion sockets, vent pipes, angle coaming area, and approximately six inches up all adjacent vertical surfaces.

4.1.2 Deck coaming. Coaming is defined as vertical raised sections of deck plating around an opening that provide a frame and/or deflect water, such as around a hatch or gooseneck.

WORK ITEM 89: Hull Plating Freeboard (Buoy Port Areas), Preserve

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to prepare and coat the buoy working areas, shown on Coast Guard Drawing 225B WLB 601-002 (see 4.1 (Definition of Buoy Port)).

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 601-002, Rev K, Booklet of General Drawings

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

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

- 3.1.5.1 (UT measurements).

3.1.2 Tech Rep.

Not applicable.

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 in the vicinity of 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.

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

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

3.1.5 Pre-surface preparation wash. Prior to accomplishing surface preparation, the Contractor must accomplish low-pressure (less than 5,000 psi) fresh water wash of all affected surfaces, to remove soluble chlorides and other surface contaminants.

3.1.5.1 Ultrasonic thickness (UT) measurement. The Contractor must take a total of 25 UT measurements in accordance with SFLC Std Spec 0740, Appendix C in locations designated by the Coast Guard Inspector and using Coast Guard Drawing as guidance. Submit a CIR.

3.1.5.2 Ensure that the water utilized for the low-pressure wash is of sufficient purity and quality that it does not prevent the surface being preserved from achieving the required degree of surface cleanliness or nonvisible contamination criteria.

3.1.5.3 Capture, contain, and dispose of wash water for proper disposal in accordance with all Federal, state and local regulations.

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

3.2 Preservation particulars. The Contractor must accomplish prepare and coat the designated buoy port surfaces in accordance with SFLC Std Spec 6310, using the system specified for “Freeboard/Superstructure, Steel – Prone to Mechanical Damage or High Wear”.

3.2.1 Ensure that all non-affected surfaces adjacent to the designated areas are feathered into the designated area, in accordance with the feathering guidance provided in SFLC Std Spec 6310, paragraph 3.1.13 (Touch-ups and minor coating repairs).

NOTE

Waterjetting may not used as a surface preparation, in view of the fact that the specified coating system includes an Inorganic Zinc coating as the primer coat.

3.2.2 Abide by all the safety, preservation, and quality control requirements specified in SFLC Std Spec

0000, paragraph 3.2.4.2 (In-process QC measures for “critical-coated surfaces”).

NOTE

Surfaces being preserved are considered “critical-coated surfaces”.

3.3 Repair of un-intended damages. The Contractor must repair all damages, including overspray, incurred to surfaces not covered by the scope of this work item, during surface preparation and paint application procedures.

4. NOTES

4.1 Definition of Buoy Port. The Buoy Port areas are defined as freeboard surfaces between Frames 30 and 48, port and starboard, from the deck level down to the top of the boot-topping; and all inboard surfaces of the gunwale.

WORK ITEM 90: Superstructure, Preserve, Partial

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to perform partial preservation of steel superstructure surfaces.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 601-002, Rev G, Booklet of General Drawings

Coast Guard Drawing 225B WLB 635-001, Rev E, Hull, Thermal, & Acoustic Insulation Schedule

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

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

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

The Society for Protective Coatings (SSPC)/NACE-International (NACE) Joint Surface Preparation Standard SSPC-SP 10/NACE No. 2, 2004, Near-White Blast Cleaning

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

The Society for Protective Coatings (SSPC)/NACE-International (NACE) Joint Surface Preparation Standard SSPC-SP 12/NACE No. 5, Surface Preparation and Cleaning of Steel & Other Hard Materials by High and Ultrahigh Pressure Water Jetting Prior to Recoating

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

- Life lines.
- Bulkheads.
- Port lights.
- Deck surfaces.

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:

- Electrical/electronic equipment.
- Junction boxes.
- Fire stations.
- RHI.
- MSB.
- Insulation (overhead of air castles)

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

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

3.4 Preservation requirements. The Contractor must prepare and coat a total of approximately 3500 square feet of the superstructure surface, as designated by the Coast Guard Inspector (where there is evidence of coating failure) with the system specified for “Freeboard/Superstructure/Mast (Freeboard/Superstructure)” in SFLC Std Spec 6310. Select the following:

3.4.1 Surface preparation. The Contractor must prepare all surfaces identified for preservation in accordance with SFLC Std Spec 6310, paragraph 3.1.13, Touch-ups and minor coating repairs.

NOTES

1. A profile suitable for over coating would be similar to what is produced by abrading the coating with 100-grit paper.

- 2. For larger areas in need of repair, abrasive blasting to SSPC-SP 10 or water jetting to SSPC-WJ-2(M) may be used in lieu of SSPC-SP 11.**
- 3. Water jetting without abrasive addition does not provide any additional anchor profile to the surface, beyond what was present after the previous surface preparation.**

3.4.2 Coating application. The Contractor must apply coatings to the repair area in accordance with SFLC Std Spec 6310, paragraph 3.1.13, Touch-ups and minor coating repairs. Top coat color must match existing adjacent surfaces in accordance with COMDTINST M10360.3.Table 6.2 (Underwater Body, Boot-top, and Freeboard Colors).

CAUTION

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

- 1. All surface preparation tools/equipment must vacuum-shrouded.**
- 2. Coatings must be applied by brushing or rolling, which may require additional coats to obtain required dry film thickness.**

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

4. NOTES

4.1 Definition of superstructure. For the purposes of this item, superstructure surfaces are defined as vertical and horizontal surfaces from the main deck level up, excluding decks, as shown in sketch provided below. These surfaces include but are not limited to the following: all handrails and stanchions, including those on forecastle and fantail; bulkheads, doors, underside of overhangs and overheads, inboard surfaces of the bulwark, ladders, piping, stuffing tubes, structural tees, angles, standoffs, brackets and gussets. The six-inch dado where the superstructure joins the deck is not included in the definition of superstructure; it is normally preserved with the deck surfaces.

4.2 Unit's responsibility. Unit crew will install all new superstructure decals, compartment checkoff holders, and name plates, after the completion of work 4.2 Unit's responsibility. Unit crew will install all new superstructure decals, compartment checkoff holders, and name plates, after the completion of work.

WORK ITEM 91: 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
12	ZHS-23	12" x 6" x 1-1/4"	SW Ballast Tank 4-57-0-W
12	ZHS-23	12" x 6" x 1-1/4"	SW Ballast Tank 4-48-0-W
4	ZHS-23	12" x 6" x 1-1/4"	SW Ballast Tank 4-30-4-W
4	ZHS-23	12" x 6" x 1-1/4"	SW Ballast Tank 4-30-3-W
10	ZHS-23	12" x 6" x 1-1/4"	SW Ballast Tank 4-21-0-0-W
4	ZHS-23	12" x 6" x 1-1/4"	SW Ballast Tank 4-6-0-W
4	ZHS-23	12" x 6" x 1-1/4"	SW Ballast Tank 4-0-0-W
1	ZHS-23	12" x 6" x 1-1/4"	Sea Chest 4-80-1-W
1	ZHS-23	12" x 6" x 1-1/4"	Sea Chest 4-80-2-W
1	ZHS-23	12" x 6" x 1-1/4"	Sea Bay 4-80-0-W
2	ZHS-23	12" x 6" x 1-1/4"	Grey Water Tank 4-82-2-W
2	ZHS-23	12" x 6" x 1-1/4"	Sewage Holding Tank 4-83-1-W

1.2 Government-furnished property.

None.

2. REFERENCES**COAST GUARD DRAWINGS**

Coast Guard Drawing 225B WLB 633-002, Rev A; Cathodic protection passive

COAST GUARD PUBLICATIONS

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

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

«REF_A»

OTHER REFERENCES

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

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

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

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

3.2 Renewal particulars. The Contractor must accomplish the following tasks. Use Coast Guard Drawing 225B WLB 633-002 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.

- 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 92: Impressed Current Cathodic Protection System, Inspect and Maintain

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to inspect and maintain the Impressed Current, Cathodic Protection (ICCP) system.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 633-001, Rev B, Cathodic Protection System Arrangement,
Block Diagram, Wiring Deck Plan, and Elementary Diagrams

COAST GUARD PUBLICATIONS

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

Coast Guard Drawing 225B WLB 633-001, Rev B, Cathodic Protection System Arrangement,
Block Diagram, Wiring Deck Plan, and Elementary Diagrams

Coast Guard Technical Publication (TP) 3574, Mar 2009, SWBS Group 633-638

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):

- 3.4.1.3 (Cleaning and visual inspection)
- 3.4.2.2.5 (Reference electrode testing)

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- 3.4.2.3.7 (Anode testing)

3.1.2 Tech Rep. Provide the services of a certified Technical Representative, who is familiar with the Impressed Current Cathodic Protection System, to accomplish the following tasks on site:

- Provide manufacturer's proprietary information, software, and tools pertinent to the maintenance, testing, modernization, and repair of the Impressed Current Cathodic Protection System.
- Assist with proper repair methods, and ensure compliance with manufacturer's procedures and standards during disassembly, inspection, repair, modification, calibration, testing, and reassembly of the Impressed Current Cathodic Protection System.

3.1.2.1 Ensure that the technician is a Certified Representative of Evoqua-Water Technologies (formerly Siemens/US Filter Electrocatalytic Products).

3.1.2.2 Submit the Tech Rep's name and résumé to the COR at the Arrival Conference.

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

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

3.2 The Contractor must perform all inspections and tests in the presence of the Coast Guard Inspector. Submit all findings and data to the Coast Guard Inspector on a Condition Found Report within one day of test completion.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.3 Operational test - initial. While waterborne in saltwater and prior to commencement of work, the Contractor must witness Coast Guard personnel perform an initial operational test of the impressed current cathodic protection system, to demonstrate existing operational condition. Submit a CFR documenting initial condition and include the following measurements:

3.3.1 The Contractor must measure and record the potential difference between each reference electrode (positive) and the hull (negative) using a high impedance voltmeter. With impressed current cathodic protection system power secured, the expected potential is 0.30 to 0.65 volts. A narrower range may be listed in TP 3574, Vol. 1 of 1, SWBS Group 633-638 for the particular reference cell chemistry and water salinity.

3.3.2 The Contractor must measure the potential difference between the unenergized anode power lead and the hull using a high impedance voltmeter. The expected potential is 0.5 to 2.0 volts with the anode being positive with respect to the hull. A narrower range may be listed in TP 3574, Vol. 1 of 1, SWBS Group 633-638 for the particular anode noble metal and water salinity.

3.4 Inspection and maintenance requirements. The Contractor must accomplish the following, while dry docked, using Coast Guard TP 3574, Vol. 1 of 1, SWBS Group 633-638, as well as Coast Guard Drawing 225B WLB 633-001 and Drawing 67845, Sheets 3 and 4, as guidance, for each anode and reference

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electrode assembly. The frame number is the location of the gland penetration. Anode designs with rectangular geometry extend well beyond the gland under the hull.

3.4.1 Cleaning and Inspection. Hand clean the anodes (Table 1) and reference electrodes (Table 2) of all marine growth.

TABLE 1 – ANODES

ID	FRAME	SIDE	COMPARTMENT
3 (58)	74½	Stbd	Main Machinery Room (4-66-0-E)
1 (59)	34½	Stbd	Sea Water Ballast Tank (4-30-3-W)
4 (60)	74½	Port	Main Machinery Room (4-66-0-E)
2 (61)	34½	Port	Sea Water Ballast Tank (4-30-4-W)

TABLE 2 – REFERENCE CELLS

ID	FRAME	SIDE	COMPARTMENT
2 (51)	54½	Port	Sea Water Ballast Tank (4-48-0-W)
1 (52)	54½	Stbd	Sea Water Ballast Tank (4-48-0-W)

3.4.1.1 Sand or lightly sandblast (protect anodes and electrodes) the dielectric shield that extends from the anodes to remove all marine growth and loose paint.

3.4.1.2 Wash all anodes and reference electrodes with fresh water to remove salt accumulation. Allow washed areas to dry thoroughly before proceeding with electrical tests of the anodes and reference electrodes.

3.4.1.3 Visually inspect all anode, electrode, and dielectric shield surfaces for pitting, dissolution, voids, corrosion, and other damage. Submit a CIR.

3.4.2 Electrical Checks.

3.4.2.1 Ground Connection Testing:

3.4.2.1.1 Verify that all power and signal grounding connections to external cables in the cathodic protection system controller(s) are tight and free of corrosion. Verify that all such cables are also tight and free of corrosion at the hull termination. Correct any deficiencies.

3.4.2.1.2 Measure and record the resistance between each power ground terminal in the cathodic protection system controller and the hull using a four-wire micro-ohmmeter. Maximum acceptable resistance is 0.05 ohm.

3.4.2.1.3 Measure and record the resistance between each signal ground terminal in the cathodic protection system controller and the hull using a four-wire micro-ohmmeter. Maximum acceptable resistance is 0.5 ohm.

3.4.2.2 Reference Electrode Testing:

3.4.2.2.1 For each accessible reference electrode gland listed in Table 2 above, inspect the housing for leaks, condensation, and corrosion. Remove connection box or anode cofferdam covers as needed to gain access. Tighten any loose packing gland nuts to the proper value. Electrode glands are considered accessible when they can be reached from compartments that are normally open to personnel or from normally closed tanks or voids that are opened and certified safe for personnel by other definite work items in this package.

3.4.2.2.2 Inspect each cable for deterioration of insulation.

3.4.2.2.3 Inspect the exterior surface of each reference electrode for damage or deterioration.

3.4.2.2.4 Measure and record the insulation resistance between each reference electrode plus cable and the hull using a high impedance multimeter. Minimum acceptable resistance is 10 kilohms.

3.4.2.2.5 Submit a CIR with results of above reference electrode inspection and testing.

3.4.2.2.6 Reconnect each reference electrode cable to the cathodic protection system controller.

3.4.2.2.7 Seal each reference electrode gland housing, applying paraffin and/or reinstalling cover if directed by the above references.

3.4.2.3 Anode Testing:

3.4.2.3.1 For each accessible anode gland listed in Table 1 above, inspect the housing for leaks, condensation, and corrosion. Remove connection box or anode cofferdam covers as needed to gain access. Tighten any loose packing gland nuts to the proper value. Anode glands are considered accessible when they can be reached from compartments that are normally open to personnel or from normally closed tanks or voids that are opened and certified safe for personnel by other definite work items in this package.

3.4.2.3.2 Inspect each anode cable for insulation deterioration.

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3.4.2.3.3 Inspect the exterior surface of each anode for damage or deterioration. Inspect the condition of the dielectric shield fairing compound and coating.

3.4.2.3.4 Electrically isolate each anode from the controller electronics. In many cases, such can be accomplished without disconnecting cables by opening circuit breakers or removing fuses. Refer to the circuit schematic in the technical publication.

3.4.2.3.5 Measure and record the resistance between each anode face and its associated cable termination at the controller using a four-wire micro-ohmmeter. Maximum acceptable resistance is 0.05 ohm.

3.4.2.3.6 Measure and record the insulation resistance between each anode and the hull using a 150 VDC tester. Minimum acceptable resistance is 10 kilohms.

3.4.2.3.7 Submit a CIR with results of above anode inspection and testing.

3.4.2.3.8 Seal each anode gland housing, applying paraffin and/or reinstalling cover if directed by the above references.

3.4.2.3.9 Restore continuity between each anode and the controller electronics.

3.3.2.4 Propeller Shaft Grounding Assembly:

3.4.2.4.1 Clean the contact surface on each propeller shaft and verify that the band clamps are tight.

3.4.2.4.2 Clean and inspect the rigging, brushes and shunts. Remove the brushes from the brush holders and clean out dirt and other foreign debris.

3.4.2.4.3 Renew any brush with less than 25% of the original length remaining. Sand new brushes to fit slip ring contour. Blow out any dust or abrasive.

3.4.2.4.4 Inspect brush shunt connections for tightness and corrosion. Apply conductive grease to prevent corrosion and torque all shunt fasteners.

3.4.2.5 Rudder Stock:

3.4.2.5.1 Inspect the bonding strap between each rudder stock and the ship's structure for corrosion and continuity. Straps are to be a minimum of No. 8 AWG flexible copper cable and must be brazed to cable lugs on the rudder stock and fixed ship's structure.

3.4.2.5.2 Apply conductive grease to all connections to prevent corrosion and torque all fasteners.

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 the impressed current cathodic protection system to be in satisfactory operating condition. Submit a CFR.

4. NOTES

4.1 Supplementary work. Based on inspection and testing results, the performance of corrective actions may be authorized via change order or by activation of the following optional work item(s):

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- Impressed Current Cathodic Protection System Anodes, Renew
- Impressed Current Cathodic Protection System Reference Cells, Renew
- Impressed Current Cathodic Protection System Dielectric Shield, Repair
- Impressed Current Cathodic Protection System Dielectric Shield, Renew

WORK ITEM 93: Impressed Current, Cathodic Protection System, Reference Cells, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew the designated impressed current, cathodic protection (ICCP) system reference cells.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
N	Reference electrode, silver & silver chloride Siemens Water Technologies W3T105012 (Electrocatalytic 32622)	NSN: 5977-01-346-0750	2 ea.	1,300.02

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 633-001, Rev B, Cathodic Protection System Arrangement,
Block Diagram, Wiring Deck Plan, and Elementary Diagrams

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3574, Mar 2009, SWBS Group 633-638
Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022,
General Requirements
Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022,
Requirements for Preservation of Ship Structures

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

▪ 3.1.1 CIR.

None.

3.1.2 Tech Rep. Provide the services of a certified Technical Representative, who is familiar with the Impressed Current Cathodic Protection System, to accomplish the following tasks on site:

- Provide manufacturer's proprietary information, software, and tools pertinent to the maintenance, testing, modernization, and repair of the Impressed Current Cathodic Protection System.
- Assist with proper repair methods, and ensure compliance with manufacturer's procedures and standards during disassembly, inspection, repair, modification, calibration, testing, and reassembly of the Impressed Current Cathodic Protection System.

3.1.2.1 Ensure that the Tech Rep is a Certified Representative of Siemens Water Technologies (formerly USFilter Electrocatalytic Products).

3.1.2.2 Submit the Tech Rep's name and résumé to the COR at the Arrival Conference.

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

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

▪ 3.2 Reference cell renewal. The Contractor must renew the reference cells shown in Table 1 using TP 3574, Vol. 1 of 1, SWBS Group 633-638, as well as Coast Guard Drawing 225B WLB 633-001 and Drawing 67845, Sheets 3 and 4, as guidance. The Contractor must ensure the following:

TABLE 1 – REFERENCE CELL RENEWAL LIST

ID	FRAME	SIDE	COMPARTMENT
2 (51)	54½	Port	Effluent Holding Tank (4-48-0-W)
1 (52)	54½	Stbd	Effluent Holding Tank (4-48-0-W)

3.2.1 Reference cell renewal may be performed while the cutter is waterborne, but normally is accomplished while drydocked. A special cartridge ejector tool, carried by OEM service personnel, is required while waterborne.

3.2.2 For each reference cell shown in Table 1 above, gain access to the gland housing by opening the listed sea water ballast tank in conjunction with work item "Tanks (Ballast), Inspect," which is a separate work item in this specification package, and removing the electrode cofferdam cover inside the tank.

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3.2.3 Electrically disconnect the electrode by removing the packing gland nut and pulling the female plug assembly out of the gland.

3.2.4 Remove each electrode assembly to be renewed in accordance with manufacturer's instructions.

3.2.5 If in drydock, clean and inspect the interior of the gland exposed by electrode assembly removal. Submit inspection results via CFR along with recommended corrective action, if any. If authorized by the COR, prepare and recoat the exposed surfaces in conjunction with work item "Underwater Body, Preserve," which is a separate work item in this specification package.

3.2.6 Upon completion of any agreed upon corrective action, coat the interior of each gland body with a thin layer of silicone grease and install each new electrode assembly in accordance with manufacturer's instructions. Renew all rings, bushings, washers, Nylok set screws, and packing.

3.2.7 Electrically reconnect the electrode by reinserting the female plug and tightening the compression nut.

3.2.8 Defer reinstallation of the cofferdam cover until after the electrode has been pressurized at normal ship's draft for at least 30 minutes and no leakage is evident.

3.3 Reference cell testing. The Contractor must measure and record the insulation resistance between each reference electrode plus cable and the hull using a high impedance multimeter. Minimum acceptable resistance is 10 kilohms.

3.3.1 The Contractor must measure and record the potential difference between each reference electrode (positive) and the hull (negative) using a high impedance voltmeter. With impressed current cathodic protection system power secured, the expected potential is 0.30 to 0.65 volts. A narrower range may be listed in TP 3574, Vol. 1 of 1, SWBS Group 633-638 for the particular reference cell chemistry and water salinity.

3.3.2 The Contractor must reconnect each reference electrode cable to the cathodic protection system controller.

3.4 Operational tests. The Contractor must, if accessible, inspect all disturbed reference cells and associated glands for leakage during vessel refloating. No leakage allowed after 30 minutes.

3.4.1 After completion of work, the Contractor must thoroughly test, in the presence of the Coast Guard Inspector and demonstrate the impressed current cathodic protection system to be in satisfactory operating condition. Submit a CFR.

3.5 Restoration. Upon satisfactory completion of the sea water leakage test, the Contractor must reinstall each cofferdam cover, renewing the neoprene gasket and the stainless steel self-locking nuts.

4. NOTES

4.1 Useful lifespan. The useful life span of each reference cell is expected to be 10 years. If an electrode has failed prematurely, the cause should be investigated and corrected.

WORK ITEM 94: 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	4 ea.	50.00

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

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

***Government-furnished property, which is to be supplied by either the vessel or the C4IT Service Center.

2. REFERENCES**COAST GUARD DRAWINGS**

Coast Guard Drawing 225B WLB 801-001, Rev A, Lines and Offsets

Coast Guard Drawing 225B WLB 801-003, Rev -, Curves of Forms and Cross Curves of Stability

Coast Guard Drawing 225B WLB 801-006, Rev G, Docking Drawing

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

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

- None.

3.1.2 Tech Rep.

Not applicable.

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

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

- Anchor assembly
- Load conditions
- U/W body appendages

3.2 Key personnel. The Contractor must determine key personnel and require their presence during all drydocking phases as required by SFLC Standard Spec 8634. Submit list of key personnel to the COR.

3.3 Docking and undocking. The Contractor must perform drydock and undock in accordance with SFLC Std Spec 8634, using Coast Guard Drawing 225B WLB 801-001, 225B WLB 801-003, and 225B WLB 801-006 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 SW): 1934.96
- VCG (FT ABL): 17.89
- LCG (FT aft FP): 106.04
- LCF (FT aft FP): 107.91
- Trim (FT by stern): 0.69
- MT1” (LT-FT/Inch): 212.7

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

POS. #	BLOCK HEIGHT ABOVE DOCKING FACILITY DECK				STEEL PLATE	SITUATION AWARENESS	FIN STABILIZERS	ADDITIONAL
	MIN.	RUDDER REMOVAL	PROPELLER REMOVAL	SHAFT REMOVAL				

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3	48"	NA	NA		NA	Forward Scan Radar: 24" minimum clearance. Forward Scan Sonar Dome (FSSD) location must not interfere with keel block. Speed log transducer: Particular attention must be paid when setting keel blocks to ensure clearance around the speed log transducer and cover plate at Frames 16-20.	NA	Keel loading must be between 12 and 16 LT/ft.
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NOTE

The Forward Scan Sonar Dome (FSSD) is usually found between Frames 62 and 63 or between Frames 63 and 64

3.4.2 Cable, sling, or strap tension calculation. If the Contractor plans to use a vertical lift, crane, or travel/mobile lift to haul out the vessel, the Contractor must submit the cable, sling, or strap tension calculation specified in Table A1 and paragraph A2.7.2.7 of SFLC Std Spec 8634 with the Pre-Award calculations, using the loading condition specified in paragraph 3.4.

3.5 Pre-award calculations. The Contractor must provide to the KO a set of pre-award calculations, as described in SFLC Std Spec 8634 Appendix A.

3.5.1 Provide vertical side/bilge block offsets for any side blocks placed in a location where vertical offsets are not already defined by the docking plan.

3.5.2 Submit an alternate blocking arrangement, as part of the pre-award calculation submission, to compensate for any changes from the docking plan.

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3.5.2.1 If the alternate blocking arrangement interferes with U/W hull plate inspection or 100% preservation of U/W body surfaces required under separate work items in this specification package, the Contractor must include a plan of how inspection/preservation will be accomplished. Plan must include any modifications necessary to the prescribed docking plan including removing, shifting, repositioning blocks, or fleeting the vessel at no additional cost to the Government.

NOTE

1. The USCG has established several approved alternate docking plans for each vessel-class, to facilitate complete access to the entire U/W body structure, for periodic comprehensive inspection and/or 100% preservation. This inspection and preservation pattern and periodicity is a configuration management concern that is a vital requirement of the contract. Intention to deviate from these plans (fewer blocks, block spacing, additional blocks, etc) is to be identified on pre-award calculations (Paragraph 3.5.2); an alternate docking plan and mitigation strategy will be provided to maintain preservation and inspection configuration.

2. Pre-award calculations may be deemed unsatisfactory - and may adversely affect contract award if they are submitted with the following detrimental factors:

a. No methods have been proposed that meet the requirements for the specified docking plan.

b. Proposed block shifting or fleeting risk-mitigating plan may result in delays in period of performance.

c. Proposed alternate docking plan violates USCG configuration management policies.

3.6 Planned availability, immediate work and routine inspections. The Contractor must perform designated routine drydocking work, in accordance with SFLC Std Spec 8634, paragraph 3.5.4 (within twenty four hours after docking).

3.6.1 Upon the COR convening the Coast Guard Underwater Hull Inspection Board (UWHIB), the Contractor must facilitate and participate in the UWHIB inspections of the underwater hull. The Contractor must provide a designated hull repair supervisor to accompany the UWHIB and mark on the hull proposed repairs areas, as necessary.

3.6.2 The Contractor must assist the UWHIB in completing the Drydocking and Underwater Body Inspection Work Sheet (CG-2926) and the Underwater Body Paint Report (CG-4815). Obtain forms from COR.

NOTES

1. The COR will convene the UWHIB as soon as possible after the vessel has been dry-docked and the hull has been cleaned. No other work must take place until the UWHIB completes their inspections.

2. The UWHIB will recommend the extent of underwater body coating system preservation required based on the conditions found during the underwater hull survey.

WARNING

Do not use chemical additives in the freshwater wash. Take extreme care to avoid damaging or removing existing intact underwater body coating.

3.7 Fuel offloading. The Contractor must 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.

4. UWHIB forms. Drydocking and Underwater Body Inspection Work Sheet (CG-2926) and the Underwater Body Paint Report (CG-4815) may be obtained from the following links.

[CG_2926.PDF](#)

[CG_4815.PDF](#)

WORK ITEM 95: Temporary Services, Provide - Cutter

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to provide temporary services to the Cutter, during the performance of this availability.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

None

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

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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 (See note)	Y
3.3.2	Telephone and internet access	Y
3.3.3	Parking	Y
3.3.4	Duty section berthing: 8 male, 6 female. Duty section berthing must be provided during disruption of berthing areas.	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)	N
3.3.8	Hazardous material/hazardous waste disposal (see Tables 2 and 3 below)	Y
3.3.9	Heavy lift equipment: 40 hours	Y
3.3.10	Water supply	
3.3.10.1	Potable water: 2000 gallons per day, at 60 psig.	Y
3.3.10.2	Hot-circulating water	N
3.3.10.3	Cooling water	Y
3.3.10.4	Firemain system (including all requirements in associated sub-paragraphs)	Y
3.3.11	Steam (including all requirements in associated sub-paragraphs)	N
3.3.12	Refuse disposal	Y
3.3.13	Sewage and grey water disposal (including all requirements in associated sub-paragraphs)	Y
3.3.14	Storage – General (including all requirements in associated sub-paragraphs):	
3.3.14	Dry stores.	Y
3.3.14	Paint and flammable stores.	Y
3.3.14	Refrigerated stores.	Y
3.3.15	Small boat storage for two boats (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
Xx	xx	xx

TABLE 3 - HAZARDOUS WASTE DISPOSAL – SOLIDS

OILY FILTERS	OILY RAGS (LBS)	EMPTY 1-GAL CONTAINER*	EMPTY 5-GAL CONTAINER*	EMPTY 55-GAL CONTAINER*
xx	xx	xx	xx	xx

*Previously housed hazardous materials.

3.2 Extended temporary services. If the performance period of the contract is extended by the KO, the contractor 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 96: Sea Trial Performance, Support, Provide

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to provide support for the performance of sea trials.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

None

COAST GUARD PUBLICATIONS

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

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

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

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3.2 Trial applicability. The Contractor must provide support to the vessel crew to perform sea trials for all work items that require conducting operational tests while the vessel is waterborne or underway, prior to the item certification as being complete. The Contractor must be responsible for ensuring all test procedures are prepared, approved, and distributed for the sea trials, and must be responsible for recording test data and submitting CFRs to the COR.

3.3 Sea trial agenda. The Contractor must prepare an agenda that details the Contractor's plans for ensuring completion of the required sea trials.

3.3.1 Agenda contents. The Contractor must ensure the agenda consists of chronological list of administrative events, inspection events and test events. Events must be arranged to permit expeditious conduct with minimum interference between concurrent events.

NOTE

Mutually compatible events may be scheduled simultaneously.

3.3.1.1 The Contractor must ensure the agenda identifies installation of any test equipment or component modification that could impact the normal operation of equipment or systems during performance of the trials.

3.3.1.2 The Contractor must ensure the agenda identifies any operating instructions or special test procedures that could impact the normal operations of equipment or systems.

3.3.1.3 The Contractor must ensure the agenda includes the full name, title, security clearance, home address, home telephone number and name of next of kin of each Contractor-personnel scheduled to ride the ship during performance of the trials.

3.3.2 Agenda submission requirements. The Contractor must submit four legible copies of the sea trial agenda to the COR two days prior to the scheduled trials. The Contractor must coordinate both the planning and conduct of the post-overhaul ship trials with the ship's force (see 4.1 (Equipment operation)).

3.4 Environmental compliance. The Contractor must abide by the below-listed rules, in addition to all other Federal, state, and local rules governing the overboard discharge of garbage and oil in the water.

3.4.1 Discharge of garbage.

TABLE 1 – GARBAGE RULES

GARBAGE TYPE	RULE
Plastics, including synthetic ropes, fishing nets, and plastic bags	Prohibited in all areas
Floating dunnage, lining and packing materials	Prohibited less than 25 miles from nearest land
Food waste, paper, rags, glass, metal, bottles, crockery and similar refuse	Prohibited less than 12 miles from nearest land
Comminuted or ground food waste, paper, rags, glass, etc...	Prohibited less than 3 miles from nearest land

3.4.2 Discharge of oil. The Contractor must be aware that the Federal Water Pollution Control Act prohibits the discharge of oil or oily waste upon or into any navigable waters of the U.S. The prohibition

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includes any discharge that causes a film or discoloration of the surface of the water or causes a sludge or emulsion beneath the surface of the water.

CAUTION

Violators are subject to substantial civil and/or criminal sanctions including fines and imprisonment.

3.5 Dock trials. The Contractor must conduct dock trials to demonstrate the material readiness of the ship for sea trials. Additionally, all onboard tests conducted after installation and prior to sea trials to prove proper installation and satisfactory operation of equipment must be conducted in accordance with the requirements specified in the work items designated in paragraph 3.1 (Trial applicability). Ensure that the dock trials are begun no later than 12 hours prior to the scheduled sea trials.

3.5.1 The Contractor must provide a pier facility (or allow the cutter to move to a Coast Guard pier) in order to support dock trials. Dock trials may not be conducted while the cutter remains floating inside the dry-dock (not touching the blocks).

3.5.2 During dock trials, the Contractor must ensure the Contractor's personnel observe tests under their cognizance and make such adjustments and repairs, as required.

3.6 Sea trials. As soon as possible after completion of the dock trials, the Contractor must coordinate performance of the sea trials, based on the operational tests, as required in the applicable work items, for the following purpose:

- Performing tests that could not be performed while the ship was moored.
- Serving as final step in proving the success of the overhaul/repair tasks required in the designated work items, and ensuring that Contractor and COR are both satisfied that the ship is in all respects ready for final acceptance.
- Provide tug boat services to maneuver the ship to open water. Tug boat services is to remain on sight until successful test of the reduction gear and CPP systems.

3.6.1 The Contractor must have representatives on board the cutter to observe the trials for the purpose of observing whether or not the repairs are satisfactory.

3.6.2 The Contractor must ensure the sea trials are be carried out in free route, away from other shipping, as designated by the COR.

3.7 Post-trial examination. After the completion of the sea trial, the Contractor must perform a careful and thorough examination of parts of the repaired machinery, as designated by the COR. If any part of the ship or its equipment fails to meet contractual requirements during trials, perform additional trials after corrective measures have been taken.

NOTES

1. Examples of dock trials include conducting cold (pre-light off) and hot checks, cycling machinery (rudders, BPU, turning gear, fin stabilizers), and conducting any post-docking shaft alignment verification checks. This time may also be used to on-load fuel, if needed for operations.

- 2. The conditions of the trials will be determined largely by the character of the work that has been performed in each case, and as designated by the COR. A full power trial should be run at this time unless the COR elects to defer this run until all new machinery parts are run-in or the training status of the crew permits full power operation without undue hazard.**
 - 3. This examination may be conducted by the Engineer Officer of the ship, in which case he will report the results of the examination to the COR, fully describing any defects or improper conditions found.**
 - 4. Representatives of manufacturers who have furnished ship components may be invited to witness trials subject to approval of the CO or OINC of the ship.**
- t to approval of the CO or OINC of the ship.**

4. NOTES

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

*S_63000_RAK_0814_SWIT
REC_S_63000_PotWtr_PumpRommDck_Prsvr_225' WLB 'B' Class (Hulls 206-216) (0712)
SYY_NNN_6300_PotWtr_PumpRommDck_Prsvr_AUT_MMYH_Hull#*

WORK ITEM 97: Potable Water Pump Room Deck, Preserve

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to preserve the deck surfaces (approximately 204 sqft) in the Potable Water Pump Room (2-21-2-Q), shown on Coast Guard Drawing 225B WLB 601-002.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 180-002, Rev E, Foundations, Block 910

Coast Guard Drawing 225B WLB 601-002, Rev K, Booklet of General Drawings

Coast Guard Drawing 225B 910-001, Rev E, Hull Block 910, Panels

COAST GUARD PUBLICATIONS

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

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

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

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

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

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

- Water pumps (qty: 4).
- Potable water pedestal.
- Reverse osmosis (R/O) plant.
- R/O pedestal and foundation.
- Pipes.

NOTE

Contractor is advised that the R/O foundation (see on Coast Guard Drawing 225B WLB 180-002 is welded to the deck in this space and will require hot work to be removed to conduct the work required in this specification. Ballast Tank 4-21-0-W is located directly beneath the pump room deck and will require gas free certification prior to the commencement of any hot work. Ship's Force will pump the tank to the low suction point.

3.2 Ultrasonic thickness (UT) measurement. After surface preparation and prior to coating application, the Contractor shall take a total of 20 UT measurements, in locations designated by the Coast Guard Inspector, in accordance with SFLC Std Spec 0740, Appendix C. Use Coast Guard Drawing Coast Guard Drawing as guidance. Submit a CIR.

3.3 Surface preservation. The Contractor shall prepare and coat the Potable Water Pump Room deck surfaces, including approximately six inches up on adjacent bulkhead using the system specified for "Decks, Steel/Aluminum Decks – wet areas, food preparation areas, exit areas, and areas subject to condensation, in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems). Select color light grey (16251), as the finish/top coat color.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 98: Deck Covering, Interior, Wet and Dry, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew wet and dry, interior deck covering system(s).

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

None

COAST GUARD PUBLICATIONS

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

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

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

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

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

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

- 3.3 Ultrasonic thickness (UT) measurements.

3.1.1 CIR.

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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 Protective measures, specific. 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:

- _____
- _____

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

- Sink
- Toilet
- Gear

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
Stateroom Heads						
1-57-0-L,	60	S	Cosmetic Polymeric Epoxy Resin, Type III (One-Step Epoxy System)/Appendix A	Y	C	Renew existing underlayment.

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1-82-1-L	60	S	Same	Y	C	Renew existing underlayment.
1-82-3-L	60	S	Same	Y	C	Renew existing underlayment.
1-82-4-L	60	S	Same	Y	C	Renew existing underlayment.
1-98-1-L	72	S	Same	Y	C	Renew existing underlayment.
1-96-1-L,	72	S	Same	Y	C	Renew existing underlayment.
1-97-4-L	72	S	Same	Y	C	Renew existing underlayment.
01-57-4-L	60	S	Same	Y	C	Renew existing underlayment.
01-71-2-L	60	S	Same	Y	C	Renew existing underlayment.
01-79-0-L	60	S	Same			Renew existing underlayment.
01-84-2-L	60	S	Same	Y	C	Renew existing underlayment.
01-88-1-L	64	S	Same	Y	C	Renew existing underlayment.
Passway 1-57-2-L		S	Same	Y	C	Retain existing underlayment.
Crew's Messdeck 1-66-0-L		S	Same	Y	C	Retain existing underlayment.
Companion way 1-66-2-L		S	Same	Y	C	Retain existing underlayment.
Deck Office 2-57-2-A		S	Same	Y	C	Retain existing underlayment.
		S	Same	Y	C	Retain existing underlayment.
Total SQFT						

*Approximated.

**Note: A = Aluminum; S = Steel.

***See SFLC Std Spec 6341 for definition of cove base.

3.3 Visual inspection. The Contractor must perform a visual inspection of all exposed deck surfaces, prior to priming deck surfaces. 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.

WORK ITEM 99: Firemain Valves, Overhaul or Renew**1. SCOPE**

1.1 Intent. This work item describes the requirements for the Contractor to overhaul or renew the listed firemain valves as designated in Table 1.

TABLE 1 - FIREMAIN VALVES

SIZE/ TYPE/ VALVE #	DESCRIPTION	MATERIAL	CONNECTION/ RATED PRESSURE CLASS #	*O/ R
2-1/2" Gate	1-54-2	Bronze	150	O
2-1/2" Gate	01-85-2	Bronze	150	O
2-1/2" Gate	01-84-4	Bronze	150	O
2-1/2" Gate	01-84-2	Bronze	150	O
2-1/2" Gate	01-86-1	Bronze	150	O
2-1/2" Gate	01-87-1	Bronze	150	O
2-1/2" Gate	01-87-3	Bronze	150	O
2-1/2" Gate	01-60-2	Bronze	150	O
2-1/2" Gate	01-60-4	Bronze	150	O
2-1/2" Gate	01-61-2	Bronze	150	O
2-1/2" Gate	01-62-1	Bronze	150	O
2-1/2" Gate	01-62-3	Bronze	150	O
2-1/2" Gate	01-63-1	Bronze	150	O

* "O" = Overhaul "R"=Renew

1.2 Government-furnished property.

None

2. REFERENCES**COAST GUARD DRAWINGS**

Coast Guard Drawing 225-WLB-79-216-3-7B FIRE MAIN DIAGRAM

Coast Guard Drawing 225-WLB-79-216-3-7C FIRE MAIN DIAGRAM

COAST GUARD PUBLICATIONS

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

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

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

OTHER REFERENCES

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

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

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

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

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

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

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

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

- Deck plates
- Piping
- Insulation
- Pumps
- Hoses

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3.2 Temporary firemain connections. The Contractor must provide temporary connections for the firemain to ensure the firemain system remains operational during the performance of the tasks specified herein.

3.3 Removal. The Contractor must remove each valve identified in Table 1 and immediately install blank flanges and gaskets over openings and secure each flange 180 degrees apart with at least two bolts.

3.4 Renewal. The Contractor must renew all valves identified in Table 1 by an "R" in the "O/ R" column. At no additional cost to the Government, the Contractor may opt to renew valves identified in Table 1 for overhaul by an "O" in the "O/ R" column as follows.

3.4.1 Equivalency. Ensure all renewed valves, including Mil-Std valves, are commercial-standard type valves conforming to the applicable standard listed in Table 1. The Contractor must ensure each new valve is of identical material and equivalent to the valve it is replacing.

3.4.2 Inspection. Visually inspect the piping and mounting arrangements and submit a CFR detailing any required modifications to accommodate the new valve(s).

3.5 Overhaul. The Contractor must accomplish the following as required for each valve identified for overhaul, not including valves the Contractor has opted to renew, to meet the specified valve testing standard:

3.5.1 Disassembly. Disassemble the valve to the extent necessary to perform the required work.

NOTE

Complete disassembly of some valves may not be necessary for overhaul.

3.5.2 Cleaning. Clean all internal surfaces.

3.5.3 Inspection. Visually inspect for defects in body and structural material, surface finish, and the condition of seats, disks, parting faces, plugs, and sealing surfaces.

3.5.4 Machining. As applicable, machine, grind, lap, and spot-in seat-to-disk to obtain an acceptable leakage rate at or below the valve's industry testing standards identified in Table 1.

3.5.5 Assembly. Assemble the valve using new hardware and software not limited to the following:

- Packing
- O-rings
- Gaskets
- Seal rings
- Non-metallic seats
- Pins
- Washers
- Inserts, etc

3.5.6 Testing. Test each overhauled valve in accordance with the applicable standards listed in Table 1. Submit a CFR.

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3.6 Installation. Upon completion of all authorized work, the Contractor must install all overhauled and renewed valves with renewed gaskets as follows:

3.6.1 Disposal. Remove and dispose of all blank flanges and associated gaskets.

3.6.2 Secure. Secure each valve installation with renewed bolting hardware.

3.6.3 Labeling. Renew all missing and damaged valve label plates, and install new valve label plates on new valves, in accordance with ASTM F992.

3.7 Touch-up preservation. The Contractor 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.)

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

3.9 Hydrostatic test. After all authorized repairs, the Contractor must hydrostatically test all new and disturbed piping and components of the disturbed firemain piping 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 100: Potable Water System Valves, Overhaul or Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to overhaul or renew listed potable water system valves as designated in Table 1.

TABLE 1 - POTABLE WATER SYSTEM VALVES

DESCRIPTION SIZE/ TYPE/ VALVE #	LOCATION	MATERIAL	CONNECTION/ RATED PRESSURE CLASS #	*O/ R
1/2" / Globe/ 1-11-67	CPW-V-2-21-30	Bronze	Welded/ 50 PSI	O
8" / Butterfly/ 02-56-78	CPW-V-2-21-28	Bronze	Flanged/ 50 PSI	O
	CPW-V-01-88-1			O
	CPW-V-01-89-2			O

* "O" = Overhaul, "R"=Renew

1.2 Government-furnished property.

None

2. REFERENCES

COAST GUARD DRAWINGS

None.

COAST GUARD PUBLICATIONS

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

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

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

OTHER REFERENCES

American National Standards Institute/American Water Works Association (ANSI/AWWA) C652, 2002, Disinfection of Water-Storage Facilities
American Society of Mechanical Engineers (ASME) B16.34, 2004, Valves-Flanged, Threaded, and Welding End
ASTM International (ASTM) F992, 2006, Standard Specification for Valve Label Plates
Manufacturers Standardization Society of the Valve and Fittings Industry (MSS) SP-61, 2003 Edition, Pressure Testing Of Steel Valves
Manufacturers Standardization Society of the Valve and Fittings Industry (MSS) SP-67, 2002 Edition, Butterfly Valves
Manufacturers Standardization Society of the Valve and Fittings Industry (MSS) SP-72, 1999 Edition, Ball Valves with Flanged or Butt-Welding Ends for General Service
Manufacturers' Standardization Society of the Valve and Fittings Industry (MSS) SP-80, 2008 Edition, Bronze Gate, Globe, Angle and Check Valves

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor 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:

- Deck plates
- Piping
- Insulation
- Pumps
- Hoses

3.2 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.

3.3 Removal. The Contractor must remove each valve identified in Table 1 and immediately install blank flanges and gaskets over openings and secure each flange 180 degrees apart with at least two bolts.

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3.4 Renewal. The Contractor must renew all valves identified in Table 1 by an "R" in the "O/ R" column. At no additional cost to the Government, the Contractor may opt to renew valves identified in Table 1 for overhaul by an "O" in the "O/ R" column.

3.4.1 Equivalency. The Contractor must ensure all renewed valves, including Mil-Std valves, are commercial-standard type valves conforming to the applicable standard listed in Table 1. The Contractor must ensure each new valve is of identical material and equivalent to the valve it is replacing.

3.4.2 Inspection. The Contractor must visually inspect the piping and mounting arrangements and submit a CFR detailing any required modifications to accommodate the new valve(s).

3.5 Overhaul. The Contractor must accomplish the following as required for each valve identified for overhaul, not including valves the Contractor has opted to renew, to meet the specified valve testing standard:

3.5.1 Disassembly. 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 for overhaul.

3.5.2 Cleaning. The Contractor must clean all internal surfaces.

3.5.3 Inspection. The Contractor must visually inspect for defects in body and structural material, surface finish, and the condition of seats, disks, parting faces, plugs, and sealing surfaces.

3.5.4 Machining. As applicable, the Contractor must machine, grind, lap, and spot-in seat-to-disk to obtain an acceptable leakage rate at or below the valve's industry testing standards identified in Table 1.

3.5.5 Assembly. The Contractor must assemble the valve using new hardware and software not limited to the following:

- Packing
- O-rings
- Gaskets
- Seal rings
- Non-metallic seats
- Pins
- Washers
- Inserts

3.5.6 Testing. The Contractor must test each overhauled valve in accordance with the applicable standards listed in Table 1. Submit a CFR.

3.6 Installation. Upon completion of all authorized work, the Contractor must install all overhauled and renewed valves with renewed gaskets.

3.6.1 Disposal. The Contractor must remove and dispose of all blank flanges and associated gaskets.

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3.6.2 Secure. The Contractor must secure each valve installation with renewed bolting hardware.

3.6.3 Labeling. The Contractor must renew all missing and damaged valve label plates, and install new valve label plates on new valves, in accordance with ASTM F992.

3.7 Touch-up preservation. The Contractor 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.)

3.8 Pipe flushing. After all authorized work is completed; the Contractor must accomplish the following:

3.8.1 The Contractor must flush all new and disturbed potable water system piping with clean fresh water for five minutes, or until all debris is removed, whichever occurs first.

3.8.2 The Contractor must ensure that flushing fluid is directed to move scale and foreign debris away from installed machinery to prevent possible damage upon operational testing.

3.8.3 Submit a CFR documenting date and time of flushing process, and verification of piping cleanliness.

3.8.4 The Contractor must dispose of flushing fluid in accordance with all applicable Federal, state, and local regulations.

NOTE

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

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

3.10 Hydrostatic test. After all authorized repairs, the Contractor must hydrostatically test all new and disturbed piping and components of the potable water piping 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.

3.11 System disinfection. After all other work involving the potable water system is complete, the Contractor must disinfect and treat the affected potable water valves and piping as necessary to meet or exceed the requirements of AWWA C652. After disinfection, remove and dispose of all treated water in accordance with all Federal, state and local regulations. Submit CFR providing confirmation that disinfection of affected potable water system components has been completed and certifying that all sampling and testing is negative for coliform organisms.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 101: Space or Component, Preserve**1. SCOPE**

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

TABLE 1 – SPACES

DESCRIPTION	LOCATION	SQFT
Flammable Liquid Storeroom	1-6-2-K	200
Vestibule	1-21-1-L	75
Companionway	1-21-3-L	110
Machine Shop	2-57-1-Q	250

1.2 Government-furnished property.

None.

2. REFERENCES**COAST GUARD DRAWINGS**

None

COAST GUARD PUBLICATIONS

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

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

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

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

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

- Example 1: Sheathing
- Example 2: Bulkhead insulation
- Example 3: Piping
- Example 4: One-step decking system
- Example 5: Electrical wiring

3.2 Substrate visual inspection. Upon completion of surface preparation and prior to application of primer coat (see 3.3 (Surface preservation)), the Contractor must perform a visual inspection of the prepared surfaces; submit a CFR.

3.2 Ultrasonic thickness (UT) measurement. The Contractor must take a total of 50 UT measurements in accordance with SFLC Std Spec 0740, Appendix C in locations designated by the Coast Guard Inspector and using Coast Guard Drawing as guidance. Submit a CIR.

3.3 Surface preservation. The Contractor must prepare and coat the surfaces including all adjacent structural members, using the system specified for in SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems). Apply finish/top coat color as follows

3.3.1 If surface preparation involves the removal of lead paint, ensure that no visible coatings remain on any part of the substrate, including pitted areas.}

3.3.2 Select power tool cleaning (SSPC-SP 3) as the method of surface preparation.

3.3.3 Select power tool cleaning to “bare metal” (SSPC-SP 11) with a minimum 1.0 mil anchor profile as the method of surface preparation.

3.3.4 Select “Commercial Grade Power Tool Cleaning” (SSPC-SP 15) with a minimum 1.0 mil anchor profile as the method of surface preparation.}

3.3.5 Select abrasive blasting to a “Commercial Blast Cleaning” standard with a 1.5-3.5 mil anchor profile as the method of surface preparation.

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3.3.6 Select abrasive blasting to “Near-White Blast Cleaning” standard with a 1.5-3.5 mil anchor profile as the method of surface preparation.

3.3.7 Select waterjetting to a “SSPC-SP WJ-2(L)/NACE WJ-2(L)” cleanliness level as the method of surface preparation.

3.3.8 Use a suitable abrasive sponge as the blast medium to minimize dust production.

3.3.9 Attach a suitable vacuum to the power tool equipment, to capture and contain all dust and paint debris.

This section is not applicable to this work item.

WORK ITEM 102: Anchor Tripping Bracket Install

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to install new Anchor Fluke tripping brackets, port and starboard.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225-WLB 601-01, Rev T, General Arr, Inboard and Outboard Profiles

Coast Guard Drawing 225-WLB 581-01, Rev F, Anchor Handling System Arrgt

Coast Guard Drawing 225-WLB 111-01, Rev D, Shell Expansion

Coast Guard Drawing 225-WLB 901-02, Rev C, Hull Block 901 Modules

Coast Guard Drawing 225B-WLB 601-01, Rev N, General Arr, Inboard and Outboard Profiles

Coast Guard Drawing 225B-WLB 581-01, Rev G, Anchor Handling System Arrgt

Coast Guard Drawing 225B-WLB 111-01, Rev A, Shell Expansion

Coast Guard Drawing 225B-WLB 901-02, Rev D, Hull Block 901 Modules

COAST GUARD PUBLICATIONS

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

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

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

OTHER REFERENCES

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

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep. Not applicable.

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

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

- Anchor and chain.
- Hull insulation.
- Anchor Pockets.
- Boatswain Storeroom No. 1 (1-0-0-A).
- SW Ballast tank (4-0-0-W) and manhole access.

3.2 Work particulars. The Contractor shall accomplish the following tasks to install new Anchor Fluke Tripping brackets, port and starboard, in accordance with SFLC Std Spec 0000 and SFLC Std Spec 0740 and using the Coast Guard drawings above for guidance and details.

3.2.1 Hot work. Open, ventilate, and clean all spaces and components necessary to accomplish this work item as required to certify them as "SAFE FOR PERSONNEL" and/or "SAFE FOR HOT WORK."

3.2.2 Installation particulars. Crop the existing tripping bars shown in **PHOTO 1** below and grind smooth. Install new Anchor Fluke Tripping brackets in accordance Coast Guard Drawings 225-WLB 581-01, 225-WLB 901-02, 225B-WLB 581-01, and 225B-WLB 901-02.

3.2.2.1 New plating shall be of similar material and mechanical properties as the adjacent material. Submit a Condition Found Report to the Coast Guard Inspector if additional repairs are required.

3.2.2.2 Ensure that welding does not warp or cause any distortion to adjacent plating.

3.3 NDI. The Contractor shall perform NDI of the new welds in accordance with SFLC Std Spec 0740, Appendix C. Submit a CFR.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

3.5 Touch-up preservation. Prepare and coat all new and disturbed exterior and interior surfaces to match existing adjacent surfaces, in accordance with SFLC Std Spec 6310, Appendix A (Cutter and Boat Exterior Painting Systems) and Appendix B (Cutter and Boat Interior Painting Systems), respectively, and as applicable.



PHOTO 1: EXISTING TRIPPING BRACKETS (STBD SHOWN)

4. NOTES

This section is not applicable to this work item.

WORK ITEM 103: Buoy Deck Quick Acting Watertight Door, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew the watertight door identified in Table 1.

TABLE 1 – WATERTIGHT DOOR LOCATION

DOOR IDENT	LOCATION	DESCRIPTION
Quick Acting Watertight Door 1-57-2-L	Passage from Aft Buoy Deck (1-57-2-L)	Quick Acting Watertight Steel Door 36"x66", Left Hand, 10 Dog w/ hasp and staple. 9" diameter fixed light

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
N	Quick Acting Watertight Steel Door 36"x66", Left Hand, 10 Dog w/ hasp and staple. 9" diameter fixed light		1 ea.	\$5000

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B-WLB-167-001, Rev M, Structural Closures

Coast Guard Drawing 225B-WLB-601-001, Rev P, General Arrangements, Inboard and Outboard Profiles

COAST GUARD PUBLICATIONS

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

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

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

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General. The intent of this work item is to renew the watertight door identified in Table 1.

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).

- Cable Ways
- Insulation
- Electrical Outlets

NOTE

Geometric dimensioning and tolerance variances and minor hardware differences are to be expected with the Government-furnished closures. These variances and differences are not limited to the following: location and physical size of the hinge assemblies; location, physical size, and number of flush mounted pockets; location, size, and orientation of securing devices.

3.2 Renewal. The Contractor must accomplish the following tasks to renew the door as designated in Table 1. See Coast Guard Drawings 225B-WLB-167-001 and 225B-WLB-601-001 for guidance and details.

3.2.1 Door Removal. The Contractor must remove the door identified in Table 1 of this work item. Retain the door securing devices and associated components. Remove and scrap all seals and fasteners.

3.2.2 Door Inspection. Inspect door, door securing devices, and associated components for damage. Submit a CFR if door or door securing devices are irreparable and dispose of irreparable items.

3.2.3 Door Frame Inspection. Inspect the door frame for corrosion and deterioration. Submit a CFR if repairs are required.

3.2.4 Door Renewal. Upon verification by the Coast Guard Inspector, the Contractor must renew the door identified in Table 1 in accordance with SFLC Std Spec 0740.

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3.2.5 Renew door frame of watertight door identified in Table 1 in accordance with SFLC Std Spec 0740.

3.2.6 Install watertight door identified in Table 1 with new gaskets and fasteners.

3.2.7 Perform all necessary modifications not limited to relocation, fabrication and reinstallation of securing device, and modifications to ensure all renewed items properly fit and function.

3.2.8 At the direction of the Coast Guard Inspector, perform all necessary relocation and modification of securing latches.

3.3 Boundary Testing. Upon complete renewal of structural closure, the Contractor must perform the following boundary tests and submit a CFR:

- Chalk test
- Water hose test

WARNING

Do not paint knife-edges, gaskets, or any moving parts; including dogs, nuts, wedges, spindles, yokes, packing, connecting rods and hinge pins.

3.4 Preservation. The Contractor must prepare and coat all new and disturbed exterior surfaces, in accordance with Freeboard/Superstructure, Steel Option I of Appendix A (Cutter and Boat Exterior Painting Systems), and interior surfaces, in accordance with and Door, Joiner, Option I of Appendix B (Cutter and Boat Interior Painting Systems), to match existing adjacent surfaces, in accordance with SFLC Std Spec 6310.

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 as defined in the following. Submit a CFR.

- Closures are properly secured, to prevent accidental or unintentional movement.
- Securing latches adequately engage closures and positively lock into place without excessive force or manipulation by the operator.

3.6 Gas freeing. When entering a tank, compartment, confined space, or conducting hot work, refer to and comply with SFLC Std Spec 0000, General Requirements.

3.7 Welding and brazing. Perform all welding, brazing, and non-destructive testing (NDT) in accordance with SFLC Std Spec 0740, Welding and Allied Processes.

3.8 Hot Work. Open, ventilate, and clean all spaces and components necessary to accomplish this work item as required to certify them as "SAFE FOR PERSONNEL" and/or "SAFE FOR HOT WORK."

4. NOTES

4.1 Damage control decals. Ship's force will apply damage control decals.

WORK ITEM 104: Inhaul Winch Brake Isolation Valves, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew two ball valves on the brake line of the inhaul winch.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B-WLB-556-004, Rev D, Fwd Hydraulic System A/D

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3498, Section A, Jul 2015, Buoy Chain Winch
Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022,
General Requirements

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

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

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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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).

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

3.2 Valve renewal. The Contractor must renew the two ball valves on the brake line of the inhaul winch in accordance with Coast Guard Drawing 225B-WLB-556-004 and SFLC Std Spec 5000. Valves and brake line are located on the buoy deck alongside and attached to the inhaul winch motor.

NOTE

Refer to Detail 84-A of Coast Guard Drawing 225B-WLB-556-004, for piping arrangement and part numbers. Detail 84-A is excerpted in Section 4 below with the two ball valves to be renewed, P/N V918, highlighted for clarity.

3.2.1 Ball valves are socket welded to piping. Remove section of hard piping for performance of hot work by breaking joints at nearest hose fitting connections. Ensure caps or blanks are immediately installed to cover and seal any openings in hydraulic system in accordance with paragraph 3.1.3.1.

3.2.2 Grind out socket welded ball valves. Remove and scrap valves. Install new, contractor furnished, stainless ball valves in accordance with Coast Guard Drawing 225B-WLB-556-004 and SFLC Std Spec 0740.

3.2.2.1 Orientation of fittings and piping bends must be consistent with original configuration to ensure proper fitment when remaking joints. Upon completion of valve welding, verify removed hard piping segment will be restored to configuration and ready for install in system following successful hydrostatic test.

3.2.3 Hydrostatic test. After restoration of hard piping segment, the Contractor must perform a hydrostatic test on segment in accordance with SFLC Std Spec 0740, Appendix C, Hydrostatic Test.

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Ensure zero leakage from or permanent deformation of pressure-containing parts by repairing all leaks, deformations, and discrepancies. Submit a CFR.

3.2.3.1 Upon satisfactory completion of hydrostatic test, install hard piping segment back into hydraulic system.

3.2.4 Leak test. After completing all authorized mechanical (i.e. threaded, bolted, etc.) joint repairs, the Contractor must test the system for tightness 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.

3.3 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.

3.3.1 Use hand pump to pressurize brake line while one valve is open and the other closed, to prove pressure boundary. Pressure should hold in brake line until both valves are open. Repeat with valve line up switched to prove pressure boundary of other valve. Restore operational valve line up upon successful completion of tests:

- Hand pump isolation valve connected to quick disconnect fitting should be normally closed.
- Brake isolation valve located next to tee fitting should be normally open.

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

4. NOTES

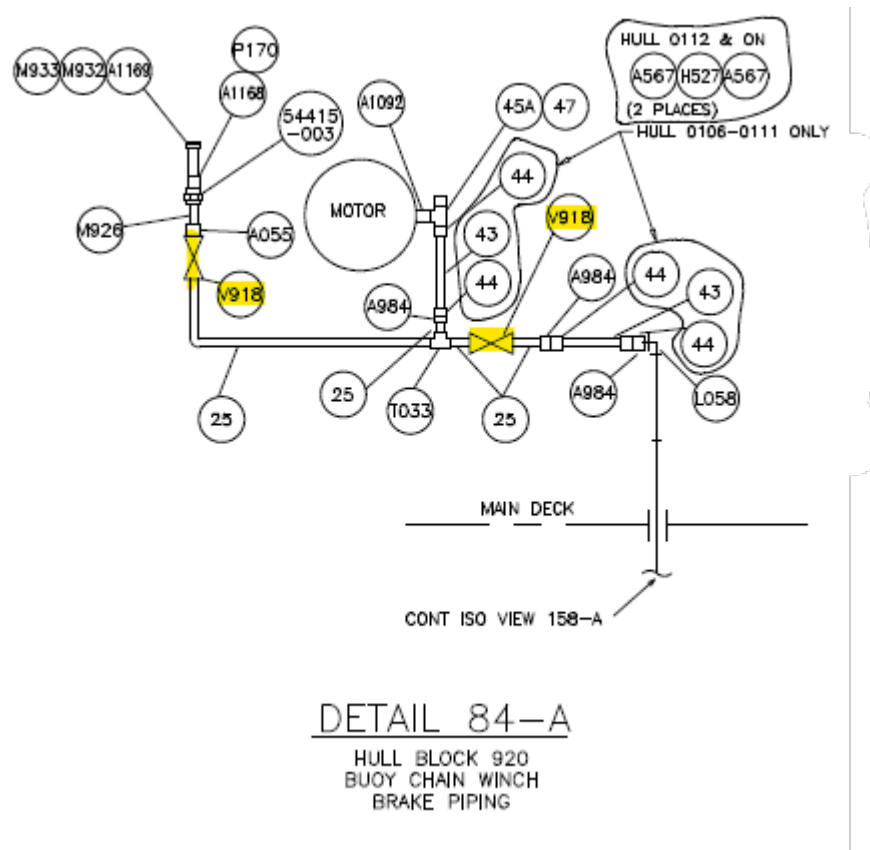


FIGURE 1 – PIPING ARRANGEMENT FOR INHAUL WINCH BRAKE LINE

NOTE - VALVES REQUIRING RENEWAL ARE HIGHLIGHTED

WORK ITEM 105: Drain Piping, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew a section of mess deck drink line drain piping residing in the Engineering Control Center, compartment number 2-69-1-C

1.2 Government-furnished property.

None

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B-WLB-528-1, Rev G, Plumbing & Interior Deck Drains Diagram

Coast Guard Drawing 225B-WLB-528-3, Rev A, MMA Plumbing & Interior Deck Drains Diagram

COAST GUARD PUBLICATIONS

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

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

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

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

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

None.

3.1.2 Tech Rep.

Not applicable.

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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 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.

NOTE

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

3.3 Drain Piping Repair.

3.3.1 The drain from the mess deck drink line drain piping has developed a blockage. blockage is in the described piping penetration into the Engineering Control Center, compartment number 2-69-1-C.

3.3.2 Contractor must repair this blockage by renewing drain piping. The exact step by step procedure to replace the piping is unknown. Therefore, this is a performance specification, where only the outcome is described.

3.3.5 Perform all weld in accordance with SFLC Std Spec 0740, Welding and Allied Processes.

3.3.6 Materials shall be approx. 15-ft of 2-in 90/10 CuNi piping.

3.4 Testing. After all work has been completed, the Contractor shall, in the presence of the Coast Guard Inspector, accomplish the following tasks, and submit a CFR:

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

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

4. NOTES

This section is not applicable to this work item.

WORK ITEM 106: Fuel Oil Tank Sounding Tube Repair

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to repair or renew the sounding tube cap for Fuel Oil (FO) tank 4-30-1-F and 3-61-1-F.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B-WLB 506-01, Rev G, Overflows, Air Escapes & Sounding Tubes Diagram

Coast Guard Drawing 225B-WLB 506-04, Rev B, Vents & St System Ad Fr 30-48 Block 920

Coast Guard Drawing 225B-WLB 506-09, Rev A, MMA Overflows, Air Escapes & Sndg Tubes Diag

Coast Guard Drawing 225B-WLB 601-01, Rev -, General Arr, Inboard & Outboard Profile

COAST GUARD PUBLICATIONS

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

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

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, Preserve Ship Structures

3. REQUIREMENTS

3.1 General.

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

None.

3.1.2 Tech Rep. Not applicable.

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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 in the vicinity of 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 (Interferences).

- FO tank 4-30-1-F and 3-61-1-F manholes.
- Flush deck box and insulation.
- Sounding tube and piping.

3.1.5 Confined or enclosed space entry and hot work. Prior to hotwork the Contractor must open, ventilate, and clean all spaces and components necessary to accomplish this work item as required to certify them as "SAFE FOR PERSONNEL" and/or "SAFE FOR HOT WORK." In accordance with SFLC Std Spec 0000.

3.2 Work particulars. The Contractor must accomplish the following tasks in order to repair or renew the sounding tube flush deck box caps in accordance with the Coast Guard Drawings above SFLC Std Spec 0000;

3.2.3 Renew the sounding tube flush deck box (cap assembly) for Fuel Oil (FO) Tank 4-30-1-F and 3-61-1-F in accordance with Coast Guard Drawings 225B-WLB 506-04, 225B-WLB 506-01 and 225B-WLB 506-09.

3.2.4 New piping and plating must be of similar material and mechanical properties as the adjacent material.

3.2.5 Clean, preserve and test the sounding tube assembly in accordance with Coast Guard Drawings 225B-WLB 506-04. Submit a Condition Found Report if additional repairs are required.

3.3 The Contractor must perform NDI of the welds in accordance with SFLC Std Spec 0740, Appendix C. Submit a CFR.

3.4 Touch-up preservation. The Contractor must prepare and coat all disturbed exterior and interior surfaces in accordance with Appendix A (Cutter and Boat Exterior Painting Systems) and Appendix B (Cutter and Boat Interior Painting Systems), respectively, and as applicable.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 107: Walk-In Reefer and Freezer, Repair and Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to repair/renew the Walk-In Reefer and Freezer.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B-WLB-516-4, Rev H, MMA Refrigeration System Instl Arrangement & Details

Coast Guard Drawing 225B-WLB-638-1, Rev C, Refrigerated Ship's Stores & Dry Provision Stowage A&D

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (Tech Pub) 3574, Refrigerator/Freezer Walk-In - Model 1429

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

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

OTHER REFERENCES

American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), ASHRAE Handbook: Refrigeration-2006.

3. REQUIREMENTS

3.1 General.

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

None.

3.1.2 Tech Rep.

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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:

- Wall, door, and ceiling panels.
- Electrical wiring.
- Galley shutdown.

3.1.5 Personnel qualification. The Contractor must provide the COR documentation that ensures all prime and sub-contractors servicing CFC or HFC refrigerant-based Air Conditioning and Refrigeration (AC&R) equipment hold a current Environmental Protection Agency (EPA) Technician Certification, Type IV (Universal Certification), and meet all state and local regulations and licensing requirements.

NOTE

Upon failure of the Refrigeration Plant, refer to the following Technical Publication: R-134A – Low Temperature Condensing Unit - 1.09/2.18 Tons - Model 90YR20NSZ3ND6M9Z3

3.1.6 Refrigerant draining and recovery. The Contractor must ensure all vessels' AC&R unit refrigerant is drained, recovered, and disposed of into a container in accordance with all federal, state, and local environmental regulations.

3.1.7 Location. Dry Stores (1-60-6-A)

3.2 Reefer and Freezer Repair/Renew. The Contractor must perform the following:

3.2.1 In the presence of the Coast Guard Inspector, inspect the walk-in reefer, freezer, and associated refrigeration equipment. Submit a CFR to the Coast Guard Inspector.

3.2.3 Rip out and install new walk-in chiller and freezer wall, ceiling, and door insulation panels, mount side panels correctly, rectify the floating side panels, replace door seals and hardware as needed and associated parts/components identified by the Coast Guard Inspector and in accordance with referenced CG Drawings, Tech Pub 3574, and General Requirements in section 2 (References)

3.2.4 Clean, purge, charge, and prep the refrigeration system for operation in accordance with Tech Pub 3574.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.3 Operational test, post-repair. After completion of work and in the presence of the Coast Guard Inspector, the Contractor must thoroughly test 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.

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

4. NOTES

This section is not applicable to this work item.

WORK ITEM 108: Miscellaneous Remote Valve Operators, Repair

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to repair the listed Remote Valve Operators.

1.2 Government-furnished property.
None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B-WLB 505-3, Rev B, Mechanical Remote Valve Operators Shipwide

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

MIL-S-16059, Apr 1961, Shafting, Flexible (Core and Casing Complete) (For the Remote
Operation of Valves)

Naval Sea Systems Command (NAVSEA) S6435-QJ-MMI-010, Actuator, Valve, Dual Linear
Remote Mechanical Valve Actuator System

Naval Sea Systems Command (NAVSEA) S9505-AG-MMM-010, Rigid Rod Valve - Remote
Control System

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

3. REQUIREMENTS

3.1 General. The Contractor must repair the damaged/non-working remote valve mechanical operator assemblies located in the following:

TABLE 1 – REMOTE VALVE OPERATORS TO BE REPAIRED

LINE #	VALVE NUMBER LOCATION	LOCATION	KNOWN PROBLEM
1	MD-V-V691-9	AFT AFFE STATION	OPERATOR SEIZED
2	MD-V-V691-8	CENTER 4 MAN HEAD	CAP SEALED INTO DECK, CANNOT OPERATE VALVE
3	V-V129-2	MAIN DRAINAGE CROSS CONNECT FROM AUX MACHINERY ROOM TO MAIN MACHINERY	OPERATOR SEIZED
4	MD-V-V673-6	MESSDECK	OPERATOR SEIZED
5	MD-V-V673-7	MMR VESTIBULE	OPERATOR SEIZED
6	WD 2-92-2	92 PASSAGEWAY	OPERATOR SEIZED
7	V-V673-1	CHAIN LOCKER	CAP SEIZED
8	WD-V-V728-4	82 PASSAGEWAY	OPERATOR SEIZED
9	WD-1-22-1	21 VESTIBULE	OPERATOR SEIZED
10	FM-1-23-1	21 VESTIBULE	OPERATOR SEIZED
11	BAL-1-24-1	21 VESTIBULE	OPERATOR SEIZED
12	V-3-47-4	SORS CARGO	OPERATOR SEIZED
13	V-3-47-1	SORS CARGO	OPERATOR SEIZED
14	V-2-47-2	SORS CARGO (SPRINKLER SYS)	OPERATOR SEIZED

3.1.1 CIR.

None.

3.1.2 Technical Representative.

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:

- Overhead insulation.
- Sheathing.
- Wiring.
- Piping.
- Line Locker.

3.2 Work Location. The concerned work areas are listed in Table 1. See the CG Drawings above, for guidance and details.

3.3 Remote Valve Operators Repair. Repair the remote valve operators in accordance with CG Drawing 225B-WLB 505-3, OEM guidance, and instructions of this specification.

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3.3.1 The listed remote operators to valves are inoperable due to both fouled and missing components. Contractor must determine, procure, install, and adjust necessary components to restore all listed remote operators to a functional state.

3.3.2 Inspect each of the remote operators of Table 1. Submit a CFR with results of inspection and components required to restore operation.

3.3.3 This is a performance based specification, where the exact detailed instructions are unknown, the Contractor must determine the parts, methods and repairs necessary to restore normal functions to the listed Remote Operators. Existing reach rods are in accordance with NAVSEA S9505-AG-MMM-010 and Coast Guard Drawing 225B-WLB 503-1.

3.3.4 A few of the remote valve operators are likely to have minor issues such as seized deck caps and/or basic cleaning and re-lubrication. Assume there will be a range of damage/problems for each, from minor to severe.

3.3.5 Similar historical work on other Cutters the Contractor's worked with W&O Supply or BFG Marine to assist in determining work effort and parts required. Below is an example of the type of parts required in past similar work efforts:

- 3/4" 90 DEGREE GEAR BOX'S.
- 3/4" UNIVERSAL JOINTS.
- 3/4" DECK ACCESS BOX W/40 TURN INDICATOR WITH WELD TYPE CAM LOCK AND THREADLESS COVER.
- 3/4" MALE VALVE COUPLING
- 3/4" STEEL ROUND BAR COLD.

3.3.6 Ensure that any required welding and hot work doesn't warp or cause any distortion to adjacent plating.

3.3.7 **For purpose of bid** assume for that each of the fourteen remote operators will require some disassembly, cleaning, alignment, and new parts. Assume the following combined quantities (for all 14) of major components will be required:

- 7 (ea) 3/4" 90 DEGREE GEAR BOX'S.
- 14 (ea) 3/4" UNIVERSAL JOINTS.
- 7 (ea) 3/4" DECK ACCESS BOX W/40 TURN INDICATOR WITH WELD TYPE CAM LOCK AND THREADLESS COVER.
- 7 (ea) 3/4" MALE VALVE COUPLING
- 80 (feet) of 3/4" STEEL ROUND BAR COLD.

3.3.8 Submit a consolidated CFR for deemed repairable remote operators with required additional parts (in excess of estimated quantities of para 3.3.6).

3.3.9 Submit a separate consolidated CFR with valve operator assemblies that are deemed beyond repair and entire new assemblies are recommended. In those cases, negotiations will require a comparison pricing for two options (1) to renew in kind and (2) to use a Remote Mechanical Valve Actuator (RMVA) detailed in Para 3.4 below.

3.4 Option for Remote Mechanical Valve Actuator (RMVA) Installation when an entire new Remote Operator is recommended.

NOTE

Renewal of an entire Remote Operator would only be authorized based on the condition found inspection results (para 3.3.9 above). Then before this paragraph was authorized contract growth would be required from Contracting Officer before this contingency paragraph became effective.

3.4.1 US NAVY/NAVSEA has moved away from solid/flexible shafts to continuous loop RMVA system per NASEA S6435-QJ-MMI-010. The continuous loop RMVA type operators are reliable and less if any maintenance, no minimum cable length requirements, submergence application, torque transmitted in linear rotary motion via pinion and gear assembly, and no buckling, binding or kinking problems.

3.4.2 Using NAVSEA S6435-QJ-MMI-010 as guidance, provide and install new RMVA assembly for each valve with their remote operator being replaced. The Contractor is responsible for proper sizing of RMVA components including valve handwheel diameter per requirements of NAVSEA S6435-QJ-MMI-010 and original equipment manufacturers (OEM). Mark all proposed routings of cable and conduit from valve to the remote station for verification by the Coast Guard Inspector.

3.4.3 Install new RMVA assembly components using requirements in NAVSEA S6435-QJ-MMI-010 and original equipment manufacturing procedures. The RMVA assembly shall have a continuous cable type between the valve station actuator and deck operator station actuator. Observe all requirements in NAVSEA S6435-QJ-MMI-010 and original equipment procedures for selecting proper cable length, torque, and necessary components for each valve mechanical actuator assembly. Known complying of this remote mechanical valve actuator assembly with continuous cable type is Triumph Controls Inc. (AKA Teleflex) represented by:

- Moody Marine Service
- moodymarinesvc.com

3.4.3.1 Install remote operator station (welded flush deck box or handwheel operated) in way of the removed remote operators. When and where necessary, install a blank plate insert from the deck opening where the old deck box was removed and cut hole to fit-up the new deck box. Note that the new deck boxes are larger, and reuse of existing deck boxes may not be possible.

3.4.3.2 Install remote actuator station from deck box or handwheel operated remote operators.

3.4.3.3 Install quick disconnect valve coupling from existing valve's handwheel.

3.4.3.4 Install valve station actuator with mounting bracket and fitted with universal adaptor.

3.4.3.5 Install quick disconnect valve coupling to universal adaptor.

3.4.3.6 Install and route cable/conduit drive system between remote actuator station and valve station actuator. All watertight deck and bulkhead penetrations are to be provided with penetration fittings.

3.4.4 Install cable/conduit assembly brackets and support clamps.

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3.4.5 Mount T-wrench in the vicinity of the deck box from adjacent bulkhead or structure.

3.4.6 In the presence of Coast Guard Inspector, the Contractor shall visually inspect the installations prior to testing:

3.4.6.1 Visually inspect the entire run of the cable/conduit for proper location and required number and type of brackets and support clamps are in place. There shall no damage allowed on the outer casing.

3.4.6.2 Visually inspect all bolted assemblies are tight and no loose fasteners.

3.4.7 Submit a condition found report of all inspection findings to the Coast Guard Inspector. All damaged components caused by installing activity shall be replaced at Contractor's expense.

3.4.8 Fabricate and install a label plate for each renewed deck box operator in accordance with MIL-DTL-15024. Material shall be stainless steel, Class 304 or 304L, 0.05" minimum thickness. Inscription shall contain the valve identification number, functional service, and to be provided by the Coast Guard Inspector.

3.5 NDI. The Contractor must perform NDI of any plate renewal or other new welds as required and in accordance with SFLC Std Spec 0740, Appendix C. Submit a CFR.

3.6 Testing of all repaired and/or renewed Remote Valve Operators.

3.6.1 In the presence of the Coast Guard Inspector, operationally test the repaired and newly installed Remote valve operator assemblies from their respective deck box or handwheel operated remote operators for proper operation. Cycle each valve to open and close for five cycles. There shall be no binding or rubbing allowed. Correct any deficiencies found and retest.

3.7 Touch-up preservation. The Contractor shall prepare and coat all new and disturbed exterior and interior surfaces to match existing adjacent surfaces, in accordance with General Requirements, Appendix A (Cutter and Boat Exterior Painting Systems) and Appendix B (Cutter and Boat Interior Painting Systems), respectively, and as applicable. Abide by all touch-up requirements outlined in SFLC Std Spec 0000, Appendix A (Requirements for Preservation of Ship Structures).

3.8 Compartment Restoration.

3.8.1 Renew deck coverings damaged in conjunction with this item in accordance with MLC PAC Std Spec 634.

3.8.2 Restore all interferences.

3.8.3 Restore affected work areas to a clean condition.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 109: Crane Cab A/C Unit**1. SCOPE**

1.1 Intent. This work item describes the requirements for the Contractor to perform overhaul / renew / repair to A/C unit in crane cab.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/ PN	QTY	ESTIMATED COST (\$/UNIT)
N	COMPRESSOR UNIT, REFRIERATION	4130-01-660-8240	1	10,206.30

or

None.

2. REFERENCES**COAST GUARD DRAWINGS**

Coast Guard Drawing 225-WLB-573-201, Rev -, Buoy Crane

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3557 Crane, Buoy - Model TB90-60

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

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

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

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

None.

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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).

3.1.3 Personnel qualification. The Contractor must ensure that all personnel servicing Air Conditioning and Refrigeration (AC&R) equipment that uses CFC or HCFC refrigerant hold a current Environmental Protection Agency (EPA) Technician Certification, Type IV (Universal Certification), and meet all State and local regulations and licensing requirements.

3.1.4 Refrigerant draining and recovery. The Contractor must drain, recover and dispose of all existing refrigerant from the vessel's AC unit into a suitable external container in accordance with all Federal, state and local environmental regulations.

3.2 Inspect the condition of the crane cab A/C unit. Submit a Condition Found Report (CFR) of inspection findings to Coast Guard Inspector.

3.3 System repair /renew– Using the Coast Guard Drawing 225-WLB-573-201 and Tech Pub 3557 for guidance repair/renew the crane cab A/C Unit.

3.4 Test and adjust (renew if needed) all control switches as well as gauges in accordance with CG Tech Pub 3557, CG Inspectors will verify all test and adjustment.

3.5 Operational test – post repairs. After completion of work, the Contractor must witness an operational test (by Coast Guard personnel) of all items or shipboard devices that have been disturbed, used, repaired, altered, or installed, to prove that they are in satisfactory operating condition in according to Tech Pub 3557 and General Requirements.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 110: Galley Vent Ducting Modify

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to perform a modification of galley (1-57-1-Q) supply vent ducting intake on the weather deck.

SYSTEM DESIGNATION	TYPE	SIZE
Galley Ventilation Duct (Starboard 01 Weather Deck)	Supply	18x10 inch

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB-512-13, Rev A, Galley Supply System Ventilation
Modifications B01 Level FR 57-61 (STBD)

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022,
General Requirements
Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2022,
Welding and Allied Processes
Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022,
Requirements for Preservation of Ship Structures

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

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

None.

3.1.2 Technical Representative.

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:

- Ducting screens
- Cable wire runs
- Insulation
- Galley overhead
- Dish racks
- Countertops
- Cabinets
- Galley equipment

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

3.3 Ventilation modification. The Contractor must modify the ventilation supply ducting in paragraph 1.1 (Intent), as designated by the Coast Guard Inspector, and using Coast Guard Drawing 225B WLB-512-13 referenced as guidance.

3.3.1 Hanger brackets renewal. The Contractor must renew the ventilation ducting hanger mounts and brackets on decks and bulkheads and renew associated hardware.

3.2.2 Vent Components. The Contractor must renew and install all duct screens, covers, closures, gaskets, pins, chains, hardware and labels on all ducting IAW referenced drawings.

3.3.3 UT Shots. The Contractor must conduct UT shots on Bulkheads and Decks on areas that appear to have corrosion and record and submit results to Coast Guard Inspector. Submit CFR.

3.3 Touch-up preservation. The Contractor must prepare and touch-up coat all new and disturbed surfaces to match existing adjacent surfaces in accordance with COMDTINST M10360.3, Appendix B (Cutter and Boat Interior Painting Systems).

3.5 Operational test – post repairs. After completion of work, the Contractor must witness an operational test (by Coast Guard personnel) of the ventilation systems included in this work item to prove satisfactory operating condition. Submit a CFR.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 111: Fluxgate Digital Compass System, Upgrade**1. SCOPE**

1.1 Intent. This work item describes the requirements for the Contractor to upgrade the fluxgate digital compass system. This work item is applicable to Coast Guard WLB cutter classes 225A and 225B.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
N	Heading Sensor, Processor Box (Fluxmeter)	NSN: 6625-01-514-3574 PN: 02-0400-02	1 ea.	5,210.00
N	Display Assembly	NSN: 5980-01-676-1704 PN: 02-0401-01	1 ea.	1,201.46
N	Junction Box Assembly (Interconnecting Box)	NSN: 5895-01-514-2455 PN: 02-0402-02	1 ea.	3,039.00
N	Power Cable, w/ conn	NSN: 5995-01-373-3391 PN: 32-0309-15	1 ea.	1,305.41
N	Data Cable, w/ conn	NSN: 6150-01-F20-6013 PN: 32-0308-15	1 ea.	1,045.00
N	Sensor Cable, w/ conn	NSN: 5995-01-373-3390 PN: 32-0313-25	1 ea.	2,535.10
N	Extension Cable, Remote Display, w/ conn	NSN: 6450-01-F20-6014 PN: 32-0316-25	1 ea.	1,392.00
N	Data Key Plug	NSN: 5935-01-485-7325 PN: 02-0782	1 ea.	561.60
N	Power Supply, 24VDC	NSN: 6130-01-490-7110 PN: 24WB125	1 ea.	210.00

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

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

***Government-furnished property, which is to be supplied by either the vessel or the C4IT Service Center.

1.3 Non-Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
N	Junction Box	NSN: 5975-01-426-1518 PN: A-10106CH	1 ea.	103.96
N	Panel, Blank	NSN: 5975-01-605-6311 PN: A10P10	1 ea.	16.24
N	Stuffing Tube, Nylon	NSN: 5975-00-296-4093	2 ea.	2.46
N	Packing Assembly	NSN: 5330-00-202-2586	2 ea.	1.54
N	O-Ring	NSN: 5331-00-580-5056	2 ea.	0.27

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

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

***Government-furnished property, which is to be supplied by either the vessel or the C4IT Service Center.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 437-005, Rev F, Gyrocompass & Magnetic Compass Sys Block, WDP & EWD

Coast Guard Drawing 225 WLB 437-005, Rev H, Gyrocompass & Magnetic Compass Sys Block, WDP & EWD

Coast Guard Drawing 225B WLB 320-001, Rev AD, Electrical One-Line Wiring Diagram

Coast Guard Drawing 225 WLB 320-001, Rev AK, Electrical One-Line Diagram

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Technical Standard (SFLC TS) 305, 2014, Electrical and Electronic Designating and Marking

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

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

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

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

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

OTHER REFERENCES

KVH Industries, MV103DG, Technical Manual User's Guide Installation Guidelines, 54-0043-02 Rev A.

MIL-DTL-15024F, General Specification for Plates, Tags, and Bands for Identification of Equipment

MIL-DTL-24643(series), General Specification for Cables and Cords, Electric, Low Smoke, for Shipboard Use.

Institute of Electrical and Electronics Engineers (IEEE), IEEE Std 45, Recommended Practice for Electrical Installations on Shipboard.

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

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3.1.2 Tech Rep.

None.

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

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

- Sheathing
- Bulkhead insulation
- Kick pipes
- Stuffing Tubes
- Electrical wiring

3.1.5 Gas Freeing. When entering a tank, compartment, confined space, or conducting hot work, the Contractor shall refer to and comply with SFLC Standard Specification 0000, General Requirements

3.1.6 Welding and Brazing. The Contractor shall perform all welding, brazing, and non-destructive testing (NDT) in accordance with SFLC Standard Specification 0740, Welding and Allied Processes.

3.1.7 Surface Preparation. The Contractor shall prepare, prime and coat all disturbed metal surfaces in accordance with SFLC Std Spec 6310, 2012, Requirements for Preservation of Ship Structures. All affected work areas shall be restored to their clean pre-installation condition.

3.1.8 Electrical work. The Contractor shall accomplish all electrical work in accordance with SFLC Std Spec 3042, and test cables in accordance with SFLC Std Spec 3041. Utilize the existing wire ways for new cable runs as much as possible.

3.1.8.1 Ensure associated breaker (additionally the Dynamic Positioning System Station 7 UPS, B class only) are secured and Danger Tags are applied IAW SFLC Standard Spec 0000 and Coast Guard Drawings 225-WLB-320-001 Sheet 5 & 225B-WLB-320-001 Sheet 5.

3.2 Upgrade particulars. The Contractor shall accomplish the following using Coast Guard Drawing 225B 437-005 & 225 437-005 as applicable.

3.2.1 Disconnect, remove, and turn the existing KVH Fluxgate Digital Compass System and associated cables over to the Coast Guard Property Administrator.

3.2.2 Modify aluminum MMC manufactured housing, with aluminum dome cover on flying bridge to accommodate new sensor as per tech manual 54-0043-02 Rev. A Sheet E-2 "processor unit template".

3.2.3 Disconnect and remove Power Supply Enclosure and replace with PN: A-10106CH. Mount new enclosure as close as possible to previous enclosure location, which will include new welded studs on "A" class assets and a new mounting bracket or expansion plate on "B" class assets.

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3.2.4 Modify Power Supply Enclosure, PN: A-10106CH, to accept stuffing tubes NSN: 5975-00-296-4093 for cables PN: 32-0308-15 and PN: 32-0309-15. Further modify enclosure as required to accept existing stuffing tubes for reused cables on Coast Guard Drawings from step 3.2. Mount terminal strip from old enclosure and new 24VDC power supply PN: 24WB125 onto blank panel PN: A10P10 in enclosure interior. Mount Fluxgate Junction Box PN: 02-0402 onto new enclosures faceplate.

3.2.5 Install the new Government-furnished Fluxgate Digital Compass System, connected to the existing electrical wiring system, in accordance with manufacturer's instructions and Coast Guard Drawings in step 3.2. Configure ECDIS fluxgate input port to accept RS-232 protocol via software settings, with help from CG operator.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

4. NOTES

4.1 Block wiring diagrams. See attached Figure 1 & 2 for applicable block wiring diagram.

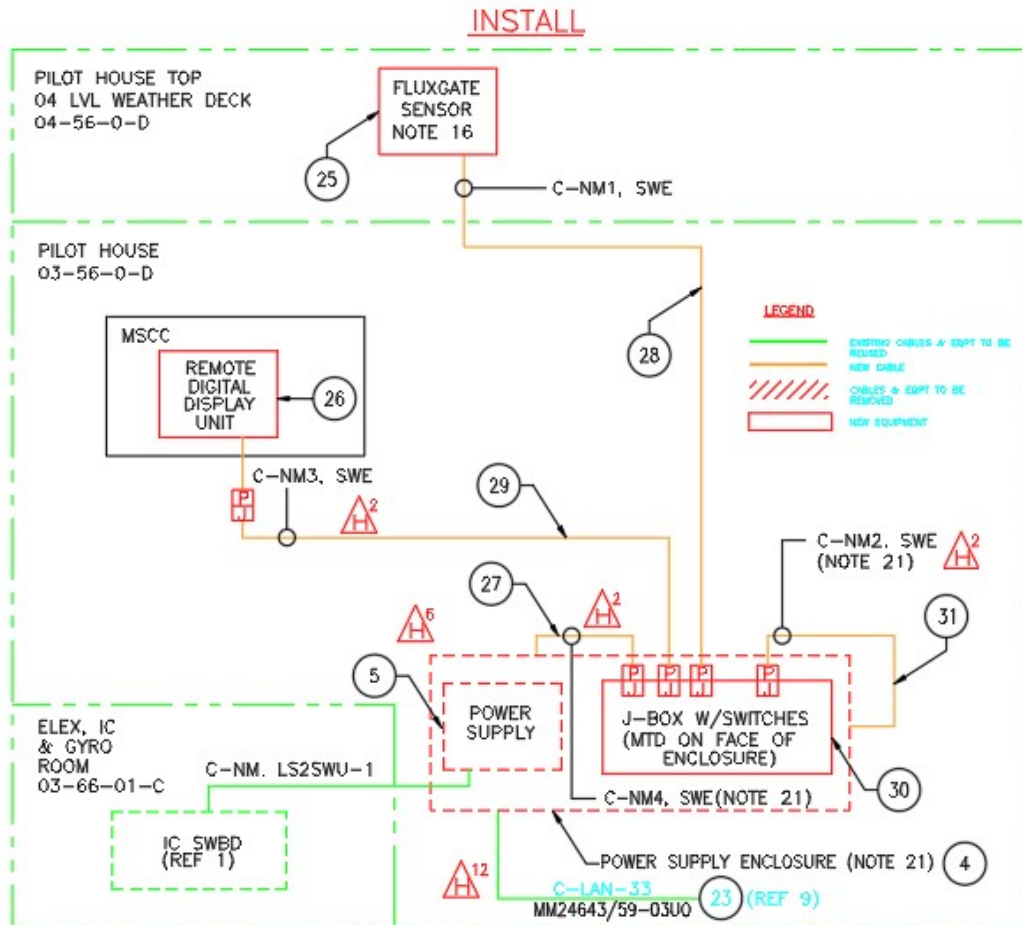


FIGURE 1. "A" CLASS UPGRADE BLOCK DIAGRAM

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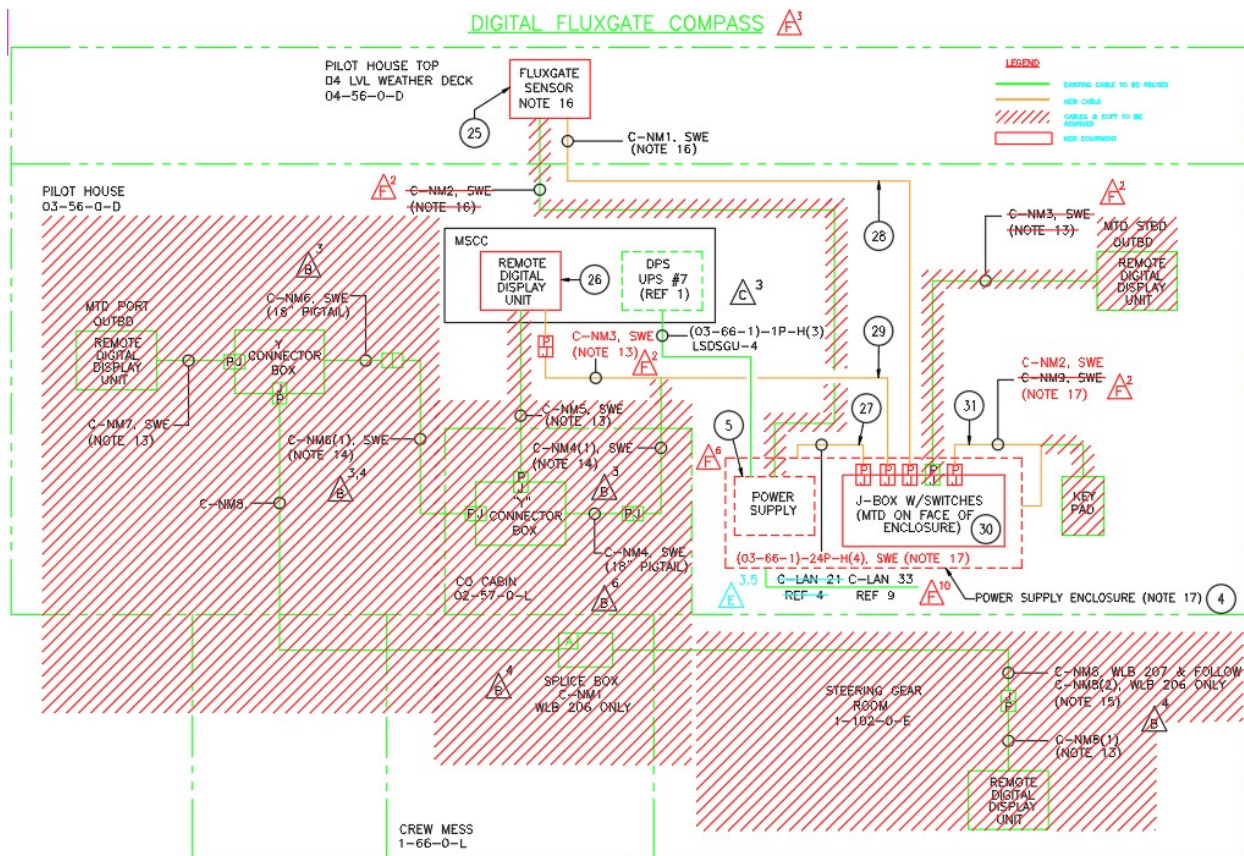


FIGURE 2. "B" CLASS UPGRADE BLOCK DIAGRAM

WORK ITEM 112: Steering Gear Heat Exchanger, Modify

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to install expansion joints in the ASW piping of the steering gear coolers to isolate the coolers from vibration, in the Steering Gear Room (1-102-0-E).

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225-WLB 256-001, Rev U; Seawater Cooling Sys Diagram
Coast Guard Drawing 225B-WLB 256-001, Rev P; Seawater Cooling Sys Diagram
Coast Guard Drawing 225-WLB 505-1, Rev D; General Requirements for Piping Systems
Coast Guard Drawing 225B-WLB 505-1, Rev D; General Requirements for Piping Systems
Coast Guard Drawing 225-WLB 561-005, Rev H; Steering Gear Heat Exchanger Replacement
Coast Guard Drawing 225B-WLB 561-005, Rev E; Steering Gear Heat Exchanger Replacement
Coast Guard Drawing 225-WLB 561-001, Rev E Steering Gear Hydraulic Diagram
Coast Guard Drawing 225B-WLB 561-001, Rev C, Steering Gear Hydraulic Diagram

COAST GUARD PUBLICATIONS

Coast Guard Commandant Instruction (COMDTINST) M10360.3 (series), Coatings and Color Manual
Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), Jan 2022, General Requirements
Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), Jan 2012, Welding and Allied Processes
Surface Forces Logistics Center Standard Specification 0850 (SFLC Std Spec 0850), Jun 2009, General Requirements for Drawing Preparation
Coast Guard Technical Publication (TP) 3555, 21-May-1996, Steering Gear Systems

OTHER REFERENCES

None.

3. REQUIREMENTS

3.1 General.

None.

3.1.1 CIR.

None.

3.1.2 Technical Representative.

Not applicable.

3.1.3 Protective measures.

Not applicable.

3.1.4 Interferences. The Contractor shall be aware that interferences in way of work include, but are not limited to the below-listed. Handle all interferences in accordance with SFLC Std Spec 0000, paragraph.

- Piping and fittings.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.2 Operational test - initial. Prior to commencement of work, the Contractor shall witness 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 Removals.

3.3.1 The Contractor shall disconnect and remove the ASW piping for both coolers on the Steering Gear HPU, as shown on Coast Guard Drawing 225-WLB-561-001, 225B-WLB-561-001, 225-WLB-561-005 and 225B-WLB-561-005.

3.4 Installations and modifications. The Contractor shall accomplish the following tasks, as shown on Coast Guard Drawing 225-WLB-561-005, 225B-WLB-561-005, 225-WLB-505-1 and 225B-WLB-505-1.

3.4.1 Install the ASW piping, valves and fittings connecting the ASW system to each heat exchanger, as shown on Coast Guard Drawing 225-WLB-561-005 and 225B-WLB-561-005.

3.5 Temporary ASW connections . The auxiliary sea water (ASW) system is required to remain online import to provide cooling to the air conditioning condensers and the vessel refrigeration unit. The ASW system may need to be temporarily secured in order to connect the new ASW piping for the hydraulic oil heat exchanger to the existing ASW system. In the event that this system may need to be secured to accomplish this engineering change, the contractor may need to provide a temporary alternate source of ASW to equipment that normally uses this ASW import. The contractor shall work with the Coast Guard inspector and vessel Engineering Officer when necessary to determine if there will be a need for this

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requirement. The contractor shall determine the proper location and method to provide this temporary connection.

3.6 All new piping, takedown joints, fittings, valves, flexible connections gaskets, nuts and bolts required to complete the piping modifications above shall be in accordance with the piping system requirements contained on CG Dwg 225–WLB-561-005 and 225B-WLB-561-005.

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

3.7 Operational test – post repairs. After completion of work, the Contractor shall witness an operational test (by Coast Guard personnel) of all items or shipboard devices that have been disturbed, used, repaired, altered, or installed, to prove that they are in satisfactory operating condition. Submit a CFR.

3.7.1 Hydrostatically test the newly installed ASW piping, and connectors to 105 psig in accordance with the directions shown in reference CG Dwg 225–WLB-561-005 and 225B-WLB-561-005. Demonstrate that there is no leakage to the Coast Guard Inspector.

3.7.2 Repair any leaks and retest in the presence of the Coast Guard Inspector.

3.8 Reassembly. Remake all connections.

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

3.10 Label plate. The Contractor shall install a label plate to document satisfactory test completion in accordance with SFLC Std Spec 5000, Appendix B, Paragraph B2.9 (Label Plates).

4. NOTES

This section is not applicable to this work item.

WORK ITEM 113: Directional Control Valve, Upgrade

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to modify the buoy chain winch by replacing a Directional Control Valve (DCV) and control equipment in the manifold on 225' WLB assets.

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
N	Directional Control Valve (DCV)	NSN: 4810-01-F19-5719 PN: 4WRE10E75-2X/G24K4/V	1 ea.	1137.00
N	Amplifier Card	NSN: 5996-01-F19-5720 PN: VT-VRPA2-2-1X/V0/T1	1 ea.	958.21
N	Amplifier Card Holder	NSN: 5996-01-F19-5721 PN: VT3002-1-2X/48F	1 ea.	367.50
N	Mating Connector, 4P G4WIF PG7 SW	NSN: 5935-01-F19-5722 PN: R900023126	1 ea.	150.00

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

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

***Government-furnished property, which is to be supplied by either the vessel or the C4IT Service Center.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225-WLB-437-210, Rev D, Buoy Deck Equipment Electrical Control System Mods Blk & Elem Wiring Diagram

Coast Guard Drawing 225-WLB-438-002, Rev D, Buoy Deck Controls Install to Suit MMA Aton Crane

Coast Guard Drawing 225B-WLB-438-002, Rev C, Buoy Deck Controls Install to Suit MMA Aton Crane

Coast Guard Drawing 225-WLB-573-207, Rev -, Replacement DCV Amplifier Card Wiring Diagram

COAST GUARD PUBLICATIONS

Coast Guard Commandant Instruction (COMDTINST) 9077.1 (series), Equipment Lockout/Tags-Plus Instruction

Coast Guard Technical Publication (TP) 3498, SWBS 573, Feb 2021, Buoy Chain Winch

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

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

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General.

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

- 3.4 Acceptance Testing

3.1.2 Tech Rep. The Contractor must provide the services of a Qualified Technical Representative who is familiar with the Directional Control Valve (DCV) and accompanying Rexroth equipment 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 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 Remove Existing Equipment. The Contractor must remove existing DCV parts by completing the following:

3.2.1 Secure valves. Secure hydraulic pressure lines on both sides of the existing DCV.

3.2.2 Label existing wires. Label all wires entering the amplifier card holder according to the originating terminal for each lead. See Replacement DCV Amplifier Card Wiring Diagram DWG 225-WLB-573-207, Rev (-).

3.2.3 Label existing power supply wires. Label all wires entering the power supply according to the originating terminal (e.g. AC Input L/N, DC Output +/-) for each lead.

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3.2.4 Disconnect existing. Secure breaker D on the Power Panel 1-18-3 which feeds the Crane PLC per CG drawings 225-WLB-437-210, 225-WLB-438-002, 225B-WLB-438-002. Disconnect equipment as defined below.

3.2.4.1 Disconnect wires where they enter the amplifier card holder (labeled in previous step) and pull back for later reinstallation.

3.2.4.2 Disconnect wires to the mounted power supply.

3.2.5 Remove existing. Remove equipment identified below:

3.2.5.1 Remove amplifier card, P/N: VT5006, dispose of the card in accordance with local regulations.

3.2.5.2 Dismount card holder, P/N: VT3002-1-2X/32D, from the enclosure and dispose of the card holder in accordance with local regulations. Set aside screws for later use.

3.2.5.3 Disconnect feedback sensor connector of cable from the end of the DCV. For 225' WLB assets, this cable is K-1EH1, LS3SJ-18.

3.2.5.4 Remove and dispose of the existing DCV feedback sensor cable in accordance with SFLC Standard Spec 3042.

3.2.5.5 Disconnect solenoid control cables K-1EH2 and K-1EH3 from the DCV. Set aside for later use.

3.2.5.6 Remove DCV, P/N: 4WRE10W-64-12/24Z4/M. See Figure 1.

3.2.5.7 Remove the existing power supply from the enclosure and set aside hardware for later use.

3.3 Install Replacement Equipment. The Contractor must install new DCV parts by completing the following:

3.3.1 Mount DCV. Install the new DCV, P/N: 4WRE10E75-2X/G24K4/V, and reconnect solenoid control cables K-1EH2 and K-1EH3.

3.3.2 Create and install feedback connector. Install the new mating connector, P/N: 4P G4WIF PG7 SW, to the DCV.

3.3.2.1 Measure and cut the length of cable needed to run from the feedback mating connector to the amplifier card using existing cableways.

NOTE

Recommended cable for the feedback mating connector is AlphaWire P/N 2829/4 but it can be replaced with any other cable which meets the following key specifications:

- four conductors, shielded

- 18 AWG

- PTFE insulation

- compliance with Std Spec 3042

3.3.2.2 Attach the DCV Mating Connector: 4P G4WIF PG7 SW to the new cable. See Table 1 and Figure 2.

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3.3.2.3 Install and label the cable in accordance with SFLC Standard Spec 3042. For 225' WLB assets, this cable is K-1EH1.

3.3.3 Install new power supply. Install replacement power supply in the same location.

3.3.3.1 Mount the power supply in the same location as the previous supply, reusing the hardware set aside in step 3.2.5.7 if possible.

3.3.3.2 Reconnect AD and DC leads to the power supply.

3.3.4 Install new amplifier card. Install replacement card holder and amplifier card:

3.3.4.1 Mount the new card holder P/N: VT3002-1-2X/48F in place of the original holder using hardware set aside in step 3.2.5.2 above. See Figure 3.

3.3.4.2 Install the new amplifier card: P/N: VT-VRPA2-2-1X/V0/T1.

3.3.4.3 Connect any remaining leads set aside in step 3.2.4.1 to the new amplifier card in accordance with Table 1 and Figures 4 and 5 below.

TABLE 1 – FEEDBACK CABLE CONNECTIONS

<u>Cond. #</u>	<u>COLOR</u>	<u>Mating Connector</u>	<u>TB B Position</u>	<u>Amp. Card Holder</u>
1	W	1	17	z18
2	BK	2	18	z12
3	R	3	19	z14
4	GR	4	20	z16
Shield	NONE	NONE	NONE	z10

3.4 Acceptance Testing. The Contractor must return the system to full functionality and test for operation. Submit a CIR.

3.4.1 Open hydraulic pressure lines on both sides of the existing DCV.

3.4.2 Remove Red Danger Tags IAW COMDTINST 9077.1 (series).

3.4.3 Reenergize all circuits following completion of work.

3.4.4 Test DC output of the new power supply for 24VDC using a voltmeter.

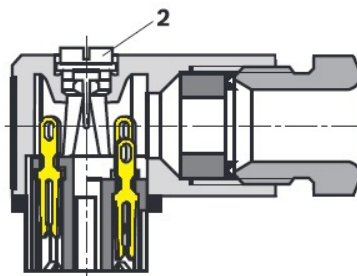
3.4.5 Test and run machinery and check for leaks.

3.4.6 If tests are unsatisfactory, perform amplifier card tests as described in Analog Amplifier Card VT-VRPA2--1X/V0/T Commissioning Instructions from Tech Pub 3498.

3.4.7 Perform a Static Load Test to ensure the DCV operates safely under load.



FIGURE 1. DCV TO BE REMOVED



2 M3 x 20 mounting screw,
tightening torque $M_A = 0.5 \text{ Nm}$

FIGURE 2. MATING CONNECTOR SOLDER TERMINALS



FIGURE 3. CARD AND HOLDER MOUNTING POSITION

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Pin assignment of blade connector

These are the terminals the leads were connected to on the old card.

Pin	Row d	Row b	Row z
2	Command value call-up 1 (24V input) 12c	Command value 1 (potentiometer connection ± 10 V) 14c	Solenoid a+ 2a
4	Command value call-up 2 (24V input)	Command value 2 (potentiometer connection ± 10 V)	Solenoid a- 32a
6	Command value call-up 3 (24V input)	Command value 3 (potentiometer connection ± 10 V)	Solenoid b+ 2c
8	Command value call-up 4 (24V input)	Command value 4 (potentiometer connection ± 10 V)	Solenoid b- 32c
10	Ramp call-up 1 (24V input) **	Command value inversion (24V input)	Shield (position transducer shield only) 28c
12	Ramp call-up 2 (24V input) **	Reserved	Position transducer supply (- output)
14	Ramp call-up 3 (24V input) **	Command value 5 + (10V)	Position transducer signal (- input)
16	Ramp call-up 4 (24V input) **	Command value 5 - (-10V)	Position transducer signal (+ input)
18	Enable (24V input) 22ac	Reserved	Position transducer supply (+ output)
20	Reserved	4-quadrant operation (24V input) **	System ground
22	Ready-for-operation signal (24 V, H-active, 50 mA) 24c	Command value 6 + (4 to 20 mA)	Reserved
24	External ramp	Command value 6 - (4 to 20 mA)	Reserved
26	Reserved	Measuring point signal	Reserved
28	Reference/external ramp	Reference potential for outputs (M0)	Reserved
30	Command value output ± 10 V	- 10 V/20 mA 24a	Operating voltage (24 V) 22ac
32	Actual value output ± 10 V	+ 10 V/20 mA 26a	L0 (0 V) 28ac

** only with amplifier card type VT-../T5

term B18

term B19

term B20

term B17

These should have been jumpered on the old card holder. Do the same here.

FIGURE 4. PIN ASSIGNMENTS: OLD TO NEW

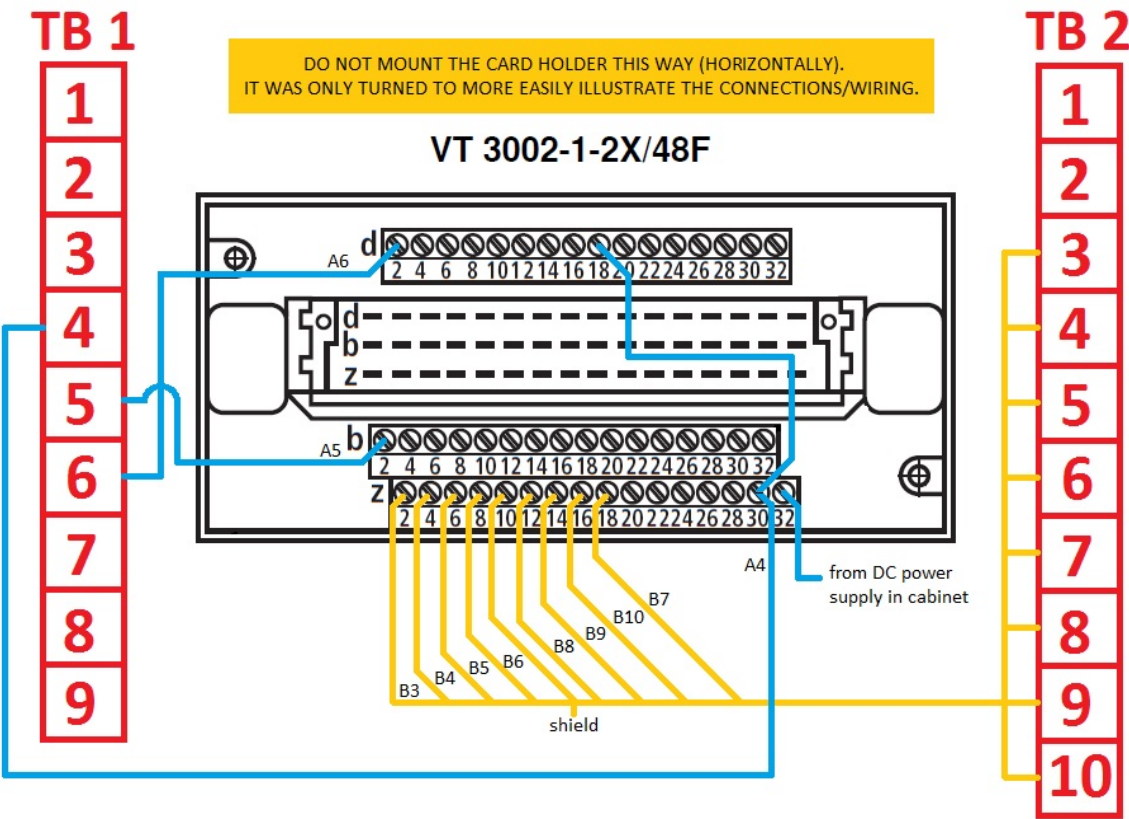


FIGURE 5. CARD HOLDER WIRING DIAGRAM

4. NOTES

This section is not applicable to this work item.

WORK ITEM 114: Fuel Oil Purifier (FOP), Upgrade

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to upgrade the Fuel Oil Purifier (FOP) system in the Main Machinery Room (4-66-0-E).

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
N	GEA Fuel Oil Purifier System	P/N: OSF 12-91-067/10	1 ea.	\$58,880.00

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

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

***Government-furnished property, which is to be supplied by either the vessel or the C4IT Service Center.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225 WLB 201-001, Rev G, Machinery Spaces Arrangement

Coast Guard Drawing 225 WLB 201-002, Rev C, Access Removal Routes

Coast Guard Drawing 225 WLB 261-001, Rev -, Foundation Mods Incidental to FOP Upgrade

Coast Guard Drawing 225 WLB 320-012, Rev -, Electrical Mods Incidental to FOP Upgrade

Coast Guard Drawing 225 WLB 541-011, Rev -, Piping Mods Incidental to FOP Upgrade

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) IB-H5-0001-V0, Rev -, Fuel Oil Purifier (FOP) – Model OSF 12-91-162 – Instruction, Planning and Installation Manuals

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

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

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

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

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

OTHER REFERENCES

ASTM International (ASTM) F992, 2017, Standard Specification for Valve Label Plates
Manufacturers Standardization Society of the Valve and Fittings Industry (MSS), SP-58, 2018,
Pipe Hangers and Supports – Materials, Design, Manufacture, Selection, Application and
Installation

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep. The Contractor must provide the services of an OEM authorized/licensed Tech Rep for the new GEA Fuel Oil Purifier 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.
- Provide familiarization and operational training to the crew operators.

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, 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:

- Foundations
- Piping
- Decking/Framing
- Stairways
- Cables

3.1.5 Contamination prevention. The Contractor must take all precautions to prevent contamination of personnel and spaces in accordance with all applicable Federal, state, and local regulations.

3.2 Fluid handling. The Contractor must remove and dispose of removed fluids from the affected piping systems, 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.

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3.3 Equipment Removal. The Contractor must accomplish the following tasks with respect to the rip-out and removal of the existing Fuel Oil Purifier equipment, foundations, piping, and electrical components:

3.3.1 Fuel Oil Purifier Equipment Removal. Disconnect and remove all major FOP equipment (centrifuges, pumps, strainers, etc.) as shown in Coast Guard Drawing 225 WLB 541-011.

3.3.2 Piping Removal. Piping to be removed is shown in Coast Guard Drawing 225 WLB 541-011.

- Crop and remove Fuel Oil (FO) system piping.
- Crop and remove Potable Water (PW) system piping.
- Crop and remove Control Air (CA) system piping.
- Crop and remove Sludge Drain system piping.
- Crop and remove Sludge Tank Vent piping.

3.3.3 Foundation Removal. Crop and remove the FOP foundations as shown in Coast Guard Drawing 225 WLB 261-001.

3.3.4 Electrical Equipment Removal. Crop and remove all electrical equipment as shown in Coast Guard Drawing 225 WLB 320-012.

3.3.5 All equipment must be removed using without the use of a temporary hull cut. Refer to Coast Guard Drawing 225 WLB 201-001 to see the various locations of equipment and Coast Guard Drawing 225 WLB 201-002, for common equipment travel routes.

3.3.6 All removed equipment must be disposed of in accordance with all applicable Federal, state, and local regulations.

3.4 Foundation Modification. The Contractor must modify the existing foundation as shown in Coast Guard Drawing 225 WLB 261-001.

3.4.1 Foundation preservation, interior. The Contractor must prepare and coat the interior foundation surfaces using the system specified for “Bulkheads (Bulkheads and Overheads, Un-insulated Metal-(Wet areas such as washrooms, water closets, shower spaces, food prep areas and exits to weather)”: Where or when water-jetting or abrasive-blasting is not feasible, select power-tool cleaning to “bare metal” preparation method to produce a minimum 1.0 mil anchor profile. The Contractor must apply top/finish coat color to match mounting surface color.

3.4.2 NDE. The Contractor must perform NDE of all welds performed on the foundation modification in accordance with SFLC Std Spec 0740, Appendix C. If selected NDE method requires coating removal, perform subsequent touch-up preservation in accordance with SFLC Std Spec 6310, (Touch-ups and minor coating repairs). Submit a CFR.

NOTE

Common NDE methods not requiring coating removal include, but are not limited to the following:

- a. Radiographic Testing (RT).**
- b. Ultrasonic Testing (UT).**
- c. Eddy Current Testing (ET).**

3.4.3 An estimated list of new material needed for the foundation modification is shown on the referenced drawings.

3.5 Equipment Installation. The Contractor must accomplish the following tasks with respect to the installation of the new Fuel Oil Purifier system:

3.5.1 Rigging. The Contractor must install the GFP provided FOP without disassembling or removing any parts from their respective skid unit. It is expected the Contractor must navigate the FOP through the various passageways, stairways and manways as well remove existing equipment (ladders, hatches, door) interferences to accomplish its task. Refer to Coast Guard Drawing 225 WLB 201-001 to see the various locations of equipment and Coast Guard Drawing 225 WLB 201-002, for common equipment travel routes.

WARNING

Removal or disassembly of parts from the recently overhauled Fuel Oil Purifier may void its warranty period.

3.5.2 FOP System Installation. The Contractor must install the GFP provided Fuel Oil Purifier system in accordance with Coast Guard Drawing 225 WLB 541-011 and Coast Guard TP IB-H5-0001-V0.

3.5.3 Piping Modification Particulars. The Contractor must accomplish the following tasks, using Coast Guard Drawing 225 WLB 541-011 as guidance:

- Install new Fuel Oil (FO) system piping.
- Install new Potable Water (PW) system piping.
- Install new Control Air (CA) system piping.
- Install new Sludge Drain system piping.
- Install new Sludge Tank Vent piping.

3.5.3.1 Pipe hangers. Furnish, fit, and install new pipe hangers in accordance with MSS SP-58.

3.5.3.2 Pipe labeling. The Contractor must label affected piping as follows:

3.5.3.2.1 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).

3.5.3.2.2 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.

3.5.3.3 Valve labeling. The Contractor must renew all missing and damaged valve label plates, and install new valve label plates on new valves, in accordance with ASTM F992.

3.5.3.4 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.

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

3.5.3.4.2 Ensure all water is removed by blowing dry all flushed piping with dry, low-pressure air.

WARNING

Do not drain ANY Fluids (including fresh water) into any space, bilge, or exterior location.

3.5.3.5 An estimated list of new material needed for the piping modifications is shown on the referenced drawings.

3.5.4 Electrical Installation. The Contractor must accomplish the following tasks, using Coast Guard Drawing 225 WLB 320-012 and Coast Guard TP IB-H5-0001-V0 as guidance:

- Provide wiring from 450 VAC Power Panel 2-66-1 (P26) to the new FOP electrical cabinet.
- Provide wiring from the new FOP control panel output to the MPCMS, to allow monitoring of the main alarm at ECC. Monitoring of all output alarms is not desired. Remote operation/control of FOP system is not desired.
- Ground all new equipment and skids.

NOTE

All upgrades, modifications and maintenance to the Machinery Plant Control and Monitoring System (MPCMS) is currently being contracted to another CNTR. The Coast Guard will provide the engineering and technical support to update the alarm monitoring capability for the new FOP system on the MPCMS.

3.5.4.1 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.

3.5.4.2 An estimated list of new material needed for the electrical modifications is shown on the referenced drawings.

3.5.5 Tech Rep Verification. The Contractor must verify, in the presence of a Coast Guard Inspector, the FOP is installed, calibrated, and commissioned with the on-site OEM tech rep.

3.5.6 MPCMS Update Coordination. The Contractor must coordinate and communicate with Coast Guard Representatives and Coast Guard employed support contractors, to update the MPCMS system to monitor the new FOP system.

3.5.6.1 The Contractor must provide the Coast Guard employed contractors physical access to the MPCMS server locations, all HMI locations and the newly installed equipment location.

3.5.6.2 The Contractor must communicate, as needed, with the Coast Guard employed contractors, via email and phone, to discuss any technical interface details between the MPCMS and the new FOP system.

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3.6 Testing. After all work has been completed, the Contractor must, in the presence of the Coast Guard Inspector, accomplish the following tasks, and submit a CFR:

3.6.1 Hydrostatic test. After all authorized repairs, the Contractor must hydrostatically test all new and disturbed piping and components of the affected piping systems 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.

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

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

3.8 Crew Training. The Contractor, under the direction of the OEM Tech Rep, must provide on-site (shipboard) familiarization and operational training to the cutters crew for the newly installed Fuel Oil Purifier system.

4. NOTES

4.1 Tech Rep Contact. The following is provided for information purposes only, regarding a potential technical representative for the GEA Fuel Oil Purifier system, whose services may be used:

GEA – Service

POC: Robert Donohue

Email: Robert.Donohue@gea.com

Phone: 201-463-1712

Website: www.gea.com

GEA – Sales

POC: Matthew Wiszowaty

Email: matthew.wiszowaty@gea.com

Phone: 201-290-1826

Website: www.gea.com

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4.2 MPCMS Engineering Support. The Coast Guard will provide engineering and technical support to update the Machinery Plant Control and Monitoring System (MPCMS) alarm and monitoring capabilities for the new GEA FOP equipment. A potential technical representative whose services may be used:

L3 Harris – Project Manager

POC: Andrea O'Toole

Email: Andrea.OToole@L3Harris.com

Phone: 978-399-8514

Website: www.l3harris.com

WORK ITEM 115: 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 Rising Stem Yoke	14	Seabay Main Suction	4-80-1	Sea pressure
Gate Rising Stem Yoke	14	Seabay Main Suction	4-80-2	Sea pressure
Butterfly PN:941703140129264	14	Strainer	MSW-V-1B	Sea Pressure
Butterfly PN:941703140129264	14	Strainer	MSW-V-2B	Sea Pressure
Globe Rising Stem	6	Seachest Recirc	4-81-1	45
Globe Rising Stem	6	Seachest Recirc	4-81-2	45
Butterfly	6	Fire Main #1	FM-V-24	40
Butterfly	6	Fire Main #2	FM-V-1	40
Gate	5	MSW Feed to #2 MDE	V-826-2	Sea Pressure
Gate	5	MSW Feed to #1 MDE	V-826-1	Sea Pressure
Butterfly	4	ASW #1 suction	V-660-1	Sea Pressure
Butterfly	4	ASW #2 suction	V-660-9	Sea Pressure
Gate	3	MSW Feed to #1 SSDG	V-127-2	Sea Pressure
Gate	3	MSW Feed to #2 SSDG	V-127-1	Sea Pressure

1.1.2 Valves designated for renewal.

TYPE	SIZE (inches)	DESCRIPTION	FRAME NO. VALVE NO.	PRESSURE (psig)
Ball	2	Seachest Vent	3-81-1	Sea pressure
Ball	2	Seachest Vent	3-81-2	Sea pressure
Gate	2	Seabay vent	TV-V-1	Sea Pressure
Gate	2	Seabay vent	TV-V-2	Sea Pressure

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Gate	2	Seabay to MSW	4-81-1	45
Gate	2	Seabay to MSW	4-81-2	45
Globe Rising Stem	1.5	Seachest B/Down	3-81-3	40
Globe Rising Stem	1.5	Seachest B/Down	3-81-4	40

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225 WLB 256-001, Rev P, Seawater Cooling System Diagram

Coast Guard Drawing 225B WLB 256-001, Rev M, Seawater Cooling System Diagram

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

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

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

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

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

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

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

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

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

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

3.1.3.1 Protective measures (Cofferdam). The Contractor must fabricate and install a cofferdam in accordance with UWSH S0600-AA-PRO-160, and as follows:

- Provide diver training documentation to the KO prior to cofferdam installation, certifying individual Contractor divers are trained and experienced in accordance with UWSH S0600-AA-PRO-160, Appendix E.
- Maintain double-valve protection (two boundaries) using two of the following:
 - Sea chest valve.
 - Internal blank-off.
 - External cofferdam, patch or plug.
- Install external patch and internal gasketed blank immediately after the sea valve is removed. Notify the COR at least 24 hours prior to removing the valve.
- After all work is complete, turn over fabricated cofferdam(s) to the Coast Guard Property Administrator for disposition.

NOTE

A cofferdam is defined as any device required to prevent seawater intrusion while conducting maintenance and/or repairs; including a plug, patch or containment structure.

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

- Deck plates
- 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

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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, it 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
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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 116: Fuel Valves, Overhaul or Renew**1. SCOPE**

1.1 Intent. This work item describes the requirements for the Contractor to overhaul or renew fuel valves, designated as follows:

NOTE

This work item is not separately priced for fuel removal and disposal and response costs into bid of affected work items of Tanks, Fuel Service, Clean and Inspect.

TABLE 1 - VALVES DESIGNATED FOR OVERHAUL.

TYPE	SIZE (INCHES)	MATERIAL	DESCRIPTION	FRAME LOCATION/V ALVE NO.	CONNECTION	RATED PRESSURE CLASS (#)
Ex: Butterfly	6	Bronze	Bilge Pump Suction	2-14-4	Flanged	50
		Bronze		V2		
		Bronze		V910		
		Bronze		V742		
		Bronze		V902-1		
		Bronze		V912-1		
		Bronze		V902-2		
		Bronze		V912-1		

TABLE 2 - VALVES DESIGNATED FOR RENEWAL.

TYPE	SIZE (INCHES)	MATERIAL	DESCRIPTION	FRAME LOCATION/V ALVE NO.	CONNECTION	RATED PRESSURE CLASS (#)
Ex: Globe	1/2	Bronze	Suction Gage C/O	2-14-2	Welded	50

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB-541-003 Fuel Oil System Diagram

COAST GUARD PUBLICATIONS

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

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

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

OTHER REFERENCES

American Society of Mechanical Engineers (ASME) B16.34, 2013, Valves-Flanged, Threaded, and Welding End

ASTM International (ASTM) F992, 2011, Standard Specification for Valve Label Plates

MIL-G-24716, Apr 1993, Gaskets, Metallic-Flexible Graphite, Spiral Wound

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

Manufacturers Standardization Society of the Valve and Fittings Industry (MSS) SP-67, 2011 Edition, Butterfly Valves

Manufacturers Standardization Society of the Valve and Fittings Industry (MSS) SP-72, 2010 Edition, Ball Valves with Flanged or Butt-Welding Ends for General Service

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:

- Insulation
- Fuel piping
- Electrical wiring

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- Diesel Fuel Tank 3-61-1-F and 3-62-2-F- (8000-gallon capacity, 274 gallons at low suction point)

3.2 Fluid handling. The Contractor must remove up to all of diesel fuel, , to facilitate tank gas-freeing. Dispose of removed fluids in accordance with all applicable Federal, state, and local regulations (see 4.1 (Tank content restoration)).

3.2 Fluid handling. The Contractor must be aware that ship's force will empty all affected fuel oil tanks to low suction point prior to work. The Contractor must drain and dispose of residual fuel oil in tanks and piping in accordance with all Federal, state, and local rules and regulations.

3.3 Removal. 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.

3.4 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 3 (Valve Standards). New valves must be equivalent (including identical material) to the valve being renewed. Visually inspect the piping and mounting arrangements; and submit a CFR detailing any required modifications to accommodate the new valve(s).

3.5 Overhaul. The Contractor 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:

3.5.1 Disassembly. 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.

3.5.2 Cleaning. 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.

3.5.3 Machining. As applicable; the Contractor must machine, grind, lap and spot-in seat-to-disk to obtain an acceptable leakage rate at or below valve testing standards (see Table 3 below).

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

3.5.5 Testing. The Contractor must test the overhauled valves in accordance with the applicable standards listed in Table 3 (Valve Standards). Submit a CFR.

TABLE 3 - VALVE STANDARDS

VALVE TYPE	INDUSTRY STANDARD
Steel Valves	MSS SP-61

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Butterfly Valve	MSS SP-67
Ball Valves, Flanged or Butt-Welded Ends	MSS SP-72
All others	ASME B16.34

3.6 Renewal. The Contractor must renew all designated with commercial-standard type valves, conforming to the applicable standard listed in Table 3 (Valve Standards). The Contractor must replace any mil-std valves listed for renewal with equivalent commercial standard valves.

3.7 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 touch-up coat all disturbed surfaces to match existing adjacent surfaces in accordance with SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems).

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

3.8.1 Label installation, nameplate. The Contractor must furnish and install a nameplate label onto the below listed and must ensure the nameplate is made of the melamine type material with either engraved black letters on white background or white letters on black background; or metal photo type material with black letters photographically sealed onto an aluminum surface.

•

3.9 Leak test. After completing all authorized mechanical (i.e. threaded, bolted, etc.) joint repairs, the Contractor must test the applicable 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.

3.10 Hydrostatic test. After all authorized repairs, the Contractor must hydrostatically test all new and disturbed piping and components of the applicable 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

4.1 Tank content restoration. The ship's forces will procure new fluids as needed and refill all tanks at the appropriate time.

This section is not applicable to this work item.

WORK ITEM 117: Thruster Generator, Clean & Inspect

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to inspect, recondition, and test in place the windings of the Thruster Generator.

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225-WLB 201-2, Rev B, Access Removal Routes
«Drawings»

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 3556, Manufacturer's Instruction Book – SWBS
Group(s) 568
Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022,
General Requirements
Surface Forces Logistics Center Standard Specification (SFLC Std Spec) 0450, 2022, Electrical
Power for Contractor's Tools & Equipment
Surface Forces Logistics Center Standard Specification (SFLC Std Spec) 3100, 2022, Inspect,
Test and Recondition AC Synchronous Machines In-Place

OTHER REFERENCES

None

3. REQUIREMENTS

3.1 General. The Contractor must inspect, recondition (“wet clean”), and test in place the windings of the Thruster Generator in accordance with SFLC Std Spec 3100. Generator data is shown in Table 1 below.

CAUTION

This work is only to be performed if the insulation resistance polarization index (PI) test results are outside of the acceptable range in Table 1A of SFLC Standard Spec 3100, or insulation resistance trends suggest that the machine will fall below the minimum acceptable insulation resistance for operation before the next depot level availability. Every wet cleaning carries some risk of carrying contaminants deeper into the windings. Once so embedded, such contamination cannot be removed and insulation resistance could actually be degraded such that a costly and time consuming rewind would be necessary.

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

- 3.5 Post-cleaning insulation resistance

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

- Advise on manufacturer's proprietary system information.
- Assist with the removal, installation, repair, and overhaul in accordance with ANSI/EASA AR100.
- Ensure compliance with manufacturer's procedures and ANSI/EASA AR100 standards during system disassembly, inspection, and reassembly as applicable.
- Witness the performance of all tests, inspections, and cleaning operations performed under this specification.

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.

TABLE 1 – GENERATOR DATA

HULL	QUANTITY	CHARACTERISTICS	MANUFACTURER	LOCATION
225' WLB (‘A’ Class: Hulls 201-205 (0310)	1	800 kW, 500 VAC, 60 Hz, 3 phase, 1200 RPM, 0.8 power factor	MagneTek	Auxiliary Machinery Room

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:

- Hand rails
- Generator framing
- Deck grating
- Compressed air piping
- Water quality package skid for shaft cooling

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3.2 Optional work. The Contractor must perform the pre and post cleaning per SFLC Std Spec 3100 and complete the optional work sections as follows:

3.2.1 Bearing wear. Do not measure and record bearing wear, instead renew all bearings.

3.2.2 Collector rings. Do not measure and record collector ring wear and concentricity.

3.2.3 Rotor extraction. Remove the rotor for cleaning within the compartment and reinstall it afterwards.

CAUTION

Available clearances may inhibit rotor extraction in current orientation. The entire thruster generator must be lifted to extract rotor for cleaning. Failure to do so will result inadequate cleaning of the rotor.

3.2.4 Installed prime mover. During drying operations, the installed prime mover (e.g., engine or barring gear) may not be used to spin the rotor while circulating current through the field windings. The rotor shall be removed from the field windings and drier while hung vertically.

3.3 Utility services. The Contractor must use Coast Guard utility services, both afloat and ashore, for performance of this work item as follows:

3.3.1 Electrical power. Electrical power for temporary tools and equipment used to accomplish this work item shall comply with SFLC Std Spec 0450. When no other power source options are practicable, such loads may be energized from a temporary generator located afloat or ashore in accordance with Appendix E of SFLC Std Spec 0450.

3.3.1.1 Dockside equipment. Power solely for dockside tools and equipment may be taken from the dockside electrical power distribution system in accordance with Appendix A (preferred) of SFLC Std Spec 0450 or from the shipboard electrical power distribution system in accordance with Appendix D of SFLC Std Spec 0450.

3.3.2 Potable water. Hot and cold potable water may be obtained from shipboard systems. Cold potable water may be obtained from dockside connections.

3.3.3 Compressed air. Compressed air for tools and generator hand cleaning may be taken from the ship service air system. Air that is to be blown into a generator shall be filtered for particulate, water, and oil prior to discharge.

3.4 External heating. The Contractor must apply external heat following cleaning to dry out the windings. The heater power rating will vary with the amount of equipment to be dried, degree of enclosure, and amount of ventilation. The estimate in Table 2 below assumes that no heat is lost by radiation or by forced or natural convection; consequently, the input power rating should be increased by a few kilowatts to compensate for heat losses.

3.4.1 Limit heat input so that winding temperatures do not increase more than 7°F per hour.

3.4.2 Do not exceed a winding temperature of 212°F.

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3.5 Post-cleaning insulation resistance. The Contractor must perform the post-cleaning insulation resistance and polarization index tests at 500 VDC and ambient environmental conditions in accordance with sections 3.3.3 and 3.3.4 of Std Spec 3100. Submit a CIR.

TABLE 2 – EXTERNAL HEATING DATA

MACHINE WEIGHT (LBS)	HEATER POWER		HEATUP RATE (°F/H)	TEMPERATURE RISE (°F)	DURATION (H)
	(KW)	(BTU/H)			
9,595	2.4	8,188	7	152	21.7

4. NOTES

4.1 Conditional performance. This work item is performed only when warranted by the condition of the generator windings. The mere presence of dust is not sufficient justification to perform this work item.

4.1.1 Note that there is some risk that solutions used during the cleaning process may penetrate through microscopic cracks in the varnish, carrying contaminants deeper into the windings through capillary action. Once so embedded, such contamination cannot be removed and insulation resistance could actually be degraded such that a costly and time consuming rewind would be necessary.

4.1.2 Cleaning is normally only warranted when the windings have been wetted by sea water or insulation resistance trends suggest that the machine will fall below the minimum acceptable insulation resistance for operation before the next depot level availability.

4.2 Shop cleaning. This generator is not removable from the vessel without making a hull cut. See CG Drawing 225-WLB 201-2 or 225B-WLB 201-2 for rigging path to weather deck, including any bolted (BERP) or welded (WERP) equipment removal plates that must be removed. For machines that can be removed from the vessel through existing accesses or openings created by other work items, it is generally quicker and more cost effective to offload the affected generator from the vessel and perform the work ashore in a generator repair shop. Such tasking should be performed under “Thruster Generator Overhaul” and not this work item.

WORK ITEM 118: TCTO (Prototype) Auxiliary Seawater System (ASW) Pump Upgrade, Install

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to install upgraded Auxiliary Sea Water (ASW) pumps, modify associated piping, build new pump foundations, and install upgraded pump controllers with associated wiring in the Lower Auxiliary Machinery Room (Compartment 4-82-0-E).

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
N	**Pump, Centrifugal, M-Series Vertical In-Line, Close-Coupled Flanged 4x4x6, CD4CuN, 670 gpm at 110' TDH, 30 hp, 3600 rpm, 460 VAC	Carver P/N: 998-4506-F-01	2 ea.	\$72,675
N	** Controller, Pump, Prewired w/Starter, NEMA12, 30 hp, 460 VAC, Size 3	JOKELL P/N: 156515	2 ea.	\$6,385
N	** Controller, Pump, Disconnect Type w/Starter, NEMA 12, 30 hp, 460 VAC, Size 3	REXEL P/N: S142868199	2 ea.	\$6,663

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

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

***Government-furnished property, which is to be supplied by either the vessel or the C4IT Service Center.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B WLB 180-015, Rev -, Aux Seawater Pump Replacement FDN Mods

Coast Guard Drawing 225B WLB 201-001, Rev D, Machinery Spaces Arrangement

Coast Guard Drawing 225B WLB 201-002, Rev D, Access Removal Routes

Coast Guard Drawing 225B WLB 202-001, Rev J, MPCMS Cabling Diagram

Coast Guard Drawing 225B WLB 202-002, Rev E, MPCMS Connection Table

Coast Guard Drawing 225B WLB 256-001, Rev T, Seawater Cooling System Diagram

Coast Guard Drawing 225B WLB 256-012, Rev -, Aux Seawater Pump Replacement & Piping Mods

Coast Guard Drawing 225B WLB 256-017, Rev -, MMA Seawater Cooling System Diagram

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Coast Guard Drawing 225B WLB 320-001, Rev AL, Electrical One-Line Wiring Diagram
Coast Guard Drawing 225B WLB 320-004, Rev E, Pwr Sys Dk Plan MMR & AMR, Hull Block 940
Coast Guard Drawing 225B WLB 320-015, Rev H, MMA Electrical One-Line Wiring Diagram
Coast Guard Drawing 225B WLB 320-029, Rev -, Electrical Mods Incidental to Aux Seawater Pump Replacement
Coast Guard Drawings FL 602-002, Rev -, Physical Label Plate Requirements

COAST GUARD PUBLICATIONS

Coast Guard Technical Publication (TP) 10502, SWBS 252, 07APR2025, Machinery Plant Control and Monitoring System (MPCMS) – Operating Manual
Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2022, General Requirements
Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2022, Welding and Allied Processes
Surface Forces Logistics Center Standard Specification 3041 (SFLC Std Spec 3041), 2022, Shipboard Electrical Cable Test
Surface Forces Logistics Center Standard Specification 3042 (SFLC Std Spec 3042), 2022, Shipboard Electrical Cable Removal, Relocation, Splice, Repair, and Installation
Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, Requirements for Preservation of Ship Structures

OTHER REFERENCES

ASTM International (ASTM) F992, 2017, Standard Specification for Valve Label Plates
DODD 4140.01-M-1, 7 Sep 2007; Compliance for Defense Packaging: Phytosanitary Requirements for Wood Packaging Material (WPM).
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-STD-1310H, 17 September 2009, Shipboard Bonding, Grounding, and Other Techniques for Electromagnetic Compatibility, Electromagnetic Pulse (EMP) Mitigation, and Safety

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not Applicable.

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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:

- Decking
- Foundations
- Piping
- Wiring and cables
- Seabay

3.1.5 Contamination prevention. The Contractor must take all precautions to prevent contamination of personnel and spaces in accordance with all applicable Federal, state, and local regulations.

3.2 Fluid handling. The Contractor must remove and dispose of removed fluids from the affected piping system, in accordance with all applicable Federal, state, and local regulations.

WARNING

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

3.3 Equipment Removal. The Contractor must accomplish the following tasks with respect to the rip-out, removal and disposal of the existing ASW Pumps, foundations, piping, and electrical components:

CAUTION

Ensure all sources of electrical power are disconnected from affected power panels prior to removal of any components to avoid shock hazards.

3.3.1 ASW Pumps Removal. Disconnect and remove the existing ASW pump/motor assemblies as shown in Coast Guard Drawing 225B WLB 256-012.

3.3.2 Piping Removal. Crop and remove the ASW system piping sections as shown in Coast Guard Drawing 225B WLB 256-012.

3.3.3 Foundation Removal. Crop and remove the ASW pump foundation as shown in Coast Guard Drawing 225B WLB 180-015.

3.3.4 Electrical Equipment Removal. Crop and remove all electrical equipment as shown in Coast Guard Drawing 225B WLB 320-029.

- Remove Circuit (A) ASW pump NO. 1 controller LSTSGU-14 (T-14) electrical cabling circuits: (2-86-1)-4P-A(1), (2-86-1)-4P-A(2).
- Remove Circuit (A) ASW pump NO. 2 controller LSTSGU-14 (T-14) electrical cabling circuits: (2-87-1)-4P-A(1), (2-87-1)-4P-A(2).
- Remove 450V VITAL AUX. POWER PANEL 2-86-1 40AT circuit breaker (A) protecting cabling to ASW Pump (1)
- Remove 450V AUX. POWER PANEL 2-87-1 40AT circuit breaker (A) protecting cabling to ASW Pump (2)

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- Remove ASW Pump NO. 1 Pressure Switch cable: Circuit (2-86-1)-P-A(PS), ASW LSDSGU-4 cable.
- Remove ASW Pump NO. 2 Pressure Switch cable: Circuit (2-87-1)-P-A(PS), ASW LSDSGU-4 cable.
- Remove CPP Purifier starter, EPC-41 controller and associated electrical cabling, including circuits (2-87-1)-4P-H(1), circuit (2-87-1)-4P-H(2), circuit (2-87-1)-4P-H(3), circuit (2-87-1)-48P-H(ES) and circuit (2-87-1)-4P-H(1) [CP]

3.3.5 All equipment must be removed without the use of a temporary hull cut. Refer to Coast Guard Drawing 225B WLB 201-001 to see the various locations of equipment and Coast Guard Drawing 225B WLB 201-002 for common equipment travel routes.

3.3.6 All removed equipment must be disposed of in accordance with all applicable Federal, state, and local regulations.

3.3.6.1 At discretion of the Coast Guard Inspector, package/crate any equipment identified to be returned to supply inventory as MTI. Items such as pump housings, 75-hp motors, impellers, mechanical seals, EPC-41 controllers, etc. may be selected for retention.

3.4 Structural Modification. The Contractor must accomplish the following structural tasks, using Coast Guard Drawing 225B WLB 180-015 as guidance:

- Install 2x new ASW pump foundations

3.4.1 Material. The Contractor must provide all material needed for structural modification. An estimated list of new material needed for the pump foundation modifications is shown on Coast Guard Drawing 225B WLB 180-015.

3.4.2 NDE. The Contractor must perform NDE of all welds performed on the foundation modification in accordance with SFLC Std Spec 0740, Appendix C. If selected NDE method requires coating removal, perform subsequent touch-up preservation in accordance with SFLC Std Spec 6310, (Touch-ups and minor coating repairs). Submit a CFR.

NOTE

Common NDE methods not requiring coating removal include, but are not limited to the following:

- a. Radiographic Testing (RT).**
- b. Ultrasonic Testing (UT).**
- c. Eddy Current Testing (ET).**

3.4.3 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:

- Newly installed ASW pump foundations

3.4.3.1 Preparation/Coating method. The Contractor must prepare interior surfaces and apply finish/top coat as specified below. Select colors to match existing adjacent surfaces.

- Bilges, Cofferdams, Foundations and Forepeaks, Steel, Option I

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3.5 Mechanical Equipment Installation. The Contractor must accomplish the following tasks with respect to the installation of the new ASW pump replacement and piping modifications:

3.5.1 Rigging. It is expected the Contractor must navigate the pumps/motor units through the various passageways, stairways and manways as well as remove existing equipment (ladders, hatches, door) interferences to accomplish its task. Refer to Coast Guard Drawing 225B WLB 201-001 to see the various locations of equipment and Coast Guard Drawing 225B WLB 201-002 for common equipment travel routes.

3.5.2 Pump Installation Particulars. The Contractor must install the 2X GFP provided ASW pumps/motor assemblies in accordance with Coast Guard Drawings 225B WLB 256-001, 225B WLB 256-012 and 225B WLB 256-017.

3.5.2.1 Renew all fasteners, flange gaskets/seals disturbed at pump interfaces, as well as any gaskets /seals associated with other shipboard piping joints elsewhere that have been disturbed as a result of performing this work item.

3.5.2.2 Clean gasket mating surfaces before installing new gaskets.

3.5.2.3 Verify flexible coupling(s) are properly aligned.

3.5.2.4 Correct all discrepancies and submit CFR documenting pump installation.

3.5.3 Piping Modification Particulars. The Contractor must accomplish the following tasks, using Coast Guard Drawing 225B WLB 256-012 as guidance:

- Install new ASW system piping.
- Install new Sea Bay Penetrations.
- Install new Gauge and Instrumentation panels.

3.5.3.1 Pipe hangers. Furnish, fit, and install new pipe hangers in accordance with MSS SP-58.

3.5.3.2 Pipe labeling. The Contractor must label affected piping as follows:

3.5.3.2.1 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).

3.5.3.2.2 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.

3.5.3.3 Label installation, nameplate. The Contractor must furnish and install a nameplate label onto the below listed and must ensure each nameplate is made of the melamine type material with either engraved black letters on white background or white letters on black background; or metal photo type material with black letters photographically sealed onto an aluminum surface:

- Install label plates on all new valves and major equipment, in accordance with ASTM F992.

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- Install label plates on all new gauges, in accordance with Coast Guard Drawing FL 602-002.

3.5.3.4 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.

3.5.3.4.1 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.

3.5.3.5 Materials. The Contractor must provide all material and components needed for mechanical modifications. An estimated list of new material needed for the pump installation and piping modifications is shown on Coast Guard Drawing 225B WLB 256-012.

3.5.3.5.1 Major equipment for the ASW pump upgrade installation and piping modifications are provided as GFP.

3.5.3.6 Surface preservation, piping. The Contractor must perform 100% preservation of piping in accordance with SFLC Std Spec 6310, Appendix B (Cutter and Boat Interior Painting Systems) as specified in preparation/coating method for Piping, Insulated and Uninsulated, Under 200 °F.

3.5.3.7 Hydrostatic test. After all authorized repairs, the Contractor must hydrostatically test all new and disturbed piping and components of the affected piping systems in accordance with Coast Guard Drawing 225B WLB 256-012 and 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.

3.6 Electrical Modification Particular. The Contractor must accomplish the following tasks, using Coast Guard Drawings 225B WLB 320-004, 225B WLB 320-015 and 225B WLB 320-029 as guidance:

- Mount pre-wired SIZE 3 LVP Motor Controllers in location previously occupied by CPP Hydraulic Oil Purifier.
- Install 60AT circuit breaker for ASW Pump (1) in 450V VITAL AUX. POWER PANEL 2-86-1, circuit (A)
- Install 60AT circuit breaker for ASW Pump (2) in 450V AUX. POWER PANEL 2-87-1, circuit (A)
- Install LSTSGU-23 (T-23) cable and connect to Circuit (A) ASW pump NO. 1 controller circuits: (2-86-1)-4P-A(1) the prewired LVP Motor Controller power source.
- Install LSTSGU-23 (T-23) cable and connect to Circuit (A) ASW pump NO. 1 controller circuits: (2-86-1)-4P-A(2) the prewired LVP Motor Controller feed to new 30hp pump motor.
- Install LSTSGU-23 (T-23) cable and connect to Circuit (A) ASW pump NO. 2 controller circuits: (2-87-1)-4P-A(1) the prewired LVP Motor Controller power source.
- Install LSTSGU-23 (T-23) cable and connect to Circuit (A) ASW pump NO. 2 controller circuits: (2-87-1)-4P-A(2) the prewired LVP Motor Controller feed to new 30hp pump motor.
- Install new LSDSGU-4 cable ASW Pump Pressure Switch cable: Circuit (2-87-1)-P A(PS)

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and Circuit (2-86-1)-P A(PS).

- Reinstall cables and wiring to MPCMS interface equipment.

3.6.1 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.

3.6.2 Materials. The Contractor must provide all material and components needed for electrical modifications. An estimated list of new material needed for the pump installation and piping modifications is shown on Coast Guard Drawing 225B WLB 320-029.

3.6.1 Major equipment for the ASW pump controller installation will be provided as GFP.

3.6.2 Two types of controllers may be provided as GFP. The Coast Guard Inspector will identify which controller type is desired for installation.

3.6.3 MPCMS Update Coordination. The Contractor must coordinate and communicate with Coast Guard Representatives and Coast Guard employed support contractors, to update the MPCMS system to control and monitor the new ASW pumps.

3.6.3.1 The Contractor must provide the Coast Guard employed contractors physical access to the MPCMS server locations, all HMI locations and the newly installed equipment location.

3.6.3.2 The Contractor must communicate, as needed, with the Coast Guard employed contractors, via email and phone, to discuss any technical interface details between the MPCMS and the new ASW pumps.

3.6.3.3 The references for the MPCMS system are shown in Section 2.

3.7 Operational test, post installation. After completion of work, the Contractor must thoroughly test, in the presence of the Coast Guard Inspector, 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.

3.8 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.)

4. NOTES

4.1 Tech Rep Contact. The following is provided for information purposes only, regarding a potential technical representative for the Carver M-series pumps, whose services may be used:

Piedmont Pump & Products – Sales

POC: Chris Waltjen

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Email: chris.waltjen@piedmontpump.com

Phone: 410-746-6914

4.2 MPCMS Engineering Support. The Coast Guard will provide engineering and technical support to update the Machinery Plant Control and Monitoring System (MPCMS) alarm and monitoring capabilities for the new ASW pump equipment. A potential technical representative whose services may be used:

L3 Harris – Project Manager

POC: Andrea O'Toole

Email: Andrea.OToole@L3Harris.com

Phone: 978-399-8514

Website: www.l3harris.com

WORK ITEM 119: ATON Tie-down Install**1. SCOPE**

1.1 Intent. This work item describes the requirements for the Contractor to remove (2) SCHOELLHORN-ALBRECHT (S-A) Recessed Lashing Cleats (S-301-1), listed below in paragraph 1.1.1, and replace and install (2) new Coast Guard (C-G) CGDR50T01 D-ring assemblies (CGDR50TDRASS01).

1.1.1 Buoy Deck Tie-Downs (Hulls 201 to 205).

QTY	DESCRIPTION	LOCATION	APPLICABLE REFERENCE
2	Pad Eye, Flush Deck (S-A S301)	Buoy Deck, 21' Off CL, P/S	Coast Guard Drawing 225-WLB 573-11

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	
N	Coast Guard (C-G) CGDR50TDRASS01 Flush Pad-eye Assembly: Coast Guard (C-G) CGDR50T01 (NSN# 5365-01-612-1273) D-Ring (Rated Load 12,300 lbs), welded strap, fabricated bowl	NSN# 2020-01-682-7587	4	

2. REFERENCES**COAST GUARD DRAWINGS**

Coast Guard Drawing 225-WLB 573-01, Rev R, Buoy Handling System Arrangement

Coast Guard Drawing 225-WLB 573-11, Rev F, ATON Tie Downs

Coast Guard Drawing 225-WLB 573-12, Rev F, Replacement Tie-downs

COAST GUARD PUBLICATIONS

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

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

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

Surface Forces Logistics Center Standard Specification 5000 (SFLC Std Spec 5000), 2022,

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Auxiliary Machine Systems

NAVSEA Dwg 2803-980209, Plates, Label

OTHER REFERENCES

The Society for Protective Coatings (SSPC)/NACE-International (NACE) Joint Surface Preparation Standard SSPC-SP 12/NACE No.5, Surface Preparation and Cleaning of Steel & Other Hard Materials by High and Ultrahigh Pressure Water Jetting Prior to Recoating

3. REQUIREMENTS

3.1 General.

3.1.1 CIR. None.

3.1.2 Technical Representative.

Not applicable.

3.1.3 Protective measures. The Contractor shall take protective measures in accordance with SFLC Std Spec 0000, paragraph 3.3.3, as applicable, in addition to all other requirements that may be specified in individual work items, to prevent contamination and surface damage of non-affected shipboard equipment, components, and spaces.

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

- Buoy deck equipment.
- Overhead insulation and sheathing.
- Piping
- Wire-ways.

3.2 Work particulars. The Contractor shall accomplish the following tasks to replace (48) existing S-A S301-1 tie-downs, as designated in paragraph 1.1, with (48) C-G CGDR50T01 D-Rings using the drawings referenced above as guidance and in accordance with SFLC Std Spec 0000:

3.2.1 Surface preparation. Prepare all surfaces of the new D-ring assembly, including the bowls to a SSPC-SP 12/NACE No. 5, WJ-2/L standard, or by one or a combination of the following surface preparation methods, as applicable:

ABRASIVE BLASTING	MECHANICAL CLEANING
Abrasive-blasting to SSPC-SP10/NACE No. 2, using grit conforming to MIL-A-22262 (1.5 to 2.5 mil anchor profile).	Power tool cleaning to a SSPC-SP 11 (1.0 mil anchor 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.

3.2.2 ATON Tie-down installation and renewal. Install new tie-down assemblies (CG CGDR50T01) D-rings, straps and fabricated bowls, **FIGURE 1** below) in accordance with Coast Guard Drawings 225-WLB 573-11 and 225-WLB 573-12 and SFLC Std Spec 0740.

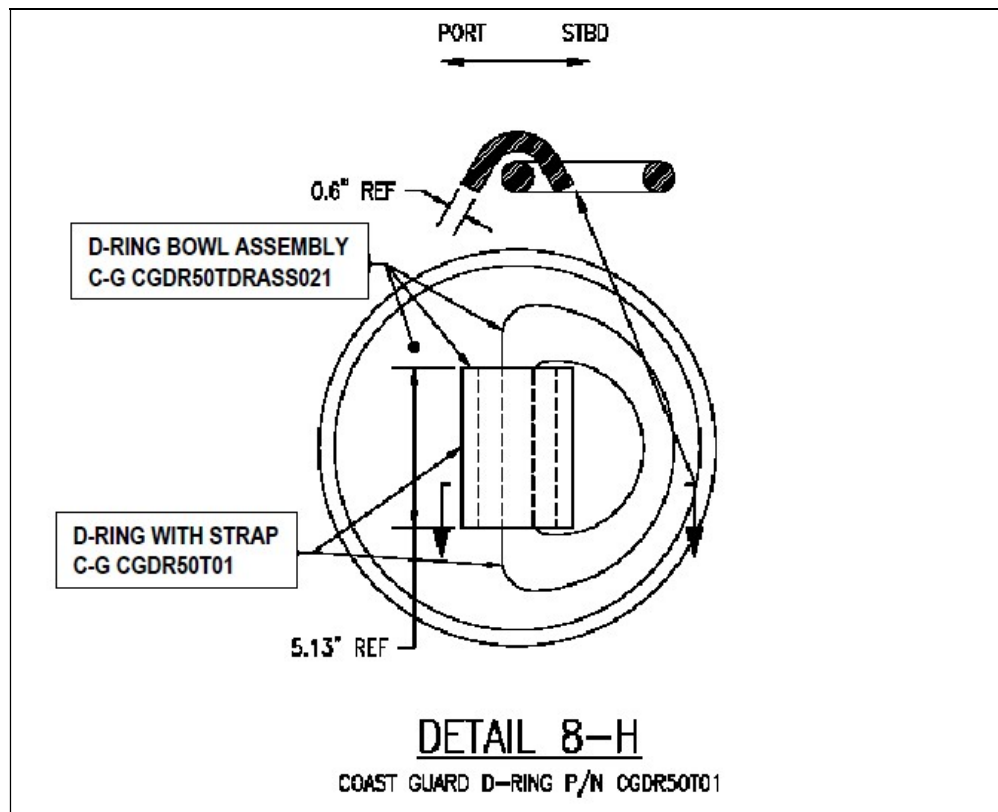


FIGURE 1. COAST GUARD (C-G) CGDR50T01 D-RING, STRAP AND BOWL

3.2.3 Static Load Test. Prior to performing NDI, in the presence of the Coast Guard Inspector perform a 200% static load test on each renewed padeye in accordance with paragraph 3.2.7 (Pull test) of SFLC Std Spec 5000, using Coast Guard Drawing 225-WLB 573-12 for guidance. Test loads are shown below. There shall be no permanent deformation of the padeye or surrounding deck structure. Submit a Condition Found Report (CFR) to the Coast Guard Inspector to report results.

TABLE 3.2 TEST LOADS

WORKING LOAD	200% TEST LOAD
12,300 lbs	36,700 lbs

3.2.3.1 No other portion of the cutter's structure shall be used as tie-downs for any part of the test equipment during the performance of the test without the verification of the Coast Guard Inspector.

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3.2.3.2 A dynamometer shall be installed in the test lead immediately adjacent to the pad eye to record the actual test load being applied. Supply a copy of the Dynamometer calibration certificate to the Coast Guard Inspector.

3.2.4 NDI. Perform NDI of all cleaned surfaces, including all components and associated welds (including but not limited to deck mounting and base/foundation welds) or other mounting hardware, in accordance with SFLC Std Spec 0740, Appendix C. Submit a CFR.

3.2.5 Post-surface preparation task. Perform solvent cleaning of all cleaned surfaces, prior to coating, in accordance with SSPC-SP 1.

3.2.6 Surface coating. Coat all prepared surfaces, using the coating system specified for “Weather Decks (Weather Deck, Buoy Tender Working Deck)” in SFLC Std Spec 6310, Appendix A (Cutter and Boat Exterior Painting Systems).

3.2.7 Touch-up preservation. The Contractor shall prepare and coat all new and disturbed exterior and interior surfaces to match existing adjacent surfaces, in accordance with SFLC Std Spec 6310, Appendix A (Cutter and Boat Exterior Painting Systems) and Appendix B (Cutter and Boat Interior Painting Systems), respectively, and as applicable.

3.3 Labels. Fabricate and install label plates for each new pad eye in accordance with NAVSEA Dwg 2803-980209. Each label plate shall show safe working load, test load and date of test.

4. NOTES

This section is not applicable to this work item.

**WORK ITEM 120: Watertight Hatches, External DC Deck and Below,
Renew****1. SCOPE**

1.1 Intent. This work item describes the requirements for the Contractor to renew water tight hatches identified in Table 1.

TABLE 1 – WATER TIGHT HATCH LOCATIONS

DESCRIPTION	LOCATION	DRAWING
QAWTH 1-5-0; 30" x 30" Quick-Acting Watertight Hatch, Steel, (Raised 12 inch coaming, 21" QAWTS (hinge fwd)), including coaming	Bosn Stores 1-0-0-A	See USCG DWG

1.2 Government-furnished property.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST (\$/UNIT)
N	30 inch x 30 inch Quick-Acting Watertight Hatch, Steel, (Raised 12 inch coaming, 21 inch QAWTS (hinge fwd))}	NSN: PN:	1 ea.	

2. REFERENCES**COAST GUARD DRAWINGS**

NAVSEA Drawing 167-7379842, Rev A, Procedure & Welding Sequence for Non-Ballistic, Watertight & Airtight Quick Acting or Individually Dogged Personnel Doors

Coast Guard Drawing 225B-WLB-167-001, Rev M, Structural Closures

Coast Guard Drawing 225B-WLB-601-001, Rev P, General Arrangements, Inboard and Outboard Profiles

COAST GUARD PUBLICATIONS

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

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

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

OTHER REFERENCES

Commercial Item Description (CID) A-A-59316, 2016, Abrasive Materials; for Blasting
Military Specification MIL-A-22262B, March 1996, Abrasive Blasting Media Ship Hull Blast
Cleaning

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

The Society for Protective Coatings (SSPC) Surface Preparation Standard No. 11 (SSPC-SP 11),
2013, Power-Tool Cleaning to Bare Metal

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures. The Contractor 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 Removal and installation. The Contractor must accomplish the following tasks for each hatch assembly, designated in Table 1:

- Crop, remove, and dispose of the hatch, including its coaming.
- Inspect adjacent deck structure for straightness. Submit CFR with repair plan for any warped or twisted deck structure resulting in a gap greater than 1/16" between the deck plating and new hatch frame.
- Install a new GFP hatch assembly in place of the removed. Use NAVSEA Drawing 167-7379842 and manufacturer instructions as guidance for installation.
- Perform all necessary modifications to ensure the renewed hatch properly fits on its corresponding enclosure.
- Provide and install new hatch gaskets, and fasteners, as required.
- To achieve satisfactory latch operating condition and at the Coast Guard Inspector's direction, relocate, adjust, fabricate and install new securing latches to the closure or ship's structure.

NOTE

- 1. Testing fitup of new hatch frame in structural cutout and balanced welding operations are crucial to ensuring proper alignment. Satisfactory operation of closure should be checked prior to, during, and after welding. Welding should be staggered around frame perimeter and on both sides of the closure to minimize distortion.**
- 2. Where possible, the hatch should be closed and dogged during welding.**
- 3. Geometric dimensioning and tolerance variances and minor hardware differences are to be expected with the Government-furnished closures. These variances and differences are not limited to the following: location and physical size of the hinge assemblies; location, physical size, and number of flush mounted pockets; location, size, and orientation of securing devices.**

3.2.1 Grab handle installation. If a Change Request has been authorized and released, and as designated by the Coast Guard Inspector, the Contractor must fabricate and weld-install a suitable “grab handle” on the coaming of a new hatch. Refer to Figure 1.

NOTE

Grab handle may be attached vertically on the hatch framing to assist members going through a scuttle. See Figure 1.

3.2.2 Knife edge alignment check. Perform string test in accordance with Figure 5-A of NAVSEA Drawing 167-7379842. Submit CFR indicating satisfactory alignment.

3.2.3 Preservation. The Contractor must prepare and coat all new and disturbed exterior and interior surfaces to match existing adjacent surfaces, refer to Table 2.

CAUTION

Do not paint knife-edges, gaskets, or any moving parts; including dogs, nuts, wedges, spindles, yokes, packing, connecting rods and hinge pins.

TABLE 2 – SURFACE PREPARATION AND COATING

	STEEL		ALUMINUM	
	PREPARATION	COATING	PREPARATION	COATING
Top	SSPC-SP10/NACE No. 2, using grit conforming to MIL-A-22262 (1.5 to 2.5 mil anchor profile) -Or- SSPC-SP 11 (1.0 mil anchor profile)	Apply coating system specified for Freeboard/Superstructure/Mast (Freeboard/Superstructure, Steel), Option I”, in Appendix A (Cutter and Boat Exterior Painting Systems) of SFLC Std Spec 6310.	Brush blast to bare metal with clean, fine aluminum oxide, garnet or equivalent inert material conforming to CID A-A-59316, Type I & IV (1.0-1.5 mil anchor profile). -Or- Power tool clean,	Apply coating system specified for “Freeboard/Superstructure/Mast (Freeboard/Superstructure, Aluminum), Option I”, in Appendix A (Cutter and Boat Exterior Painting Systems) of SFLC Std Spec 6310.

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			using non-metallic abrasive padding, to remove all coatings and contamination.	
Bottom	SSPC-SP 11 (1.0 mil anchor profile)	Apply coating system specified for “Door, Joiner, Option I” in Appendix B (Cutter and Boat Interior Painting Systems) of SFLC Std Spec 6310.	Power tool clean, using non-metallic abrasive padding, to remove all coatings and contamination.	Apply coating system specified for “Door, Joiner, Option I” in Appendix B (Cutter and Boat Interior Painting Systems) of SFLC Std Spec 6310.

3.2.4 Testing. Upon complete renewal of each structural closure, the Contractor must perform the following boundary tests and submit a CFR in accordance with SFLC Std Spec 0740, Appendix C:

- Chalk test
- Water hose test

NOTE

Coast Guard personnel will operate all shipboard machinery and equipment.

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

- Closures are properly secured, so as to prevent accidental or unintentional movement.
- Securing latches adequately engage closures and positively lock into place without excessive force or manipulation by the operator.

3.4 Insulation, install. The Contractor must install new insulation material on the underside of the hatch to the same standard as the adjoining structure, as specified on Coast Guard Drawing 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).

4. NOTES

4.1 Damage control markings. Coast Guard personnel will apply appropriate damage control decals onto all newly installed closure(s).



FIGURE 1- ACCEPTABLE GRAB HANDLE

WORK ITEM 121: Sounding Tube Cap Repair

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew the sounding tube caps for the following tanks and voids:

- 4-6-0-W,
- 4-27-2-V,
- 4-30-3-W,
- 4-30-4-W,
- 4-39-0-V,
- 4-30-1F

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225B-WLB 506-01, Rev G, Overflows, Air Escapes & Sounding Tubes Diagram

Coast Guard Drawing 225B-WLB 506-03, Rev C, Vent & St System A&D, Fr 30 Fwd Block 901 & 910

Coast Guard Drawing 225B-WLB 506-04, Rev B, Vents & St System A&D, Fr 30-48 Block 920

Coast Guard Drawing 225B-WLB 506-05, Rev D, Vent & St System A&D, Fr 48-66 Block 930

Coast Guard Drawing 225B-WLB 506-09, Rev A, MMA Overflows, Air Escapes & Sndg Tubes Diagram

Coast Guard Drawing 225B-WLB 601-01, Rev -, General Arr, Inboard & Outboard Profile

COAST GUARD PUBLICATIONS

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

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

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2022, Preserve Ship Structures

3. REQUIREMENTS

3.1 General.

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

None.

3.1.2 Tech Rep. Not applicable.

3.1.3 Protective measures - general. The Contractor must furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces in the vicinity of the work area against contamination during the performance of work. Upon completion of work, the Contractor 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 (Interferences).

- Tanks and voids (and associated manholes) listed in paragraph 1.1.
- Flush deck boxes and deck insulation.
- Sounding tubes and piping.

3.1.5 Confined or enclosed space entry and hot work. Prior to hotwork the Contractor must open, ventilate, and clean all spaces and components necessary to accomplish this work item as required to certify them as "SAFE FOR PERSONNEL" and/or "SAFE FOR HOT WORK." In accordance with SFLC Std Spec 0000.

3.2 Work particulars. The Contractor must accomplish the following tasks to repair or renew the sounding tube deck box caps listed in paragraph 1.1, in accordance with the Coast Guard Drawings above and SFLC Std Spec 0000.

3.2.3 Renew the sounding tube flush deck box (cap assembly) (1-39-1-F) for the following tanks and voids in accordance with Coast Guard Drawings referenced above.

- 4-6-0-W,
- 4-27-2-V,
- 4-30-3-W,
- 4-30-4-W,
- 4-39-0-V,
- 4-30-1-F

3.2.4 New piping and plating must be of similar material and mechanical properties as the adjacent material.

3.2.5 Clean, preserve and test the sounding tube assembly in accordance with Coast Guard Drawings 225B-WLB 506-03, 225B-WLB 506-04, 225B-WLB 506-05. Submit a Condition Found Report (CFR) if additional repairs are required.

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3.3 The Contractor must perform NDI of the welds in accordance with SFLC Std Spec 0740, Appendix C. Submit a CFR.

3.4 Touch-up preservation. The Contractor must prepare and coat all disturbed exterior and interior surfaces in accordance with Appendix A (Cutter and Boat Exterior Painting Systems) and Appendix B (Cutter and Boat Interior Painting Systems), respectively, and as applicable.

4. NOTES

This section is not applicable to this work item.

WORK ITEM 122: Independent NACE Inspector (Level 3), Provide

1. SCOPE

1.1 Intent. This work item describes the requirement for the Contractor to provide the services of an independent NACE-certified level 3 inspector for the preservation of all critical-coated surfaces.

NOTE

This work item is not separately priced (NSP). Factor tenting costs into bid for below work items.

- WORK ITEM : U/W Body, Preserve (All)
- WORK ITEM : Rudder, Preserve, 100%
- WORK ITEM : Hull Plating Freeboard, Preserve
- WORK ITEM : Superstructure, Preserve
- WORK ITEM : Deck - Exterior, Preserve, Non- Skid Broad Cast Grit System
- WORK ITEM : Deck – Exterior, (Buoy or Construction Deck)

1.2 Government furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

None.

COAST GUARD PUBLICATIONS

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

Surface Forces Logistics Center Standard Specification 5000 (SFLC Std Spec 5000), 2022,
Auxiliary Machine Systems

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

OTHER REFERENCES

The Society for Protective Coatings (SSPC) Surface Preparation Specification No.1 (SSPC-SP 1), Solvent Cleaning
The Society for Protective Coatings (SSPC) Surface Preparation Specification No.3 (SSPC-SP 3), Power Tool Cleaning)
The Society for Protective Coatings (SSPC) Surface Preparation Specification No.11 (SSPC-SP 11), Power Tool Cleaning to Bare Metal
The Society for Protective Coatings (SSPC), Paint Application Specification No. 2 (PA-2), Procedure for Determining Conformance to Dry Coating Thickness Requirements
The Society for Protective Coatings SSPC-SP 10/NACE No.2, Near-White Blast Cleaning

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep. The Contractor shall provide the services of an independent Certified Coating Inspector. The Coating Inspector shall be Independent and certified NACE level 3.

3.1.2.1 Professional independence. The Tech Rep shall neither be an employee of the Contractor, nor of any coating system manufacturer.

3.1.2.2 The services of the tech rep shall be used for all preservation, partial-preservation, and touch-ups of critical-coated surfaces.

3.1.2.2 Inspector or tech rep duties. The Coating Inspector for the contractor-provided NACE-certified Tech Rep shall remain on site, to perform the following duties, as applicable, for each work item that involves preservation of “critical-coated surfaces”:

- Verify inspection instrument calibration
- Verify and approve the suitability of ambient conditions before surface preparation is begun, and before each coat of paint is applied.
- Verify all aspects of surface preparation – including, but not limited to: Cleanliness of compressed air; adequacy of solvent cleaning; proper handling of blast media and actual surface preparation procedure.
- Inspect and approve final surface preparation, before application of primer coat.
- Supervise and approve coating system preparation and application procedures, including but not limited to: mixing and thinning, stripe coating application, spray techniques, and film thickness measurements and recordings.
- Determine when applied coats have sufficiently cured for overcoating or for system service resumption (see paragraph 3.1.19 of SFLC Std Spec 6310 (Critical drying time requirements)).
- Complete and sign the quality assurance (QA) inspection forms, provided in Appendix E of SFLC Std Spec 6310 (Coatings QA Forms/QA-1 thru QA-5).

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- Submit all completed QA inspection forms to the COR (through the Contractor), upon completion of work.
- Approve all preservation plans

NOTE

The NACE Inspector must remain onsite, to fulfill the tasked duties listed above - unless otherwise approved by the KO.

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

3.1.2.3 Tech Rep shall maintain daily communication with the contractor and COR, ensuring progress, problems, or any deviations from the specification are known immediately to all parties.

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

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

3.2 Work Location. The concerned work locations are all surfaces that require preservation, partial-preservation, and touch-ups of critical-coated surfaces.

3.2.1 Touch-Up Preservation. Documentation for critical-coated surfaces shall not be waived for touch-up preservation.

4. NOTES

4.1 Definitions.

4.1.1 Critical-coated surfaces. Areas where premature failure of the coating system cannot be detected by routine observation due to inaccessibility, or areas where restoration of a failed system cannot be undertaken without laying up the ship at an industrial facility or a forward repair site; or areas where restoration of a failed system may subject a vessel to a loss of operational days, in addition to resulting in avoidable repair costs. The absence of the critical- coated surfaces designation in the individual work items does NOT downgrade, diminish, or relax the critical-coated surface protocols for established list defined within SFLC Std Spec 0000 paragraph 1.3. The list of "Critical- coated surfaces" will always be treated as critical-coated surfaces as set forth in the applicable sections of this standard. Individual work items may place the critical- coated surface protocols on additional surfaces.

4.1.2 Partial Preservation. Surface preparation and coating application accomplished for up to 33% of a ship component (e.g., tank, u/w body, freeboard, main deck, grid cooler, crane, davit, etc.). This may also include an additional finish coat over 100% of the component - for aesthetic purpose. In-process QC measures are applicable for partial preservation of surfaces defined as "critical-coated surfaces" [see paragraph 3.2.4.2 (In-process QC measures for "critical-coated surfaces") of SFLC Std Spec 0000].

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4.1.3 Touch-up. Preservation operations on cumulative surface areas less than 10 percent of the total area (e.g., bilge, tank, space, etc.) being preserved, with no individual area greater than 10 square feet. Included under touch-up operations are new and disturbed surfaces of less than 10 square feet. Except for potable water, reserve feedwater, or freshwater drain collecting tanks.

4.2 Auxiliary Equipment Preservation. Preservation and partial preservation tasks shall be performed in accordance with STLFF Std. Spec 5000 paragraph 3.2.4 and all subparagraph

WORK ITEM 123: Tenting, Provide

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to provide suitable tenting to create or maintain required ambient conditions for preservation and to contain all waste generated during preservation processes for the following work items:

NOTE

This work item is not separately priced (NSP). Factor tenting costs into bid for below work items.

- WORK ITEM : U/W Body, Preserve (All)
- WORK ITEM : Rudder, Preserve, 100%
- WORK ITEM : Hull Plating Freeboard, Preserve
- WORK ITEM : Superstructure, Preserve
- WORK ITEM : Deck - Exterior, Preserve, Non- Skid Broad Cast Grit System
- WORK ITEM : Deck – Exterior, (Buoy or Construction Deck)

1.2 Government-furnished property.

None.

2. REFERENCES

COAST GUARD DRAWINGS

Coast Guard Drawing 225-WLB 601-001, Rev AC, General Arrangements Inboard and Outboard Profiles

COAST GUARD PUBLICATIONS

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

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

OTHER REFERENCES

Code of Federal Regulations (CFR) Title 29, Part 1910, Occupational Safety and Health Standards

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

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not Applicable.

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

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

3.1.5 Work coordination: The Contractor must coordinate the accomplishment of this work item with the following work items :

- Superstructure, Preserve
-

3.2 Environmental protection. The Contractor must abide by all requirements for environmental protection specified in SFLC Std Spec 0000, Appendix A (Requirements for Environmental Protection at Contractor Operated (Non USCG) Facilities), and Appendix B (Requirements for Environmental Protection at USCG Facilities).

3.3 Safety and protection. The Contractor must comply with all required and applicable safety and protection specified in SFLC Std Spec 0000, paragraph 3.3.1 (Personnel safety and property protection - general), and all OSHA safety and health regulations, and any other applicable federal, state, and local laws, and regulations, for the protection of both personnel and property. Relevant Coast Guard and federal regulations include, but are not limited to the following:

- Suitable Scaffolding and/or lifelines are required for working above five feet (29 CFR 1910 and 1915)
- Temporary lines or rails must be installed in place of all removed lifelines or life rails, and be retained until replacement tasks have been completed.
- Adequate illumination is required in walkways, work areas, and access to provide a safe work environment (29 CFR 1915.92(a))

3.4 Tenting. The Contractor must tent work areas defined by the scope of work items referenced in Paragraph 1.1 during surface preparation and preservation operations in accordance with SFLC Std Spec 6310, paragraph 3.1.5 (Tenting and ambient condition control) and SFLC Std Spec 0000, paragraph A2.2.14/B2.2.16 (Containment - general). Tenting features must be as follows:

- Tenting must be set up in a way that it will not interfere with the blasting, preservation, or

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machinery removal and reinstallation operations.

- Tenting must be constructed to prevent precipitation from affecting preservation operations, and be able to withstand severe inclement weather conditions.
- Tenting must be outfitted with a re-sealable opening that will permit loading and unloading of equipment and supplies.
- Tenting must be used to protect the environment from possible contamination due to preservation work.
- Tenting must prevent all preservation waste products from leaving the work area including but not limited to: dust generated from blasting, blast media, and paint chips.
- Tenting interior spaces must be kept orderly, with waste and debris disposed of regularly.
- Temporary tenting must be included to protect exterior surfaces from inclement weather, while undergoing preservation.
- Temporary enclosures may be rigged and left overnight as long as they do not block egress routes or ventilation.

3.5 Ambient condition control. The Contractor must control environmental conditions necessary for required works in accordance with SFLC Std Spec 6310, paragraph 3.1.4 (Ambient condition parameters).

3.5.1 Control equipment. To maintain ambient conditions recommended by coating system manufacturers and to accomplish surface preparation and coating application, the Contractor must provide suitable ambient condition control equipment including, but not limited to:

- Lighting : Lights and light fixtures
- Temperature : HVAC systems (e.g. heaters, air-conditioners)
- Humidity : Humidifiers, or dehumidifiers
- Air circulation : Blowers, and ventilators

3.5.2 Control plan. The Contractor must submit an ambient condition control plan to the COR before or on arrival conference prior to initiating ambient condition control process.

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

4. NOTES

This section is not applicable to this work item.