

SCOPE OF WORK REQUIREMENTS (CG41446)

These specifications require the contractor to furnish all labor, materials, equipment and appropriate plant site, unless otherwise noted, to accomplish the specified dry-docking, cleaning, painting and general service repairs to the CG-41446 United States Coast Guard Utility Boat (UTB), stationed at Yorktown, Virginia. This operation must be carried out in conformance with the specifications, applicable drawings, clauses, terms, and conditions of the contract, and completed within 60 calendar days after delivery to contractor, unless otherwise noted. Delivery to contractor will be on or about **2 September 2008**.

The contractor shall provide adequate protection to prevent the boat sides from chafing against the wharf or pier while moored at the contractor's facility. The contractor shall ensure that no vessel, boat or barge is moored alongside the Coast Guard boat without permission of the Coast Guard Contracting Officers Technical Representative (COTR).

The contractor shall provide easy and safe access to the boat. The contractor shall use no space on the boat as a storage area. It shall be the responsibility of the contractor to provide adequate protection to all windows, deck coverings, furniture, machinery, equipment, etc., in areas where the work items of these specifications is to be accomplished. Suitable plastic or canvas throw cloths shall be used to protect windows, furniture, machinery, equipment and associated items. The contractor is responsible for the cleanup of dirt and debris, incident to the contract work on a daily basis. The contractor is responsible for a thorough clean up and wash down of the entire boat after the completion of all other work to remove dirt and dust.

The boat will proceed to the contractor's facility, in a public navigable waterway with a minimum water depth of 4 feet 6 inches at mean low water, under its own power or in tow by a Coast Guard vessel. The contractor at no additional expense to the Coast Guard, noting minimum depth requirement will accomplish any movement of the boat during repair period under this contract.

Whenever any material is required to be removed from the boat or installed on the boat, the contractor is Responsible for all handling. Any interference's required to be removed, including cutting and restoring temporary access openings in structures, to facilitate removal or installation shall be treated as part of the work item. The contractor is responsible for identifying the interference's involved and is urged to inspect the boat prior to submitting a bid. The boat outfit, life raft, radar, radio, compass, batteries and occasionally the engines, are removed prior to delivery to the boatyard facility.

All machinery, piping, wiring, ducts, insulation, paint work and any other article removed, disturbed or damaged in the process of accomplishing the work on the individual work items of these specifications shall be replaced, renewed, or repaired by the Contractor with no additional cost to the government. All material and equipment furnished by the Contractor shall be new and of a grade and quality equal to or better than original. All burned or scarred areas resulting from any work performed by the Contractor are to be prepared and painted in accordance with the applicable chapters of COMDTINST M10360.3A Coatings and Color Manual. The repaired areas shall be of the same color and texture as the adjacent undisturbed areas. The COTR shall provide the color number. All flanges and joints broken or loosened shall be properly remade, using gaskets of the proper size and material. Care shall be taken to smooth off all ragged or burned off edges by grinding or filling to a smooth surface. Removal of fixtures, equipment, plating, piping and fittings shall be made clean to the root and finished off, with pipes, cables and welded insert plates being of like material and thickness.

All glass and unpainted areas (dock lights, windows, taff rail, etc.) adjacent to areas where sandblasting, grinding, or painting is required or accomplished shall be covered to prevent scarring and over spray. This applies to work on the exterior/interior of the boat. All machinery exposed to dust or drifting particles resulting from sandblasting, chipping, grinding, wire brushing or painting shall be adequately protected from damage. Any damage shall be repaired by and at the expense of the Contractor.

The Contractor shall have a properly ventilated and lighted building. This building will be of adequate square footage to completely enclose a 41' UTB. The floor of his building will be constructed of a solid material (wood, asphalt, or concrete) that can be swept and washed to facilitate a clean work area. The building must be capable of being secured to prevent vandalism or theft of government property.

All spray painting of the underwater body; hull and superstructure shall be performed in the enclosed building. This building shall be heated whenever the outside temperature falls below 55 degrees Fahrenheit. Care must be taken to store all government furnished material/equipment in accordance with the manufacturers recommended storage temperature requirements.

The Contractor shall be responsible for protecting the boat against damage or destruction by fire, theft and freezing or adverse weather conditions from the time the boat is accepted by the Contractor until the Coast Guard removes the boat from the facility.

The Coast Guard will provide all legends, shields and numbers in the required quantity and size to the contractor in a timely manner. The legends, shields and numbers shall remain property of the Coast Guard and the Contractor is expected to take reasonable care to prevent damage or unnecessary waste.

MINIMUM STANDARD FOR YACHT QUALITY WORK

Work performed on the Coast Guard Utility Boat (UTB), under this repair/maintenance contract shall be consistent with the standard of work generally accepted throughout the commercial boat yard industry as "yacht quality" workmanship. Work performed to this standard shall, at a minimum provide:

1. Smoothly feathered sanding in such a manner to blend in as unnoticed to the surrounding finish, to provide for a smooth surface finish for all painted areas.
2. Protection for bright work not normally painted or surfaces designated by the COTR as not painted, from any paint slops, over spray, etc. All such areas should be protected to provide a clean distinguishing line between the painted surface and the non-painted surface. This standard of clean distinguishing lines shall apply where areas of different color meet.
3. Above water line surfaces shall produce a high gloss even finish unless specifically stated otherwise. Painted Surfaces shall be smooth and free of runs or sags in painted finish.
4. Fiberglass work shall be finished in such a manner as to blend in unnoticed to the surrounding finish.

ENVIRONMENTAL AND SAFETY NOTICE

The successful contract bidder shall be given "Material Safety Data Sheets" for all known or presently identified coatings on the vessel at the time of contract award. The contractor shall meet with the Contracting Officer and Contracting Officers Technical Representative on board U.S. Coast Guard Reserve Training Center, Yorktown, Virginia prior to the start of work.

The contractor is responsible for compliance with all applicable OSHA standards, Federal and State Environmental Protection Agency laws concerning worker protection and disposal of hazardous / toxins produced as a result of the vessel being at the contractors facility.

The contractor upon awarding of the contract agrees to State and Federal Agency Inspections for compliance with all applicable laws and standards.

DEFINITIONS THAT APPLY:

MDFT	= Minimum dry film thickness of paint.
MILS	= Millimeters metric measurement
COMDTINST	= U.S. Coast Guard Commandants Instruction
IAW	= in accordance with...
USC	= United States Code
PSI	= Pounds per square inch unit of measure
COTR	= Contracting Officers Technical Representative
UTB	= United States Coast Guard Utility Boat (41')
KO	= Contracting Officer

VESSEL DATA INFORMATION SHEET

Principle dimensions;

Type: Utility Boat
 Design: Aluminum Hull
 Fixed height (keel to radar) 17' 6"
 Length, overall: 40' 8"
 Beam: 13' 6"
 Displacement (full load): 32,600 lbs.
 Displacement (operating): 28,600lbs
 Draft: 4' 1"
 Draft (full load): 4' 2"
 Hoisting Weight: 28,000lbs
 Shipping Weight: 24,600 lbs.
 Hull Material: 5086 Aluminum Alloy
 Fuel Capacity (# .2 Diesel) 460 gallons
 Propulsion: 2 Cummins VT 903M
 Rated Horsepower: 320 at 2600 RPM'S
 Electrical System: 24 Volt DC
 Propeller Details: Two (2) 26-inch diameter by 28-inch pitch, 2 inch bore right and left hand, 4 blades
 Magnesium Bronze, or Ni-Al-Bronze.
 Value of Vessel 500,000.00

Name of Contractor					
Item No.	Supply/ Service	Quantity	Unit	Price	Total
1.0	Drydocking	01	Job		
2.0	Zinc Anodes	01	Job		
3.0	Keel Inspection	01	Job		
4.0	Sea Chest Valves	01	Job		
5.0	BLANK	01	Job		
6.0	Fuel Tank Cleaning	02	Job		
7.0	Deck Gear	01	Job		
8.0	Interior Cabin Spaces	01	Job		
9.0	Freeboard Painting	01	Job		
10.0	BLANK	01	Job		
11.0	Remove, inspect and replace rub rails	01	Job		

ITEM 1.0 DRYDOCKING

1.1 Scope of Work:

1.1.1 Hoist vessel from water using suitable drydock or railway, or by slings and spreader bars.

1.1.2 Drydock the vessel for underwater repairs, sandblasting, surface preparation, and painting of the underwater body

1.1.3 Refloat the vessel upon completion of all specified underwater repairs.

1.2 Docking Requirements:

1.2.1 Provide suitable drydocking facilities to drydock the vessel for underwater repairs, sandblasting, surface preparation and painting of the underwater body.

1.2.2 Remove the vessel from the water, using a hoist or rail system that meets all city, county, state, and federal requirements, and has a lifting capacity of at least 1-½ times the weight of the vessel. Same day haul-out is desired. The underwater body shall be pressure washed and scraped to remove marine growth while the vessel is still wet.

1.2.3 Properly block the vessel, without obstructing the one sea chest located on the starboard side between frames 8 and 9, and the one (1) Fathometer transducer located on the starboard side 2 feet from the centerline between frames 6 and 7, in accordance with the attached docking plan. Taking care to eliminate any undue stress or strain on the vessel's hull. The vessel shall be blocked with the bottom of the keel a minimum of 36 inches to the ground or floor of the drydock. This is the minimum clearance required for removal of the rudders. Ample room shall exist at the stern for removal of the shafts. The contractor shall provide Coast Guard personnel a minimum of eight (08) normal work hours within the first week in which the vessel is dry-docked. Coast Guard personnel will perform packing renewal, rudder clearance readings, and propulsion shaft bearing clearances and run out readings of the propeller shafts. The contractor may lower the vessel after the completion of the above work at no additional cost to the government.

1.2.4 The vessel shall be shifted on the blocks, for completion of cleaning and painting inaccessible areas, adhering as close as practical to the docking plan. Keel blocks need not be shifted unless otherwise specified. Caution shall be used not to block transducer.

1.2.5 The contractor shall provide suitable mooring space with a 20 AMP 110 Volt AC power supply at the facility for a 24 hour period in which to inspect all compartments and through hull fittings for leaks and proper operation, at the completion and acceptance of all work items.

1.2.3 Contractor and COTR Check Point:

1.3.1 Inspect blocking of the vessel to ensure transducer and sea chest is not blocked.

1.3.2 Witness shifting of vessel blocks.

1.3.3 Witness refloating of the vessel.

ITEM 2.0 ZINC ANODES

2.1 Scope of Work:

2.1.1 Remove, install, replace and or clean all zinc anodes.

2.2 Requirements:

2.2.1 The contractor shall remove the four 3 X 12 inch type ZSS strap zincs and four shaft zincs from the vessel prior to the start of any underwater body work except power washing and scraping.

2.2.2 Upon completion of all underwater body work the zinc anodes and the mounting areas on the vessel shall be cleaned to a bright shine (free of all paint and corrosion). The contractor shall install all zincs with new 316 stainless steel or better bolts, lock washers and self-locking nuts. If the existing zincs are more than 50% deteriorated, the Coast Guard shall provide new zincs for the contractor to install.

2.2.3 The contractor shall conduct a continuity check of the installation using an ohmmeter. A reading of zero is required from each zinc to the hull, shafts, and rudders.

2.2.4 Prior to undocking the vessel the contractor shall polish the zincs to a bright metal by wire brushing.

2.3 Contractor and COTR Check Points:

2.3.1 Witness surface preparation.

2.3.2 Witness installation and ohm test, reading of zero must be achieved.

2.3.3 Prior to refloating of the boat, inspect condition of zincs.

ITEM 3.0 KEEL INSPECTION

3.1 Scope of Work:

3.1.1 Within the first three days the vessel is dry-docked, the contractor shall, with COTR present, inspect the keel. The drain plug (s) shall be removed, checking for the presence of water. The exterior of the keel shall be visually inspected for any signs of cracks, bends or other abnormalities.

3.1.2 If water is found upon removal of the drain plug (s) the contractor shall notify the Contracting Officer/COTR immediately. If any testing and repair of the keel is required, the Contracting Officer will request in writing, a proposal from the contractor. The contractor is not to begin any work without authorization from the Contracting Officer. The keel shall be tested upon completion of repairs by pressurizing it with two psi of air, holding this pressure for a period of no less than ten minutes with a zero drop in pressure. The test air pressure shall not exceed three psi at any time.

3.1.3 The drain plug (s) shall have Teflon tape applied to the threads prior to installation conforming to MIL-T-27730 or equivalent.

3.1.4 The contractor shall repair all disturbed areas.

3.2 Contractor and COTR Check Points:

3.2.1 Witness keel inspection.

3.2.2 Witness keel pressure test.

3.2.3 Witness keel plug (s) removal and installation.

ITEM 4.0 SEA CHEST VALVES

4.1 Scope of Work:

4.1.1 Remove and replace five (05) sea chest valves.

4.2 Requirements:

4.2.1 The contractor shall remove the two engine raw water valves, fire pump raw water valve, engine cooling recirculation valve and the sea chest vent valve. The contractor shall clean, inspect, reinstall, or replace with new/rebuilt valves, which will be supplied by the Coast Guard. Using all new neoprene rubber gaskets, supplied by the Coast Guard. Coat both sides of the gaskets with silicone sealant, and assemble while wet. Use new 316 or better stainless steel fasteners, which will be supplied by the contractor.

4.3 Contractor and COTR Check Points:

4.3.1 A leak and function test shall be performed with the vessel water borne. The contractor and COTR shall do the inspection. The contractor shall be immediately prepared to haul the vessel if the valves leak or do not pass a function inspection/test.

ITEM 5.0 BLANK

ITEM 6.0 FUEL TANK CLEANING

6.1 Scope of Work:

6.1.1 Drain, open, clean, inspect tank interiors. Close up, purchase fresh fuel and fuel the vessel with 400 gallons of #2 marine grade diesel fuel, (200 gallons in each tank) upon completion of work and inspection.

6.2 Safety Requirements:

6.2.1 In the performance of any burning, heating or welding required to accomplish the repairs specified in this item, it shall be the responsibility of the contractor to clean and provide a "GAS FREE" or "SAFE FOR HOT WORK" certificate to the COTR. Certifying that all tanks and adjacent areas are free of gases or other fire hazards.

6.3 Fuel Removal:

6.3.1 The contractor shall remove the fuel from the vessel's fuel tanks and dispose of in accordance with current Federal and State regulations. No additional expense shall be billed to the government for disposal of the fuel. There will be no more than 250 gallons in each of the 2 fuel tanks for a total of 500 gals.

6.4 Tank Cleaning:

6.4.1 Remove all fuel tank access covers.

6.4.2 Open each tank and clean free of remaining fuel, water sludge or other foreign matter.

6.4.3 Ensure all tank access cover sealing surfaces are free of all rust, corrosion, and distortion to provide a smooth flush fit.

6.4.4 Upon completion of cleaning and required repairs, the contractor, COTR and a Coast Guard Engineer shall conduct inspections for cleanliness and to ensure that no piping or vent is plugged.

6.5 Piping Inspection:

6.5.1 Inspect all fill pipes and vent pipes of each tank for deterioration of the pipes.

6.6 Tank Closures:

6.6.1 When directed by the COTR, close each tank as follows:

6.6.1.1 Both mating surfaces of the covers and access area shall be cleaned free of all foreign matter and free of distortion to provide a smooth liquid leak proof seal.

6.6.1.2 Recondition all secure stud threads by chasing with a die nut.

6.6.1.3 Fabricate and install new gaskets for each access cover. New gaskets shall be of a cork impregnated neoprene material, 3/16" thickness, to be supplied by the COTR.

6.6.1.4 Each stud closure shall be secured with a flat washer; a lock washer and a securing nut. The Contractor shall furnish and replace all missing or defective fasteners of equivalent grade. Closure tightening sequence shall be in the form of a star to avoid crimping the gasket material due to a uneven torque sequence.

6.7 Contractor and COTR Check Points:

6.7.1 Inspect tanks and piping for corrosion and deterioration.

6.7.2 Inspect gaskets and fasteners.

6.7.3 Inspect for leaks after vessel has been fueled.

ITEM 7.0 DECK GEAR

7.1 Scope of Work:

7.1.1 Preparation and painting of deck gear, which includes the following: One (1) towline reel, One (1) dewatering pump can, two (2) fuel fill caps, two (2) anchors and emergency tiller. COLD SPRAY GALVANIZED is to be used on the anchors and emergency tiller. The contractor will provide all required paints, primers, thinner and materials.

7.2 Preparation:

7.2.1 All items listed in 7.1.1 shall be prepared IAW with COMDTINST M10360.3A Colors and Coatings Manual and 7.3. Surface preparation shall produce a 1.0 to 1.25 MIL anchor pattern and eliminate deteriorated coating and feather in all imperfections leaving a smooth surface.

7.3 Painting:

7.3.1 Each item listed in 7.1.1 with the exception of anchors and emergency tiller shall have 2 coats, 3 MILS MDFT each, polyamide epoxy primer green MIL-P-24441/1 or Ameron 235, applied IAW COMDTINST M10360.3A Coatings and Colors Manual. The contractor shall conduct MDFT Test in the presence of the COTR after each coat has dried, except as listed in COMDTINST M10360.3A Coatings and Colors Manual.

7.3.2 The tow reel shall have 2 coats 2 MILS MDFT Exterior/Interior Gloss Alkyd White (17875), the pump can shall have 2 coats 2 MILS MDFT each, Exterior/Interior Gloss Alkyd Resin Enamel Vivid/International Orange (color 12197) TT-E-489. The fuel caps shall have 2 coats 2 MILS MDFT Safety Yellow. The anchors and tiller shall have 2 coats 2 MILS MDFT each (Cold Spray Galvanize). The contractor shall conduct MDFT test in the presence of the COTR after each coat has dried. All paint shall be applied IAW COMDTINST M10360.3A Coatings and Color Manual and the manufactures application instructions.

7.4 Contractor and COTR Check Points:

7.4.1 Witness surfaces prior to painting.

7.4.2 Witness MDFT Test.

ITEM 8.0 INTERIOR CABIN SPACES

8.1 Scope of Work:

8.1.1 Preparation and painting of the cabin interior to include the following: All interior yellow with the exception of area under cox'n flat, console panel, dash, coxswain chair, navigation chair, navigation box, lower and upper bench seats and inside of cabin door. The contractor will provide all required primers, paints, thinners and materials with the exception of interior yellow.

8.2 Preparation:

8.2.1 The contractor shall protect all windows, carpets, upholstery, bright work, gasket material, ground straps, wire mounts and wire runs from damage or paint. No paint shall be applied where ground straps meet mounting hardware. Removable interferences may be removed, if so all items shall be reinstalled and any damage shall be repaired or item replaced in kind at the expense of the contractor. The contractor shall sand all interior surfaces to provide a 1.25 MIL anchor pattern. **EXCEPT THE COXSWAIN CHAIR SHALL BE SAND BLASTED, DIE PENETRANT TESTED AT ALL WELDS FOR CRACKS.**

8.3 Painting:

8.3.1 The contractor shall apply 2 coats, 2 mils MDFT each of Latex Yellow # 23594 (provided by COTR), applied IAW COMDTINST M10360.3A Coatings and Colors Manual to the interior cabin surfaces previously painted yellow with the exception of the area under the cox'n flat. The contractor shall conduct a MDFT in the presence of the COTR.

8.3.2 Each item listed in 8.1.1 shall have 2 coats, 3 MILS MDFT each, polyamide epoxy primer green MIL-P-24441/1 or Ameron 235, applied IAW COMDTINST M10360.3A Coatings and Colors Manual. The Contractor shall apply 2 coats, 2 MILS MDFT each, Silicone Alkyd Semigloss Brown (color 20117) TT-E-490 applied IAW COMDTINST M10360.3A Coatings and Color Manual and manufactures application instructions to the bench seats, console, inside of cabin door, coxswain chair, navigation chair, navigation box and bench seats. The contractor shall conduct a MDFT in the presence of the COTR.

8.3.3 The contractor shall apply 2 coats, 2 MILS MDFT each, Flat Enamel Black Paint (color 37038), DOD-P-15146 to the interior cabin surfaces on the console and dash including all attached pieces that are already black in color. This shall be applied by spray. Dries to recoat in 1 hour and hard in 5 hours to a flat/egg shall finish. The contractor shall conduct a MDFT in the presence of COTR.

8.4 Contractor and COTR Check Points:

8.4.1 Witness die penetrates test.

8.4.2 Witness surfaces prior to painting.

8.4.3 Witness the MDFT test.

ITEM 9.0 FREEBOARD PAINTING

9.1 Scope of work:

- 9.1.1 Preparation and painting of the red and blue stripes on freeboard. The contractor will provide all required primers, thinners and materials (Paint shall be supplied by Coast Guard).

9.2 Preparation

- 9.2.1 Both red and blue Coast Guard stripes shall be sanded or sandblasted to a 2.5 anchor pattern and eliminate deteriorated coating and feather in all imperfections leaving a smooth surface.

9.3 Painting

- 9.3.1 All prepared areas shall have 2 coats, 3 MILS MDFT each, polyamide epoxy primer green MIL-P-24441/1 or Ameron 235 applied IAW COMDTINST M10360.3A Coatings and Colors Manual. The contractor shall conduct MDFT Test in the presence of the COTR after each coat has dried, except as listed in COMDTINST M10360.3A Coatings and Colors Manual.
- 9.3.2 The Contractor shall apply 3 coats, 2 MILS MDFT each, Silicone Alkyd Semigloss Coast Guard Red(12199) and Coast Guard Blue (15182) (both supplied by COTR) applied IAW COMDTINST M10360.3A Coatings and Color Manual and manufactures application instructions

9.4 Contractor and COTR Check Points:

- 9.4.1 Witness surfaces prior to painting.
- 9.4.2 Witness the MDFT test.

ITEM 10: BLANK

ITEM 11.0 REMOVE, INSPECT AND REINSTALL RUB RAILS

11.1 Scope of work

This describes the requirements for the contractor to remove and reinstall rubrail.

11.2 Requirements

- 11.2.1 Responsibility for labor and materials. The Contractor shall provide all labor and materials, unless otherwise specified in a work item, to accomplish all work specified herein.
- 11.2.2 **Removal:** The contractor shall remove all rub rails, label each one accordingly to ensure proper replacement and set aside. The contractor will also remove all plastic backing from inside of old rubrail.
- 11.2.3 The contractor shall allow time (approx 48 hours) for the COTR to inspect all threaded rod and rub rails and determine if any repairs are needed. **Any repairs to threaded rods shall be completed by Coast Guard** or the COTR will request a estimate for yard work.
- 11.2.4 **Reinstall:** Upon completion of inspection the contractor shall replace the removed plastic with ¼” aluminum (**provided by Coast Guard**) and drill holes were needed and reinstall all rub rails, The Coast Guard will furnish any rub rail deemed non-useable. Any new rub rail will need to be properly drilled according to threaded rods placement.

11.3 Contractor and COTR check points:

- 11.3.1 Inspect any new rub rail for proper drilling of holes and inspect proper installation of all rubrail.

ITEM 12.0 Windows and Bomar Hatch Removal/Replacement in cabin top.

12.1 Scope of Work:

12.1.1 Remove forward Bomar hatch and all cabin top windows.

12.2 Preparation:

12.2.1 Remove Bomar hatch and all cabin top windows and prepare surface of cabin and windows for re-caulking.

12.3 Installation:

12.3.1 The surface shall be free of all dust and other particles. The surface shall be inspected by the COTR to ensure cleanliness. The contractor shall Re-caulk using white Sika-Flex 291 around window cuts out and install windows ensuring watertight integrity. After window is securely attached, the contractor shall apply a final bead of same caulking around outer edge of windows ensuring a smooth seal is made around windows.

12.4 Finish:

12.4.1 All surfaces shall be thoroughly cleaned.

12.5 Contractor and COTR check points

12.5.1 Witness removal and preparation of windows/bomar hatch

12.5.2 Conduct leak test

ITEM 13.0 UNDERWATER HULL

13.1 Scope of work

13.1.1 Preparation and painting of the underwater hull to include the area from the water line down to, and including the keel. The contractor will provide all materials required. **THE COAST GUARD WILL PROVIDE THE AMERON 235 AND NO FOUL SN-1 PAINT SYSTEM.**

13.2 Requirements

13.2.1 Responsibility for labor and materials. The Contractor shall provide all labor and materials, unless otherwise specified in a work item, to accomplish all work specified herein.

13.2.2 Material receipt inspection. The Contractor shall ensure that all paint or coating products are delivered to the job site in original and unopened containers with the following information:

- Manufacturer
- Batch No.
- Date of manufacture
- Shelf life
- Product data/ASTM F718 sheet
- Material safety data sheet (MSDS)
- Certificate of compliance (COC)

13.3.3 Material storage, handling, mixing, and application. The Contractor shall observe all paint manufacturer's recommended procedures, as well as the good painting practice recommendations outlined in Chapter 5.1 of SSPC-PA 1 for all aspects involving storage, handling, mixing, and application of paint materials. Ensure that ambient conditions (dew point, surface and air temperatures, and relative humidity) are as recommended by the applicable coating manufacturers.

13.3.4 Personnel qualification. The Contractor shall submit to the Contracting Officer documentation demonstrating that personnel performing the surface preparation and coating application have at least 2 years experience specializing in the performance of work similar to that required by this specification.

13.3.5 Blank

13.3.6 Ambient conditions. Verify and approve the suitability of ambient conditions at the following instances:

- Prior to commencing surface preparation
- Prior to *each* coat application

13.3.7 Surface preparation. Inspect and approve final surface preparation, prior to primer application.

13.3.8 Coating preparation and application. Supervise and approve coating system preparation and application procedures, including but not limited to: mixing and thinning, stripe coating, spray techniques, and *wet and dry* film

13.3.9 General personnel health and safety compliance. The Contractor shall strictly adhere to all safety measures provided in the material safety data sheets (MSDS) for all materials to be used, in addition to the measures outlined in SSPC-PA Guide 3, to protect personnel at all times during all aspect of surface preparation and coating mixing, handling, and application operations.

13.3.10 Containment. The Contractor shall provide or employ suitable means to contain generated dust, waste water, paint chips, spent abrasives, and overspray.

13.3.11 General environmental compliance. The Contractor shall comply with all applicable Federal, state, and local public safety and environmental protection regulations regarding (a) removal, handling, and disposal of spent abrasives and removed paint products; (b) protection of the air and waterways, and (c) application of coatings. Provide or employ suitable means to contain generated dust, waste water, paint chips, spent abrasives, and overspray, when applicable.

13.3.12 Protective measures. The Contractor shall accomplish the following:

**Remove and store all sea chest strainers in a Coast Guard approved location.

**Remove the sea chest baffle, sea chest screen and zincs and ensure all hull openings are plugged. Mask or otherwise protect all waster pieces, sound-transparent surfaces (sonar domes, sea scanners, and transducers), propellers, propeller shafts, propeller seals and bearings, rudder bearings, rudder and shaft seals, stern tube openings, and neoprene-coated surfaces to protect against damage from sandblasting and underwater body painting.

**Protect all deck machinery, ventilation openings, armament, sea valves, overboard scuppers, and hull openings from sand and all other foreign matter associated with surface preparation and painting.

13.3.13 Surface preparation. The Contractor shall accomplish the following:

** Procedure before surface preparation. Prior to surface preparation, remove visible oil, grease, soil, soluble welding residues, and salts from the surfaces using a fresh water low-pressure wash down at 1,000-2,000 psi.

** Methods of preparation. Prepare the underwater body surfaces to the **RED OXIDE 235 BARRIER COAT**, by blasting with (1) a very fine aluminum oxide, garnet or equivalent inert material, to produce an anchor profile of no more than 2.5 mils.

13.3.14 Procedures following surface preparation and immediately prior to painting. After surface preparation and prior to painting, accomplish the following:

13.3.15 Debris removal. Collect, remove, and dispose of all paint products, dirt, water, and other debris resulting from the surface preparation procedures.

13.3.16 Oil and grease removal. Remove all visible deposits of oil, grease, or other contaminants by any of the methods specified in SSPC-SP 1.

13.3.17 Surface coating. The Contractor shall prime and coat the prepared underwater body surfaces with the following coating system (see 5.2 (Coating system suppliers)):

13.3.18 Undercoating system. Apply 1 coat of a high build epoxy conforming to MIL-PRF-24647B, at 7.0-9.0mils WFT to produce 5.0-6.0 mils DFT each, as follows:

1st coat: RED OXIDE 235

13.3.19 Antifouling topcoating system. Spray or roller-apply the following coats of "E Paint No Foul SN-1" antifouling coating, or an equivalent anti-fouling coating (see 4.5 (Essential characteristics of an equivalent anti-fouling coating)) at 5.0-7.0mils WFT to produce 3.0-4.0 mils DFT each coat, and as follows:

1st: "S1-705", navy gray

2nd: "S1-405", white

3rd: "S1-405", white

4th: "S1-305", black

NOTES:

1. Each subsequent No Foul SN-1 coat must be applied a minimum of 4 hours at 70°F after applying previous NO Foul-SN-1 coat (extend time at lower temperatures-consult manufacturer).

2. The 4th (black) coat must be applied to the boot-topping areas, or to areas from the design water line six inches down for boats without boot-topping.

13.4 QUALITY ASSURANCE

13.4.1 Prepared surface inspections. Upon completion of surface preparation, the Contractor shall accomplish the following, in the presence of the Coast Guard Inspector:

13.4.2 Visual. Perform a visual inspection of the prepared surfaces, to ensure conformance with the requirements herein.

13.4.3 Surface profile. Measure the surface profile of the cleaned surfaces, using replica (testex) tape and a micrometer, as described in Method C of ASTM D4417. Identify each reading with a number and write the surface profile measured in the space provided on the tape. Paste each tape onto the surface preparation quality assurance checklist provided herein, to serve as a permanent record.

13.4.4 Coating inspection. The Contractor, along with the Coast Guard Inspector, shall inspect each paint coat to ensure that there are no holidays, skips, runs, sags, overspray, dryspray, or other visual paint defects which will affect the performance of the paint system. Remove all areas determined by the Coast Guard Inspector to be defects to the previous stage, and re-apply coating.

13.4.5 Quality assurance data sheets. The Contractor shall document environmental conditions on the quality assurance data sheets provided at the end of this document, every 4 hours, during all surface preparation, coating application procedures, and through final cure. Paste all surface profile measuring testex tape onto the applicable data sheets. Submit the data sheets to the COR upon completion of work.

13.4.6 Essential characteristics of an equivalent anti-fouling coating. An equivalent coating system to the foul-release system specified herein shall meet the following criteria:

- Contains an EPA-approved biocide, to prevent attachment of marine foulings.
- Does not contain lead, PCB, asbestos, copper, Tributyl Tin (TBT, and isocyanates in its composition.
- Has a proven record (at least three years) of usage as an underwater aluminum hull coating system.
- Contains no metallic substances which could have a deleterious effect on the aluminum substrate.
- Has equal or better resistance to mechanical damage from blunt objects than conventional antifouling systems.

13.5 NOTES

13.5.1 Underwater body. The underwater body is defined as the areas from the bottom of the keel to the upper edge of the boot-top, including rudders, bilge keels, struts skegs, gratings, and sea chests, and rope guards.

13.5.2 Coating system suppliers: Although there are several high build epoxies qualified under MIL-PRF-24647, the below-listed epoxy undercoating can be used, as a system, with the antifouling top-coating, as recommended by the antifouling paint manufacturer.

13.5.3 Epoxy undercoating.

Brand name: 235/Bar-Rust 235
Manufacturer: Ameron Coatings Division/ Devoe
Phone: 1-800-283-6627.

13.5.4 Antifouling top-coating.

Brand name: No-Foul SN-1
Manufacturer: E Paint Co.
Phone: 1-800-258-5998.

13.5.5 NACE Session I training requirements. Topics included in Session I of the NACE Coating Inspector Certification Curriculum are as follows:

- Basic corrosion mechanisms, effects of environments, methods of corrosion control, and importance of protective coatings and linings.
- Considerations for coating inspection including coating applications, records and reports, importance of the pre-job conference, working with others to get the job done, and coating inspection ethics.
- Surface preparation and spray application.
- Equipment and inspection criteria and safety.
- Inspection tools and test.
- Protective coating concepts including types of primers, importance of correct coating thickness, pigments, solvents, common inspection criteria and failure modes, and common curing mechanisms.
- Types of protective coatings and inspection criteria. Causes and types of coating failures.

ITEM 14.0 INTERIOR DECK CARPETING

14.1 Scope of work

14.1.1 Remove and replace the existing deck carpet.

14.2 Requirements

14.2.1 The contractor shall remove and dispose of all carpet.

14.2.2 The contractor shall install new carpet in the upper and lower cabin area. The carpet installed shall be shipboard type and meet federal specifications of Maximum optical density of smoke:450, in accordance with ASTM E662 and Critical radiant flux: 0.45 watts/cm² in accordance with ASTM E648., Color will be equal to Woodland Brown (a sample should be approved by COTR). Carpet edge binding will be used around all exposed edges in lower cabin, to avoid carpet curling or fraying. Carpet glue shall be used to secure carpet to deck and shall be NON-FLAMMABLE (i.e. Parabond 350 or AM 400).

14.3 Contractor and COTR check points

14.3.1 Inspect all material to be used for compliance with above.

14.3.2 Inspect carpet for proper installation .

ITEM 15.0 CABIN TOP REPAIRS, PAINTING, GEL-COAT

15.1 Scope of Work:

15.1.1 Preparation: The Contractor shall remove all through cabin fasteners/stuffing tubes, with the exception of the main cabin bolts. The stuffing tubes that are removed shall be replaced using cable clams. The main cabin bolt heads shall be covered to prevent gel-coating. All holes not utilized for thru hole fasteners/fittings shall be filled with a commercial grade fiberglass filler. The entire surface of the cabin including exhaust vents shall be sanded to provide a 1.25 anchor pattern. No part of the main cabin shall be sand blasted. The interior of the cabin shall be protected at all times from exterior contaminants.

15.2 Fiberglass Repair:

- 15.2.1 The Contractor shall remove all through cabin fasteners/fittings, with the exception of the main cabin bolts. The fasteners that are removed shall be marked and saved for reinstallation of equipment.
- 15.2.2 The damaged area of fiberglass (delamination) fwd compartment (aft of anchor) needs to be cut away and repaired. Approx size of damaged area is a 2' X 2' square.
- 15.2.3 All through holes in the inner skin of both upper and lower cabin tops shall be fiber glassed over.
- 15.2.4 Replace core material with Divinycell H80 or equal.
- 15.2.5 Use West system Fiberglass on outer shell to achieve same thickness as before.

15.3 Fiberglass, gel-coat and paint:

- 15.3.1 The contractor shall sand the cabin tops to provide a 1.25 mil anchor pattern. The cabin tops shall be cleaned to remove all foreign articles. Then 2 coats, 2 mils MDFT each Top Coat, Awlgrip Dark Gray shall be applied by spray application. The contractor shall conduct the MDFT test in the presence of the COTR.
- 15.3.2 The contractor shall sand all white work on cabin to provide a 1.25 anchor pattern. The contractor shall apply two (2) coats, 5 mils MDFT of high Gloss White gel-coat by spray application to the entire cabin surface with exception of cabin tops, that produces a high gloss finish. The main cabin bolt heads shall be covered to prevent gel-coating. All holes not utilized for thru hole fasteners/fittings shall be filled with a commercial grade fiberglass filler. Any paint shall be removed from existing gel-coat by sanding.
- 15.3.3 All through cabin fasteners/fittings shall be replaced using cable clams. The contractor shall apply Sika Flex caulk or an equivalent marine grade caulking to each fastener/fitting as it is installed. The contractor shall conduct a leak test in the presence of the COTR.

15.4 Contractor and COTR Check Points:

- 15.4.1 Witness surfaces prior to fiber glassing.
- 15.4.2 Witness surface prior to painting.
- 15.4.3 Witness the MDFT test.
- 15.4.4 Witness the surface prior to gel-coating.
- 15.4.5 Witness the leak test.

ITEM 16.0 NON-SKID PAD REMOVAL

16.1 Scope of work

16.1.1 Removal of non-skid pads on Main deck and well deck areas.

16.2 Requirements

16.2.1 Responsibility for labor and materials. The Contractor shall provide all labor and materials, unless otherwise specified in a work item, to accomplish all work specified herein.

16.2.2 General environmental compliance. The Contractor shall comply with all applicable Federal, state, and local public safety and environmental protection regulations regarding (a) removal, handling, and disposal of spent abrasives and removed paint products; (b) protection of the air and waterways, and (c) application of coatings. Provide or employ suitable means to contain generated dust, waste water, paint chips, spent abrasives, and overspray, when applicable.

16.2.3 Protective measures. The Contractor shall furnish and install suitable covering to seal off and protect all non-affected surfaces/equipment and spaces in the vicinity of the work area against contamination during the performance of work. Upon completion of work, remove protective material and inspect for the presence of contamination. Clean all equipment and space contamination discovered, if any, which was due to improper protection or performance of work, to the original condition of cleanliness prior to the start of work.

16.2.4 Surface preparation. The Contractor shall accomplish the following:

The eight (8) cleats shall be removed prior to sandblasting of main deck, and when replaced shall have bedding of Sika-Flex 291 caulk (or equivalent). The contractor will provide all materials required.

** Procedure before surface preparation. Prior to surface preparation, remove visible oil, grease, soil, soluble welding residues, and salts from the surfaces using fresh water low-pressure wash down at 500 psi.

** Methods of preparation. Prepare the above water hull surfaces to bare metal, by blasting with (1) a very fine aluminum oxide, garnet or equivalent inert material, to produce an anchor profile not to exceed 2.5 mils;

16.2.5 Procedures following surface preparation and immediately prior to painting. After surface preparation.

16.2.6 Debris removal. Collect, remove, and dispose of all paint products, dirt, water, and other debris resulting from the surface preparation procedures.

16.2.7 Oil and grease removal. Remove all visible deposits of oil, grease, or other contaminants by any of the methods specified in SSPC-SP 1.

16.3 QUALITY ASSURANCE

16.3.1 Prepared surface inspections. Upon completion of surface preparation, the Contractor shall accomplish the following, in the presence of the Coast Guard Inspector:

16.3.2 Visual. Perform a visual inspection of the prepared surfaces, to ensure conformance with the requirements herein.

16.3.3 Surface profile. Measure the surface profile of the cleaned surfaces, using replica (testex) tape and a micrometer, as described in Method C of ASTM D4417. Identify each reading with a number and write the surface profile measured in the space provided on the tape. Paste each tape onto the surface preparation quality assurance checklist provided herein, to serve as a permanent record.

16.3.4 Quality assurance data sheets.

The Contractor shall document environmental conditions on the quality assurance data sheets provided at the end of this document, every 4 hours, during all surface preparation, coating application procedures, and through final cure. Paste all surface profile measuring testex tape onto the applicable data sheets. Submit the data sheets to the COR upon completion of work.

QUALITY ASSURANCE DATA SHEET
SURFACE PREPARATION

Vessel Name and Hull Number: _____

Work Item Title: _____

Location of Work (including frame numbers): _____

Area (square feet): _____

Pre-Inspection Comments: _____

Blasting Method: _____

Degreasing Method Used: _____

Number of hours surfaces (steel only) left unpainted: _____

Sweep blasting performed to remove flash rusting (steel)? Yes No: _____

<u>TIME</u>	<u>AIR TEMP.</u>	<u>WET BULB</u>	<u>RELATIVE HUMIDITY</u>	<u>SURFACE TEMP.</u>	<u>DEW POINT</u>	<u>INSPECTOR</u>
Start						
Stop						

Average Surface Profile: _____

Soluble Chloride Reading: _____

Signature of Inspector: _____

Date and Time: _____

QUALITY ASSURANCE DATA SHEET

This page is for attaching replica testex tapes used for surface profile readings, and for sketching location of chloride test

QUALITY ASSURANCE DATA SHEET
(Coating Application - 1 Sheet Per Coat)

Pre-Inspection Comments: _____

Coating Manufacturer

Product Name: _____

Batch Number: _____

Storage Temperature: _____

Induction Time: _____

TIME	AIR TEMP.	WET BULB	RELATIVE HUMIDITY	SURFACE TEMP.	DEW POINT	INSPECTOR
Start						
Stop						

Application Method (Airless, Conventional Spray, Rolled): _____

Average Wet Film Thickness: _____

Comments: _____

Signature of Inspector: _____

Date and Time: _____

QUALITY ASSURANCE DATA SHEET

This page is for sketching location of dry film thickness readings

APPLICABLE DOCUMENTS

MIL-PRF-24647B(1), Paint System, Anti-Corrosive and antifouling, Ship Hull, Rev B, Amend 1, 9 Aug 94

MIL-PRF-24635, Enamel, Silicone Alkyd Copolymer, 30 JUN 1994

Steel Structures Painting Council (SSPC), 3rd Edition, Good Painting Practice, Steel Structures Painting Manual, Volume 1 (referred to as SSPC Manual, Volume 1) (1994)

Steel Structures Painting Council (SSPC), Paint Application Guide No. 3 (SSPC-PA Guide 3), 01 JUL 1995

Steel Structures Painting Council (SSPC), Paint Application Specification No. 1 (SSPC-PA 1), Shop, Field, and Maintenance Painting, 01 AUG 1991

Steel Structures Painting Council (SSPC), Surface Preparation Specification No.1 (SSPC-SP 1), Solvent Cleaning, 01 NOV 82

+Steel Structures Painting Council (SSPC)/NACE International (NACE) Joint Surface Preparation Standard SSPC-SP 12/NACE No.5, Surface Preparation and Cleaning of Steel and Other Hard Materials by High-and-Ultrahigh-Pressure Water Jetting, 1995

American Society for Testing and Materials (ASTM), D4417, Test Method for Field Measurement of Surface Profile of Blast Cleaned Steel, 1993

GOVERNMENT FURNISHED EQUIPMENT

<u>Quantity</u>	<u>Unit of Issue</u>	<u>Item</u>
1	KIT	SN-1 NO FOUL PAINT SYSTEM
1	SET	GASKET MATERIAL REQUIRED FOR FUEL TANK COVERS
5	EA	REQUIRED SEA CHEST VALVES
4	EA	HULL ZINC ANODES
2	EA	SHAFT ZINC ANODES