

UNITED STATES DEPARTMENT OF TRANSPORTATION
MARITIME ADMINISTRATION

SPECIFICATIONS FOR ACTIVATION FOR SERVICE

PRESIDENT HARRISON

TYPE: C6-S-1QC Container Ship

DIMENSIONS: Length Overall 668' - 7 3/4"

Beam 76' - 0"

Depth 44' - 6"

TONNAGE: Gross 16,819

Net 11,340

Displacement 13,500

ITEM NO. 1 - SERVICES

Provide the following services during the entire period of repairs including the connecting and disconnecting as required in the course of repairs:

- A. Shore power, 440VAC, 3 phase, 60 HZ and 600 AMPS
- B. Gangway with locked gate provision at top
- C. Debris and garbage removal as required daily
- D. Steam
- E. Air Service
- F. Fresh water
- G. Provide two (2) telephones for local calls, one (1) for Chief Engineer's office and one (1) additional phone whose location will be determined later
- H. Gas free certificates
- I. Berthage, linehandlers and all costs for shifting of vessel required during contract period
- J. Crane service as required to accomplish the activation specifications and handling owner's materials
- K. Fire protection using portable fire stands on fore and aft ends of vessel with sufficient hose to reach any area of vessel

ITEM NO. 2 - DRYDOCKING - ABS & USCG

Drydock vessel for examination, cleaning, painting and repairs as specified herein. On completion of specified work, undock vessel. Vessel is 16,819 gross tons. Remove equipment and sand from drydock and prepare for further drydockings.

ITEM NO. 3 - RUDDER AND PINTLE TESTING, INSPECTION AND CLEARANCES - ABS & USCG

Examine and test rudder, pintle pin and nut as follows:

- A. Rudder pintle clearances are to be obtained by welding a clip to the bottom of the rudder, then with a chain fall, pull the rudder hand to port. Using a dial indicator mounted on the gudgeon, show the lateral shift of the rudder when it is then pulled starboard. All clearances are to be witnessed by owner's representative and interested parties.
- B. For the pintle pin nut inspection, cut out the inspection plate for access to pintle pin nut. Check nut for condition and tightness and upon completion of examination refit and weld plate back as original.

ITEM NO. 3- RUDDER AND PINTLE TESTING, INSPECTION AND CLEARANCES - ABS & USCG (Con'd) ²

C. Apply air test to rudder at 3 P.S.I. for examination by owner's representative. Upon completion of test provide fifteen (15) gallons of preservative, fill rudder with preservative, then drain and replace plugs as original.

ITEM NO. 4 - STEERING ENGINE AND RUDDER POST

Remove sixteen (16) pieces of wood wired to the steering engine rams, blocking same. Remove wire from king post to the port and stbd sides.

Add one (1) turn of contractor furnished long grain fiberflax packing to rudder gland and harden up gland.

ITEM NO. 5 - ANCHORS, CHAINS AND CHAIN LOCKERS - ABS & USCG

Range anchors and chains on dock for examination by U.S.C.G., A.B.S. and MarAd representatives. Caliper chains as required by A.B.S. and submit seven (7) copies of report.

Thoroughly clean chains. Repaint shot markings with white paint and replace wire sizings as required. Paint second to last shot yellow and last shot red. Spray remainder of chains with fish oil and/or an approved substitute. While chains are ranged, thoroughly clean the chain lockers and drain wells clearing all limber holes. Coat chain lockers with fish oil and/or an approved substitute.

Prove chain locker eductor system by pumping water through system. Restow chain in chain lockers.

ITEM NO. 6 - SEA VALVES - ABS & USCG

Open up, clean, grind in, repack, and coat interiors with one (1) coat of anti-corrosive and one (1) coat of anti-fouling paints, all sea valves. Time to be allowed for drying between coats. After inspection by U.S.C.G., A.B.S. and MarAd representatives assemble valves renewing bonnet joints. Exercise valves and leave in closed position. Valves shall include, but not be limited to the following:

SEA VALVES: STB'D SIDE

1 Main cond. mechanized overboard	36" Gate
1 Main cond. emergency overboard	10" Gate
1 Refrig. Circ. water overboard	6" Gate
1 Aux. Circ. low sea suction	12" Gate
1 Aux. Circ. High sea suction	12" Gate
1 Aux. Cond. overboard	10" Gate
1 Ballast overboard	8" Globe
1 Fire pump sea suction	6" Gate
1 Ballast sea suction	8" Gate
1 Steam out/fire pump	3/4" Globe
2 Steam out/aux. circ. sea suctions	3/4" Globe

SEA VALVES: PORT SIDE

1 Main circ. mechanized sea suction	30" Gate
1 Main cond. mechanized scoop sea suction	36" Gate

ITEM NO. 6 SEA VALVES - ABS & USCG (Con'd)

1 S. W. service pump sea suction	10" Gate
1 Fire pump sea suction	10" Gate
1 Fire pump overboard	6" Gate
1 Brine pump overboard	8" Gate
1 Distiller pump sea suction	6" Gate
1 L.O. Cooler overboard	10" Gate
1 Boiler blow overboard	1-1/2" Globe
1 Main scoop flushing	2-1/2" Globe
1 Steam out/sea chest mn. circ.	3/4" Globe
1 Steam out/sea chest fire pump	3/4" Globe
1 Steam out/main scoop	3/4" Globe
1 Sewage pump overboard	4" Gate

The sewage overboard valve is in void space, contact vessel Chief Engineer. Open and close void as directed.

ITEM NO. 7 HULL CLEANING AND PAINTING - KEEL TO DEEP LOADLINE - ABS AND USCG

X DRAFT

Remove all marine growth, loose rust, scale and loose paint by sandsweeping, scraping and wirebrushing from keel to light loadline including rudder. Wash down with high pressure fresh water and prepare for painting.

All overboards not fitted with chutes that are still draining water are to be plugged prior to painting and unplugged upon completion. Grease fathometer oscillators prior to painting and degrease upon completion.

Apply the following coating system using International Paint Company products (or equal):

- A. From keel to deep loadline apply one (1) full coat of International Silver Primacon.
- B. From keel to deep loadline apply one (1) second full coat of International Silver Primacon.
- C. At stern area and rudder apply one (1) coat of anti-galvanic paint.
- D. Apply one (1) coat of anti-fouling paint from keel to turn of the bilge.
- E. Apply one (1) coat of red boottopping from light loadline to deep loadline.
- F. Within 24 hours of the vessel undocking apply one (1) coat of anti-fouling from turn of bilge to light loadline.
- G. Paint hailing port and vessel's name on stern. Paint vessel's name port and stbd sides of bow and paint draft marks port and stbd sides of bow and stern. Paint plimsol marks port and stbd. All names and markings are to be in white paint.

ITEM NO. 8 TAILSHAFT WEARDOWN - ABS AND USCG

Accomplish the following work to obtain the top and bottom tailshaft weardown reading as soon as practical:

- A. Inside the shaft alley position the tailshaft as per the reference marks.
- B. Remove the top and bottom plugs and drain the oil from the after tailshaft seal assembly.
- C. Using vessel furnished depth micrometer obtain top and bottom clearance readings.

ITEM NO. 8 TAILSHAFT WEARDOWN - ABS AND USCG (Cond)

- D. Upon completion of work replace top and bottom plugs and refill seal assembly with S.T.P. (approx 2 Gals).
- E. Provide MarAd representative with seven (7) copies of the Readings Report.

ITEM NO. 9 SEA CHESTS AND STRAINER PLATES - ABS AND USCG

Disconnect and remove twelve (12) strainer plates. Scrape. Clean and dry all the sea chests for examination by MarAd, U.S.C.G. and A.B.S. surveyors. Staging required.

Clean strainer plates and apply two (2) coats of anti-corrosive and one (1) coat of anti-fouling paint to sea chests and strainer plates.

After examination, close up and renew any missing and/or defective monel nuts, studs, bolts and pins.

Port side sea chests:

Four (4) 21" x 30"

Two (2) 22" x 23"

Stbd side sea chests:

Six (6) 22" x 24"

ITEM NO. 10 CATHODIC PROTECTION SYSTEM

Under the direct supervision of an Englehart Industries Field Service engineer examine, repair, test and adjust the "Capac" cathodic protection system as follows:

Remove interferences and connection box covers in way of four (4) anodes and two (2) reference cells for examination and testing by field service engineer. Replace covers with new gaskets, replace any defective studs, nuts and washers.

Furnish ladder or mechanical hoist equipment for examination of "Capac" anodes, anode shields and reference cells. Repair dia-electric anode shields as per field service engineer's recommendations.

Adjust system for proper operation.

ITEM NO. 11 MAIN CONDENSER SCOOP PIPING - ABS AND USCG

Remove two (2) scoop bars by burning to gain access to the main scoop piping.

Clean piping and apply two (2) coats of anti-corrosive and one (1) coat of anti-fouling paint to main condenser. Scoop piping after inspection by MarAd, A.B.S. and U.S.C.G surveyors. Flexible expansion pieces will also be inspected.

Reweld scoop bars and touch up painting.

ITEM NO. 12 TAILSHAFT AND STERN BEARINGS- ABS AND USCG

Make all preparations and remove the fairwater cone, propeller shaft nut and the rope guard.

Remove the shaft lock and store for future use and disconnect the line shaft from tailshaft and move the line shafting plus bearings out of the way and hang off.

Draw the tailshaft into the shaft alley for inspection. Remove the keys in tailshaft. Clean tailshaft, keyway taper and threads. Magnaflux the tailshaft in way of keyway, taper and close to liner.

Remove and renew the outer and inner Waukesha oil seals. The oil draining and renewal is covered on another item of these specifications.

Clean the grooves and renew the "O" rings on the propeller and propeller cone. Renew defective, damaged, worn and broken studs on propeller cone and gland housings. Remove any broken studs and tap holes prior to installing new studs.

While shaft is out of tube, clean bearing surfaces and take inside micrometer readings at six (6) positions in tube showing readings from top to bottom and side to side.

Take readings of the outside diameter of the liner at approximately the same position on liner to match the six (6) positions taken in stern tube. Submit seven (7) copies of all readings to MarAd representatives.

Reinstall tailshaft in stern tube and replace keys. Align propeller and reinstall on shaft, harden nut in the presence of the MarAd representative.

Reinstall propeller cone.

Shift intermediate shafting and bearings back in place and install as original including the rope guard and all removed interferences including coupling guards.

ITEM NO. 13 CLEANING AND PAINTING HULL

From the deep loadline of the hull to the top of caprail port and stbd sides from bow to stern excluding the house area remove all loose or flaky paint, scale, rust and dirt by sandblasting to a white metal surface, the required areas.

Apply a primer coat of an approved one (1) coat type application of an inorganic zinc coating only in way of blasting.

Apply one (1) full coat of a bonding and top coat of haze gray paint to the complete hull after primer coat has had manufacturer's recommended drying time.

ITEM NO. 14 DECK SCUPPER BLANK REMOVAL

Remove by burning the welded steel deck scupper blanks on main deck and house deck scupper piping.

Procure the stowed strainer plates previously removed and reinstall using non-ferrous fastening material.

Halfmoon drain holes approximately 4" x 2" have been cut in fishplates or coamings adjacent to blanked scuppers and split pipe or channel projections fitted to carry drainage overboard. The halfmoon cutouts have been tack welded adjacent to openings.

Remove the split pipe or channel projections and reweld halfmoon sections in place.

ITEM NO. 15 STACK CLOSURE REMOVALS

Remove the following five (5) welded air tight plate closures for stack penetrations:

- A. Emergency diesel exhaust - approximately 4 inch diameter
- B. Boiler uptake - approximately 6 foot diameter
- C. Port sky pipe - hat approximately 12 inches diameter x 13 inches high
- D. Stbd sky pipe - hat approximately 12 inches diameter x 13 inches high
- E. Access hatch - approximately 18 inches x 24 inches

After removal of the access hatch plate reinstall the hatch cover now tack welded inside stack.

Mark the removals as to location and use and stow in engineer's storage area.

ITEM NO. 16 DEHUMIDIFICATION PLATING REMOVAL

- A. Remove five (5) plates welded to ventilation openings on smoke stack.

Remove the tagged ventilation screens from inside storage and reinstall on stack. Mark removed plates and stow as directed.

- B. Remove plates welded to emergency diesel room ventilation openings.

Remove the tagged ventilation screens from inside storage and reinstall in emergency diesel room. Mark removed plates and stow as directed.

- C. Remove four (4) 3/16 inch thick steel plates from the port and stbd side air conditioning intake plenum openings on the aft end of the house on boat deck. Remove the tagged metal screens and install. Mark removed plates and stow as directed.

- D. Remove one (1) welded 3 foot by 2 foot steel plate from vent opening on top of fwd mast house. Reinstall stored screen and mark removed plate and store for future use.

- E. Remove one (1) welded 6 inch diameter steel blank on vent from paint locker on weather deck aft of #6 hatch.
- F. Remove one (1) 12 inch diameter steel hat from over the ship's steam whistle, mark hat and stow same for future work.
- G. Remove one (1) welded galley stack cover.

ITEM NO. 17 CLEANING AND PAINTING EQUIPMENT AND HOUSES

From the main deck of the vessel upward including all exteriors of houses, decks, raised hatch fittings, masts, booms, windlass, bulwarks, brackets, foundations windlass, boat davits, stack and all other exterior fittings remove all loose or flaky paint, scale, rust and dirt by sand-blasting to a white metal surface.

Apply one (1) coat of an approved one (1) coat type application of an inorganic zinc coating only in way of blastings.

Apply one (1) full coat of a bonding and top coat of haze gray from the top of the masts down to the main deck covering everything inbetween.

Allow sufficient drying time between coats and mask vessel as required prior to painting.

ITEM NO. 18 DOOR REINSTALLATION AND REPAIR

Accomplish the following work on the various weather doors:

- A. From the weather double doors aft end of house on boat deck level remove sheet metal can^s and store below. Remove all tape and caulking compound from door and frame and reinstall as original two (2) door closures and two (2) door knobs on inside of doors.
- B. From the weather doors to the port and stbd sides of the quiet lounge located fwd end of house on boat deck level, remove steel plates and store below. Remove all tape and caulking compound from doors and frames and reinstall at original two (2) door knobs on inside of door.
- C. Remove the two (2) air tight sheet metal pans covering the port and stbd entrances to the bridge on the navigation bridge deck and reinstall the sliding doors for port and stbd sides stored in warehouses together with all hardware. Store removed covers below.
- D. Remove as directed the 3 inch iron straps welded over seven (7) store room doors for security storage. Store removed straps below.
- E. Remove the sealing compound and tape and clean areas in way of removals for the following listed panel door^s. Door handles have been removed. Remove wooden blanks and reinstall handles.

ITEM NO. 18 DOOR INSTALLATION AND REPAIR (Con'd)Bridge Deck - Outside Rooms

1. Masters stateroom	26 inch door port side
2. Passageway	30 inch door stbd side
3. Diesel gen. room	26 inch door stbd side
4. Deck locker	26 inch door stbd side

Boat Deck - Outside Rooms

5. Battery locker	26 inch door port side
6. Deck locker	26 inch door port side
7. Passageway	30 inch door port side
8. Fan room	26 inch door port side
9. Passageway	30 inch door stbd side
10. Fan room	26 inch door stbd side
11. Deck locker	26 inch door stbd side

Cabin Deck - Outside Rooms

12. Passageway	30 inch door port side
13. Passageway	30 inch door port side
14. Passageway	30 inch door stbd side
15. Deck Locker	26 inch door stbd side
16. Passageway	30 inch door stbd side

Upper Deck

17. Ships Office	30 inch door port side
18. Passageway	30 inch door port side
19. Deck Locker	26 inch door port side
20. Passageway	30 inch door stbd side
21. Passageway	30 inch door stbd side

F. Open the following dogged watertight doors removing sealing compound from doors. Clean all door and gasket surfaces of caulking compound and chalk test doors for the satisfaction of the USCG and the American Bureau of Shipping and MarAd representatives.

Forecastle Deck

1. Winch control room	26 inch water tight door
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Main Deck

2. Forward house	26 inch water tight door port side
3. Forward house	26 inch water tight door stbd side
4. Winch control room #3	26 inch water tight door port side
5. Passageway	30 inch water tight door port side
6. Passageway house aft	30 inch water tight door port side
7. Passageway house aft	30 inch water tight door stbd side
8. Port Officer's Qtrs	30 inch water tight door port side
9. Passageway	30 inch water tight door stbd side
10. Winch Control room #4	30 inch water tight door port side
11. Special cargo locker	30 inch water tight door port side
12. Winch power supply	30 inch water tight door port side
13. Cargo checkers office	26 inch water tight door stbd side
14. Passageway	26 inch water tight door stbd side

In way of all the work mentioned above all welding slag is to be chipped off all areas in way of removals. A prime coat of paint followed by a top coat is to be applied in way of all the above mentioned work for touch up.

ITEM NO. 19 PORT LIGHTS AND WINDOWS

Undog all port lights and windows sealed for dehumidification purposes and clean sealants from the mating surfaces and prove port lights and windows tight.

ITEM NO. 20 LIFEBOAT DAVITS AND BOATS - USCG

Remove stopper bars welded to the four (4) davit arm tracks. Remove wire latching from boats and davits.

Fill the stbd life boat engine with water and oil and refill the fuel tank with diesel oil. Test motor and adjust engine as required. Test run to the satisfaction of the MarAd and USCG requirements.

Stock the two (2) boats with owner supplied provisions and weight test boats to the satisfaction of the USCG.

Weight test the boats and davits to the satisfaction of the USCG and MarAd representative.

Paint required markings on boats and paint the interior of the two (2) boats International Orange. Paint the exterior holes including the cap rails with a coat of haze gray.

Install ridge polls, spreaders, rudders, oars, SOLAS covers, masts and all other life boat gear.

Boats are 30 feet in length manufactured of plastic construction by Welin.

ITEM NO. 21 RADAR ACTIVATION

Provide the services of a qualified electronic service representative to power, test, service and adjust the two (2) radar systems aboard vessel. Check out the 10CM and 3CM radar system wiring, antenna arrays, antenna drive units, modulator transmitter reliever (MTR) and the visual | indicative units.

Also check all interconnecting signal sources from other electronic systems.

ITEM NO. 22 LIFE RAFTS

Remove from the passageway storage on second deck level near side ports the two (2) life rafts and send to a manufacture and USCG approved service shop.

Open for inspection, repair and certify one (1) Elliot 20 person and one (1) Switlick 15 person liferafts. Check hydraulic release units. Return rafts to vessel in shipyard and weld the four (4) legs of the supporting base to deck and where instructed by the MarAd representative. Place unit in stand properly.

ITEM NO. 23 RADIO STATION

Provide the services of a ITT McKay Electronic Service engineer to service and check out all radio room equipment and go through licensing procedure for the station with the FCC inspector. Renew all radio station antenna wiring and insulators.

ITEM NO. 24 BRIDGE DECK GRATINGS AND HOUSE HAND RAILS

Remove the wooden bridge gratings from vessel to shop, clean, sand, restain, revarnish and reinstall.

Remove the wooden hand rails from the following locations, deliver to shop, clean and sand. Revarnish and reinstall using non-ferrous fastenings.

Hand railings are located as follows:

A. Navigation bridge deck	-	Approx 100 feet long
B. Bridge deck	-	Approx 90 feet long
C. Boat deck	-	Approx 90 feet long
D. Cabin deck	-	Approx 100 feet long

ITEM NO. 25 OVERBOARD DISCHARGE LINES

Remove five (5) flush with hull plumber's plugs from overboard discharge lines located midships on port and stbd sides of hull.

Free up the sealed garbage chute cover and remove sealant from gasketing.

ITEM NO. 26 EQUIPMENT REINSTALLATION FLYING BRIDGE

Remove from storage on bridge the binnacle and search lights for reinstallation on the flying bridge on top of the wheelhouse.

Remove the two (2) steel hats from the deck to replace the two (2) units and store below for future use.

Reinstall wiring.

ITEM NO. 27 FIRE FIGHTING EQUIPMENT

Accomplish the following work relating to the fire fighting equipment aboard vessel:

- A. Recharge the foam and soda and acid fire extinguishers. Reinstall in original locations and weigh and certify the portable CO₂ extinguishers. Vessel has thirteen (13) AII, fifteen (15) BII and five (5) CII extinguishers.

- B. Exterior fire hoses have been removed and stored inside vessel.

Remove all hose from vessel and test same for the USCG. Return

hose to vessel and reinstall all exterior and interior hoses.

The total length of fire hose aboard vessel is 1875 feet.

Work on this item shall begin after the sections of the fire main piping used for dehumidification of the vessel have been changed back to fire main.

- C. All the exterior fire nozzles, spanners, spray nozzles and fire axes are to be removed from storage and reinstalled.
- D. Weigh the various CO₂ cylinders on vessel for SCG inspection:
 - 1. Eighty one (81) 75 lb. cylinders located in CO₂ room
 - 2. Two (2) 75 lb. cylinders located in emergency generator room
 - 3. One (1) 50 lb. cylinder outside paint locker
- E. Connect all CO₂ controls and activate CO₂ systems.
- F. Test the entire fire main.

ITEM NO. 28 ROLLER CHOCKS AND FAIRLEADS

Free up and lubricate the following roller chocks:

- A. 3 Roller chock unit at Bow port side forecastle deck
- B. 3 Roller chock unit at Bow stbd side forecastle deck
- C. 2 Roller chock unit forecastle deck port side frm #16
- D. 2 Roller chock unit forecastle deck stbd side frm #16
- E. 2 Roller chock unit forecastle deck port side frm #32
- F. 2 Roller chock unit forecastle deck stbd side frm #32
- G. 2 Roller unit main deck port side frm #215
- H. 2 Roller chock unit main deck stbd side frm #215
- I. 2 Roller chock unit main deck port side frm #227
- J. 2 Roller chock unit main deck stbd side frm #227

ITEM NO. 29 DEHUMIDIFICATION EQUIPMENT REMOVAL

Accomplish the following work to remove the dehumidification system equipment and fittings to return vessel to original configuration:

- A. Remove the dehumidification machine from the wiper's room, the last room on the port side after end of the main deck. Make all required disconnects to accomplish removal and deliver the D/H machine to the National Defense Reserve Fleet site, James River, Virginia.
- B. Reinstall metal berth, settee, porthole glass and deadlight and any other furniture or fixtures removed for D/H machine installation. Remove sheet metal ducting in wiper's room and reinstall 4 inch flanged spool piece in fire line removed for ducting installation. Plate over porthole opening was welded and will have to be burned off.
- C. Remove approximately 400 feet of 6 inch dia. schedule 40 PVC pipe and 40 feet of 2 inch dia. schedule 40 PVC pipe plus fittings required to deliver air to three (3) mast houses along main deck.

D. After removal of D/H ducting from the three (3) masts houses and main house insert the holes in way of the removals. Paint areas in way of inserts with inorganic zinc prime coat after blasting inserts, followed by a top and bonding coat.

E. Remove all other ducting from fire main and make all repairs necessary to make system tight. Prove system tight by hydrostatically testing system to USCG standards.

F. Insert any further openings made for D/H installation and, after all removals both mechanical and electrical have been accomplished, all openings in way of removals will have been sealed.

G. Send the 440V circuit breaker used for D/H machine to Reserve Fleet with dehumidifier. Remove all wiring for D/H machine installation.

H. Remove the bilge alarm floats from engine room and shaft alley and the fire along with wiring and the alarm/light panel atop the bridge and return to Fleet with D/H machine.

I. Remove the four (4) dehumidification sensors from wheelhouse, steering engine flat, engine room at operating level and wipers room along with wiring and return to Fleet with D/H machine.

ITEM NO. 30 WEATHER DECK PIPING VENT LINES

Remove the sheet metal blanks from the following tank weather deck vent line goosenecks and reinstall goosenecks with new gasketing:

- A. Four (4) Potable water tanks
- B. Two (2) Sewage tanks
- C. One (1) Distilled water tank

ITEM NO. 31 FORE PEAK AND AFTER PEAK TANKS - ABS AND USCG

Remove covers and air out the fore and after peak tanks for examination by ABS, USCG and MarAd representatives.

Upon completion of inspections close up tanks renewing gasketing and any defective studs, bolts or nuts.

ITEM NO. 32 MEGGER READINGS

Take megger readings on all motors and controllers of one (1) horsepower or more and all generators. As soon as possible submit seven (7) copies of readings to MarAd representative.

Upon completion of taking megger readings for each motor and generator 1 horsepower and above, reset all motor electric brushes with the proper spring tension.

ITEM NO. 33 PIPING, FITTINGS OPEN FOR DRAINAGE

Accomplish the following work to the various piping systems:

- A. All sanitary traps, toilet bowls, sinks and wash basins have had trap plugs removed and attached to each unit. Reinstall all removed fittings, plugs, etc., to close up all openings, renewing any missing or defective pieces.
- B. Except for the Freon, Oil and Hydraulic systems on the vessel all other machinery and piping systems have been drained by removal of plugs, caps, etc., from all systems. In some instances the breaking of flanges was accomplished. Reconnect all equipment, tanks, machinery, etc., to close all drainage systems. Disturbed joints and drilled piping has been marked with flourescent paint.

ITEM NO. 34 TANK COVER CLOSING

Remove wedges, reinstall all manhole plates, handhole plates, drain plugs, piping and fittings, etc., left open or removed for drainage or D/H air circulation and renew gaskets for the following tanks:

A. Fresh water tanks

1. Potable water tank No. 1
2. Potable water tank No. 2
3. Potable water tank No. 3
4. Potable water tank No. 4
5. Distilled water tank

Chlorinate and flush the potable water systems as per U.S.P.H. requirements.

B. Service, inspection and drain tanks on vessel.

C. Two (2) sewage tanks

Renew all broken, missing or defective fastenings.

ITEM NO. 35 FREON COMPRESSORS AND SYSTEMS

Lower the oil level on the following six (6) refrigeration compressors to operating level: #1 and #2 domestic refr. compressors, #1, #2 and #3 air conditioning reefer compressors and the cargo refr. compressor or standby air conditioning compressor. Replace heat exchanger drain plugs.

The domestic and air conditioning systems were left fully charged.

Check out and repair all leaks in compressors and associated systems.

Interchange compressors while checking systems.

Set all controls and replace or repair defective controls. Test run systems to the satisfaction of the MarAd representative.

Remove wooden blocks used to block reefer box doors open and provide freon gas as required.

ITEM NO. 36 EMERGENCY DIESEL ENGINE

Replace all removals for cleaning and D/H air circulation and close up the emergency diesel engine and stack.

Replace drain plugs and fill engine with water and oil.

Tune and test operate emergency diesel engine.

ITEM NO. 37 PLUGGED SOUNDING TUBES

Remove approximately twenty (20) pipe plugs from all sounding tubes in engine room, shaft alley and steering engine flat.

ITEM NO. 38 CENTRIFUGAL AND ROTARY WATER PUMPS

The following MarAd centrifugal or rotary water pumps have had the soft packing removed for lay-up. Furnish new soft packing, repack the pumps and leave pumps ready for use:

Two (2) Cond & drain transfer

Two (2) Sanitary

Two (2) Fresh water

One (1) Hot water circulating

One (1) Ice water circulating

Two (2) A.C. Chilled water circulating

Two (2) Htg. coil hot water aft

Two (2) A.C. chilled water or H.W. circulating

One (1) Vacuum priming

ITEM NO. 39 DUMBWAITER

Dumbwaiter car is presently sitting on blocks in the lower position with the counterweights blocked and the cables removed.

Provide services of a qualified elevator service organization to place dumbwaiter system back in service.

Check complete system electrically and reinstall cables, counterweights, etc., and test operate dumbwaiter to the satisfaction of the MarAd rep.

ITEM NO. 40 LUBE OIL ANALYSIS

Furnish labor and take samples of the main turbine and two (2) generator turbines lube oil, and have oil analyzed and submit seven (7) copies of report to MarAd representative.

ITEM NO. 41 BATTERY INSTALLATION

Take delivery of owner furnished batteries for radio station, emergency diesel, general alarm, etc., and install in battery locations and hook-up and leave ready for service.

ITEM NO. 42 CLEANING

Furnish labor, material and equipment to remove all debris and thoroughly broom clean the following areas upon completion of work in the areas:

- A. All exterior weather decks
- B. All machinery spaces, fan rooms, store rooms
- C. All passageways, vents and blower screens
- D. All machinery in machinery spaces including boilers
- E. All state rooms, crews quarters, heads, wash rooms, locker spaces and recreation rooms
- F. Pilot house, chart room, gyro room, radio room and all officers
- G. All galley and pantry and stewards spaces and equipment
- H. All mess rooms

On the exteriors of the weather decks after sweeping hose down the decks.

ITEM NO. 43 AUDIO GAUGING FOR A.B.S. SPECIAL SURVEY

Upon completion of hull cleaning the contractor is to supply electronic technicians and ultrasonic testing equipment which meets the approval of the American Bureau of Shipping and take the following audio gauge readings as per A.B.S. special survey:

- A. Four (4) Readings for each flat keel plate the full length of hull
- B. Four (4) Readings on each "A" strake port and stbd sides
- C. Four (4) Readings on each plate port and stbd sides at the wind and water belt.
- D. Four (4) Readings on each plate on two (2) circumferential girth belts
- E. Take readings required by A.B.S. on the centerline plates on the areas between the hatches and the houses
- F. Take additional Readings as required by A.B.S. for special survey purposes.
- G. A total of approximately 2000 Readings could be required.
- H. Submit seven (7) copies to MarAd.

Yard to furnish all services as required.

ITEM NO. 44 INSPECTION AND TESTING OF CARGO GEAR

Weight test the vessel's existing cargo gear as per the USCG requirements for the four (4) year time frame administered by the American Bureau of Shipping and bring the register of cargo gear up to date after testing.

Weight test to the satisfaction of the attending A.B.S. Surveyor and then take gear down and disassemble on deck for further survey by A.B.S. Surveyor. Reassemble gear and reinstall all cargo gear upon completion of testing.

Lubricate all gear and slush cargo runners when reinstalling.

The following are the eleven (11) cargo booms and associated equipment to be tested:

<u>Total</u>	<u>Location</u>	<u>Weight</u>
Two (2)	#1 Aft - Port and Stbd	10 Ton
Two (2)	#2 Fwd - Port and Stbd	30 Ton
One (1)	#3 Centerline Aft	30 Ton
Two (2)	#4 Fwd - Port and Stbd	30 Ton
Two (2)	#5 Aft - Port and Stbd	30 Ton
Two (2)	#6 Fwd - Port and Stbd	30 Ton

ITEM NO. 45 ELECTRICAL REQUIREMENTS - ABS AND USCG

Accomplish the following electrical work to comply with American Bureau of Shipping requirements plus activation work:

- A. Clean and tighten all the connections and fittings on the main and emergency switchboards.
- B. Megger readings are to be taken of all equipment and circuits.
Valves
Valves are to be measured between conductors and between conductors and ground.
- C. All key auxiliary electrical equipment including generators and motors are to have insulation resistance of each measured. Submit seven (7) copies of all readings to the MarAd representative.

ITEM NO. 46 BOILERS - ABS AND USCG

Remove from port and stbd boilers the mountings and attachments. Open mountings for inspection and test the studs or bolts as required by USCG. Reassemble mountings, attachments and reinstall on boilers.

Testing will encompass the USCG eight (8) year required inspections.

Upon completion of inspection of boiler internals by ABS, USCG and MarAd representatives, replace all manhole, handhole, doors, registers, piping, burners and all equipment removed from the two (2) boilers.

Use all new No. 316 flexatallic gasketing in preplacing equipment.

Apply hydrostatic test as required by USCG and ABS to ensure tightness of all tubes and fittings.

After testing boilers are to be left ready for lite-off. Contractor to furnish adequate distilled water for lite-off period and port steaming prior to departure. Test and set boiler safety valves to the satisfaction of the USCG and ABS representatives.

ITEM NO. 47 HIGH AND LOW PRESSURE MAIN TURBINES - ABS AND USCG

Open for inspection and clean the H.P. and L.P. turbines for American Bureau of Shipping survey. Lift upper casings to land clear of turbines and lift rotors clear of casings.

Furnish the necessary guide pins for removing H.P. and L.P. upper casing halves. Remove all bearings including thrusts, disassemble flexible couplings.

Remove the wire mesh screens and wooden sticks from under the L.P. turbine relief valve and the two (2) turbine casing inspection covers.

ITEM NO. 47 HIGH AND LOW PRESSURE MAIN TURBINES - ABS AND USCG (Con'd)

Open governors, hand nozzle blocks, tripping devices, ahead, astern, guardian throttle valves, bypass valves, control valves and steam strainer. Free up diaphragms and labyrinth packing upper and lower casings. Furnish typewritten list in triplicate of all readings, repair and/or missing parts required to MarAd representative.

Stone journals in way of bearings and carbon packing. Grind in hand nozzle, throttle, guardian, control and throttle bypass valves and repack stems.

Vessel will furnish and contractor will install all replacement parts. Contractor to furnish new gaskets and all missing or defective fastenings. Replace all missing or disturbed thermal insulation. All work to be accomplished under the direct supervision of manufacturer's representative furnished by contractor at his expense.

Manufacturer: General Electric Company
Normal S.H.P. 17,500
Cross Compound, Impulse Type

ITEM NO. 48 MAIN REDUCTION GEAR CASING AND MAIN THRUST BEARING - ABS AND USCG

Accomplish the following work:

- A. Remove wooden wedges and wire mesh screens and tighten the covers on thirteen (13) reduction gear covers. Care to be exercised while inspection holes are open to prevent entrance of any foreign material.
- B. Open, disassemble and clean the main reduction gear thrust bearing assembly.

Adjust and set to proper clearances the thrust under the direct supervision of the manufacturer's representative furnished by the contractor at his expense.

Submit in triplicate clearance readings as found and as modified, to the MarAd representative.

ITEM NO. 49 PEAK TANKS - ABS AND USCG

Remove covers from the fore peak and after peak tanks. After inspection by ABS, USCG and MarAd representative close tanks renewing cover gaskets and any defective fastening material.

ITEM NO. 50 MAIN LINE SHAFT BEARINGS - ABS AND USCG

Lift covers of two (2) of the main propulsion line shaft bearings and roll out the lower half bearing shells for examination by ABS, USCG and MarAd representatives.

ITEM NO. 50 MAIN LINE SHAFT BEARINGS - ABS AND USCG (Con'd)

Reinstall the bearing shells, close-up bearings.

Remove the covers on the seven (7) line shaft bearings and thoroughly wire the lube oil sumps with lint free rags.

Close up cover plates and refill bearings with vessel furnished oil.

ITEM NO. 51 SHIP SERVICE GENERATOR TURBINES AND REDCUTION GEARS - ABS AND USCG

Open for inspection and clean the two (2) ship service generator turbines and the turbine reduction gears.

Furnish the necessary guide pins for removing generator turbine upper casing halves. Land casings clear of units and disassemble and lift rotors for examination.

Remove turbine and generator bearings, open flexible couplings, governors and control mechanisms, oil pumps, tripping devices, hand nozzle valves, spring loaded valves, thrust bearings, reduction gear bearings, etc.

Stone journals in way of bearings and carbon packing.

Take and record all clearances and report all deficiencies in triplicate to MarAd representative.

Remove the nuts from the stainless steel mesh screens covering the two (2) generator reduction gear casings inspection covers and remove the wooden wedges and the screens. There is one (1) cover on each generator.

Remove the wooden wedges and mesh screens from the generator lube oil sump inspection cover on each generator.

After examination, fit all replacement parts supplied by vessel and close up in good order renewing all gaskets and defective or missing fastenings.

As
X Renew all original, all disturbed, missing or deteriorated thermal insulation in way of work.

All work to be accomplished under the direct supervision of the manufacturer's representative furnished by the contractor at his expense.

Manufacturer: General Electric Company
Package Type A.C. Generator
750 KW, 1200 RPM

ITEM NO. 52 CENTRIFUGAL PUMPS - ABS SPECIAL SURVEY

Open the following listed centrifugal pumps, clean and disassemble as required for complete inspection by ABS, MarAd and USCG representatives:

ITEM NO. 52 CENTRIFUGAL PUMPS - ABS SPECIAL SURVEY (Con'd)

- A. Auxiliary Circulating pump No. 1 1500 GPM
- B. Auxiliary Circulating pump No. 2 1500 GPM
- C. Auxiliary Condensate pump No. 1 30 GPM
- D. Auxiliary Condensate pump No. 2 30 GPM
- E. Bilge and ballast pump No. 1 700 GPM
- F. Bilge and ballast pump No. 2 700 GPM
- G. Bilge and Butterworth pump No. 1 Bilge 400 GPM, Butterworth 600 GPM
- H. Distiller feed pump No. 1 308 GPM
- I. Distiller brine pump No. 1 293 GPM
- J. Distiller distillate pump No. 1 20 GPM
- K. Main circulator pump No. 1 18,000 GPM
- L. Main condensate pump No. 1 325 GPM
- M. Main condensate pump No. 2 325 GPM
- N. Fire condensate pump No. 1 470 GPM
- O. Fire and bilge pump No. 1 Bilge 1,000 GPM, Fire 100 GPM
- P. Salt and water service pump No. 1 550 GPM
- Q. Salt and water service pump No. 2 550 GPM
- R. Salt and water service pump No. 3 550 GPM

Close pumps renewing packing and any gasketing.

ITEM NO. 53 STEAM FEED PUMPS - ABS SPECIAL SURVEY

Open the following listed steam driven boiler feed pumps, clean and
 DISASSEMBLE
 X reassemble as required for complete inspections by ABS, MarAd and USCG
 representatives:

- A. Main multi stage feed pump No. 1 Warren 450 GPM
- B. Main multi stage feed pump No. 2 Warren 450 GPM
- C. Port single stage feed pump No. 1 Coffin 150 GPM

Close pumps renewing seals and packing.

ITEM NO. 54 MAIN AND AUXILIARY CONDENSERS - ABS AND USCG

Remove the inspection covers from the main condenser and the two (2) auxiliary condensers for an inspection by American Bureau of Shipping, U. S. Coast Guard and Maritime Administration representatives.

Renew gasketing and any defective studs, bolts or nuts and close-up covers.

ITEM NO. 55 HEAT EXCHANGER CLOSE-UP - ABS AND USCG

Replace the pipe plugs, caps, fittings and valves removed for drainage of the various heat exchangers throughout the vessel. On most heat exchangers there is only one (1) or two (2) small pipe plugs removed. The following is a partial list of units involved, but work will be limited to these units only:

- A. Two (2) Hot water heaters
- B. Three (3) Air ejectors
- C. Three (3) Feed water heaters
- D. Four (4) Fuel oil heaters
- E. Four (4) Main and aux. lube oil coolers
- F. One (1) Butterworth heater
- G. One (1) Liquid water heater
- H. One (1) Chill water cooler
- I. Two (2) Dishwasher heaters
- J. Reducing steam manifolds

Replace the sanitary tank cover and two (2) securing dogs and renew gasket.

ITEM NO. 56 DEAERATING FEED WATER HEATER - ABS AND USCG

20.

Open the inspection cover of the D.C. heater for internal examination and disassemble heater units for an examination of the nozzles by ABS, USCG and MarAd representatives.

Close-up unit renewing gasketing.

ITEM NO. 57 FUEL OIL HEATER RELIEF VALVES - ABS AND USCG

Remove the four (4) relief valves from the fuel oil heaters located in the engine room and deliver to shop.

Disassemble, clean, test, adjust and set the relief valves and reinstall on heaters.

ITEM NO. 58 BILGE SYSTEM TESTING - ABS AND USCG

Test
X Thet the pumping capacity of the vessel's main bilge pump and pumping system from the various pumping locations in the system to the satisfaction of the ABS, USCG and MarAd representative.

ITEM NO. 59 EVAPORATOR - ABS AND USCG

Remove the inspection covers, sight glasses and other interferences from the 20,000 G.P.O. evaporator for an inspection by ABS, USCG and MarAd representatives.

Close-up in good order renewing gasketing.

ITEM NO. 60 SANITARY OVERBOARD VALVES - ABS

Free-up remote linnage, open and clean the valves listed below for ABS, USCG and MarAd representative inspections.

Renew flange gaskets, packing and grease all universal joints on the remote linkage.

Sanitary Overboard Valves

- A. One (1) valve remote operated from main deck Frame #205 - #206
- B. One (1) valve remote operated from main deck Frame #133 - #134 Cofferdam
- C. One (1) valve 2nd deck Frame #130 - #131 port side
- D. One (1) valve 2nd deck frame #130 - #131 stbd side

Clear Drain Valves

Accomplish the same work on five (5) clear drain over board discharge valves.

ITEM NO. 61 INSPECTION OF DOUBLE BOTTOM TANKS - ABS AND USCG

Perform the following listed work to open the vessel's double bottom salt water and mud ballast tanks:

- A. Open salt water ballast tanks and ventilate. Clean all dirt, debris, scale and foreign matter from floors of tanks for inspection by ABS, USCG and MarAd representatives.

ITEM NO. 61 INSPECTION OF DOUBLE BOTTOM TANKS - ABS AND USCG (Con'd)

Upon completion of survey tanks are to be closed using new gaskets and renew any defective studs, bolts, washers and nuts.

List of Tanks:

<u>Tank</u>	<u>Tonnage</u>	<u>Frame</u>
#1A	53	#14 - #24
#1B	90	#24 - #36
#2 Port	78	#36 - #57
#2 Stbd	78	#36 - #57
#3 Port	77	#57 - #82
#35 Stbd	77	#57 - #82
#4 Port	138	#82 - #M5
#4 C	196	#82 - #M5
#4 Stbd	138	#82 - #M5
#4A Port	133	#M5 - #M24
#4A C	170	#M5 - #M24
#4A Stbd	133	#M5 - #M24
#4B C	223	#M24 - #106
#5A C	185	#106 - #127
#3 C	213	#57 - #82
#4B Port	375	#M24 - #106
#4 B Stbd	375	#M24 - #106
#5 A Port	412	#134 - #151
#5 A Stbd	412	#134 - #151
#5 B Port	87	#134 - #151
#5 B C	145	#134 - #151
#5 B Stbd	87	#134 - #151
#6A Port	26	#151 - #160
#6 A C	77	#151 - #160
#6 A Stbd	26	#151 - #160
#7 Port	105	#160 - #184
#7 Stbd	105	#160 - #184

B. Open mud ballast tanks and pull waster plates for examination by ABS, USCG and MarAd representatives. Replace waster plates in tank.

Take samples of mud ballast and have samples analyzed for content and possibility of gas being generated by mud. Submit seven (7) copies of report to MarAd representative.

Upon completion of testing and examination tanks are to be closed using new gaskets and renew any defective studs, bolts, washers and nuts.

ITEM NO. 62 COFFERDAMS AND VOID SPACES - ABS AND USCG

Open, clean, scale and remove debris from the cofferdams and void spaces listed below. After inspection by American Bureau of Shipping, U. S. Coast Guard and MarAd representatives apply prime coat to interiors and when sufficiently dry, top coat all the areas.

Close-up spaces after paint has dried, renewing gaskets and any missing or defective studs, bolts or nuts.

The cofferdams and void spaces are as follows:

- A. Fathometer cofferdam Frames #57 - #59
- B. Cofferdam around L.O. Sump Frames #127 - #134
- C. #5A Deep tank void port Frames #152 - #159
- D. #5A Deep tank void stbd Frames #152 - #159
- E. Centerline void shaft alley
- F. Void space over fore peak tank Frame #3 - #8
- G. Cofferdam between F.O. Set and F.W. #119 - #120 Port
- H. Cofferdam between F.O. Set and F.W. #119 - #120 Stbd

ITEM NO. 63 DOCK TRIAL

Contractor to conduct an eight (8) hour dock trial to test operate the main and auxiliary machinery and to conduct tests and make adjustments to machinery and electrical equipment for observation by ABS, USCG and MarAd representative.

Prior to dock trial set boiler safety valve relieving pressures as per USCG requirements. Also all other tests and settings are to be made, both electrical and mechanical, as required by ABS and USCG representatives to certificate and classify vessel.

ITEM NO. 64 SEA TRIAL

Contractor shall provide the personnel to conduct a forty eight (48) hour duration sea trial of vessel on completion of all work in these specifications.

All equipment is to be operated as per a trial run agenda submitted to MarAd representative for approval a week prior to trial by contractor.

Conduct a four (4) hour full speed test run during sea trial.

MarAd representative will submit to contractor a list of ABS, USCG, Navy and MarAd personnel scheduled to participate on sea trial.

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