

# American Bureau of Shipping

45 BROAD STREET, NEW YORK 4, N. Y.

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Report No. PO272

Portland, Oregon, May 27, 1953

U.S.N.S. "GENERAL JOHN POPE"

THIS IS TO CERTIFY that the undersigned Surveyor to this Bureau did, at the request of the owner's representative, attend the twin screw steel steamer "GENERAL JOHN POPE" as the vessel lay afloat at Willamette Iron and Steel Co., Portland, Oregon, on the 10th day of February 1953 and subsequent dates in order to examine and report upon the alteration of troop and passenger accommodations and to complete the Special Periodical Survey No. 2 of Hull, Machinery and Electrical Apparatus, carry out the Annual Classification Survey, Annual Boiler Survey and Survey for Assignment of International Load Line and has to report as follows:

SPECIAL PERIODICAL SURVEY NO. 2 OF HULL - ANNUAL HULL  
CLASSIFICATION SURVEY - SURVEY FOR ASSIGNMENT OF LOAD LINE AND  
ALTERATIONS.

- 1- All parts of the steering arrangements, including the gear, quadrant, tiller, tele-motor and other transmission gear and brakes were examined and found satisfactory.
- 2- The ventilator and hatchway coamings and covers, their supports and tarpaulins were examined and made satisfactory as follows:
  - (a) Various ventilators in exposed positions were equipped with brackets or stayed to house sides.
  - (b) Two access hatch coamings found to be of light material were renewed using proper thickness of steel.
  - (c) New tarpaulins were supplied for all hatches.
  - (d) All access hatch covers were overhauled, broken and missing dogs replaced and gaskets renewed as necessary.
- 3- Machinery casings, guard rails and all other means of protection provided for openings and for access to crew's quarters were examined and found satisfactory. Guard rails were altered as follows:
  - (a) Boat deck, port and starboard, frames 56 to 158, railing renewed using four-course pipe rail 42 inches high.
  - (b) Promenade deck, port and starboard, frames 160 to 200, railing renewed using four-course pipe rail 42 inches high.
- 4- The freeing ports were examined and found satisfactory.
- 5- The closing appliances in deck houses and superstructure and for air and sounding pipes were examined and placed in satisfactory condition as follows:
  - (a) The ball checks for air pipes were freed up and wire mesh screens were renewed.
  - (b) Gaskets of all water-tight doors were renewed as necessary and dogs made operable after which doors were hose tested.
  - (c) Passenger, cargo and fueling side ports were overhauled and hose tested.

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ENCLOSURE (1)

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## 5- (Continued)

- (d) Gaskets, glass and deadlights were renewed as necessary on all portlights and all, including 15 new portlights were hose tested.
- 6- Casings of overboard discharge valves were removed and made satisfactory as follows:
  - (a) Refaced the clappers on 140 valves.
  - (b) Renewed the clappers on 16 valves.
  - (c) Built up seat and machined four valves.
  - (d) Renewed studs, bolts, nuts and gaskets as necessary.
- 7- A total of 30 additional check valves were installed and three remote controls installed in order to meet Rules requirements of overboard discharges. Two garbage chutes with gag scupper valves were installed per Willamette Dwg. SR 777-S48-2 approved American Bureau March 4, 1953.
- 8- The cargo holds and 'tween deck spaces were examined and placed in satisfactory condition as follows:
  - (a) Approximately 500 feet of salt and fresh water pipe lagging renewed.
  - (b) Approximately 100 feet of steam pipe lagging renewed.
  - (c) A new transverse deck beam shell frame and stanchion were installed at frame 102, port side, between main and second deck. Original members missing.
  - (d) A new transverse deck beam, shell web frame and stanchion installed at frame 118, port side, between main and second deck. Original members missing.
  - (e) A new stanchion was installed 17'-6" off centerline at frame 126, port, between second and main deck.
  - (f) The existing remaining sections of longitudinal bulkheads where welded to underside of main deck were cut back and 4" x 3/8" flat bar face plates installed to provide deck longitudinals. Locations were as follows:  
Longitudinal bulkhead 12'-6" off centerline, port, between frames 83-1/2 to 97, 110 to 113 and 118 - 130, longitudinal bulkhead 12'-6" off centerline, starboard, between frames 94 - 99 and 110 to 123, longitudinal bulkhead 17'-6" off centerline, port, between frames 88-1/2 to 102, 106 to 114 and 118 to 130, longitudinal bulkhead 17'-6" off centerline, starboard, between frames 83-1/2 to 103, 105 to 114 and 118 to 130.
  - (g) Various longitudinal girders were found to be cut, without proper compensation, when obsolete ventilation ducts were removed. Openings were properly closed with inserts.
  - (h) The bilge wells were cleaned and strainers replaced.
  - (i) Control rods for all bilge suction valves were overhauled and made operable.
- 9- All water-tight bulkheads were examined and found satisfactory.
- 10- The following tanks were cleaned, examined internally and found satisfactory:  
Forepeak - B 601 W - B 602 W - B 603 W, B 604 W, C 602 W  
Afterpeak - C 603 W - C 604 W.
- 11- The tank top of No. 1 double bottom tank was examined, striking pads for bilge sounding lines properly installed and all found satisfactory. This satisfies recommendation of San Francisco Report No. 11655 dated July 24, 1951.

- 12- The following tanks were hydrostatically tested and found satisfactory:  
Forepeak, afterpeak, deep tanks #1 P/S, #2 P/S, #3 P/S/C, #4 P/S/C, #5 and #6;  
Double bottom tanks #1 P/S, #2 P/S, #3 P/S/C, #4 P/S/C, #5 P/S/C, #6 P/S/C,  
#7 P/S/C/, #8 P/S/C, #9 P/S.
- 13- Sufficient insulation was removed in way of reefer spaces to examine plating which was found satisfactory. The void space under reefer box was examined and found satisfactory.
- 14- Pneumacator and sounding pipe of No. 6 port double bottom tank were removed and wasted sections renewed. Tank was tested and proven tight.
- 15- Pneumacator line of No. 4 center double bottom tank was removed and wasted section renewed. Tank was tested and proven tight.
- 16- All deck covering was removed to bare metal, decks cleaned and covering renewed.
- 17- Plating in way of air ports was examined and found satisfactory.
- 18- The masts, spars, rigging, hawse pipes and equipment were examined and found satisfactory.
- 19- Cofferdams of the forward, after and auxiliary engine room were examined and found satisfactory.
- 20- The CO2 cylinder room was relocated from the auxiliary engine space, 2nd platform to a 3rd deck compartment, frames 118-122 starboard. Compartment is fume tight and has natural exhaust to promenade deck.
- 21- All water-tight doors were examined and made satisfactory by renewing gaskets and missing dogs as necessary.
- 22- Fire extinguishing equipment was overhauled, tested and proven to operate satisfactorily. CO2 bottles were recharged as necessary.
- 23- One distorted hatch beam at #7 hatch was satisfactorily faired.
- 24- A paint and plumbing shop were installed in the after deck house with a steel, dog type, water-tight door provided in the new centerline bulkhead at frame 183.
- 25- Approximately 2,000 feet of insulation was renewed on water and steam lines in the aft section of vessel.
- 26- An access hatch to the bosn's stores was provided at this time to comply with load line regulations, replacing two flush type covers. New hatch is at port side, just off centerline at frames 229-30, hatch is 3/8" x 30" x 30" with 24" coaming, welded steel construction with hinged, dogged, water-tight cover. The two former flush deck openings were permanently plated over and welded.

- 27- A new stores hatch was provided at frames 30 to 32 on main deck, port side. Hatch is 1/2" x 49-1/2" x 55-1/2" with 24" coaming, welded steel construction with hinged, dogged, water-tight cover. A 500# capacity davit was installed adjacent to hatch. This hatch is trunked from the main deck to the lower hold.
- 28- The length of No. 3 hatch was reduced at the upper, main, 2nd, 3rd and 1st platform levels. The new hatch opening is 12'-6" x 25'-0". Alteration was made as follows:
- (a) Upper deck - Removed the 38" wide pontoon covers and plated over the after portion of hatch at level of adjacent plating. 1/2" flat bars were welded to one side of existing 49" pontoon covers and the three covers utilized for closure. Existing coamings and cleats were removed and new after transverse hatch end beam, coaming, landings, cleats and tarpaulins provided to suit the new hatch size.
  - (b) Main deck - Same as above except no hatch covers or strongbacks.
  - (c) 2nd and 3rd deck - Plated over same as upper deck. Two existing strongbacks reinstalled to utilize two existing rows of metal hatch boards and one new row of metal hatch boards. Hatches have safety chain railings.
  - (d) 1st Platform - Same as 2nd and 3rd deck except hatch boards were all renewed with metal covered hatch boards to comply with fire control requirements.

For further details of the above alterations see Willamette Iron & Steel Dwg. SR 777-S11-10 and 11, approved American Bureau of Shipping, January 26, 1953 and February 3, 1953.

- 29- The length of No. 5 hatch was reduced at the third deck and 1st platform levels. The new hatch opening is 4'-9" x 16'-0". The after portion of the hatch was plated over with 15.3# plate, coaming modified, after transverse hatch end beam renewed. Metal covered hatch boards and portable safety chain railings were provided. For further details see Willamette Iron & Steel Dwg. SR 777-S11-10 approved American Bureau of Shipping, February 3, 1953.
- 30- The boat deck was extended aft to frame 160-1/2 port and starboard. Plating is 17.85# with 8" x 3-1/2" x 21.4# channels and 6" x 6" x 1/2" stanchions. For further details see Willamette Iron & Steel Dwg. SR 777-S11-12 Alt. 2 approved American Bureau of Shipping March 10, 1953.
- 31- Fifteen additional airports were installed on main deck between frames 58-1/2 to 89. Portlights are of approved type and have hinged, cast steel, deadlight covers.
- 32- Four steel inserts were welded flush in the main deck in way of the removed gun pedestal at frames 227 to 231.
- 33- Obsolete deck drain at frame 277 was removed and opening in main deck was closed by a steel insert welded flush to deck.
- 34- Sounding tubes of 1-1/2" piping complete with deck fittings and striking pads were installed in the following fresh water tanks: B601W, B602W, B603W, B604W, C602W, C603W, and C604W. Internal surfaces of these tanks were scaled to bare metal and coated with zinc dust.
- 35- Approximately four feet of deteriorated 1-1/2" vent line, where passing through tank top of B-911-V was renewed.

- 36- The emergency generator room in the forward stack was made fume tight by installing new deck, bulkhead, access doors and weather-tight louvres.
- 37- The anchor windlass was lifted from its foundation and the entire wood foundation was renewed with 6" thick white oak. Prior to laying new foundation area was scaled and white putty used for imbedding new wood. All holding-down bolts and nuts were renewed.
- 38- Base of shell frame in way of #12 starboard line shaft bearing was altered to permit removal of the bearing cap.
- 39- The existing manually operated doors in the machinery space at frames 119, 130 and 146 starboard side, were altered and are now power operated from the fire control room.
- 40- Bulkheads, decks, doors, hatch covers and other closing appliances throughout the entire vessel were insulated or altered to meet fire control requirements.
- 41- Various escape manholes and ladders were installed to meet fire control requirements.
- 42- All overboard discharges between frames 40 to 214 were provided with scupper guards extending from a point 18" above top of discharge to a point 24'-0" above base line.
- 43- The two capstans located on the after main deck were removed and decks scaled to bare metal and recoated, wood bases were renewed.
- 44- The existing marinite bulkheads on port and starboard sides of No. 6 cargo hatch on second deck between frames 175-1/2 to 180-3/4 were removed and new 1/4" steel bulkheads with stiffeners were installed along with access doors.
- 45- The tow and stream wires removed from their reels, examined, measured and found to comply with Rules requirements, recoated and properly restowed.
- 46- Two new connecting links were installed in the starboard chain. Links were found stamped - PH27528 AB.
- 47- Obsolete bulkheads, sheating, ceiling, doors, gun platforms, bulwarks, foundations and supporting structures were removed at this time.
- 48- Approximately 4,000 feet of obsolete piping was removed at this time.
- 49- Ventilation and air conditioning systems were completely altered at this time. Foundation for air conditioning refrigeration machinery and pumps was installed between bulkhead 102 and frame 110, port side. Steam and exhaust piping, Westinghouse turbine and pumps were tested. For details of entire systems reference is made to the following Willamette Iron & Steel Co., Dwgs: SR 777-S11-13 approved American Bureau March 24, 1953; SR 777-S38-15 approved American Bureau December 19, 1953. Reference is also made to the following MSTs Dwgs: T-AP110-S3803-1179071-2-3-4-5-6-7-8-9-18-19-20-21-22-23-24 and 25.  
T-AP110-S3803-1171327 Alt. 1  
T-AP110-S5901-1179181 Alt. 2.

- 50- It was the intent to accomplish work as listed on "Specification No. MSTs-P-53-66 of October 10, 1952 for Troop lift and safety at sea alterations, annual inspection and voyage repairs to the General John Pope (T-AP110)".
- 51- Subsequent to vessel's arrival a request was made for Load Line Assignment. Work was accomplished at this time so that vessel complies with Load Line requirements and a complete Load Line Survey held. Load Line marks were cut in vessel's sides, checked and found to be in compliance with assignment. A Provisional Load Line Certificate was placed aboard the vessel dated May 27, 1953 and valid until November 27, 1953.

The Special Periodical Survey No. 2 of Hull, Annual Surveys of Hull and Machinery and Load Line Inspection are now complete.

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SPECIAL PERIODICAL SURVEY OF MACHINERY

- 52- The high pressure turbine casings were raised on the #1 unit located in the forward engine room and the #2 unit located in the after engine room. The flexible couplings, bearing caps and turbine thrusts were disassembled and the rotors were lifted for cleaning and examination. Moving and stationary blading, blade rings, labyrinth packing and casing were cleaned. The following work was accomplished on these units:
- (a) High Pressure Turbine No. 1 - Forward engine room - renewed the 1st row of buckets, carbon rings, diaphragm and labyrinth packing. Refaced the nozzle valve disc and ground in valve. Removed by grinding, the pitting in valve stems and restored to original size by chrome plating. Renewed the rotor journal bearings and thrust collar. Upon completion of repairs rotor was balanced and unit closed satisfactorily.
  - (b) Low Pressure Turbine No. 1 - Forward Engine Room - distorted blading was straightened and shrouding tightened. The 4th stage diaphragm was renewed. Renewed the carbon rings and diaphragm packing. Renewed one thrust liner. Unit was closed satisfactorily.
  - (c) High Pressure Turbine #2 - after engine room - renewed the 1st, 2nd, 3rd and 4th rows of blading. Renewed the carbon rings. Renewed the diaphragm and labyrinth packing. Renewed the forward and aft H.P. turbine bearings. Refaced the nozzle valve disc and ground in valve. Removed by grinding, the pitting in valve stems and restored to original size by chrome plating. Upon completion of repairs unit was closed and satisfactorily balanced.
  - (d) Low Pressure Turbine #2 - after engine room - renewed the diaphragm packing and packing springs. Renewed the carbon rings.
- 53- (a) Main reduction gears - forward engine room -  
The bull and 2nd reduction pinion gears were examined and found to have a slight wire edge which was removed by filing. The flexible couplings were examined and found satisfactory. Renewed the 1st reduction forward pinion and aft gear bearings on the H.P. side. Renewed the after bull gear bearing. Machined oil hole in bearing housing of the forward and after 2nd reduction gear. Renewed the forward pinion bearing 2nd reduction gear.
- (b) Main reduction gears - after engine room -  
The bull and pinion gears were examined and found satisfactory. The flexible couplings were examined and found satisfactory. Renewed the 2nd reduction pinion

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53-(b) continued.

bearing on the L.P. side and the after H.P. gear bearing. Renewed the wire screen in two lube oil strainers. Machined oil hole in bearing housing of the forward and after 2nd reduction gear.

54- The main thrust bearings of the Nos. 1 and 2 main engines were opened and the bearings, shoes and journals examined, clearances corrected and closed satisfactorily.

55- The port and starboard line shaft bearings were examined and made satisfactory as follows:

- #7 port - wiped - scraped and refitted with .006" liner under chocks.
- #2 starboard - relieved high spots by scraping.
- #3 " - wiped - scraped and refitted.
- #4 " - wiped - scraped and refitted.
- #5 " - wiped - scraped and refitted with .006" liner under chocks.
- #6 " - wiped - scraped and refitted with .007" liner under chocks.
- #8 " - wiped - scraped and refitted with .008" liner under chocks.
- #9 " - wiped - scraped and refitted.
- #10 " - wiped - scraped and refitted with .008" liner under chocks.
- #11 " - wiped - scraped and refitted.
- #12 " - wiped - scraped and refitted.

#### AUXILIARIES

56- The main condensers (2) were opened, cleaned, tested, examined and made satisfactory as follows:

- (a) No. 1 Condenser - renewed approximately 20 defective tubes, installed approximately 50 plastic inserts. Condenser heads recoated, gaskets, studs and nuts renewed as necessary.
- (b) No. 2 Condenser - renewed 7 defective tubes, installed approximately 1,400 plastic inserts. Condenser heads recoated, gaskets, studs and nuts renewed as necessary.

57- The auxiliary condensers (4) were opened, cleaned, tested, examined and made satisfactory by recoating heads, renewing gaskets, studs and nuts as necessary.

58- The following pumps were opened, examined and made satisfactory as follows:

- (a) Main circulating pumps Nos. 1 and 2 - refit casings rings and renewed wearing rings. Built up packing and bearing journals by metal spray and machined to proper size. Remetalled and refit bearings, cleaned lubricating lines. Dressed edges of impeller vanes.
- (b) Auxiliary circulating pumps Nos. 1 and 2 - built up packing and bearing journals by metal spray and machined to proper size. Remetalled and refit bearings. Refit casing rings and renewed wearing rings.
- (c) Main feed pump No. 2 - stoned crank journals and refit bearings. Renewed plungers.  
Main feed pump No. 4 - renewed guide rod bushings and realigned guides.

58- (Continued)

- (d) Fuel Oil Transfer Pumps Nos. 1 and 2 - No. 1 Steam end - renewed inboard piston rod and polished outboard rod. Renewed valve stem and refit crossheads. Renewed pins and bushings in valve gear.

No. 2 - polished steam piston rods, machined side on crosshead and renewed two pins. Refaced suction and discharge valve discs.

- (e) Fuel Oil Standby Pumps - Nos. 1 and 2 - renewed steam piston rods and refit to pistons. Renewed valve stem rods, renewed and refit keys in arms of valve gear.
- (f) Fresh Water Pumps Nos. 1 and 2 -
  - No. 1 - renewed piston rods and cylinder sleeves. Ground in valve seats and disc.
  - No. 2 - renewed valve seat and guide. Ground in valve seats and disc.
- (g) Wash Water Pump No. 1 - renewed piston rod, machined valve seat, refaced sliding valve.
- (h) Bilge Pump No. 1 - renewed impeller shaft and two bearings. Refit casing rings and renewed wearing rings.
- (i) Fuel Oil Service Pump No. 1 - renewed idle worm, drive worm and housing.
- (j) Diesel Oil Service Pumps Nos. 1 and 2 - renewed steam piston rods, valve stem rods and disc guides. Renewed pins in valve gear linkage. Freed up piston rings.
- (k) Sanitary Pump No. 1 - renewed piston rods, packing and cylinder sleeves.
- (l) Main Condensate Pump No. 4 - Refit casing rings and renewed wearing rings. Polished packing and bearing journals. Renewed bearings.
- (m) Submersible Bilge Pump - refit casing rings and renewed wearing rings. Remetalled and refit impeller bearing. Suction side - polished main and crank bearing journals. Refit bearings. Renewed thrust bearing. Realigned pump.
- (n) Bilge Pump No. 2 - renewed shaft and bearings. Refit casings rings and renewed wearing rings.
- (o) No. 1 Turbine Lube Oil Pump - Machined casing in way of lube oil seal and diaphragm. Renewed upper and lower sleeve bearings, ball bearing, drive gear, drive pinion, governor oil pump gears, lube oil pump gears and idler gear shaft.

59- The evaporators were cleaned, examined, tested and found satisfactory.

60- The air compressors were opened, cleaned, examined and found satisfactory.

61- The No. 1 Throttle and Equalizing Valves were opened, examined and made satisfactory as follows: machined liner in equalizing cylinder to remove score from cylinder wall. Renewed equalizing piston rings. Renewed retaining rings in cylinder. Renewed rings for the ahead, astern guarding and equalizing poppet valves. Machined astern throttle valve stem to remove pitting, chrome plated, ground and polished same to original diameter. Removed, retaped and renewed broken stud in ahead valve. Hydrostatic test made on valve body.

62- Diesel Engine of Emergency Generator was opened, examined and made satisfactory by renewing push rod and compression ring on No. 4 intake valve.



- 9-
- 63- The steering engine was examined and made satisfactory by renewing the end bushings in each arm of strake control unit. The steering engine and its related parts was tested during trials.
- 64- The anchor windlass was opened, brake bands and drums along with bearings examined, unit reassembled and tested under operating conditions.
- 65- The pumping arrangements were examined, tried out and found to be satisfactory.

ELECTRICAL APPARATUS

- 66- The Nos. 1, 2, 3, 4 Turbo Generators were opened, examined and made satisfactory as follows:
- Nos. 1, 2 and 3 - Chrome plated the No. 1 reduction gear pinion and ground to proper size. Chrome plated the bearing and carbon journals on turbine rotor. Renewed the turbine, gear and pinion bearings. Renewed the diaphragm packing, carbon rings and springs. Renewed the valves, seats, lifting rods, pilot valves, sleeves, contact plates, thrust bearings, governor springs and pilot springs. Gauges were recalibrated as necessary. Nozzle blocks were renewed. Armatures were removed to shop, cleaned, revarnished, commutators undercut and journals polished. The armatures and bull gears were dynamically balanced as a unit. The rotors were removed to shop, pumice blasted and the rotors dynamically balance. Bored and renewed coupling bolts. Overhauled spring loading trip valves. Governor oil pump on #3 unit overhauled. Governors ground, pistons built up by chrome plating. No. 3 governor unit was renewed.
- No. 4 unit - the packing journals were metal sprayed, machined to proper clearance and bearings renewed. The turbine, gear and pinion bearings were not renewed on this unit. Diaphragms were removed from all units and sand blasted.
- Units were operated singly and in parallel and proven satisfactory. It is recommended that the No. 4 generator be opened for examination at the next Annual Survey for examination of the packing journals and guide vanes. Packing journals had been previously turned down and metal sprayed.
- 67- The main switchboard and distribution panels were cleaned, examined, meggered and found satisfactory.
- 68- Cable connections and runs were examined and made satisfactory by renewing approximately 1,300 feet of armored cable throughout vessel.
- 69- Megger readings were taken on all circuits and principal motors and same found or made satisfactory.
- 70- The anchor windlass motor was removed to the shop, cleaned, reinsulated, commutator polished and undercut. Renewed brush rigging and rewrapped all leads and reinsulated same. Renewed one roller bearing.
- 71- Motors for the following pumps were examined and made satisfactory as follows:
- (a) Main feed pump No. 3 - cleaned and revarnished windings. Polished and undercut commutator. Cleaned and reinsulated field coils. Renewed brushes. Renewed bearings. Armature dynamically balanced.
  - (b) Main Condensate Pump - after shaft of armature built up, machined and bearing refit.

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71- (Continued)

- (c) Standby Fire, No. 2 Fire, No. 2 Compressor, No. 4 Feed, No. 2 and No. 3 Main Condensate pump armatures were all removed to shop, armatures and field windings were cleaned and reinsulated, commutators turned and undercut, brush rigging renewed as necessary. Motors were reassembled using all new bearings.

The Special Periodical Survey of Machinery is now complete.

ANNUAL SURVEY OF BOILERS

- 72- The four boilers were hydrostatically tested to 788 pounds per square inch, together with the main steam pipes, economizers and superheaters. The boilers were examined internally and externally, together with their superheaters, economizers, mountings, studs and fittings and all found or placed in satisfactory condition as follows:

No. 1 Starboard Boiler - renewed entire floor and corbels, renewed protection refractory of mud drum and installed expansion joint. Renewed plastic and anchor bolts of all three arches. Removed superheater plugs and hand rolled superheater tubes. The main superheater outlet pipe was renewed at this time. For further particulars see San Francisco Report No. 53-SF155-611 dated April 6, 1953.

No. 2 Port Boiler - renewed entire floor and corbels, plastic and anchor bolts of all three arches. Removed superheater plugs and hand rolled superheater tubes. Renewed protection refractory of mud drum.

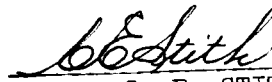
No. 3 Starboard Boiler - renewed the entire nest of superheater tubes along with the support plates, flame protectors, studs, nuts and support brackets to steam and mud drums. Renewed nuts, studs and gaskets on compound feed line joint.

No. 4 Port Boiler - renewed the entire nest of superheater tubes along with the support plates, flame protectors, studs, nuts and support brackets to steam and mud drums. Renewed 2-1/2" - 600# superheated steam gate valve from bulkhead stop to generator. New valve is flanged globe type. Two 2" riser tubes were renewed. Renewed seat and stem of superheater steam stop valve.

- 73- The main steam lines from bulkhead stops to throttle valves on all four boilers were drill tested, gauged and found satisfactory.
- 74- Upon completion of repairs and renewals boilers were again hydrostatically tested and found satisfactory.
- 75- The drum and superheater safety valves were set under steam to the allowed working pressure.

The Annual Boiler Survey is now complete.

Upon completion of this survey a dock trial and river trial were conducted in a satisfactory manner. It is recommended that the vessel be maintained in her present Class with this Bureau.

  
C. E. STITH  
Surveyor