

REPORT ON MACHINERY.

No. 1234

Port of PHILADELPHIA.

No. in Survey held at Camden N.J Date, first Survey 5-2-02 Last Survey Jan'y 29th 1904
 Reg. Book. 1038 on the SS Mongolia (Number of Visits 100)
 Master J. H. Pinder Built at Camden N.J By whom built New York SBC Tons {Gross 13638.84
 Engines made at Camden N.J By whom made New York SBC when made 1904.1 Net 8750.10
 Boilers made at Camden N.J By whom made New York SBC when made 1904.1
 Registered Horse Power ✓ Owners E. H. Harriman Port belonging to New York
 Nom. Horse Power as per Section 28 1923 Is Refrigerating Machinery fitted No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Twin screw Quadruple No. of Cylinders 8 No. of Cranks 8
 Dia. of Cylinders 30" 43" 63" 89" Length of Stroke 60" Revs. per minute 80 Dia. of Screw shaft as per rule 18.08 17.4
 Dia. of Tunnel shaft as per rule 16.9 15.8 Dia. of Crank shaft journals as per rule 17.78 17.05 Dia. of Crank pin 18.0 Size of Crank webs 13 x 24 Dia. of thrust shaft under
 collars 14 3/4 Dia. of screw 18.6 Pitch of screw 23.6 No. of blades 3 State whether moveable Yes Total surface 86.8 sq ft
 No. of Feed pumps 4 Diameter of ditto 11 x 8 Stroke 26" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 4 Diameter of ditto 6" Stroke 30" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 8 Sizes of Pumps (2) 10 x 12, 12 x 12, 9 x 6 x 10, 5 x 4 x 5, 7 x 8 x 5 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Two 4", seven 3 1/2", four 2 1/2" In Holds, &c. No 1 hold two 3 1/2", No 2-3-4-5-6 two 3 1/2" x
one 2 1/2", No 7 two 2 1/2", deep tanks two 3 1/2" two 6", shaft tunnels two 2 1/2" each.
 No. of bilge injections 2 sizes 11" Connected to condenser, or to circulating pump Is a separate donkey suction fitted in Engine room & size Yes two-4"
 Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes Are the sluices on Engine room bulkheads always accessible none
 Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks both
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the discharge pipes above or below the deep water line below
 Are they each fitted with a discharge valve always accessible on the plating of the vessel Yes Are the blow off cocks fitted with a spigot and brass covering plate Yes
 What pipes are carried through the bunkers Bilge How are they protected wood casings
 Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times Yes
 Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges Yes
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock 29. 2-04 Is the screw shaft tunnel watertight Yes
 Is it fitted with a watertight door Yes worked from upper deck

BOILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 28276 sq ft Is forced draft fitted Yes
 No. and Description of Boilers 4 DE x 4 SE Multitubular Working Pressure 215 lbs Tested by hydraulic pressure to 430 lbs
 Date of test 12-3-03 Can each boiler be worked separately Yes Area of fire grate in each boiler SE 53 DE 106 sq ft No. and Description of safety valves to
 each boiler DE 3, SE 2, direct spring Area of each valve SE 12.5 Pressure to which they are adjusted 215 lbs Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers 24" Mean dia. of boilers 14.5" Length DE 19.10 SE 12.95 Material of shell plates Steel
 Thickness 9/16 Range of tensile strength 28-32 Are they welded or flanged no Descrip. of riveting: cir. seams D.T.R long. seams D.B.S.T.R
 Diameter of rivet holes in long. seams 9/16 Pitch of rivets DE 9 1/16, SE 10" Top of plates no width of butt straps 2 1/4"
 Percentages of strength of longitudinal joint rivets 91.9 Working pressure of shell by rules 235 lbs Size of manhole in shell 16 x 12"
 Size of compensating ring 36 x 32 x 1/16 No. and Description of Furnaces in each boiler DE 6, SE 3 Material Steel Outside diameter 44 1/16"
 Length of plain part top 4" Thickness of plates bottom 3/32 Description of longitudinal joint weld No. of strengthening rings none
 Working pressure of furnace by the rules 239 lbs Combustion chamber plates: Material Steel Thickness: Sides 5/8 Back 5/8 Top 5/8 Bottom 5/8
 Pitch of stays to ditto: Sides 7/2 x 7/8 Back 7/16 x 7/16 Top 7/8 x 7/4 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 252 lbs
 Material of stays Steel Area at smallest part .52 sq ft Area supported by each stay 55.28 sq ft Working pressure by rules 248 lbs End plates in steam space:
 Material Steel Thickness 1/16 Pitch of stays 15 1/4, 15 1/4 How are stays secured D.N Working pressure by rules 293 lbs Material of stays Steel
 Diameter at smallest part 2 3/4" Area supported by each stay 232.5 sq ft Working pressure by rules 255 lbs Material of Front plates at bottom Steel
 Thickness 1/16 Material of Lower back plate Steel Thickness 1/16 Greatest pitch of stays 13 3/4" Working pressure of plate by rules 315 lbs
 Diameter of tubes 2" Pitch of tubes 3 1/2 x 3 3/4 Material of tube plates Steel Thickness: Front 7/8 Back 3/4 Mean pitch of stays 9"
 Pitch across wide water spaces 12 1/4" Working pressures by rules 370 lbs Girders to Chamber tops: Material Steel Depth and
 Thickness of girder at centre SE 8 x 13" Length as per rule DE 49 1/2 Distance apart 7 5/8 Number and pitch of Stays in each SE three 7"
 Working pressure by rules 226 lbs Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked
 separately no Diameter no Length no Thickness of shell plates no Material no Description of longitudinal joint no Diam. of rivets
no Pitch of rivets no Working pressure of shell by rules no Diameter of flue no Material of flue plates no Thickness no
 stiffened with rings no Distance between rings no Working pressure by rules no End plates: Thickness no How stayed no
 Working pressure of end plates no Area of safety valves to superheater no Are they fitted with easing gear no



DONKEY BOILER— No. 1 Description *Mult. Single ended, dry back, one furnace*
 Made at *Camden* By whom made *New York S.B.C.* When made *1904* Where fixed *Main deck*
 Working pressure *2 1/5* tested by hydraulic pressure to *4 3/4* No. of Certificate *19* Fire grate area *10 sq ft* Description of safety valves *Direct Spring*
 No. of safety valves *2* Area of each *3 1/4* Pressure to which they are adjusted *2 1/5* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No*
 Dia. of donkey boiler *5'-6"* Length *7'-10 1/2"* Material of shell plates *Steel* Thickness *3/32* Range of tensile strength *78-82* Descrip. of riveting long. seams *D.B.S., D.P.* Dia. of rivet holes *15/16* Whether punched or drilled *Drill* Pitch of rivets *5"*
 Rivts. *81* Thickness of shell *end* plates *15/16* ~~double~~ *double* Pitch No. of Stays to do. *21*
 Dia. of stays. *2 1/8* Diameter of furnace *30 1/2* Bottom *✓* Length of furnace *7'-1 1/2"* Thickness of furnace plates *15/32* Description of joint *weld* Thickness of furnace crown plates *—* Stayed by *—* Working pressure of shell by rules *2 2 1/4*
 Working pressure of furnace by rules *2 2 3/16* Diameter of ~~water~~ *tube* tubes *3"* Thickness of ~~water~~ *steel* plates *F 15/16 B 3/32* Thickness of ~~water~~ *steel* tubes *1/4"*

SPARE GEAR. State the articles supplied:— *24 Coupling bolts, 4 top & 4 bottom end bolts, 4 main bearing bolts, one full set of valves for all pumps, one full set-piston springs, two sets crank pin brasses, two sets crosshead brasses, two complete propellers, one propeller shaft, eight main bearings, one section of crank shafts.*
 The foregoing is a correct description,
New York Shipbuilding Company
D. J. O'Connell Manufacturer.

By *D. J. O'Connell* President. From *July 14th 1902* to *July 25th 1903*, visits *72*
 " *Aug 19th 1903* " *January 29th 1904* " *28*
 Total No. of visits *100* Is the approved plan of main boiler forwarded herewith *No*

Boiler plans retained for dealing with sister ship " " " " *No*

General Remarks (State quality of workmanship, opinions as to class, &c.)
This shafting is hollow, a 6" hole running through the whole length, tapering at outer end of propeller shaft.

Material of screw shaft *Steel* Is the screw shaft fitted with a continuous liner the whole length of the stern tube *Yes*
 Is the after end of the liner made water tight in the propeller boss *Yes* * the liner is in more than one length — the joints burned *with white metal*
 If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive *filled close* If two liners are fitted, is the shaft lapped or protected between the liners *✓*

This vessel's machinery has been constructed & fitted on board under Special Survey. The workmanship is sound & good throughout. The machinery has been tried under steam as required by the Rules & found satisfactory, which in my opinion renders the vessel eligible for the record of + L.M.C. 1-04 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. I L.M.C. 1-04 F.D. Elec. Light.

Imp. 7.3.04

J.L.S. 7.3.04

Mr John Haug receives \$17.50 of this fee.

The amount of Entry Fee... \$ 15.00 : When applied for,
 Special ... \$ 580.75 : 3. 2- 1904
 Donkey Boiler Fee ... \$ 10.50 :
 Travelling Expenses (if any) \$ 78.20 : 18. 2- 1904
 including \$50 credited to New York.
 Committee's Minute

Robert Haig
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

TUES. 8 MAR 1904

Assigned

+ L.M.C. 1-04 F.D.

MACHINERY CERTIFICATE WRITTEN.



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Certificate (if required) to be sent to PHILADELPHIA. (The Surveyors are requested not to write on or below the space for Committee's Minute.)

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