

REC'D 19 Feb. 04.

No. 1234

REPORT ON MACHINERY.

Port of PHILADELPHIA.

Received at London Office

FEB. 1 1904

No. in Survey held at
Reg. Book.

Camden N.J.

Date, first Survey 5-2-02

Last Survey Jan'y 29th 1904

1038 on the

s s Mongolia

(Number of Visits 100)

Master J. H. Pinder

Built at

Camden N.J.

By whom built

New York SBC

Engines made at

Camden N.J.

By whom made

New York SBC

Boilers made at

Camden N.J.

By whom made

New York SBC

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" 4 3/4" 6 3/4" 8 3/4"

Length of Stroke

60"

Revs. per minute

80

Dia. of Screw shaft

as per rule 18.08 7.4

Lgth. of stern bush

6-1/4"

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 8.0

Size of Crank webs

13 1/2 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 1/8"

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" 12" x 12" 12" x 12" 12" x 12" 12" x 12" 12" x 12" 12" x 12"

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"

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

Yes

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 & 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

S.E. 53 sq ft

No. and Description of safety valves to

Each boiler

DE 3, SE 2, direct spring

Area of each valve

S.E. 9.6 sq ft

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

S.E. 12.9 10.5

Material of shell plates

Steel

Thickness

1/16"

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

1/16"

Pitch of rivets

DE 9 1/16", S.E. 10"

Length of plates

22 1/4"

width of butt straps

22 1/4"

Percentages of strength of longitudinal joint

rivets 91.9

plate

84.0

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

Pitch of stays to ditto: Sides

7/8" x 7/8"

Back

7/8" x 7/8"

Top

7/8" x 7/8"

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 in

Area supported by each stay

55.28 sq in

Working pressure by rules

248 lbs

End plates in steam space:

Material

Steel

Diameter at smallest part

2 3/4"

Area supported by each stay

232.5 sq in

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

S.E. 8 1/8" 28 1/2"

Girders to Chamber tops: Material

Steel

Depth and

S.E. three 7"

Thickness of girder at centre

DE 7 1/2" x 1 1/2"

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

Diameter

Length

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivets

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

End plates: Thickness

How stayed

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Yes

No

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Yes

No

Yes

No

Yes

No

Yes

No

Yes

No

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Yes

No

Yes

No

Yes

No

Yes

No

Yes

No

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Yes

No

Yes

No

Yes

No

Yes

No

Yes

No

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Yes

No

Yes

No

Yes

No

Yes

No

Yes

DONKEY BOILER— No. 1 Description *Mult. Single ended, dry back, one furnace*
 Made at *Camden* By whom made *New York S.R.C.* When made *1904* Where fixed *Main deck*
 Working pressure *2 1/5* tested by hydraulic pressure to *430* No. of Certificate *19* Fire grate area *10 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 *28,320* 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"*
 Rivets *8 1/2* Thickness of shell *end* plates *15/16* *double* Pitch *5"* 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 *22 1/2*
 Working pressure of furnace by rules *22 3/4* Diameter of *stays* *3"* Thickness of *stays* plates *F 15/16 B 3/32* Thickness of *stays* 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 shaft.*
The foregoing is a correct description,
New York Shipbuilding Company
By *Donkey* *may* Manufacturer.

By *Donkey* President *from Feb 14th 1902 to July 25th 1903. visits 72*
Aug 19th 1903 to January 29th 1904 - 28
 Dates of Survey *During progress of work in shops - -*
During erection on board vessel - -
 while building *Total No. of visits 100*
 Is the approved plan of main boiler forwarded herewith *No*
 Boiler plans retained for dealing with sister ship *no* " donkey " " " *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 *fitted 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 of the Board 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. + L.M.C 1-04 F.D. ELEC. LIGHT.

Emd.
7.3.04

J.L.B.
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 *PH*
 Donkey Boiler Fee .. \$ 10.50 : When received,
 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.

Assigned *TUES. 8 MAR 1904*
+ L.M.C 1-04 7D

MACHINERY CERTIFICATE
 WRITTEN.



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 Foundation

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