

REPORT ON MACHINERY.

No. 4319

No. in Survey held at
Reg. Book.

on the

Glasgow
J.G. "Mirror"

Date, first Survey June 25th 1885 Last Survey February 12th 1886

(Number of Visits 48)

Tons 1545 Gross

Master Green Built at Glasgow By whom built Messrs R. Napier & Sons When built 1885

Engines made at Glasgow By whom made Messrs R. Napier & Sons when made 1885

Boilers made at Glasgow By whom made " when made 1885

Registered Horse Power 250 Owners The Eastern Telegraph Co (Lim) Port belonging to London

ENGINES, &c.—

Description of Engines Compound Inverted direct acting (Twin Screw)

Diameter of Cylinders 26" & 21" Length of Stroke 36" No. of Rev. per minute 100 Point of Cut off, High Pressure .4 Low Pressure .45

Diameter of Screw shaft 9 1/2" Diam. of Tunnel shaft 8 3/4" Diam. of Crank shaft journals 9 1/2" Diam. of Crank pin 10" size of Crank webs 6" x 11 1/2"

Diameter of screw 9" 6" Pitch of screw 16 ft No. of blades 4 state whether moveable Yes total surface 34 sq ft

No. of Feed pumps One to each diameter of ditto 3 1/2" Stroke 19" Can one be overhauled while the other is at work Yes

No. of Bilge pumps One to each diameter of ditto 4 1/4" Stroke 19" Can one be overhauled while the other is at work Yes

Where do they pump from Each compartment

No. of Donkey Engines two Size of Pumps 6 1/4" & 8 1/2" Stroke 8" & 9" Where do they pump from Sea, bilges, tanks

hotwell

Are all the bilge suction pipes fitted with roses Yes Are the roses always accessible Yes Are the sluices on Engine room bulkheads always accessible Yes

No. of bilge injections three and sizes two & diam 1 1/2" Are they connected to condenser, or to circulating pump Condenser & centrifugal pump

How are the pumps worked by levers also separate engine for centrifugal pump

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 above

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 forward suction How are they protected Wood casing

Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times Yes

Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges Yes

When were stern tube, propeller, screw shaft, and all connections examined in dry dock previous to the vessel being launched

Is the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from the top platform

BOILERS, &c.—

Number of Boilers two Description Cyl. Multitubular single ended Whether Steel or Iron Steel

Working Pressure 100 lbs Tested by hydraulic pressure to 200 lbs Date of test October 1st 1885

Description of superheating apparatus or steam chest None

Can each boiler be worked separately Yes Can the superheater be shut off and the boiler worked separately Yes

No. of square feet of fire grate surface in each boiler 40 sq ft Description of safety valves direct spring No. to each boiler two

Area of each valve 11.49 sq in Are they fitted with easing gear Yes No. of safety valves to superheater 1 area of each valve 1

Are they fitted with easing gear Yes Smallest distance between boilers and bunkers or woodwork 18" from deck Diameter of boilers 14" 6"

Length of boilers 10' 3" description of riveting of shell long. seams tub riv lap circum. seams dbl riv lap Thickness of shell plates 1"

Diameter of rivet holes 1 3/8" whether punched or drilled drilled pitch of rivets 6" & 3" Lap of plating 9 1/2"

Per centage of strength of longitudinal joint 74% working pressure of shell by rules 106 lbs size of manholes in shell 16" x 12"

Size of compensating rings 4 1/8" x 1" No. of Furnaces in each boiler three

Outside diameter 41" length, top 4 ft bottom 9' 3" thickness of plates 3/4" description of joint corrugated if rings are fitted Yes

Greatest length between rings 122 lbs working pressure of furnace by the rules combustion chamber plating, thickness, sides 1/2" back 1/2" top 5/8"

Pitch of stays to ditto, sides 8 1/2" x 8 1/2" back 8 1/2" x 8 1/2" top 10 1/2" If stays are fitted with nuts or riveted heads nuts working pressure of plating by

rules 106 lbs Diameter of stays at smallest part 1 1/4" & 1 1/2" working pressure of ditto by rules 109 lbs end plates in steam space, thickness 7/8"

Pitch of stays to ditto 16" x 16" how stays are secured dbl nuts working pressure by rules 104 lbs diameter of stays at

smallest part 2 1/4" screw working pressure by rules 102 lbs Front plates at bottom, thickness 5/8" Back plates, thickness 5/8"

Greatest pitch of stays 11" x 8 1/2" working pressure by rules 100 lbs Diameter of tubes 3" 6" pitch of tubes 4" x 4" 8" thickness of tube

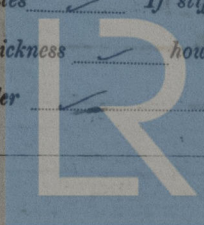
plates, front 3/4" back 11/16" how stayed stay tubes pitch of stays 15 1/2" x 4" width of water spaces 5"

Diameter of Superheater or Steam chest length thickness of plates description of longitudinal joint diam. of rivet holes

Pitch of rivets working pressure of shell by rules diameter of flue thickness of plates If stiffened with rings

Distance between rings working pressure by rules end plates of superheater, or steam chest; thickness how stayed

Superheater or steam chest; how connected to boiler



Lloyd's Register
Foundation

GLS151-0334

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DONKEY BOILER— Description *Cylindrical Mult. single ended*
Made at *Glasgow* by whom made *Messrs R Napier & Sons* when made *1885* where fixed *On deck*
Working pressure *100 lbs* tested by hydraulic pressure to *200 lbs* No. of Certificate *1624* fire grate area *17.4 sq ft* description of safety valves *direct spring* No. of safety valves *two* area of each *4.07 sq in* if fitted with easing gear *Yes* if steam from main boilers can enter the donkey boiler *No* diameter of donkey boiler *8' 6"* length *8' 0"* description of riveting *dbl riveted butt*
Thickness of shell plates *5/8"* diameter of rivet holes *7/8"* whether punched or drilled *drilled* pitch of rivets *3 1/16"* lap of plating *straps 9 1/2 x 5/8"*
per centage of strength of joint *7 1/2%* thickness of ~~crown~~ *end* plates *7/8"* stayed by *long stay 2" dia 14" x 14" 8" pitch*
Diameter of furnace, top *4' 5"* bottom *✓* length of furnace *5' 2"* thickness of plates *9/16"* description of joint *Welded*
Thickness of ~~furnace crown~~ *tube* plates *3/4" 7/16"* stayed by *stay tubes and 2" long stay* working pressure of shell by rules *11 1/4 lbs*
Working pressure of furnace by rules *100 lbs* diameter of uptake *✓* thickness of plates *✓* thickness of water tubes *✓*

SPARE GEAR. State the articles supplied:— *1 crank shaft (single throw) 4 propeller blades and 12 studs & nuts for same 1 slide valve spindle 1 pair of top and bottom end brasses 1 pair of main bearing brasses 1 H P valve face 1 Eccentric strap 100 condenser tubes 100 boiler tubes 2 sets of springs for each piston 2 con rod top & bottom end bolts & nuts 2 main bearing bolts 1 set of coupling bolts*
The foregoing is a correct description,
N. Napier & Sons. Manufacturer. *4 valves & seats for bilge pump & 8 for feed pump assorted bolts & nuts &c &c.*

General Remarks (State quality of workmanship, opinions as to class, &c.)
The above Engines and Boilers have been constructed under Special Survey; they are of good material and workmanship and are now in good order and safe working condition and eligible in my opinion to be noted in the Register Book **L M & 2-86**
The Shafting was examined at the works of Messrs R Napier & Sons while being rough turned and also when finished and appeared to be satisfactory

Certificate to be retained in London till the Builder calls for it.

The amount of Entry Fee .. £ *2* : - : - received by me,
Special £ *32* : *10* : -
Donkey Boiler Fee £ - : - : -
Certificate (if required) .. £ - : - : - *15/2/1886*
To be sent as per margin.
(Travelling Expenses, if any, £ *8/-*)

Committee's Minute

G L Hindmarsh
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

