

REPORT ON MACHINERY.

No. *9619* Port of *Glasgow* Received at London Office **FRIDAY 7 FEB 1890**
 No. in Survey held at *Dumbarton* Date, first Survey *18th April 1889* Last Survey *9th January 1890*
 Reg. Book. *69* on the *S. S. Africa* (Number of Visits *23*) Tons *2632*
 Master *Dumbarton* Built at *Dumbarton* By whom built *H. Denny Brothers* When built *1844-4*
 Engines made at *Dumbarton* By whom made *Denny & Co* when made *1890*
 Boilers made at *"* By whom made *"* when made *1890*
 Registered Horse Power *250* Owners *British India Steam Navigation Co* Port belonging to *Glasgow*

ENGINES, &c.—

Description of Engines *Quadruple (2 cranks)*
 Diameter of Cylinders *21" 40"* Length of Stroke *42"* No. of Rev. per minute _____ Point of Cut off, High Pressure _____ Low Pressure _____
 Diameter of Screw shaft _____ Diam. of Tunnel shaft _____ Diam. of Crank shaft journals _____ Diam. of Crank pin _____ size of Crank webs _____
 Diameter of screw _____ Pitch of screw _____ No. of blades _____ state whether moveable _____ total surface _____
 No. of Feed pumps _____ diameter of ditto _____ Stroke _____ Can one be overhauled while the other is at work _____
 No. of Bilge pumps _____ diameter of ditto _____ Stroke _____ Can one be overhauled while the other is at work _____
 Where do they pump from _____
 No. of Donkey Engines _____ Size of Pumps _____ Where do they pump from _____

Are at the bilge suction pipes fitted with roses _____ Are the roses always accessible _____ Are the sluices on Engine room bulkheads always accessible _____
 No. of bilge injections _____ and sizes _____ Are they connected to condenser, or to circulating pump _____
 How are the pumps worked _____
 Are all connections with the sea direct on the skin of the ship _____ Are they Valves or Cocks _____
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates _____ Are the discharge pipes above or below the deep water line _____
 Are they each fitted with a discharge valve always accessible on the plating of the vessel _____ Are the blow off cocks fitted with a spigot and brass covering plate _____
 What pipes are carried through the bunkers _____ How are they protected _____
 Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times _____
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges _____
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock _____
 Is the screw shaft tunnel watertight _____ and fitted with a sluice door _____ worked from _____

BOILERS, &c.—

Number of Boilers *Two* Description *Round double ended* Whether Steel or Iron *Steel*
 Working Pressure *180 lbs* Tested by hydraulic pressure to *360* Date of test *29th Oct 1889*
 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 _____
 No. of square feet of fire grate surface in each boiler *65 1/2* Description of safety valves *Direct Spring* No. to each boiler _____
 Area of each valve _____ Are they fitted with easing gear _____ No. of safety valves to superheater _____ area of each valve _____
 Are they fitted with easing gear _____ Smallest distance between boilers and bunkers or woodwork _____ Diameter of boilers *12' 0 1/2"*
 Length of boilers *14' 3"* description of riveting of shell long. seams *Double riveted* circum. seams *Double riveted* thickness of shell plates *1 1/4"*
 Diameter of rivet holes *1 3/8" & 1 1/4"* whether punched or drilled *Drilled* pitch of rivets *8"* Lap of plating _____
 Per centage of strength of longitudinal joint *84 7/10* working pressure of shell by rules *189 lbs* size of manholes in shell *17" x 13"*
 Size of compensating rings *Doubling plates fitted* No. of Furnaces in each boiler *Four*
 Outside diameter *3' 6"* length, top *5' 3"* bottom _____ thickness of plates *1 1/16"* description of joint *Corrugated* if rings are fitted _____
 Greatest length between rings _____ working pressure of furnace by the rules *190 lbs* combustion chamber plating, thickness, sides *9/16"* back _____ top *9/16"*
 Pitch of stays to ditto, sides *7' x 7 3/8"* back _____ top *7' x 7 1/2"* stays are fitted with nuts or riveted heads *Nuts* working pressure of plating by rules *190 lbs*
 Diameter of stays at smallest part *1 3/8" = 1.25"* working pressure of ditto by rules *198 lbs* end plates in steam space, thickness *1 1/16"*
 Pitch of stays to ditto *16 1/2" x 13"* how stays are secured *By double nuts* working pressure by rules *210 lbs* diameter of stays at smallest part *2 3/4" & 2 5/8" = 5"* working pressure by rules *209 lbs* Front plates at bottom, thickness *1 1/16"* Back plates, thickness _____
 Greatest pitch of stays _____ working pressure by rules _____ Diameter of tubes *3"* pitch of tubes *4 1/2" x 4 1/2"* thickness of tube plates, front *1 3/16"* back *1 3/16"* how stayed *By tubes* pitch of stays *9" x 9"* width of water spaces *about 6"*
 Diameter of Superheater or Steam chest *none* 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 _____

DONKEY BOILER—

Description

Round Multitubular

Made at

Dumbarton

by whom made

Denny & Co

when made

1890

where fixed

Working pressure

60 lbs

tested by hydraulic pressure to

120 lbs

Certificate

2373

fire grate area

description of safety

valves

No. of safety valves

area of each

if fitted with easing gear

if steam from main boilers

enter the donkey boiler

diameter of donkey boiler

8 1/2

length

13 1/4

description of riveting

Double riveted

Thickness of shell plates

1 3/8

diameter of rivet holes

1 3/16

whether punched or drilled

Drilled

pitch of rivets

3"

lap of plating

per centage of strength of joint

76 9/10

thickness of ~~shell~~ plates

1 9/16

stayed by

bar stays

Diameter of furnace, top

3.6

bottom

length of furnace

5 1/2

thickness of plates

3/16

description of joint

welded

Thickness of ~~main~~ plates

3/16

stayed by

Screw Stays

working pressure of shell by rules

Working pressure of furnace by rules

93 lbs

diameter of uptake

1

thickness of plates

1

thickness of water tubes

1

SPARE GEAR. State the articles supplied:—

The foregoing is a correct description,

Manufacturer.

General Remarks

(State quality of workmanship, opinions as to class, &c.)

These Boilers have

been made under Survey and tested in the usual way by Hydraulic pressure to double the working pressure. The workmanship and materials are of good description.

On account of the vessels having been withdrawn from classification in the Society's Register Book the Boilers have not been tried under Steam after being fitted on board.

The working pressure is 180 lbs per sq in and in my opinion the Boilers are suitable for the pressure.

In consequence of the incomplete nature of Survey a modified fee has been charged

It is submitted that as this vessel is not classed no further action is necessary with regard to the boilers

Ad
7. 2. 90

The amount of Entry Fee

£

received by me,

Special

£

5: 5:-

Donkey Boiler Fee

£

:

Certificate (if required)

£

:

To be sent as per margin.

(Travelling Expenses, if any, £)

Committee's Minute

James Hollison

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

Glyde District

Lloyd's Register
Foundation