

REPORT ON MACHINERY.

Port of *Greenock*

THURS. 26 MAY 1892

Received at London Office

Survey held at *Port Glasgow*Date, first Survey *16th Decr. 1891* Last Survey *24th May 1892*Appellment *"S.S. Blue Bell"*(Number of Visits *52*)Tons { Gross *561.86*
Net *344.10*Built at *Port Glasgow*By whom built *D. J. Dunlop & Co.*When built *1892*at *Port Glasgow*By whom made *D. J. Dunlop & Co.*when made *1892*at *do* By whom made *do do*when made *1892*Horse Power *96*Owners *The London, Antwerp & Continental Steam Navigation Co. Ltd.* Port belonging to *London.*Power as per Section 28 *89.*

, &c.— Description of Engines *Inverted Direct Acting Triple Expansion* No. of Cylinders *Three*
 Cylinders *15" 23" 38"* Length of Stroke *27"* Revolutions per minute *120* Diameter of Screw shaft *as per rule 6" 99*
 Tunnel shaft *as per rule 6" 66* Diameter of Crank shaft journals *7"* Diameter of Crank pin *7"* Size of Crank webs *9" x 5"*
 crew *9.0* Pitch of screw *11.0* No. of blades *Four* State whether moveable *no* Total surface *32 square feet*
 pumps *Two* Diameter of ditto *2"* Stroke *13"* Can one be overhauled while the other is at work *yes*
 pumps *Two* Diameter of ditto *3"* Stroke *13"* Can one be overhauled while the other is at work *yes*
 Engines *One* Sizes of Pumps *4" x 6" Stroke* No. and size of Suctions connected to both Bilge and Donkey pumps
 Room *Two & one in tunnel well 2"* In Holds, &c. *Two 2" in fore main hold & one 2" in*
 sections *One* sizes *3 3/4" boiler* Connected to condenser, or to circulating pump *Is a separate donkey suction fitted in Engine room & size 2"*
 ge 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*
 tions with the sea direct on the skin of the ship *yes* Are they Valves or Cocks *Both*
 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 *at little below*
 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*
 are carried through the bunkers *no* How are they protected *brass casing*
 , cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times *yes*
 e suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges *yes*
 stern tube, propeller, screw shaft, and all connections examined in dry dock *on ship before* Is the screw shaft tunnel watertight *yes*
 with a watertight door *yes* worked from *Top platform*

, &c.— (Letter for record *S*) Total Heating Surface of Boilers *1563 square feet*
 Description of Boilers *One, R.H. Multitubular* Working Pressure *160 lbs* Tested by hydraulic pressure to *320 lbs*
 12/4/92 Can each boiler be worked separately *no* Area of fire grate in each boiler *54 sq feet* No. and Description of safety valves to
Two Direct Spring Area of each valve *6 sq* Pressure to which they are adjusted *164 lbs* Are they fitted
 gear *yes* Smallest distance between boilers or uptakes and bunkers or woodwork *1 1/2"* Mean diameter of boilers *12" 11"*
 Material of shell plates *Steel* Thickness *1 1/2"* Description of riveting: circum. seams *Lap double* long. seams *2 B straps triple*
 rivet holes in long. seams *1 3/16"* Pitch of rivets *8 1/2" x 4 1/2"* Lap of plates or width of butt straps *17 3/4"*
 of strength of longitudinal joint *rivets 8.6.3 plate 8.6* Working pressure of shell by rules *162 lbs* Size of manhole in shell *16 3/4" x 12 3/4"*
 compensating ring *31" x 1 1/2"* No. and Description of Furnaces in each boiler *Three plain* Material *Steel* Outside diameter *39"*
 main part *top 6" 9" bottom 9" 10"* Thickness of plates *crown 3 1/2" 3" bottom 3 1/2" 4"* Description of longitudinal joint *2 B straps* No. of strengthening rings *4 in bottom*
 measure of furnace by the rules *162 lbs* Combustion chamber plates: Material *Steel* Thickness: Sides *9"* Back *9"* Top *9"* Bottom *3 1/4"*
 ys to ditto: Sides *7 1/2" x 7 1/2"* Back *7 1/2" x 7 1/2"* Top *7 1/2" x 7 1/2"* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *194 lbs*
 stays *Steel* Diameter at smallest part *1 1/2"* Area supported by each stay *56 sq* Working pressure by rules *170 lbs* End plates in steam space:
Steel Thickness *1 1/2"* Pitch of stays *16" x 16"* How are stays secured *Double nuts* Working pressure by rules *162 lbs* Material of stays *Steel*
 at smallest part *2 1/2" 2 1/2"* Area supported by each stay *256 sq* Working pressure by rules *170 lbs* Material of Front plates at bottom *Steel*
 Material of Lower back plate *Steel* Thickness *3 1/2" 3"* Greatest pitch of stays *15"* Working pressure of plate by rules *169 lbs*
 of tubes *3 3/4"* Pitch of tubes *5" x 5"* Material of tube plates *Steel* Thickness: Front *7/8" 5/8"* Back *1 1/2"* Mean pitch of stays *12 1/2"*
 oss wide water spaces *14 1/2"* Working pressures by rules *240 lbs* Girders to Chamber tops: Material *Steel* Depth and
 of girder at centre *7" x 15"* Length as per rule *30"* Distance apart *7 1/2"* Number and pitch of Stays in each *Three 7 1/2" pitch*
 pressure by rules *179 lbs* Superheater or Steam chest; how connected to boiler *no* Can the superheater be shut off and the boiler worked
 Diameter — Length — Thickness of shell plates — Material — Description of longitudinal joint — Diam. of rivet
 Pitch of rivets — Working pressure of shell by rules — Diameter of flue — Material of flue plates — Thickness —
 with rings — Distance between rings — Working pressure by rules — End plates: Thickness — How stayed —
 pressure of end plates — Area of safety valves to superheater — Are they fitted with easing gear —

DONKEY BOILER—

Description *Round Upright*

Made at *St. Margarets*

By whom made *D. J. Dumbleton*

When made *1892*

Where fixed *At the hold*

Working pressure *80 lb* tested by hydraulic pressure to *160 lb*

No. of Certificate *352*

Fire grate area *17 1/2 sq ft*

Description of safety valves *Direct spring*

No. of safety valves *Two*

Area of each *4 1/2*

Pressure to which they are adjusted *80 lb*

If fitted with easing gear *yes*

If steam from main boilers can enter the donkey boiler *no*

Diameter of donkey boiler *5 1/2*

Length *8 1/2*

Material of shell plates *Steel*

Thickness *7/16*

Description of riveting long seams *Lap double*

Diameter of rivet holes *1 1/8*

Whether punched or drilled *drilled*

Pitch of rivets *3*

Lap of plating *4 1/2*

Per centage of strength of joint *63*

Rivets *63*

Thickness of shell crown plates *5/8*

Radius of do. *6 1/2*

No. of Stays to do. *Six*

Dia. of stays *1 1/2*

Diameter of furnace Top *4 1/2*

Bottom *4 1/8*

Length of furnace *4 1/2*

Thickness of furnace plates *7/16*

Description *Joint*

joint *Lap single*

Thickness of furnace crown plates *9/16*

Stayed by *as above*

Working pressure of shell by rules *88 lb*

Working pressure of furnace by rules *80 lb*

Diameter of uptake *1 3/8*

Thickness of uptake plates *7/16 (iron)*

Thickness of water tubes *3/8 (iron)*

SPARE GEAR.

State the articles supplied:—

2 top & 2 bottom end bolts & nuts for connecting rods. 2 main bearing bolts. 1 set coupling bolts. 1 set of feed & bilge pump valves. Escape valve springs for cylinders & feed pump. 1 propeller. 6 tubes & 25 ferrules for surface Condenser. 6 tubes & 7 stoppers for main boiler. a quantity of bolts, nuts & iron rivets.

The foregoing is a correct description,

Manufacturer.

David J. Dumbleton

General Remarks

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

These Engines and Boilers have been specially surveyed during construction. Workmanship good. Main steam pipe tested by hydraulic pressure to 320 lbs per sq. inch. Test satisfactory. Shafts examined when being turned and found apparently sound. The Engines and Boilers are satisfactorily fitted in vessel and have been tested under full steam. They are now in good order and safe working condition. And are in my opinion eligible to be now noted in Register Book. LMC. 5.92.

It is submitted that this vessel is eligible for THE RECORD + LMC 5-92
MA 26-5-92

MACMILLAN CERTIFICATE WRITTEN.

Certificate (if required) to be sent to

Greenock Office.

The amount of Entry Fee..

£

1 : 0 : 0

When applied for,

Special

£

13 : 7 : 0

25th May 1892

Donkey Boiler Fee

£

:

When received,

Travelling Expenses (if any) £

£

:

25th May 1892

Committee's Minute

FRI 27 MAY 1892

Assigned

+ LMC 5,92

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

Greenock District.



Lloyd's Register Foundation