

REPORT ON MACHINERY.

5381

No. 5381

Port of *Dundee*

RECEIVED 19 JUNE 1890

No. in Survey held at *Dundee*
Reg. Book.

Date, first Survey *4 September* Last Survey *10th June* 1890.

(Number of Visits *23*)

on the *Iron & Steel S. Herondelle*

Tons *1607*
847

Master *Ch. Loring* Built at *Dundee* By whom built *Gourlay Bros & Co.* When built *1890.*

Engines made at *Dundee* By whom made *Gourlay Bros & Co.* when made *1890.*

Boilers made at *Dundee* By whom made *Gourlay Bros & Co.* when made *1890.*

Registered Horse Power *370 (by rule)* Owners *General Steam Navigation Co.* Port belonging to *London.*

ENGINES, &c.—

Description of Engines *Triple expansion. Surface Condensing*

Diameter of Cylinders *28" x 44" x 71"* Length of Stroke *48* No. of Rev. per minute *76* Point of Cut off, High Pressure *27"* Low Pressure *28"*

Diameter of Screw shaft *14"* Diam. of Tunnel shaft *13 1/2"* Diam. of Crank shaft journals *14"* Diam. of Crank pin *14"* size of Crank webs *10" x 24"*

Diameter of screw *15' 3"* Pitch of screw *23' 8"* No. of blades *4* state whether moreable *No* total surface *74 sq. ft*

No. of Feed pumps *Two* diameter of ditto *3 3/8"* Stroke *33"* Can one be overhauled while the other is at work *Yes*

No. of Bilge pumps *Two* diameter of ditto *3 3/8"* Stroke *33"* Can one be overhauled while the other is at work *Yes*

Where do they pump from *sea, all holds, engine room, stokehold and tunnel.*

No. of Donkey Engines *Two* Size of Pumps *9" x 6" x 4" x 8" x 8" x 6 1/2"* Where do they pump from *sea, tanks, hold, feed heater, from all holds, engine room, overboard, through condenser & on deck.*

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 *One* and sizes *5"* Are they connected to condenser, or to circulating pump *Circulating pump*

How are the pumps worked *from low pressure cylinder.*

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 *Bilge & tank pipes* How are they protected *by strong boxes*

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 7th May 1890*

Is the screw shaft tunnel watertight *Yes* and fitted with a sluice door *Yes* worked from *deck.*

BOILERS, &c.—

Number of Boilers *Two* Description *Circular tubular* Whether Steel or Iron *Steel, letter of material S.*

Working Pressure *160 lb* Tested by hydraulic pressure to *320 lb* Date of test *12/4/90.*

Description of superheating apparatus or steam chest *✓*

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 *114.7 sq. ft* Description of safety valves *Springs* No. to each boiler *Two*

Area of each valve *11.04 sq. in.* Are they fitted with easing gear *Yes* No. of safety valves to superheater *✓* area of each valve *✓*

Are they fitted with easing gear *✓* Smallest distance between boilers and *ships' sides* *4' 3"* Diameter of boilers *13' 6"*

Length of boilers *16' 0"* description of riveting of shell long. seams *Double straps* circum. seams *Lap* Thickness of shell plates *1 1/32"*

Diameter of rivet holes *15/16"* whether punched or drilled *Drilled* pitch of rivets *8 1/4"* Lap of plating *20' 8" straps*

Per centage of strength of longitudinal joint *85% x 99%* working pressure of shell by rules *166 lb* size of manholes in shell *17" x 13"*

Size of compensating rings *4" x 4" x 1/4"* No. of Furnaces in each boiler *Six*

Outside diameter *3' 3/8"* length, top *6' 4"* bottom *6' 4"* thickness of plates *9/16"* description of joint *Ribbed* if rings are fitted *Ribbed*

Greatest length between *rings* *9"* working pressure of furnace by the rules *179 lb* combustion chamber plating, thickness, sides *9/16"* back *✓* top *9/16"*

Pitch of stays to ditto, sides *7 1/4"* back *✓* top *7 1/4"* If stays are fitted with nuts or riveted heads *Nuts* working pressure of plating by rules *162 lb*

Diameter of stays at smallest part *1 1/8"* working pressure of ditto by rules *197 lb* end plates in steam space, thickness *1 1/32"*

Pitch of stays to ditto *15 1/2" x 15 1/2"* how stays are secured *Double nuts* working pressure by rules *178 lb* diameter of stays at smallest part *2 3/8"*

working pressure by rules *105 lb* Front plates at bottom, thickness *11/16"* Back plates, thickness *✓*

Greatest pitch of stays *✓* working pressure by rules *✓* Diameter of tubes *3 1/4"* pitch of tubes *4 1/2" x 4 1/2"* thickness of tube plates, front *3/4"* back *29/32"*

how stayed *scissors* pitch of stays *9" x 9"* width of water spaces *7"*

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 *✓*

SPARE GEAR. State the articles supplied:— 1 propeller and shaft, 1 eccentric strap complete, 12 piston bolts
1 pair of main bearing brases, 1 slide block rod, 1 air pump bucket rod, 3 main bearing bolts & nuts
" " top end connecting rod brases, 1 set of coupling bolts " " head valve, seat & guard, 2 safety valve springs
" " bottom " " " 2 top end connecting rod bolts & nuts, 25 boiler tubes, 1 set of fire bars
The foregoing is a correct description, bottom end " " " Various sizes of tools etc.
Goulden Brothers & Co. Manufacturer.

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

The machinery of this vessel has been built under special
in accordance with the approved plans sent herewith.
boilers are constructed of steel, which has been tested
the steelworks by one of the Society's Surveyors, and
certificates of tests are annexed.

The safety valves have been seen under steam.

The materials and workmanship are good.

The machinery is in good condition and safe working order
and this vessel is in my opinion eligible to be classed
in the Registerbook with the Notification **L.M.O. G. 90.**

$$\frac{0}{2} \left\{ \frac{11^2 \times \sqrt{48}}{100} + \frac{5894 \cdot 8}{15} \right\} = 370 \text{ HP}$$

It is submitted that this vessel is eligible to have a License so recorded.

19.6.90

The amount of Entry Fee . . . £ 3 : 0 : received by me.

Special £ 38 : 10 :

Donkey Boiler Fee £ : :

Certificate (if required) . . £ : :

To be sent as per margin.

(Travelling Expenses, if any, £)

R. V. Kendall 1020
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

TUES 24 JUNE 1890

+ Lm 6 b/90

Lloyd's Reg
Foundation