

REPORT ON MACHINERY.

No. *5969*

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

Date, first Survey *Jan 10th 1882* Last Survey *Jan 26th 1883*

on the *Screw Steamer Kirby Hall*

Tons *2620.5*
1759

Master *G. Hambury*

Built at *Glasgow*

When built *1882*

Engines made at *Glasgow*

By whom made *The London & Glasgow Co.* When made *1882*

Boilers made at *Do.*

By whom made *do* when made *1882*

Registered Horse Power *300*

Owners *Alexander & Raddcliffe*

Port belonging to *Liverpool*

ENGINES, &c.—

Description of Engines *Inverted direct acting. Compound. Surface Condensing.*
Diameter of Cylinders *36" x 70"* Length of Stroke *48"* No. of Rev. per minute *65* Point of Cut off, High Pressure *7/8"* Low Pressure *7/8"*
Diameter of Screw shaft *12 1/4"* Diameter of Tunnel shaft *11 3/4"* Diameter of Crank shaft journals *12 1/4"* Diameter of Crank pin *12 1/4"* size of Crank webs *8 x 14"*
Diameter of screw *16-0"* Pitch of screw *18 ft.* No. of blades *Four* state whether moveable *Long* total surface *61 1/2 sq ft.*
No. of Feed pumps *Two* diameter of ditto *3 1/2"* Stroke *27"* Can one be overhauled while the other is at work *yes*
No. of Bilge pumps *Two* diameter of ditto *3 1/2"* Stroke *27"* Can one be overhauled while the other is at work *no*
Where do they pump from *Holds & Engine room bilges.*
No. of Donkey Engines *One & Hand* Size of Pumps *4 1/2" x 8" stroke* Where do they pump from *Holds & Engine Room.*
4" x 8" do

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 *By levers from Low Pressure Engine.*
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 pipe Forward.* How are they protected *By wood.*
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* *Before launching.*
Is the screw shaft tunnel watertight *yes.* and fitted with a sluice door *yes* worked from *Engine room above Main deck.*

BOILERS, &c.—

Number of Boilers *Two* Description *Cylindrical, Multitubular. Double ended.*
Working Pressure *80 lbs* Tested by hydraulic pressure to *160 lbs* Date of test *Dec 2nd 1882.*
Description of ~~superheating apparatus~~ on steam chest *Horizontal. Inside of smoke box.*
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 *80* Description of safety valves *Direct springs.*
No. to each boiler *Two* area of each valve *19.6 sq ins* 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 bunkers *on woodwork* *12 ins*
Diameter of boilers *11-3"* Length of boilers *16-6"* description of riveting of shell long. seams *Butt, double rivet circum. seams* *Lap, double*
Thickness of shell plates *19/32"* diameter of rivet holes *1/16"* whether punched or drilled *Drilled* pitch of rivets *4 3/8"*
Lap of plating *11" Butt & lap* per centage of strength of longitudinal joint *75* working pressure of shell by rules *82 1/2 lbs*
Size of manholes in shell *16 x 12"* size of compensating rings *Angle irons 4 x 3 x 1/2"*
No. of Furnaces in each boiler *Four* outside diameter *3-7"* length, top *6-0"* bottom *15-10"*
Thickness of plates *1/2"* description of joint *Butt.* if rings are fitted *yes* greatest length between rings *5-6"*
Working pressure of furnace by the rules *87 lbs*
Combustion chamber plating, thickness, sides *15/32"* back *—* top *15/32"*
Pitch of stays to ditto sides *8 1/2"* back *—* top *8 1/2" x 8 7/8"*
If stays are fitted with nuts or riveted heads *Nuts* working pressure of plating by rules *86 lbs*
Diameter of stays at smallest part *1 3/8" screw* working pressure of ditto by rules *96 lbs*
End plates in steam space, thickness *13/16"* pitch of stays to ditto *16 1/2" x 15"* how stays are secured *Nuts*
Working pressure by rules *87 lbs* diameter of stays at smallest part *2 3/8"* working pressure by rules *107 lbs*
Front plates at bottom, thickness *5/8"* Back plates, thickness *—* greatest pitch of stays *—* working pressure by rules *—*

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Diameter of tubes $3\frac{1}{2}$ " pitch of tubes $4\frac{3}{4}$ " thickness of tube plates, front $\frac{11}{16}$ " back $\frac{7}{8}$ "
How stayed *Tubes* pitch of stays $14\frac{1}{2}$ " width of water spaces 6"
Diameter of Superheater or Steam chest 3-6 length 16-6
Thickness of plates $\frac{15}{32}$ " description of longitudinal joint *Double* diameter of rivet holes $\frac{13}{16}$ " pitch of rivets $2\frac{7}{8}$ "
Working pressure of shell by rules 128lbs. 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 $\frac{9}{16}$ " How stayed *One stay 2 1/4" screw*.
~~Superheater~~ or steam chest; how connected to boiler *Neck. 16" dia Double riveted*

DONKEY BOILER— Description *Flat sided Multitubular*
Made at *Glasgow* By whom made *The London & Glasgow Co* when made 1882. Tested *14th November*
Where fixed *On deck* working pressure 60lbs Tested by hydraulic pressure to 120lbs No. of Certificate *941*
Fire grate area *18 1/2 sq ft* Description of safety valves *Direct spring* No. of safety valves *One* area of each *9 1/2 sq ins*
If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No*
Diameter of donkey boiler *4-6 x 10-0* length *8-6* description of riveting *Double, lap*
thickness of shell plates $\frac{7}{16}$ " diameter of rivet holes $\frac{13}{16}$ " whether punched or drilled *Punched*
pitch of rivets $3\frac{1}{8}$ " lap of plating $4\frac{1}{2}$ " per centage of strength of joint 75
thickness of ~~crown~~ plates $\frac{7}{16}$ stayed by *1 1/4 stays*
Diameter of furnace, ~~top~~ *3-14* bottom — length of furnace *6-0*
thickness of plates $\frac{7}{16}$ description of joint *Butt*
thickness of furnace crown plates — stayed by *Cylindrical furnace*
Working pressure of shell by rules 60lbs working pressure of furnace by rules 68lbs.
diameter of uptake — thickness of plates — thickness of water tubes —

The foregoing is a correct description,
for the London & Glasgow Engineering Co
15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100
Manufacturer.

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

These Engines & Boilers have been constructed under special survey, they are of good material & workmanship they have been well fitted on board & satisfactorily tested under steam. I am therefore of opinion that they are eligible to be classed "ALLOYD'S M.C." 1-83 in the Register Book.

It is submitted that this vessel is due to leave the registration + 2 m c 183 recorded

The amount of Entry Fee .. £ 3 : 0 : 0 received by me,
Special £ 35 : 0 : 0
Certificate (if required) .. £ *Grates* 5/1 1883
To be sent as per margin.

(Travelling Expenses, if any, £)
Committee's Minute Tuesday 9th January, 1883.

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

