

REPORT ON MACHINERY.

No. 5969

(Received at London Office 8th Jan 1883)

No. in Survey held at Glasgow
Reg. Book.

Date, first Survey Jan 10th 1882 Last Survey Jan 6th 1883

on the Screw Steamer "Tirley 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 5/8" Low Pressure 5/8"
 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 None 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 pipes 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~~ 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 128 lbs. 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 60 lbs Tested by hydraulic pressure to 120 lbs No. of Certificate *941*
 Fire grate area $18\frac{1}{2}$ sq ft Description of safety valves *Direct spring* No. of safety valves *One* area of each *9.6 sq ins*
 If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No*
 Diameter of donkey boiler $4-6 \times 10-0$ 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 ~~cover~~ plates $\frac{7}{16}$ stayed by *1 1/4" stays*
 Diameter of furnace, ~~top~~ $3-4$ 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 60 lbs working pressure of furnace by rules 68 lbs.
 diameter of uptake — thickness of plates — thickness of water tubes —

The foregoing is a correct description,
As the London & Glasgow Engineering Manufacturer.
Wm. Stephenson & Co. Glasgow

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 admitted that this vessel is due to have the registration + 2 m.c. 1-83 recorded

WALTER E. POLSON

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

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

Committee's Minute Tuesday 9th January, 1883.

