

REPORT ON MACHINERY.

No. 6559

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

Date, first Survey *Oct. 1st 1883* Last Survey *June 10th 1884*
(Number of Visits *23*)

on the *Swire Screw Steamer "Australia"*

Tons *459*
260

Master *Mr. Farlane* Built at *Dumbarton* By whom built *Burrell & Son*

When built *1884*

Engines made at *Dumbarton* By whom made *M. Paul & Coy*

when made *1884*

Boilers made at *"* By whom made *"*

when made *1884*

Registered Horse Power *77* Owners *Captain Mr. Farlane*

Port belonging to *Glasgow*

ENGINES, &c.—

Description of Engines *Compound Inverted Direct acting*
Diameter of Cylinders *16" & 30"* Length of Stroke *22"* No. of Rev. per minute *130* Point of Cut off, High Pressure *.5* Low Pressure *.45*
Diameter of Screw shaft *5 1/2"* Diam. of Tunnel shaft *5 1/2"* Diam. of Crank shaft journals *5 3/4"* Diam. of Crank pin *5 1/4"* size of Crank webs *7 1/4" x 4"*
Diameter of screw *4 1/2"* Pitch of screw *9" x 9"* No. of blades *four* state whether moveable *solid* total surface *9.5 sq ft*
No. of Feed pumps *One* diameter of ditto *3"* Stroke *15"* Can one be overhauled while the other is at work *Yes*
No. of Bilge pumps *One* diameter of ditto *3"* Stroke *15"* Can one be overhauled while the other is at work *Yes*
Where do they pump from *All Compartments*
No. of Donkey Engines *One* Size of Pumps *8" x 4" x 8" stroke* Where do they pump from *Sea Bidge & Hotwell*

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* to each set of Engines *22"* Are they connected to condenser, or to circulating pump *To Circulating*
How are the pumps worked *By Levers*
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 pipes & Hold* How are they protected *Good casing*
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 *On ship before launching*
Is the screw shaft tunnel watertight *Yes* and fitted with a sluice door *Yes* worked from *Upper platform*

BOILERS, &c.—

Number of Boilers *One* Description *Round Horizontal* Whether Steel or Iron *Steel*
Working Pressure *80 lbs* Tested by hydraulic pressure to *160 lbs* Date of test *4 April 1884*
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 *50 ft* Description of safety valves *Direct Spring* No. to each boiler *Two*
Area of each valve *12.0* 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 or woodwork *10"* Diameter of boilers *13' 6"*
Length of boilers *9' 9"* description of riveting of shell long. seams *Double riveted* circum. seams *Double riveted* Thickness of shell plates *2 1/2"*
Diameter of rivet holes *15/16"* whether punched or drilled *Drilled* pitch of rivets *4' 9"* Lap of plating *Butt straps*
Per centage of strength of longitudinal joint *80%* working pressure of shell by rules *80 lbs* size of manholes in shell *16" x 12"*
Size of compensating rings *8" x 13/16"* No. of Furnaces in each boiler *Three*
Outside diameter *3' 5"* length, top *6' 2 1/2"* bottom *9 ft* thickness of plates *9/16"* description of joint *Double butt straps* rings are fitted *filled*
Greatest length between rings *—* working pressure of furnace by the rules *91 lbs* combustion chamber plating, thickness, sides *9/16"* back *9/16"* top *9/16"*
Pitch of stays to ditto, sides *8 1/4" x 9"* back *8 1/4" x 9"* top *8 1/2" x 9"* If stays are fitted with nuts or riveted heads *Nuts* working pressure of plating by rules *80 lbs* Diameter of stays at smallest part *1 1/4"* working pressure of ditto by rules *80 lbs* end plates in steam space, thickness *13/16"*
Pitch of stays to ditto *1 1/4" x 1 1/4"* how stays are secured *By double nut* working pressure by rules *80 lbs* diameter of stays at smallest part *2 1/4"* working pressure by rules *83 lbs* Front plates at bottom, thickness *1 1/16"* Back plates, thickness *1 1/16"*
Greatest pitch of stays *1 1/4" x 8 1/4"* working pressure by rules *—* Diameter of tubes *3 1/4"* pitch of tubes *4 1/2"* thickness of tube plates, front *1 1/16"* back *1 1/16"* how stayed *By tubes* pitch of stays *13 1/2" x 9"* width of water spaces *6 1/2"*
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 *—*

GLS149-0202

DONKEY BOILER—

Description

Round Vertical

Made at *Dumbarton*

by whom made

*M. Paul & Co*when made *1884*

where fixed

*In Stechhold*Working pressure *50 lbs*tested by hydraulic pressure to *100 lbs*No. of Certificate *1363*fire grate area *4 ft*

description of safety

valves *Direct Spring*No. of safety valves *One*area of each *4"*if fitted with easing gear *Yes*

if steam from main boilers can

enter the donkey boiler *No*diameter of donkey boiler *3' 9"*length *8 ft*description of ribbing *Single*Thickness of shell plates *9/16"*diameter of rivet holes *1 3/16"*whether punched or drilled *punched*pitch of rivets *2 3/4"*lap of plating *2 1/2"*per centage of strength of joint *61.5%*thickness of crown plates *9/16"*stayed by *Uptake*Diameter of furnace, top *2' 8"*bottom *3' 3"*length of furnace *5' 3"*thickness of plates *9/16"*description of joint *lap*Thickness of furnace crown plates *9/16"*stayed by *Fished to 2' 8" radius*working pressure of shell by rules *48 lbs*Working pressure of furnace by rules *46 lbs*diameter of uptake *9"*thickness of plates *9/16"*thickness of water tubes *9/16" x 5 1/2"*

SPARE GEAR. State the articles supplied:—

Two Connecting rod bolts (top & bottom) 1 set coupling bolts, 2 main bearing bolts, 1 set piston springs, 1 set air & air pump valves, 1 feed & 1 bilge valve with seat, 2 propellers, right & left hand, assortment of iron & bolts

The foregoing is a correct description,

Matthew Paul & Co Manufacturer

General Remarks

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

*These Engines & Boilers are of good workmanship & materials and are now in good order & safe working condition and eligible in my opinion to be noted in the Register Book. Lloyd's M.C. 6.84 Tracing of Boiler and reports on steel tests appended.*The amount of Entry Fee *£ 1 : 0 : 0* received by me.Special *£ 11 : 11 : 0*Donkey Boiler Fee *£ 0 : 0 : 0*Certificate (if required) *£ 0 : 0 : 0* *11/6/1884*

To be sent as per margin.

(Travelling Expenses, if any, £ - *8/-*)

Committee's Minute

FRIDAY 13 JUNE 1884

James Mollison
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.*Clyde District*