

# REPORT ON MACHINERY

No. 19441

Received at London Office 13/7/86

No. in Survey held at Lowcastle

Date, first Survey 3<sup>rd</sup> June 1855 Last Survey 24<sup>th</sup> June 1886

Reg. Book.

(Number of Visits 40)

503 on the S S Port-Pirie

Tons 3109  
2040

Master Hepworth Built at Lowcastle By whom built R & W Hawthorn, Leslie & Co. When built 1856

Engines made at Lowcastle By whom made Major Wigham Richardson when made 1856

Boilers made at Do By whom made Do when made 1856

Registered Horse Power 450 Owners Wm Milburn & Co Port belonging to London

## ENGINES, &c.—

Description of Engines Invented triple cylinder Surface condensing

Diameter of Cylinders 29.44.74 Length of Stroke 48 No. of Rev. per minute 70 Point of Cut off, High Pressure 70% Low Pressure 50%

Diameter of Screw shaft 14 Diam. of Tunnel shaft 15 1/2 Diam. of Crank shaft journals 13 3/4 Diam. of Crank pin 13 3/4 size of Crank webs 2 1/2 x 9 1/2

Diameter of screw 15-9 Pitch of screw 20-6 No. of blades 4 state whether moveable yes total surface 86 ft

No. of Feed pumps 2 diameter of ditto 3 3/8 Stroke 29 Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 diameter of ditto 4 1/4 Stroke 29 Can one be overhauled while the other is at work yes

Where do they pump from Sea Tanks and all bilges

No. of Donkey Engines Two Size of Pumps 9 x 10 & 4 x 9 Where do they pump from Sea tanks

Holds & all bilges and fresh water condensers

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 1 and sizes 4 Are they connected to condenser, or to circulating pump in

How are the pumps worked Lever over condenser

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 at line

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 none How are they protected —

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 none

Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from top platform of engine room

## BOILERS, &c.—

Number of Boilers Three Description Double ended Whether Steel or Iron Steel

Working Pressure 150 Tested by hydraulic pressure to 300 Date of test 29<sup>th</sup> December 1885

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 none

No. of square feet of fire grate surface in each boiler 68 1/2 Description of safety valves Spring No. to each boiler two

Area of each valve 70" 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 18 inches Diameter of boilers 11-0

Length of boilers 16-0 description of riveting of shell long. seams 2 Part steps circum. seams lap hills down Thickness of shell plates 1

Diameter of rivet holes 1 1/2 whether punched or drilled Drill pitch of rivets 5 1/8 Lap of plating lap 1-0 1/4

Per centage of strength of longitudinal joint 84% working pressure of shell by rules 155 1/2 size of manholes in shell 16 x 12

Size of compensating rings 6 1/2 x 1 1/8 No. of Furnaces in each boiler 4

Outside diameter 36 length, top 6-0 bottom 6-0 thickness of plates 1 3/32 description of joint Corrugated if rings are fitted —

Greatest length between rings — working pressure of furnace by the rules 152 combustion chamber plating, thickness, sides 1 3/32 back — top 1 3/32

Pitch of stays to ditto, sides 8 7/16 back — top 8 7/16 If stays are fitted with nuts or riveted heads nuts working pressure of plating by rules 152 Diameter of stays at smallest part 1 3/8 working pressure of ditto by rules 160 end plates in steam space, thickness 3/16

Pitch of stays to ditto 16 3/16 how stays are secured 2 nuts working pressure by rules 210 diameter of stays at smallest part 2 3/8 working pressure by rules 150 Front plates at bottom, thickness 3/8 Back plates, thickness —

Greatest pitch of stays — working pressure by rules — Diameter of tubes 3 1/4 pitch of tubes 4 1/2 x 1 3/8 thickness of tube plates, front 1 3/16 back 3/4 how stayed Tubes pitch of stays 9" width of water spaces 6"

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 —

Report recd 28/8/86 sent to Genl. 12/1/86

8910-56LJMN



**DONKEY BOILER**— Description *Cylindrical (all steel)*  
 Made at *Gatehead* by whom made *Clark Chapman & Parsons* when made *26.4.86* where fixed *Stokehold*  
 Working pressure *75* tested by hydraulic pressure to *150* No. of Certificate *2094* fire grate area *22* # description of safety  
 valves *Spring* No. of safety valves *2* area of each *7 1/2"* if fitted with easing gear *yes* if steam from main boilers can  
 enter the donkey boiler *on* diameter of donkey boiler *8-0* length *8-6* description of riveting *Double Lap*  
 Thickness of shell plates *7/32* diameter of rivet holes *1* whether punched or drilled *punched* pitch of rivets *3 1/4* lap of plating  
 per centage of strength of joint *69* thickness of ~~end~~ *end* plates *7/16* stayed by *3 Annular 15" pitch & riveted washers*  
 Diameter of furnace, ~~top~~ *28* ~~bottom~~ *two* length of furnace *6-0* thickness of plates *1/2* description of joint *Single Lap*  
 Thickness of furnace ~~end~~ *end* plates *7/16* stayed by *1 1/8 stays 8x9 pitch* working pressure of shell by rules *86*  
 Working pressure of furnace by rules *133* diameter of ~~aperture~~ *aperture* *30* thickness of plates *7/16* ~~with~~ *with* ~~stays~~ *3 stays*  
*on crown 1 1/8 diameter and dome double riveted to*

**SPARE GEAR.** State the articles supplied:—  
*As per Society's requirements.*

The foregoing is a correct description,  
 for *Wigham Richardson* Manufacturer.  
*Wigham*

**General Remarks** (State quality of workmanship, opinions as to class, &c.)  
*The machinery of this vessel has been constructed under special survey. The materials and workmanship are sound and satisfactory and eligible in my opinion to have the notation of Lloyd's M.C. 6-8e in the Society's Register Books.*

*It is admitted that this vessel is shabby to have the notation + time to be recorded.*

The amount of Entry Fee .. £ 3 : - - *not used at receipt*  
 Special .. £ 42 : 10 : - } *received by me*  
 Donkey Boiler Fee .. £ - : - : - } *F.P.*  
 Certificate (if required) .. £ *frank* : - : - } *23.9.86*  
 (Travelling Expenses, if any, £ .. )

Committee's Minute .. **FRIDAY 16 JULY 1886**  
*John Duckworth*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.  
*Newcastle*