

# REPORT ON MACHINERY.

No. 4142

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No. in Survey held at Dumbarton Date, first Survey 19<sup>th</sup> Jan<sup>y</sup> Last Survey 12<sup>th</sup> Oct<sup>r</sup> 1885  
 Reg. Book. on the Screw Steamer "Barcoo" (Number of Visits 35) Tons 1504.56  
 Master M. M. Ingram Built at Dumbarton By whom built Mr Denny & Co When built 1883  
 Engines made at Dumbarton By whom made Denny & Co when made 1885  
 Boilers made at Dumbarton By whom made " when made 1883  
 Registered Horse Power 308 Owners Queensland Steam Ship Co Port belonging to London

## ENGINES, &c.—

Description of Engines Triple Expansive (Three Cylinders)  
 Diameter of Cylinders 25" 41" 68" Length of Stroke 48" No. of Rev. per minute 94 Point of Cut off, High Pressure — Low Pressure —  
 Diameter of Screw shaft 12 3/4" Diam. of Tunnel shaft 11 1/2" Diam. of Crank shaft journals 12 3/4" Diam. of Crank pin 18" size of Crank webs 19" x 9"  
All shafting turned & finished at the Engineers Works  
 Diameter of screw 13" 6" Pitch of screw 19 ft No. of blades — state whether moveable Yes total surface 50.4 ft<sup>2</sup>  
 No. of Feed pumps Two diameter of ditto 4 1/4" Stroke 24" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps Two diameter of ditto 4 1/4" Stroke 24" Can one be overhauled while the other is at work Yes  
 Where do they pump from All Compartments  
 No. of Donkey Engines Four Size of Pumps 4" Cyl 8" x 10" Stroke Where do they pump from Ballast Tanks & Bilges  
Two 8" 4" x 6" 1/4" Sea Hotwell & Bilge & Bunks  
One 4" x 6" Sea  
 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 condensers, or to circulating pump To Circulating  
 How are the pumps worked By Lever  
 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 to fore hold How are they protected Iron 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 One 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 Two Description Round double end Whether Steel or Iron Steel  
 Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs Date of test 10<sup>th</sup> August 1885  
 Description of superheating apparatus Longitudinal Receiver  
 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 96 ft<sup>2</sup> Description of safety valves Direct Spring No. to each boiler Three  
 Area of each valve 8.9" 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 about 12" Diameter of boilers 13" 2 1/16"  
 Length of boilers 14 ft description of riveting of shell long. seams Double butt straps circum. seams Double riveted Thickness of shell plates 1 1/4"  
 Diameter of rivet holes 1 1/4" whether punched or drilled Drilled pitch of rivets 6 1/2" x 3" Lap of plating Staple 20" x 1 1/4"  
 Per centage of strength of longitudinal joint 80% working pressure of shell by rules 164 lbs size of manholes in shell 17" x 13"  
 Size of compensating rings Doubling plates No. of Furnaces in each boiler Four  
 Outside diameter 4' 2 1/4" length, top 6' 6" bottom — thickness of plates 1 1/16" description of joint Corrugated if rings are fitted —  
 Greatest length between rings — working pressure of furnace by the rules 160 lbs combustion chamber plating, thickness, sides 9/16" back — top 9/16"  
 Pitch of stays to ditto, sides 4 3/4" x 6 1/4" back top 8" x 6 1/4" if stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 182 Diameter of stays at smallest part 1 3/8" working pressure of ditto by rules 184 end plates in steam space, thickness 1 1/16"  
 Pitch of stays to ditto 16" x 12" how stays are secured by double nuts working pressure by rules 180 lbs diameter of stays at smallest part 2 3/4" working pressure by rules 191 lbs Front plates at bottom, thickness 1 1/16" Back plates, thickness —  
 Greatest pitch of stays — working pressure by rules — Diameter of tubes 4" pitch of tubes 5 1/4" x 5 1/4" thickness of tube plates, front 1 1/16" back 1 1/16" how stayed by tubes pitch of stays 20 1/2" width of water spaces Double butt  
 Diameter of Superheater or Steam chest 3' 1 1/2" length 6' 9" thickness of plates 9/16" description of longitudinal joint Double riveted diam. of rivet holes 7/8"  
 Pitch of rivets 3" working pressure of shell by rules 240 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 9/16" how stayed by stays fixed to 2 1/2" radius  
 Superheater or steam chest; how connected to boiler by neck 18" dia 1/8" thick



7142 gls

DONKEY BOILER—

Description *Round Horizontal*

Made at *Lumbarton* by whom made *Scumy & Coy* when made *1883* where fixed *On upper deck*  
 Working pressure *160 lbs* tested by hydraulic pressure to *320 lbs* No. of Certificate *1604* fire grate area *16.5 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 *yes* diameter of donkey boiler *8 ft* length *8' 3 3/16"* description of riveting *Double butt*  
 Thickness of shell plates *13/16"* diameter of rivet holes *1 1/8"* whether punched or drilled *Drilled* pitch of rivets *4 1/2" x 2 1/2"* of plating  
 per centage of strength of joint thickness of *end* plates *10/16"* stayed by *Bar stays 2 1/2" dia 14" x 14" pitch*  
 Diameter of furnace, *top 3' 3"* bottom *3'* length of furnace *6 ft* thickness of plates *9/16"* description of joint *Corrugated*  
 Thickness of *Comb Chamber* plates *9/16"* stayed by *Screw stays 1/2" x 1/2" x 1/2" 13/8" dia* working pressure of shell by rules  
 Working pressure of furnace by rules *144 lbs* diameter of uptake *13/16"* thickness of plates *13/16"* thickness of water tubes *1/16"*

SPARE GEAR. State the articles supplied:—*One Propeller + Propeller Shaft complete 2 main bearings*  
*bolts, 4 Connecting Rod bolts (top + bottom), 6 Coupling bolts, one Eccentric strap + 2 bol*  
*. Air + Circulating pump rod, 1 set piston springs, Piston valves one set packing rings*  
*Spindle for each. Two valves with seats for Feed + Bidge pumps, one third Crank shaft,*  
*The foregoing is a correct description, Boiler + Condenser tubes, Quadrant bushes, Safety*  
*valve springs, bolts nuts + other gear*  
*Scumy & Coy. Manufacturers.*

General Remarks (State quality of workmanship, opinions as to class, &c. *These Engines + Boilers are*  
*of the best workmanship + materials and are now in good order*  
*safe working condition and eligible in my opinion to be noted*  
*in the Register Book* ✖ *Lloyds M.C. 10/83*

*It is submitted that this*  
*should be signed to have*  
*& L.M.C. 10 & recorded*  
*Am 15/10/85*

The amount of Entry Fee .. £ *3* : .. received by me,  
 Special .. .. £ *35* : *8* :  
 Donkey Boiler Fee .. .. £ .. : ..  
 Certificate (if required) .. £ .. : .. *14/10/1885*  
 To be sent as per margin.  
 (Travelling Expenses, if any, £ - *8/-* )

Committee's Minute FRIDAY 16 OCT 1885

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