

REPORT ON MACHINERY.

No. 2987

Received at London Office WEDNESDAY 26 SEPT 1883

No. in Survey held at *Belfast*
Reg. Book. *S.S. Newington*

Date, first Survey *July 6th 1882* Last Survey *Sept 13th 1883*

(Number of Visits *15*) *1125.30*

Tons *713.12*

Master *Wm. Sloan* Built at *Belfast* By whom built *McKean, Clark & Co.* When built *1883*

Engines made at *Belfast* By whom made *Wm. Coates & Co. Ltd.* when made *1883*

Boilers made at *"* By whom made *Rich & Macfarlane & Co.* when made *1883*

Registered Horse Power *99* Owners *Marchant, Davidson & Co.* Port belonging to *Leith*

ENGINES, &c.—

Description of Engines *Compound Inverted Surface Condensing*
Diameter of Cylinders *26 - 50 1/2* Length of Stroke *36* No. of Rev. per minute *65* Point of Cut off, High Pressure *1/2* Low Pressure *1/2*
Diameter of Screw shaft *9 3/4* Diam. of Tunnel shaft *9 3/4* Diam. of Crank shaft journals *9 3/4* Diam. of Crank pin *10 1/4* size of Crank webs *12 1/2 x 7 1/2*
Diameter of screw *13 - 4* Pitch of screw *16 - 0* No. of blades *44* state whether moveable *not total surface 50 sq feet*
No. of Feed pump *Two* diameter of ditto *3 1/2* Stroke *24* Can one be overhauled while the other is at work *yes*
No. of Bilge pumps *Two* diameter of ditto *3 1/2* Stroke *24* Can one be overhauled while the other is at work *yes*
Where do they pump from *engine room, fore and after wells and ballast tanks*
No. of Donkey Engines *Two* Size of Pumps *1 1/2 dia x 9 stroke* Where do they pump from *large pump from ballast tanks & engine room, small do from sea, hot-well, & ballast tanks & Bilges*
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 *Two* and sizes *4 1/2 dia* Are they connected to condenser, or to circulating pump *Circulating Pump*
How are the pumps worked *by levers from after engine*
Are all connections with the sea direct on the skin of the ship *yes* Are they Valves or Cocks *both Valves and Cocks*
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 *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 *before launching, New Bessel.*
Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *low platform.*

BOILERS, &c.—

Number of Boilers *One* Description *Cylindrical Multi-tubular* Whether Steel or Iron *Shells Iron*
Working Pressure *83 lbs* Tested by hydraulic pressure to *170 lbs* Date of test *1st August 1883*
Description of superheating apparatus or steam chest *Horizontal Drum*
Can each boiler be worked separately *✓* Can the superheater be shut off and the boiler worked separately *Yes superheater*
No. of square feet of fire grate surface in each boiler *45* Description of safety valves *Spring* No. to each boiler *Two*
Area of each valve *14.19 sq* 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 *14 - 7*
Length of boilers *10 - 6* description of riveting of shell long. seams *all welded except two fronts in inner circle, seams lap. DR. & Riv. & which are closed with D.B.S. & Riv.* Thickness of shell plates *3/16*
Diameter of rivet holes *1 1/16* whether punched or drilled *drilled* pitch of rivets *4 1/2* Lap of plating *13 strips 17 wide*
Per centage of strength of longitudinal joint *70* working pressure of shell by rules *95 lbs* size of manholes in shell *17 x 13*
Size of compensating rings *7 x 1 1/8* No. of Furnaces in each boiler *Three*
Outside diameter *3 - 7 1/8* length, top *6 - 0* bottom *9 - 6* thickness of plates *3/8* description of joint *D.B.S. & Riv. & if rings are fitted in bottom*
Greatest length between rings *✓* working pressure of furnace by the rules *104 lbs* combustion chamber plating, thickness, sides *1/2* back *1/2* top *3/16*
Pitch of stays to ditto, sides *8 x 8* back *8 x 8* top *8 x 7 1/2* If stays are fitted with nuts or riveted heads *none* working pressure of plating by rules *120 lbs* Diameter of stays at smallest part *1 1/2 x 1 3/4* working pressure of ditto by rules *138 lbs* end plates in steam space, thickness *3/8*
Pitch of stays to ditto *15 x 15* how stays are secured *into & through* working pressure by rules *121 lbs* diameter of stays at smallest part *2 7/8* working pressure by rules *128 lbs* Front plates at bottom, thickness *13/16* Back plates, thickness *3/16*
Greatest pitch of stays *14* working pressure by rules *86 lbs* Diameter of tubes *3 1/2* pitch of tubes *4 7/8 x 4 3/4* thickness of tube plates, front *3/4* back *3/4* how stayed *Stay Tubes* pitch of stays *9 1/4 x 9 1/2* width of water spaces *1 1/2 between tubes 3/2 " Furnaces*
Diameter of Superheater or Steam chest *3 - 7* length *5 - 6* thickness of plates *5/8* description of longitudinal joint *D.B.S. & Riv. & 2019*
Pitch of rivets *3 1/4* working pressure of shell by rules *91 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 *3/4* how stayed *by 5 through Stay*
each 2" effective diameter *✓* Superheater or steam chest; how connected to boiler *by flanged neck 5/8 thick*

IRON 447-0513

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DONKEY BOILER— Description *Cylindrical Vertical with Firebox*
Made at *Belfast* by whom made *J. Coates & Co.* when made *Feb 1883* where fixed *in H.M.S. "Hobart"*
Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *47* grate area *12 1/2 sq ft* description of safety valves *Spring* No. of safety valves *One* area of each *11 sq in* fitted with rising gear *yes* & drawn from main boiler or enter the donkey boiler *no* diameter of donkey boiler *5-6* length *12-6* description of heating *Long Keels, Lap, D.R.*
Thickness of shell plates *1/2* diameter of rivet holes *3/4* whether punched or drilled *drilled* pitch of rivets *2 1/4* lap of plating *1 1/2*
percentage of strength of joint *66* thickness of crown plates *1/16* stayed by *8 Stays, each 2 1/2 in effect in dia.*
Diameter of furnace, top *5 1/2* bottom *5 1/2* length of furnace *6-0* thickness of plates *9/16* description of joint *Lap, 1 Riv.*
Thickness of furnace crown plates *9/16* stayed by *as Shell Crown* working pressure of shell by rules *10 1/2*
Working pressure of furnace by rules *82.5 lbs* diameter of uptake *1 1/2* thickness of plates *7/8* thickness of water tubes *7/8*

SPARE GEAR. State the articles supplied:—*Connecting rod top and bottom end bolts and nuts, 1st main bearing bolts, 1st coupling bolt, feed & vice pump, valves, Spare bolt & nut, 1 Propeller, Springs for safety valves & cylinder, 1 feed & 1 spare bolts and cushion tubes 12*

The foregoing is a correct description,
Manufactured

General Remarks (State quality of workmanship, opinions as to class, &c.)
Victor Coates
Natural and Workmanship good and satisfactory.
The Machinery and Boilers of this vessel are in good order and safe working condition and in my opinion eligible to have the
certification of Lloyd's Register of Shipping 9-83 recorded in the Register Book

The amount of Entry Fee . . . £ / : . . . received by me,
Special . . . £ 14 17 : -
Donkey Boiler Fee . . . £ : :
Certificate (if required) . . . £ : : 25.9. 1883
To be sent as per margin.
(Travelling Expenses, if any, £ 7-7-0.)
Committee's Minute

FRIDAY 28 SEPT 1883

Quean Rattrie
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
Barron-in-Furness.