

REPORT ON MACHINERY.

No. *46256* Received at London Office 18
 No. in Survey held at *London* Date, first Survey *17 March 1885* Last Survey *20 May 1886*
 Reg. Book. *239* on the *S. S. Penguin* (Number of Vials *9*) Tons *482*
 Master *J. M. Hawley* Built at *Dundee* By whom built *When built 1876.5*
 Engines made at *Dundee* By whom made *Gowley Bros & Co* when made *1876*
 Boilers made at *London* By whom made *General Steam Nav Co* when made *1886*
 Registered Horse Power *220* Owners *General Steam Nav Co* Port belonging to *London*

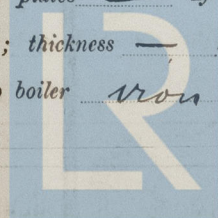
ENGINES, &c.—

Description of Engines *New Boilers*
 Diameter of Cylinders Length of Stroke No. of Rev. per minute Point of Cut off, High Pressure Low Pressure
 Diameter of Screw shaft Diam. of Tunnel shaft Diam. of Crank shaft journals Diam. of Crank pin size of Crank webs
 Diameter of screw Pitch of screw No. of blades state whether moveable total surface
 No. of Feed pumps diameter of ditto Stroke Can one be overhauled while the other is at work
 No. of Bilge pumps diameter of ditto Stroke Can one be overhauled while the other is at work
 Where do they pump from
 No. of Donkey Engines Size of Pumps Where do they pump from

Are all the bilge suction pipes fitted with roses Are the roses always accessible Are the sluices on Engine room bulkheads always accessible
 No. of bilge injections and sizes Are they connected to condenser, or to circulating pump
 How are the pumps worked
 Are all connections with the sea direct on the skin of the ship Are they Valves or Cocks
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the discharge pipes above or below the deep water line
 Are they each fitted with a discharge valve always accessible on the plating of the vessel Are the blow off cocks fitted with a spigot and brass covering plate
 What pipes are carried through the bunkers How are they protected
 Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock
 Is the screw shaft tunnel watertight and fitted with a sluice door worked from

BOILERS, &c.—

Number of Boilers *Two* Description *Cylindrical return tubular* Whether Steel or Iron *Iron*
 Working Pressure *65 lbs.* Tested by hydraulic pressure to *130 lbs.* Date of test *28.3.86*
 Description of superheating apparatus or steam chest *horizontal domes*
 Can each boiler be worked separately *no* Can the superheater be shut off and the boiler worked separately
 No. of square feet of fire grate surface in each boiler *54* Description of safety valves *spring* No. to each boiler *two*
 Area of each valve *14'2* 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 *9"* Diameter of boilers *15'4"*
 Length of boilers *9'58"* description of riveting of shell long. seams *double rivet lap* circum. seams *double R lap* Thickness of shell plates *7/8"*
 Diameter of rivet holes *1 1/8"* whether punched or drilled *punched* pitch of rivets *3 3/4"* Lap of plating *7 1/4"*
 Per centage of strength of longitudinal joint *70%* working pressure of shell by rules *68 lbs* size of manholes in shell *15"x12"; 12" diam*
 Size of compensating rings *angle 4x4x5/8* & Superheater necks. No. of Furnaces in each boiler *three*
 Outside diameter *37"* length, top *6'6"* bottom *9'0"* thickness of plates *1/2, 9/16* description of joint *lap* if rings are fitted *partial*
 Greatest length between rings *6ft* working pressure of furnace by the rules *100* combustion chamber plating, thickness, sides *7/16* back *7/16* top *7/16*
 Pitch of stays to ditto, sides *8x8* back *7x9 3/4* top *13"* If stays are fitted with nuts or riveted heads *nuts* working pressure of plating by rules *57-110*
 Diameter of stays at smallest part *1 1/8"* working pressure of ditto by rules *4400* end plates in steam space, thickness *5/8*
 Pitch of stays to ditto *15' x 17' (iron)* how stays are secured *double nuts & washers* working pressure by rules *674 to* diameter of stays at smallest part *2 3/16* working pressure by rules *4400* Front plates at bottom, thickness *11/16* Back plates, thickness *5/8*
 Greatest pitch of stays *gussets* working pressure by rules *ample* Diameter of tubes *3 1/2"* pitch of tubes *4 3/4" x 4 3/4"* thickness of tube plates, front *1/16* back *1/16* how stayed *stay tubes* pitch of stays *14"* width of water spaces *12"*
 Diameter of Superheater or Steam chest *4'9"* length *9'3"* thickness of plates *1/2"* description of longitudinal joint *lap & rivet* diam. of rivet holes *3/16*
 Pitch of rivets *2 5/8* working pressure of shell by rules *94* 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 *iron necks*



462562

DONKEY BOILER— Description *Vertical Cylindrical*
 Made at *Defford* by whom made *General Steam Nav Co* when made *1886* where fixed *Lake Hole*
 Working pressure *45 lbs* tested by hydraulic pressure to *90 lbs* No. of Certificate *165* fire grate area *12 1/2 sq ft* description of safety
 valves *Spring* No. of safety valves *one* area of each *7"* if fitted with easing gear *yes* if steam from main boilers can
 enter the donkey boiler *yes* diameter of donkey boiler *57"* length *9' 6"* description of riveting *Single lap*
 Thickness of shell plates *7/16"* diameter of rivet holes *3/4"* whether punched or drilled *punched* pitch of rivets *2"* lap of plating *2 1/2"*
 per centage of strength of joint *62.5* thickness of crown plates *1/2"* stayed by *5 stays & uptake* description of joint *single rivet lap*
 Diameter of furnace, top *4' 0"* bottom *4' 0"* length of furnace *4' 3"* thickness of plates *3/8"* working pressure of shell by rules *44*
 Thickness of furnace crown plates *1/2"* stayed by *Uptake & 5 stays* thickness of water tubes *3/8"*
 Working pressure of furnace by rules *62* diameter of uptake *13"* thickness of plates *1/2"*

SPARE GEAR. State the articles supplied:—

The foregoing is a correct description,

C. R. Masters

Manufacturer

Superintendent General Steam Nav. Co.

General Remarks

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

The material and workmanship of these boilers appears to be good. The boilers have been securely fitted on board and their safety valves have been set to blow at the required working pressures. The sea connections are fitted to the ship's sides above the platforms except stokehold water service. Examined the high pressure & low pressure cylinders and slide valves & found them good. The low pressure cylinder has been relined.

Examined tailshaft and found it good. New lignum vitae has been fitted in the stern tube.

As far as seen the machinery of this vessel is in a safe working condition and eligible in my opinion to have the notifications N. B. 86 and B. S. 5. 86 recorded in the Register Book.

The amount of Entry Fee .. £ — : — : — received by me, *ACU*

Special .. £ 6 : 6 : —

Donkey Boiler Fee .. £ — : — : —

Certificate (if required) .. £ — : — : — *3rd Sep 1886*

To be sent as per margin.

(Travelling Expenses, if any, £ ..)

Committee's Minute

Tuesday, 15th June, 1886.

DM

*NVB 86
B. S. 5. 86*

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