

REPORT ON MACHINERY.

17407

14404
 Received at London Office Rec'd 4th MAR, 1884.
 Date, first Survey 29th May Last Survey 29th Dec 1883
 (Number of Visits 14) Tons 1366.73
 882.24
 Survey held at *Newcastle* on the *Screw Steamer "H. Garel"*
 Built at *Newcastle* By whom built *Rep. J. M. Smith* When built *1883*
 By whom made *Dalmen & Shipway Co. Ld.* when made *1883*
 Owners *J. Scutten Sons & Co* Port belonging to *London*

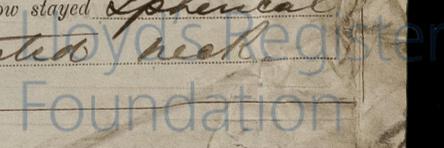
ENGINES, &c.
 Description of Engines *Vertical acting compound surface Condensing*
 Diameter of Cylinders *30" & 58"* Length of Stroke *36"* No. of Rev. per minute *65* Point of Cut off, High Pressure *9/16* Low Pressure *.5*
 Diameter of Screw shaft *10 1/4"* Diam. of Tunnel shaft *10"* Diam. of Crank shaft journals *10 1/2"* Diam. of Crank pin *10 1/2"* size of Crank webs *6 1/8" x 12 1/4"*
 Diameter of screw *13.2* Pitch of screw *16.0* No. of blades *4* state whether moveable *no* total surface *49 5/8*
 No. of Feed pumps *2* diameter of ditto *3 3/4"* Stroke *20"* Can one be overhauled while the other is at work *yes*
 No. of Bilge pumps *2* diameter of ditto *3 3/4"* Stroke *20"* Can one be overhauled while the other is at work *yes*
 Where do they pump from *Tanks, holds, bipes, & hot well*
 No. of Donkey Engines *2* Size of Pumps *8" x 4" & 10" x 8"* Where do they pump from *Tanks, holds, bipes, & hot well*
 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 *4"* Are they connected to condenser or to circulating pump *Circulating pump*
 Are the pumps worked *Locus 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 *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*
 How are pipes 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 *now*
 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 *Cylindrical Single end* Whether Steel or Iron *Steel*
 Working Pressure *80 lbs* Tested by hydraulic pressure to *100 lbs* Date of test *15. 8. 83* No. of Co. *1377*
 Description of superheating apparatus or steam chest *vertical dome*
 Can each boiler be worked separately *yes* Can the superheater be shut off and the boiler worked separately *—*
 Area of square feet of fire grate surface in each boiler *36 5/8* Description of safety valves *Spring* No. to each boiler *2*
 Area of each valve *9.62* 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 *12"* Diameter of boilers *12.6*
 Length of boilers *10.6"* description of riveting of shell long. seams *lap tubes* circum. seams *lap dome* Thickness of shell plates *3/4"*
 Diameter of rivet holes *1"* whether punched or drilled *drilled* pitch of rivets *3 3/8"* Lap of plating *7 1/4"*
 Percentage of strength of longitudinal joint *68%* working pressure of shell by rules *79.7 lbs* size of manholes in shell *15" x 11 1/2"*
 Size of compensating rings *9 1/2" x 3 1/4"* No. of Furnaces in each boiler *2*
 Outside diameter *3.6"* length, top *7.0"* bottom *6.6"* thickness of plates *1/32"* description of joint *d. butt strap* if rings are fitted *—*
 Greatest length between rings *6.6"* working pressure of furnace by the rules *92%* combustion chamber plating, thickness, sides *1/2"* back *1/2"* top *1/2"*
 Pitch of stays to ditto, sides *8 1/2" x 9"* back *8 1/2" x 9"* top *21" radius* If stays are fitted with nuts or riveted heads *both* working pressure of plating by rules *80 lbs*
 Diameter of stays at smallest part *1 1/8"* working pressure of ditto by rules *97 lbs* end plates in steam space, thickness *3/4"*
 Pitch of stays to ditto *19 1/2" x 19"* how stays are secured *d. nuts & washers* working pressure by rules *80 lbs* diameter of stays at smallest part *2 3/8"* working pressure by rules *97 lbs* Front plates at bottom, thickness *1/16"* Back plates, thickness *1/16"*
 Greatest pitch of stays *13"* working pressure by rules *—* Diameter of tubes *3 1/4"* pitch of tubes *4 5/8"* thickness of tube plates, front *3/4"* back *3/4"* how stayed *tubes* pitch of stays *13 3/8"* width of water spaces *6"*
 Diameter of Superheater or Steam chest *3.8"* length *5.6"* thickness of plates *1/2"* description of longitudinal joint *lap dome* diam. of rivet holes *3/4"*
 Pitch of rivets *2 1/2"* working pressure of shell by rules *171 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 *1/16"* how stayed *Spherical*
 Superheater or steam chest; how connected to boiler *Contracted neck*

Report rec'd 5/1/84 sent to Com. 3/13/84

Boiler drawing made of shell web from forwarded

NWC 789-0166

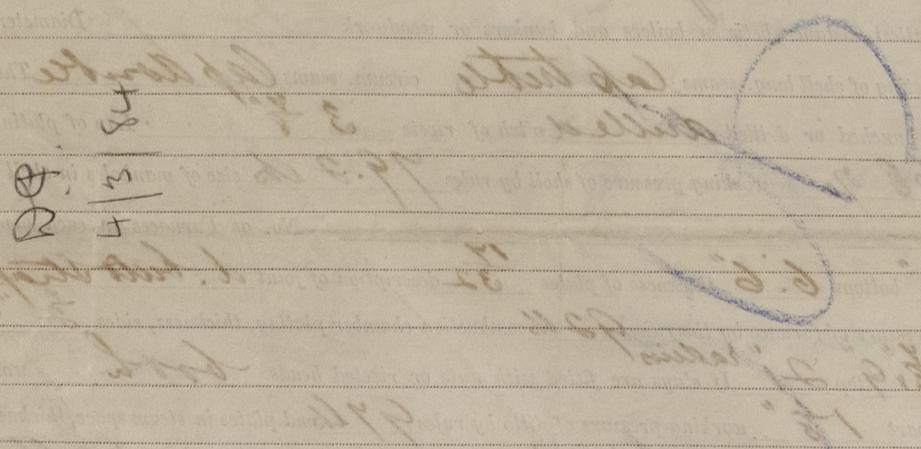


DONKEY BOILER— Description *Critical crop tubes*
 Made at *Gateshead* by whom made *Blake Chapman & Co* when made *13.10.83* where fixed *Stockholm*
 Working pressure *10 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *1456* fire grate area *20 sq* description of safety
 valves *Spring* No. of safety valves *1* area of each *9.62* if fitted with easing gear *yes* if steam from main boilers can
 enter the donkey boiler diameter of donkey boiler *6' 0"* length *12' 6"* description of riveting *Lap double*
 Thickness of shell plates *9/16"* diameter of rivet holes *1 1/8"* whether punched or drilled *punched* pitch of rivets *3 3/8"* lap of plating *4 1/2"*
 per centage of strength of joint *42%* thickness of crown plates *9/16"* stayed by *dished & 6 Stay 1 1/2"* effective dia
 Diameter of furnace, top *4' 8"* bottom *5' 1 1/2"* length of furnace *5' 9"* thickness of plates *9/16"* description of joint *Lap single*
 Thickness of furnace crown plates *9/16"* stayed by *as above* working pressure of shell by rules *92 lbs*
 Working pressure of furnace by rules *74 lbs* diameter of uptake *15"* thickness of plates *7/16"* thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *Half crank shaft, 2 main bearing bolts & nuts, 2 top end bolts & nuts, 2 bottom end bolts & nuts, set of coupling bolts & nuts, set of feed, bilge, & feed donkey valves, slide valve spring, complete, piston patent, tail end shaft & propeller, set of brass valve for air pump, 14 holding down bolts & nuts, 9 cylinder cover studs & a quantity of a row.*
 The foregoing is a correct description,
 Jan 9/84 *W. Boyd* Director

General Remarks (State quality of workmanship, opinions as to class, &c.)
The machinery of this vessel has been specially surveyed during construction the material and workmanship good and render the vessel eligible in my opinion to have the notification L. R. C. 12. 83 in the Register Book of the Society.

This vessel
 is submitted to
 the Society to have the
 certificate + Jan 12. 83
 recorded



The amount of Entry Fee £ 2 : - : - received by me,
 Special .. £ 22 : 10 : -
 Donkey Boiler Fee .. £ - : - : -
 Certificate (if required) *paid* - : - : - 12th Jan 1884
 To be sent as per margin.
 (Travelling Expenses, if any, £ - : - : -)

Richard Hirst
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute
 FRIDAY 7 MARCH 1884
W. Boyd