

## REPORT ON MACHINERY.

No. 77152

Port of London

Received at London Office 13 NOV 1914

No. in Survey held at *Whivenhoe & Garmouth*  
Reg. Book. *S.S. "BREEZY"*  
on theDate, first Survey *29th July* Last Survey *5th Nov 1914*  
(Number of Visits *16*)

Master Built at *Whivenhoe* By whom built *Rennie Forrest & Co. Ltd* Tons { Gross  
Engines made at *St Garmouth* By whom made *Griffith & Co. Ltd* Net  
Boilers made at *Stockton* By whom made *Thos. Sutor & Co. Ltd* When built *1914*  
Registered Horse Power Owners *J. H. Cook & Co. Ltd* when made *1914*  
Nom. Horse Power as per Section 28 *52* Is Refrigerating Machinery fitted for cargo purposes ☒ Port belonging to *London*  
Is Electric Light fitted ☒

ENGINES, &c.—Description of Engines *Triple expansion* No. of Cylinders *3* No. of Cranks *3*  
Dia. of Cylinders *10 3/4 x 14 x 28* Length of Stroke *18* Revs. per minute *130* Dia. of Screw shaft *6"* Material of *Steel*  
Is the screw shaft fitted with a continuous liner the whole length of the stern tube *Yes* Is the after end of the liner made water tight  
in the propeller boss *Yes* If the liner is in more than one length are the joints burned ☒ If the liner does not fit tightly at the part  
between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive ☒ If two  
liners are fitted, is the shaft lapped or protected between the liners ☒ Length of stern bush *27"*  
Dia. of Tunnel shaft *5 1/2"* Dia. of Crank shaft journals *5 1/2"* Dia. of Crank pin *5 1/2"* Size of Crank webs *8 1/2 x 3 1/2* Dia. of thrust shaft under  
collars *5 1/2"* Dia. of screw *7-0* Pitch of Screw *9-0* No. of Blades *3* State whether moveable *No* Total surface *18 #*  
No. of Feed pumps *one* Diameter of ditto *2 1/2* Stroke *9"* Can one be overhauled while the other is at work ☒  
No. of Bilge pumps *one* Diameter of ditto *2 1/2* Stroke *9"* Can one be overhauled while the other is at work ☒  
No. of Donkey Engines *one* Sizes of Pumps *2 1/2 x 4 X Duglex* No. and size of Suctions connected to both Bilge and Donkey pumps  
In Engine Room *two 2"* In Holds, &c. *one 2" forward & one 2" aft*  
No. of Bilge Injections *one* sizes *3"* Connected to condenser, or to circulating pump *to pump* Is a separate Donkey Suction fitted in Engine room & size *Yes 2"*  
Are all the bilge suction pipes fitted with roses *Yes* Are the roses in Engine room always accessible *Yes* Are the sluices on Engine room bulkheads always accessible *None*  
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 ☒ Are the Discharge Pipes above or below the deep water line *Yes*  
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 *Main & donkey steam* How are they protected *Steel tunnel*  
Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times *Yes*  
Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges *Yes*  
Dates of examination of completion of fitting of Sea Connections *17.8.14* of Stern Tube *10.8.14* Screw shaft and Propeller *17.8.14*  
Is the Screw Shaft Tunnel watertight ☒ Is it fitted with a watertight door ☒ worked from ☒

## BOILERS, &amp;c.—(Letter for record ) Manufacturers of Steel

Total Heating Surface of Boilers Is Forced Draft fitted No. and Description of Boilers *One single ended.*  
Working Pressure *180 lb* Tested by hydraulic pressure to Date of test No. of Certificate  
Can each boiler be worked separately Area of fire grate in each boiler No. and Description of Safety Valves to  
each boiler *2 Spring loaded* Area of each valve *4.9* Pressure to which they are adjusted *185 lb* Are they fitted with easing gear *Yes*  
Smallest distance between boilers or uptakes and bunkers or woodwork *No side tanks* Mean dia. of boilers Length Material of shell plates  
Thickness Range of tensile strength Are the shell plates welded or flanged Descrip. of riveting: cir. seams  
long. seams Diameter of rivet holes in long. seams Pitch of rivets Lap of plates or width of butt straps  
Per centages of strength of longitudinal joint rivets Working pressure of shell by rules Size of manhole in shell  
Size of compensating ring No. and Description of Furnaces in each boiler Material Outside diameter  
Length of plain part top Thickness of plates bottom Description of longitudinal joint No. of strengthening rings  
Working pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom  
Pitch of stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules  
Material of stays Diameter at smallest part Area supported by each stay Working pressure by rules End plates in steam space:  
Material Thickness Pitch of stays How are stays secured Working pressure by rules Material of stays  
Diameter at smallest part Area supported by each stay Working pressure by rules Material of Front plates at bottom  
Thickness Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules  
Diameter of tubes Pitch of tubes Material of tube plates Thickness: Front Back Mean pitch of stays  
Pitch across wide water spaces Working pressures by rules Girders to Chamber tops: Material Depth and  
thickness of girder at centre Length as per rule Distance apart Number and pitch of stays in each  
Working pressure by rules Superheater or Steam chest; how connected to boiler Can the superheater be shut off and the boiler worked  
separately Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet  
holes Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness  
If stiffened with rings Distance between rings Working pressure by rules End plates: Thickness How stayed  
Working pressure of end plates Area of safety valves to superheater Are they fitted with easing gear



# VERTICAL DONKEY BOILER—

Manufacturers of Steel

No. Description  
 Made at By whom made When made Where fixed  
 Working pressure tested by hydraulic pressure to Date of test No. of Certificate Fire grate area Description of Safety  
 Valves No. of Safety Valves Area of each Pressure to which they are adjusted Date of adjustment  
 If fitted with easing gear If steam from main boilers can enter the donkey boiler Dia. of donkey boiler Length  
 Material of shell plates Thickness Range of tensile strength Descrip. of riveting long. seams  
 Dia. of rivet holes Whether punched or drilled Pitch of rivets Lap of plating Per centage of strength of joint Rivets  
 Working pressure of shell by rules Thickness of shell crown plates Radius of do. No. of stays to do. Dia. of stays  
 Diameter of furnace Top Bottom Length of furnace Thickness of furnace plates Description of joint  
 Working pressure of furnace by rules Thickness of furnace crown plates Stayed by  
 Diameter of uptake Thickness of uptake plates Thickness of water tubes Dates of survey

SPARE GEAR. State the articles supplied:— Two main bearing bolts nuts, 2 bolt end bolts & nuts, 2 top end bolts & nuts, 1 set coupling bolts, 1 set each of feed & bilge pumps, 1 set each of an ecc. pump valves, 1 annular of condenser tubes, a quantity of assorted bolts & nuts, & run of various sizes ✓

CRABTREE & CO. LIMITED

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building During progress of work in shops— 1914 July 29. Aug 6. 10. 17. 22. 28 Sept. 5. 19. During erection on board vessel— 1914 Aug. 17. 21. 28, Sept. 5. 14. 22, Oct. 1. 7. 13 19 20. 26 Nov 5  
 Total No. of visits 16

Is the approved plan of main boiler forwarded herewith ✓

Dates of Examination of principal parts—Cylinders 31.8.14 Slides 14.9.14 Covers 5.9.14 Pistons 14.9.14 Rods 14.9.14  
 Connecting rods 14.9.14 Crank shaft 1.9.14 Thrust shaft 29.7.14 Tunnel shafts 29.7.14 Screw shaft 17.8.14 Propeller 29.7.14  
 Stern tube 29.7.14 Steam pipes tested 19.10.14 Engine and boiler seatings 1.10.14 Engines holding down bolts 19.10.14  
 Completion of pumping arrangements 19.10.14 Boiler fixed 1.10.14 Engines tried under steam 20.10.14  
 Main boiler safety valves adjusted 20.10.14 Thickness of adjusting washers 5" P. 5" S.  
 Material of Crank shaft Steel Identification Mark on Do. 3815 W.D.H. Material of Thrust shaft Steel Identification Mark on Do. 917 J.P. A.E.F.  
 Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts Steel Identification Marks on Do. 3826 W.D.H.  
 Material of Steam Pipes Copper ✓ Test pressure 360 lb. ✓

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

The above engines constructed under Special Survey the material tested as per Rules & the workmanship is good. after being fitted in the vessel examined under working conditions & found satisfactory. the main boiler examined under steam & the safety valves adjusted. — & is now eligible in my opinion for the record of + L.M.C. 11-14 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 11. 14.

The amount of Entry Fee.. £ 1 : 0 : 0 When applied for,  
 Special .. .. £ 4 - 12 - 0 7. 11. 1914  
 Donkey Boiler Fee .. .. £ : : : When received,  
 Travelling Expenses (if any) £ 4 : 6 - 3 11/11 1914

Committee's Minute

Assigned

FRI. NOV. 13. 1914

+ L.M.C. 11. 14

J.W.D. 13/11/14

A.E. Farmer  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Certificate (if required) to be sent to:  
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)

NE: MIDDLESBRO' 888.



Sir,  
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 Crabtree  
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