

## REPORT ON MACHINERY.

No. 15643.

Port of *Hull*Received at London Office **TUES. 3 NOV 1903**

No. in Survey held at *Hull* Date, first Survey *Oct. 23<sup>rd</sup>* Last Survey *31<sup>st</sup> Oct. 1903*  
Reg. Book. *S.S. "Earn"* (Number of Visits *4*)  
in boilers ca on the *S.S. "Earn"* Tons <sup>Gross</sup> <sub>Net</sub>  
Master Built at *Hull* By whom built *J. Cooper* When built *1903*  
Engines made at *Yarmouth* By whom made *Crabtree Ltd* when made *1903*  
Boilers made at *Milford* By whom made *John Fraser & Son* when made  
Registered Horse Power *7* Owners *Simpson & Farquhar* Port belonging to *Banff*  
Nom. Horse Power as per Section 28 Is Refrigerating Machinery fitted Is Electric Light fitted

## ENGINES, &amp;c.—Description of Engines

No. of Cylinders

No. of Cranks

Dia. of Cylinders Length of Stroke Revs. per minute Dia. of Screw shaft <sup>as per rule</sup> <sub>as fitted</sub> Material of <sup>screw shaft</sup>  
Is the screw shaft fitted with a continuous liner the whole length of the stern tube Is the after end of the liner made water tight  
in the propeller boss 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  
Dia. of Tunnel shaft <sup>as per rule</sup> <sub>as fitted</sub> Dia. of Crank shaft journals <sup>as per rule</sup> <sub>as fitted</sub> Dia. of Crank pin Size of Crank webs Dia. of thrust shaft under  
collars Dia. 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  
No. of Donkey Engines Sizes of Pumps No. and size of Suctions connected to both Bilge and Donkey pumps  
In Engine Room In Holds, &c.

No. of bilge injections sizes Connected to condenser, or to circulating pump Is a separate donkey suction fitted in Engine room & size  
Are all the bilge suction pipes fitted with roses Are the roses in Engine room always accessible Are the sluices on Engine room bulkheads always accessible  
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 *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 How are they protected  
Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times  
Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges  
When were stern tube, propeller, screw shaft, and all connections examined in dry dock *Before launching* Is the screw shaft tunnel watertight  
Is it fitted with a watertight door worked from

## BOILERS, &amp;c.—

(Letter for record)

Total Heating Surface of Boilers

Is forced draft fitted

No. and Description of Boilers Working Pressure Tested by hydraulic pressure to  
Date of test Can each boiler be worked separately Area of fire grate in each boiler No. and Description of safety valves to  
each boiler Area of each valve Pressure to which they are adjusted Are they fitted with easing gear  
Smallest distance between boilers or uptakes and bunkers or woodwork Mean dia. of boilers Length Material of shell plates  
Thickness Range of tensile strength Are they 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 <sup>rivets</sup> <sub>plate</sub> 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 <sup>top</sup> <sub>bottom</sub> Thickness of plates <sup>crown</sup> <sub>bottom</sub> 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



DONKEY BOILER— No. Description

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_

Working pressure \_\_\_\_\_ tested by hydraulic pressure to \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of safety valves \_\_\_\_\_

No. of safety valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ 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 \_\_\_\_\_ 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 \_\_\_\_\_ Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_

Working pressure of furnace by rules \_\_\_\_\_ Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_

SPARE GEAR. State the articles supplied:—

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building { During progress of work in shops - - }  
 { During erection on board vessel - - } Hull. 1903:- Oct. 23. 26. 28. 31  
 Total No. of s 4

Is the approved plan of main boiler forwarded herewith *no*

" " " donkey " " "

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

The Engines of this vessel were made by Messrs Crabtree Ltd of Larmouth and have been fitted on board at Hull. The vessel has now left for Larmouth where the machinery will be completed.

The amount of Entry Fee... £ : : When applied for, \_\_\_\_\_  
 Special ... £ : : 19...  
 Donkey Boiler Fee ... £ : : When received, \_\_\_\_\_  
 Travelling Expenses (if any) £ : : 19...

Committee's Minute

TUES. DEC 29 1903

Assigned

*J. Kerr & Harry C. Lawrence*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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