

# REPORT ON MACHINERY.

No. 75940

Port of London

Received at London Office 16 JUN 1913

No. in Survey held at Beccles + Jarmouth Date, first Survey 2<sup>nd</sup> Jan<sup>y</sup> Last Survey 4<sup>th</sup> June 1913  
Reg. Book. on the Steam Drifter "R.R.S." (Number of Visits 14)

Master \_\_\_\_\_ Built at Selly By whom built Cochrane + Sons Tons {Gross \_\_\_\_\_ Net \_\_\_\_\_ When built \_\_\_\_\_  
Engines made at Beccles By whom made Elliott + Garrod when made 1913  
Boilers made at Beccles By whom made Elliott + Garrod when made 1913  
Registered Horse Power ✓ Owners R. Sutton Port belonging to Jarmouth  
Nom. Horse Power as per Section 28 37 38 Is Refrigerating Machinery fitted for cargo purposes ✓ Is Electric Light fitted ✓

**ENGINES, &c.**—Description of Engines Triple expansion No. of Cylinders Three No. of Cranks two  
Dia. of Cylinders 9 3/4 - 15 - 22 Length of Stroke 16 Revs. per minute 160 Dia. of Screw shaft as approved 5 1/2 Material of screw shaft 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 26  
Dia. of Tunnel shaft as per rule 5 1/4 Dia. of Crank shaft journals as approved 5 1/4 Dia. of Crank pin 5 1/4 Size of Crank webs 3 1/2 x 7 Dia. of thrust shaft under collars 5 1/4 Dia. of screw 6-3 Pitch of Screw 8-0 No. of Blades 4 State whether moveable No Total surface 15 sq  
No. of Feed pumps one Diameter of ditto 2 1/4 Stroke 6 1/4 Can one be overhauled while the other is at work ✓  
No. of Bilge pumps one Diameter of ditto 2 1/8 Stroke 4 1/4 Can one be overhauled while the other is at work ✓  
No. of Donkey Engines one Sizes of Pumps 4 1/2 x 2 3/4 x 4 1/2 Duplex No. and size of Suctions connected to both Bilge and Donkey pumps  
In Engine Room Two 2" dia. + one ejector In Holds, &c. one 2" dia. one in ballast tank 2"  
No. of Bilge Injections one size 4" Connected to condenser, or to circulating pump air pp. 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 ✓  
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 None How are they protected ✓  
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 22-4-13 of Stern Tube 22-4-13 Screw shaft and Propeller 22-4-13  
Is the Screw Shaft Tunnel watertight ✓ Is it fitted with a watertight door ✓ worked from ✓

**BOILERS, &c.**—(Letter for record S) Manufacturers of Steel The Steel Company of Scotland  
Total Heating Surface of Boilers 805 sq Is Forced Draft fitted No No. and Description of Boilers One Multitubular  
Working Pressure 180 lb Tested by hydraulic pressure to 360 Date of test 21-4-13 No. of Certificate 1046  
Can each boiler be worked separately ✓ Area of fire grate in each boiler 31.8 sq No. and Description of Safety Valves to each boiler Two spring loaded Area of each valve 5.9 Pressure to which they are adjusted 180 lb Are they fitted with easing gear Yes  
Smallest distance between boilers or uptakes and bunkers 8" Mean dia. of boilers 10-0 Length 9-6 Material of shell plates Steel  
Thickness 3/32 Range of tensile strength 29/32 ton Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D.R. lap long. seams TR Double  
Diameter of rivet holes in long. seams 15/16 Pitch of rivets 7" Lap of plates or width of butt straps 13  
Per centages of strength of longitudinal joint rivets 88 Working pressure of shell by rules 183 lb Size of manhole in shell 12x16  
Size of compensating ring 15x32 No. and Description of Furnaces in each boiler Two plain Material Steel Outside diameter 36  
Length of plain part top 40 bottom 60 Thickness of plates crown 3/32 bottom 3/32 Description of longitudinal joint Weld No. of strengthening rings one partial 3x3x4"  
Working pressure of furnace by the rules 208 lb Combustion chamber plates: Material Steel Thickness: Sides 9/16 Back 3/32 Top 1/16 Bottom 1"  
Pitch of stays to ditto: Sides 8x7 Back 9x8 1/2 Top 11x7 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 185 lb  
Material of stays Steel Diameter at smallest part 1 3/4 Area supported by each stay 76.5 sq Working pressure by rules 187 lb End plates in steam space: Material Steel Thickness 1" Pitch of stays 15 1/4 How are stays secured Double nuts Working pressure by rules 192 lb Material of stays Steel  
Diameter at smallest part 2 1/4 Area supported by each stay 232 sq Working pressure by rules 310 lb Material of Front plates at bottom Steel  
Thickness 1" Material of Lower back plate Steel Thickness 1" Greatest pitch of stays 19x13 Working pressure of plate by rules 185 lb  
Diameter of tubes 3 1/4 Pitch of tubes 4 1/2 x 4 3/4 Material of tube plates Steel Thickness: Front 1" Back 1/16 Mean pitch of stays 9 1/4  
Pitch across wide water spaces 14" Working pressures by rules 205 lb Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9x1 1/2 Length as per rule 27 Distance apart 11 Number and pitch of stays in each two 7"  
Working pressure by rules 215 lb Superheater—Steam chest; how connected to boiler S.R. lap Can the superheater be shut off and the boiler worked separately ✓ Diameter 24" Length 20" Thickness of shell plates 1/2" Material Steel Description of longitudinal joint S.R. lap Diam. of rivet holes 13/16 Pitch of rivets 2 1/8 Working pressure of shell by rules 300 lb Diameter of flue ✓ Material of flue plates ✓ Thickness ✓  
If stiffened with rings ✓ Distance between rings ✓ Working pressure by rules ✓ End plates: Thickness 3/32 How stayed Dished  
Working pressure of end plates 187 lb 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 \_\_\_\_\_ Plates \_\_\_\_\_

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 connecting rod piston rod bolts nuts, 2 main bearing bolts, 1 set of coupling bolts, 1 set feed & bilge pump valves, a quantity of bolts nuts & iron of various sizes*

The foregoing is a correct description,

**ELLIOTT & GARROD LIMITED**  
*Secretary* Manufacturer.

Dates of Survey while building  
 During progress of work in shops— 1913: Jan. 2, Feb. 11-27, April 2, 17, 21, 22, May 2, June 4.  
 During erection on board vessel— May 20, 27, 28.  
 Total No. of visits 14.

Is the approved plan of main boiler forwarded herewith *Yes*

Dates of Examination of principal parts—Cylinders 2-1-13, 11-2-13, 27-2-13 Slides 11-2-13, 27-2-13 Covers 11-2-13, 27-2-13 Pistons 11-2-13, 27-2-13 Rods 11-2-13  
 Connecting rods 11-2-13 Crank shaft 11-2-13 Thrust shaft 11-2-13, 27-2-13 Tunnel shafts ✓ Screw shaft 11-2-13, 27-2-13 Propeller 27-2-13  
 Stern tube 27-2-13, 28-4-13 Steam pipes tested 20-5-13, 4-6-13 Engine and boiler seatings 2-5-13 Engines holding down bolts 2-5-13  
 Completion of pumping arrangements 28-5-13 Boilers fixed 2-5-13 Engines tried under steam 28-5-13  
 Main boiler safety valves adjusted 28-5-13 Thickness of adjusting washers Port valve  $\frac{3}{8}$ " Starb<sup>l</sup> valve  $\frac{5}{16}$ "  
 Material of Crank shafts *Steel* Identification Mark on Do. *N<sup>o</sup> 38+39 C.M. H.P.C. 17-4-13* Material of Thrust shaft *Steel* Identification Mark on Do. *N<sup>o</sup> 40 C.M. + A.E.F. 27-2-13*  
 Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shaft *Steel* Identification Marks on Do. *N<sup>o</sup> 41 C.M. + H.P.C.*  
 Material of Steam Pipes *Steel* Test pressure 360 lbs

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

*These engines & boiler have been constructed under special survey, the material has been tested as required by the Rules & the workmanship is good, & is in my opinion eligible for the record of + L.M.C. 6-13 in the Register Book.*

It is submitted that this vessel is eligible for THE RECORD, + L.M.C. 6. 13.

*JWD 18/6/13*  
*A.E. Farminet + H. Cornick*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee. . . £ 1-0-0.  
 Special . . . . . £ 8-0-0.  
 Donkey Boiler Fee . . . . . £ : :  
 Travelling Expenses (if any) £ 6:8:2

When applied for, 16 June 13  
 When received, 17 July 13

Committee's Minute TUE. JUN. 24, 1913  
 Assigned + Lmb 6 13

Certificate (if required) to be sent to the Registrar or below the space for Committee's Minute.

MINISTRY CERTIFICATE WRITTEN

