

# REPORT ON MACHINERY.

No. 25513.

Received at London Office

FRI. OCT. 11. 1912

Date of writing Report 19 When handed in at Local Office 4. 10. 12 Port of Hull.

No. in Survey held at Hull. Date, First Survey July 17<sup>th</sup> Last Survey Sep 23<sup>rd</sup> 1912  
 Reg. Book. 17 Suffon the Ship S.C.K. "G.E. FOSTER" (Number of Visits 21)

Master Built at Sulby By whom built Buchanan & Sons. When built 1912.

Engines made at } By whom made } when made 1912.  
 Boilers made at } Hull. By whom made } Messrs. Charles D. Adams & Co. Ltd. when made 1912.

Registered Horse Power Owners Arthur Construction Co. Port belonging to Grimsby -

Nom. Horse Power as per Section 28 43 ✓ Is Refrigerating Machinery fitted for cargo purposes No. ✓ Is Electric Light fitted Yes. ✓

ENGINES, &c.—Description of Engines Triple Expansion ✓ No. of Cylinders 3 ✓ No. of Cranks 3 ✓

Dia. of Cylinders 12" x 21" x 34" ✓ Length of Stroke 24" Revs. per minute Dia. of Screw shaft as per rule 6.99" Material of screw shaft as fitted 4.75" ✓

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 Yes. ✓ 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 31" ✓

Dia. of Tunnel shaft as per rule 6.26" ✓ Dia. of Crank shaft journals as per rule 6.54" ✓ Dia. of Crank pin 6.5" ✓ Size of Crank webs 4.5" x 13.5" ✓ Dia. of thrust shaft under collars 6.5" ✓ Dia. of screw 8-6" ✓ Pitch of Screw 10-3" ✓ 10-3" ✓ No. of Blades 4. State whether moveable No. Total surface 24.5 sq ft ✓

No. of Feed pumps 1 ✓ Diameter of ditto 2.5" ✓ Stroke 24" Can one be overhauled while the other is at work ✓

No. of Bilge pumps 1 ✓ Diameter of ditto 2.5" ✓ Stroke 24" Can one be overhauled while the other is at work ✓

No. of Donkey Engines 2 ✓ Sizes of Pumps 6" x 3" x 6" ✓ 4.5" x 2.5" x 4" ✓ No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Two 2" One forward & one aft. ✓ In Holds, &c. Two 2" one in main hold & one in fore hold. ✓ Equal suction from all bilges with discharge on deck. ✓

No. of Bilge Injections 1 sizes 3.5" ✓ Connected to condenser, or to circulating pump pump. Is a separate Donkey Suction fitted in Engine room & size 2.5" ✓

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 0.

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 Hold suction ✓ How are they protected Wood casing - ✓

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 31. 4. 12 of Stern Tube 31. 4. 12 Screw shaft and Propeller 31. 4. 12

Is the Screw Shaft Tunnel watertight ✓ Is it fitted with a watertight door ✓ worked from ✓

BOILERS, &c.—(Letter for record S. ✓) Manufacturers of Steelworks, Glesne & Co. Ltd. ✓

Total Heating Surface of Boilers 1290 sq ft ✓ Is Forced Draft fitted No. ✓ No. and Description of Boilers One up. mult. single mtd. ✓

Working Pressure 180 lbs. ✓ Tested by hydraulic pressure to 360 lbs. ✓ Date of test 2. 9. 12 No. of Certificate 1923.

Can each boiler be worked separately ✓ Area of fire grate in each boiler 48 sq ft ✓ No. and Description of Safety Valves to each boiler Two 4" ✓ Area of each valve 4.90" ✓ Pressure to which they are adjusted 185 lbs. ✓ Are they fitted with easing gear Yes. ✓

Smallest distance between boilers or uptakes and bunkers or woodwork 6" ✓ Mean dia. of boilers 13-6" ✓ Length 10-6" ✓ Material of shell plates S. ✓

Thickness 1/8" ✓ Range of tensile strength 29 tons ✓ Are the shell plates welded or flanged No. ✓ Descrip. of riveting: cir. seams S. ✓

Long. seams D.P.S.P.P. ✓ Diameter of rivet holes in long. seams 1/16" ✓ Pitch of rivets 6.5" ✓ Lap of plates or width of butt straps 15.5" ✓

Percentages of strength of longitudinal joint rivets 92 ✓ Working pressure of shell by rules 181 lbs. ✓ Size of manhole in shell 16" x 12" ✓

Size of compensating ring 4" x 1/16" ✓ No. and Description of Furnaces in each boiler 3 plain ✓ Material S. ✓ Outside diameter 38" ✓

Length of plain part top 48.5" ✓ Thickness of plates crown 23" ✓ Description of longitudinal joint Weld ✓ No. of strengthening rings

Working pressure of furnace by the rules 180 lbs. ✓ Combustion chamber plates: Material S. ✓ Thickness: Sides 1/16" ✓ Back 3/32" ✓ Top 1/16" ✓ Bottom 1/16" ✓

Pitch of stays to ditto: Sides 8.5" x 10.5" ✓ Back 9" x 10.5" ✓ Top 8.5" x 10.5" ✓ If stays are fitted with nuts or riveted heads No. ✓ Working pressure by rules 183 lbs. ✓

Material of stays S. ✓ Diameter at smallest part 2.40" ✓ Area supported by each stay 110.250" ✓ Working pressure by rules 196 lbs. ✓ End plates in steam space: Material S. ✓ Thickness 1.5" ✓ Pitch of stays 18" x 19.5" ✓ How are stays secured 20. 7. 52 ✓ Working pressure by rules 180 lbs. ✓ Material of stays S. ✓

Diameter at smallest part 6.30" ✓ Area supported by each stay 251.0" ✓ Working pressure by rules 184 lbs. ✓ Material of Front plates at bottom S. ✓

Thickness 1/8" ✓ Material of Lower back plate S. ✓ Thickness 3/32" ✓ Greatest pitch of stays 14" x 9" ✓ Working pressure of plate by rules 180 lbs. ✓

Diameter of tubes 3.5" ✓ Pitch of tubes 5.5" x 5" ✓ Material of tube plates S. ✓ Thickness: Front 3/8" ✓ Back 1/2" ✓ Mean pitch of stays 10.5" ✓

Pitch across wide water spaces 14" ✓ Working pressures by rules 285 lbs. ✓ Girders to Chamber tops: Material S. ✓ Depth and thickness of girder at centre 10.5" ✓ Length as per rule 2-10.9" ✓ Distance apart 10.5" ✓ Number and pitch of stays in each 3-8.5" ✓

Working pressure by rules 206 lbs. ✓ 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 Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness

Are they 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
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
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 top and bottom bolts & nuts, two connecting rod bolts & nuts, two main bearing bolts, one set of coupling bolts, one of fuel & bilge pump valves, a quantity of assorted bolts & nuts, iron of various sizes etc.*

The foregoing is a correct description,  
**P. PRO CHARLES D. HOLMES & CO. LTD.** Manufacturer.

*Harold Sherwin* DIRECTOR

Dates of Survey while building: During progress of work in shops - 1912 - July 17, 19, 23, 24, 31, Aug 1, 9, 14, 16, 22, 28, 29, Sep 2, 5, 7, 10, 11, 17, 18, 19, 23

During erection on board vessel - Sep 18, 19, 23

Total No. of visits 21

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

Dates of Examination of principal parts—Cylinders 19.4.12 Slides 28.8.12 Covers 22.8.12 Pistons 28.8.12 Rods 14.8.12

Connecting rods 1.8.12 Crank shaft 19.4.12 Thrust shaft 16.8.12 Tunnel shafts - Screw shaft 19.4.12 Propeller 23.7.12

Stern tube 23.4.12 Steam pipes tested 14.9.12 Engine and boiler seatings 21.4.12 Engines holding down bolts 5.9.12

Completion of pumping arrangements 23.9.12 Boilers fixed 18.9.12 Engines tried under steam 19.9.12

Main boiler safety valves adjusted 19.9.12 Thickness of adjusting washers  $A \frac{3}{16}$   $F \frac{3}{8}$

Material of Crank shaft *S* Identification Mark on Do. *Nº 9567.62* Material of Thrust shaft *S* Identification Mark on Do. *Nº 9567.62*

Material of Tunnel shafts *S* Identification Marks on Do. - Material of Screw shafts *S* Identification Marks on Do. *Nº 9567.62*

Material of Steam Pipes *Solid drawn copper* Test pressure *360 lbs per sq. inch hydraulic*

**General Remarks** (State quality of workmanship, opinions as to class, &c. *The engine & boiler of this vessel have been constructed under special survey in accordance with the Rules. The materials & workmanship are sound & good. The boiler tested by hydraulic pressure & with the engine secured on board & tested under steam they are now in good order & safe working condition & respectfully submitted as being eligible in my opinion to be classed with the notes of L.M.C. 9.12 in the Register Book.*

*It is submitted that this vessel is eligible for THE RECORD + L.M.C. 9.12.*

*J.W.D.*  
 15/10/12  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

The amount of Entry Fee	£ 1 : 0 :	When applied for,
Special	£ 10 : 19 :	10.10.12
Donkey Boiler Fee	£ :	When received,
Travelling Expenses (if any)	£ 2/6 :	31.10.12

Committee's Minute  
 Assigned  
 TUE. OCT. 15. 1912  
*L.M.C. 9.12*



Certificate (if required) to be sent to

The Surveyors are requested not to write on or below the space for Committee's Minute.