

## REPORT ON MACHINERY.

No. 18935

Port of Hull

Received at London Office

MUN. MAY 6 1907

No. in Survey held at Hull Date, first Survey Nov. 6/06. Last Survey 30<sup>th</sup> Apr 1907  
Reg. Book. 5744 on the Steel S.S. Grenada (Number of Visits 52)  
Master Built at Hull By whom built Messrs Earles & Co. Ltd. When built 1907  
Engines made at Hull By whom made Messrs Earles & Co. Ltd. when made 1907  
Boilers made at Hull By whom made Messrs Earles & Co. Ltd. when made 1907  
Registered Horse Power Owners Hull Steam Fishing & Ice Co. Ltd. Port belonging to Hull  
Nom. Horse Power as per Section 28 49 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3  
Dia. of Cylinders 10" ~ 17" ~ 28" Length of Stroke 24" Revs. per minute 113 Dia. of Screw shaft as per rule 7.22" Material of Iron  
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 length 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 34 1/2"  
Dia. of Thrust shaft as per rule 5.76" Dia. of Crank shaft journals as per rule 6.05" Dia. of Crank pin 6 1/4" Size of Crank webs 12 3/4" x 3 3/4" Dia. of thrust shaft under  
collars 6 1/4" Dia. of screw 10" ~ 0" Pitch of Screw 8'-0" ~ 9'-3" No. of Blades 4 State whether moveable No Total surface 30 ft<sup>2</sup>  
No. of Feed pumps 1 Diameter of ditto 2 1/2" Stroke 11" Can one be overhauled while the other is at work —  
No. of Bilge pumps 1 Diameter of ditto 2 1/2" Stroke 11" Can one be overhauled while the other is at work —  
No. of Donkey Engines Two Sizes of Pumps 6" x 3" x 6" 5" x 5" x 5" No. and size of Suctions connected to both Bilge and Donkey pumps  
In Engine Room Two 2" In Holds, &c. One 2" from hold, one 2" from  
tank, and ejector suction from eng. room bilge, hold and tank!  
No. of Bilge Injections 1 sizes 3 1/2" Connected to condenser, or to circulating pump 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 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 tank 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 26.4.07 of Stern Tube 26.4.07 Screw shaft and Propeller 26.4.07  
Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door — worked from —

BOILERS, &c.—(Letter for record 8) Manufacturers of Steel Messrs Beardmore & Co.  
Total Heating Surface of Boilers 820 ft<sup>2</sup> Is Forced Draft fitted No No. and Description of Boilers One Cyl. Multi  
Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 22.1.07 No. of Certificate 1542  
Can each boiler be worked separately — Area of fire grate in each boiler 27.4 ft<sup>2</sup> No. and Description of Safety Valves to  
each boiler Two Spring Area of each valve 3.14 ft<sup>2</sup> Pressure to which they are adjusted 190 lbs Are they fitted with easing gear Yes  
Smallest distance between boilers of uptakes and bunkers or woodwork 6" Mean dia. of boilers 10" ~ 9" Length 9' ~ 3" Material of shell plates Steel  
Thickness 1" Range of tensile strength 28.32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams L.D.  
long. seams O.A.S.Y.R. Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 7 1/16" Lap of plates or width of butt straps 16"  
Per centages of strength of longitudinal joint rivets 91.6 Working pressure of shell by rules 203 lbs Size of manhole in shell 16" x 12"  
plate 85.21 Size of compensating ring 40" x 30" x 1" No. and Description of Furnaces in each boiler Two plain Material steel Outside diameter 3'-2 3/4"  
Length of plain part top 5'-4" Thickness of plates crown 49 Description of longitudinal joint Welded No. of strengthening rings 0  
bottom 6'-4" Working pressure of furnace by the rules 212 lbs Combustion chamber plates: Material Steel Thickness: Sides 11/16" Back 5/8" Top 5/8" Bottom 11/16"  
Pitch of stays to ditto: Sides 7" x 8 1/4" Back 8 1/4" x 7 1/4" Top 8 1/4" x 7 1/4" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 223 lbs  
Material of stays Steel Diameter at smallest part 1 1/2" Area supported by each stay 59.8 ft<sup>2</sup> Working pressure by rules 236 lbs End plates in steam space:  
Material Steel Thickness 3/32" Pitch of stays 14 1/2" x 14 1/2" How are stays secured Nuts & screws Working pressure by rules 203 lbs Material of stays steel  
Diameter at smallest part 2 1/16" Area supported by each stay 206.6 ft<sup>2</sup> Working pressure by rules 259 lbs Material of Front plates at bottom Steel  
Thickness 15/16" Material of Lower back plate Steel Thickness 15/16" Greatest pitch of stays 14" x 8 1/4" Working pressure of plate by rules 230 lbs  
Diameter of tubes 3 1/4" Pitch of tubes 4 7/8" x 4 5/8" Material of tube plates Steel Thickness: Front 15/16" Back 7/8" Mean pitch of stays 9 1/2"  
Pitch across wide water spaces 13 3/4" Working pressures by rules 202 lbs Girders to Chamber tops: Material Steel Depth and  
thickness of girder at centre 7 1/2" x 13 1/4" Length as per rule 2'-6 1/2" Distance apart 7 1/2" Number and pitch of stays in each Two 8 1/2"  
Working pressure by rules 219 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  
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
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 each top and bottom end connecting rod bolts and nuts, two main bearing bolts and nuts, one set coupling bolts nuts, one set each feed and bilge pump valves, and a quantity of assorted bolts nuts etc

The foregoing is a correct description,

*F. J. Palethorpe* Manufacturer.

Dates of Survey while building { During progress of work in shops - 1906 - Nov 6. 7. 10. 12. 13. 15. 21. 23. 26. 30. Dec 4. 6. 7. 10. 19. 1907. Jan 1. 4. 7. 9. 11. 15. 21. 22. 24. During erection on board vessel - Jan 29. Feb 5. 8. 12. 15. 18. 20. 26. Mar 1. 2. 6. 8. 11. 14. 15. 16. 21. 27. Apr 6. 9. 12. 15. 22. 23. 25. 26. Total No. of visits Apr 27. 30 = 52. Is the approved plan of main boiler forwarded herewith - No it was sent on with the rft Hull 2018864 on Barbados

Dates of Examination of principal parts—Cylinders 21. 3. 07 Slides 7. 12. 06 Covers 4. 12. 06 Pistons 19. 12. 06 Rods 10. 12. 06 Connecting rods 10. 12. 06 Crank shaft 14. 3. 07 Thrust shaft 14. 3. 07 Tunnel shafts — Screw shaft 14. 3. 07 Propeller 6. 4. 07 Stern tube 16. 3. 07 Steam pipes tested 23. 4. 07 Engine and boiler seatings 27. 3. 07 Engines holding down bolts 25. 4. 07 Completion of pumping arrangements 25. 4. 07 Boilers fixed 25. 4. 07 Engines tried under steam 25. 4. 07 Main boiler safety valves adjusted 25. 4. 07 Thickness of adjusting washers 5/16 port 1/2 star board. Material of Crank shaft Steel Identification Mark on Do. 81 G.A.H. Material of Thrust shaft Steel Identification Mark on Do. 81 G.A.H. Material of Tunnel shafts Identification Marks on Do. Material of Screw shafts Iron Identification Marks on Do. 81 G.A.H. Material of Steam Pipes Solid drawn copper Test pressure 400 lbs

General Remarks (State quality of workmanship, opinions as to class, &c. The engines and boiler of this vessel have been constructed under special survey in accordance with the Rules, the materials and workmanship are good, the boiler tested by hydraulic pressure and with the engines placed on board, and tested under steam they are now in good order, and safe working condition, and respectfully submitted as being eligible in my opinion to be classed with the notation of *LCMC 407* in the Register Book.

The above machinery is similar to that fitted on the Barbados Hull Rft 2018864.

It is submitted that this vessel is eligible for THE RECORD. *LCMC 407*

The amount of Entry Fee. £ 1 : : : When applied for, 4/57 1907 Special £ 8 : : : 5/7 07 Donkey Boiler Fee £ : : : When received, 8/7 1907 Travelling Expenses (if any) £ : : : 1907

Committee's Minute TUES. 7 MAY 1907

Assigned *LCMC 407*

*James Barclay* Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

MACHINERY CERTIFICATE WRITTEN.



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