

REPORT ON MACHINERY.

No. 19510.

THUR. 17 OCT 1907

Port of Hull

Received at London Office

19

No. in Survey held at Hull Date, first Survey May 29th Last Survey 3rd Oct 1907
Reg. Book. 23 Suff on the Steel S. K. Tern (Number of Visits 29)
Master Built at Goole By whom built Goole S. B. L. 67 Ld When built 1907
Engines made at } By whom made } Charles C. Ld when made 1907
Boilers made at } Hull By whom made } when made 1907
Registered Horse Power Owners Kelsall Brothers & Buching Ld Port belonging to Hull
Nom. Horse Power as per Section 28 55 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 12" - 21" - 33" Length of Stroke 21" Revs. per minute 105 Dia. of Screw shaft as per rule 6" Material of screw shaft Steel
Is the screw shaft fitted with a continuous liner the whole length of the stern tube No 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 Two separate liners 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 No Length of stern bush 35 1/2
Dia. of Tunnel shaft as per rule 5.74 Dia. of Crank shaft journals as per rule 6" Dia. of Crank pin 6 1/2" Size of Crank webs 12 1/4" x 4 1/2" Dia. of thrust shaft under
collars 6 1/2" Dia. of screw 8'-9" Pitch of Screw 9'-6" to 10'-6" No. of Blades 4 State whether moveable No Total surface 26 ft
No. of Feed pumps 1 Diameter of ditto 2 1/2" Stroke 10" Can one be overhauled while the other is at work
No. of Bilge pumps 1 Diameter of ditto 2 1/2" Stroke 10" Can one be overhauled while the other is at work
No. of Donkey Engines 1 Sizes of Pumps 4 1/2" x 2 3/4" x 4" No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room one 2", one 2 1/2" ejector In Holds, &c. one 2" to hold, two 2"
to 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 1/2"
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 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 Tank 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 16.8.07 of Stern Tube 16.8.07 Screw shaft and Propeller 16.8.07
Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door ✓ worked from ✓

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Messrs Beardmore & Co. On 8.8. Multitubular
Total Heating Surface of Boilers 900 ft Is Forced Draft fitted No No. and Description of Boilers Two plain
Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs Date of test 9.8.07 No. of Certificate 1581
Can each boiler be worked separately Area of fire grate in each boiler 24 1/2 ft No. and Description of Safety Valves to
each boiler Two Spring Area of each valve 3.14 sq Pressure to which they are adjusted 162 lbs Are they fitted with easing gear Yes
Smallest distance between boilers or uptakes and bunkers or woodwork 11" Mean dia. of boilers 10'-6" Length 9'-6" Material of shell plates Steel
Thickness 3/32" Range of tensile strength 28-32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap D.
long. seams D. B. S. D. R. Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 5 3/8" Lap of plates or width of butt straps 11 1/2"
Per centages of strength of longitudinal joint rivets 86.7 Working pressure of shell by rules 161 lbs Size of manhole in shell 16" x 12"
plate 80.2 No. and Description of Furnaces in each boiler Two plain Material steel Outside diameter 2'-10"
Size of compensating ring 30" x 28" x 2 1/2" Length of plain part top 6'-4 1/2" Thickness of plates crown 2 1/2" Description of longitudinal joint Welded No. of strengthening rings 0
bottom 6'-4 1/2" Working pressure of furnace by the rules 176 lbs Combustion chamber plates: Material S Thickness: Sides 5/8" Back 3/32" Top 5/8" Bottom 5/8"
Pitch of stays to ditto: Sides 8 1/2" x 8 1/2" Back 10" x 9" Top 8 1/2" x 7 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 164 lbs
Material of stays Steel Diameter at smallest part 1 1/2" Area supported by each stay 72.250 Working pressure by rules 195 lbs End plates in steam space:
Material Steel Thickness 7/8" Pitch of stays 15" x 15" How are stays secured D. Nuts Working pressure by rules 161 lbs Material of stays Steel
Diameter at smallest part 2 5/16" Area supported by each stay 225 sq Working pressure by rules 195 lbs Material of Front plates at bottom Steel
Thickness 5/8" Material of Lower back plate Steel Thickness 5/8" Greatest pitch of stays 14" x 9" Working pressure of plate by rules 191 lbs
Diameter of tubes 3" Pitch of tubes 4 5/8" x 4 5/8" Material of tube plates Steel Thickness: Front 7/8" Back 1 1/16" Mean pitch of stays 9"
Pitch across wide water spaces 14" Working pressures by rules 160 lbs Girders to Chamber tops: Material Steel Depth and
thickness of girder at centre 7 1/2" x 1 1/2" Length as per rule 2'-2" Distance apart 7 1/2" Number and pitch of stays in each Two 8 1/2"
Working pressure by rules 246 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	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 each top and bottom end connecting rod bolts and nuts, two main bearing bolts + nuts, one set each coupling bolts and nuts, one set each, air circulating feed and bilge pump valves, and a quantity of assorted bolts nuts etc.
The foregoing is a correct description,

Manufacturer.

Dates of Survey while building	During progress of work in shops—	1907:— May 29. Jun 5. 12. 17. 19. 22. 26. 29. Jul 4. 8. 17. 23. 24. 30. Aug 9. 16. 20. 24. 30 Sep 4.
	During erection on board vessel—	Sep 11. 12. 16. 17. 18. 23. 26. Oct 1. 3.
	Total No. of visits	29.

Is the approved plan of main boiler forwarded herewith Yes

Dates of Examination of principal parts—	Cylinders 5.9.07	Slides 5.9.07	Covers 4.9.07	Pistons 4.9.07	Rods 5.9.07
Connecting rods 5.9.07	Crank shaft 22.7.07	Thrust shaft 30.7.07	Tunnel shafts	Screw shaft 16.8.07	Propeller 16.8.07
Stern tube 16.8.07	Steam pipes tested 16.9.07	Engine and boiler seatings 9.9.07	Engines holding down bolts 18.9.07		
Completion of pumping arrangements 3.10.07	Boilers fixed 18.9.07	Engines tried under steam 3.10.07			
Main boiler safety valves adjusted 18.9.07	Thickness of adjusting washers 1/4" 5/16"				
Material of Crank shaft Steel	Identification Mark on Do. 1916	Material of Thrust shaft Steel	Identification Mark on Do. 96		
Material of Tunnel shafts	Identification Marks on Do.	Material of Screw shafts Steel	Identification Marks on Do. 96		
Material of Steam Pipes Solid drawn Copper	Test pressure 400 lbs per inch				

General Remarks (State quality of workmanship, opinions as to class, &c. The engines 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, fitted & fastened on board, & tried 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 L.M.C. 10.07 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. L.M.C. 10.07.

17.10.07

The amount of Entry Fee..	£ 1 : : :	When applied for.	16/10/07
Special ..	£ 8 : 5 : :	When received,	27/11/07
Donkey Boiler Fee ..	£ : : : :		
Travelling Expenses (if any) £	: : 12 : 8		

Committee's Minute

FRI, 18 OCT 1907

Assigned

+ Lmb. 10.07

MACHINED
WRITTEN

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



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Foundation