

REPORT ON MACHINERY.

No. 18610

Port of Hull

Received at London Office

TUES. 1 1907

No. in Survey held at Hull Goole Date, first Survey May 21st Last Survey 27th Decr 1906
Reg. Book. 67 on the Steel S. S. Merlin (Number of Visits 44)
Master Goole Built at Goole By whom built Goole S. B. Rpg 6 Tons 172 Gross 52 Net
Engines made at Hull By whom made Messrs when made 1906
Boilers made at Hull By whom made Charles G. Ltd when made 1906
Registered Horse Power 53 Owners Kelsall Brothers & Bushing Ltd Port belonging to Hull
Nom. Horse Power as per Section 28 53 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" ~ 20" ~ 32" Length of Stroke 21" Revs. per minute 105 Dia. of Screw shaft 7 1/2" Material of screw shaft Iron
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 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 32 1/2"
Dia. of Tunnel shaft 5.68" as per rule 5.96" as fitted 6 1/2" Dia. of Crank shaft journals 6 1/2" as fitted 6 1/2" Dia. of Crank pin 6" Size of Crank webs 11 3/4" x 4" 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 sq ft
No. of Feed pumps 1 Diameter of ditto 2 1/2" Stroke 10" Can one be overhauled while the other is at work Yes
No. of Bilge pumps 1 Diameter of ditto 2 1/2" Stroke 10" Can one be overhauled while the other is at work Yes
No. of Donkey Engines 1 Sizes of Pumps 4" x 2 3/4" x 4" No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room Two 2" In Holds, &c. One 2" to hold, One 2" to each tank, and ejector suction, with discharge on deck.
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 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 4. 12. 06 of Stern Tube 4. 12. 06 Screw shaft and Propeller 4. 12. 06
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 Boender Bergwerks. Futter-Verein.
Total Heating Surface of Boilers 900 sq ft Is Forced Draft fitted No No. and Description of Boilers One cyl. Multi
Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs Date of test 24. 10. 06 No. of Certificate 1518
Can each boiler be worked separately — Area of fire grate in each boiler 24.5 sq ft No. and Description of Safety Valves to each boiler Two Spring Area of each valve 3.14 sq in Pressure to which they are adjusted 165 lbs Are they fitted with easing gear Yes
Smallest distance between boilers or uptakes and bunkers or woodwork 12 1/2" Mean dia. of boilers 10" - 6" Length 9' - 6" Material of shell plates Steel
Thickness 3/32" Range of tensile strength 28 - 32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams L. D
long. seams D. G. S. I. 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 86.7 rivets 80.2 plate Working pressure of shell by rules 160 lbs Size of manhole in shell 16" x 12"
Size of compensating ring 30" x 28" x 3/32" No. and Description of Furnaces in each boiler 2 plain Material Steel Outside diameter 2' - 10"
Length of plain part 5' - 10' Thickness of plates 3/32" crown 2 1/2" bottom 3/32" Description of longitudinal joint Welded No. of strengthening rings 0
Working pressure of furnace by the rules 185 lbs Combustion chamber plates: Material Steel 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 72.75 sq in Working pressure by rules 194 lbs End plates in steam space: Material Steel Thickness 5/8" Pitch of stays 15" x 15" How are stays secured Nuts Working pressure by rules 161 lbs Material of stays Steel
Diameter at smallest part 2 5/16" Area supported by each stay 225 lbs Working pressure by rules 187 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" Working pressure of plate by rules 190 lbs
Diameter of tubes 3" Pitch of tubes 4 5/8" x 4 3/8" Material of tube plates Steel Thickness: Front 5/8" Back 13/16" Mean pitch of stays 9"
Pitch across wide water spaces 13 1/2" Working pressures by rules 161 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 7 1/4" 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 228 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 —

W1531-0113

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 and nuts, one set coupling bolts and nuts, one set feed and bilge pump valves, and a quantity of assorted bolts and nuts etc.*

The foregoing is a correct description,
F. J. Palethorpe Manufacturer.

Dates of Survey while building	During progress of work in shops - -	During erection on board vessel - -	Total No. of visits	Is the approved plan of main boiler forwarded herewith
			44	

Dates of Examination of principal parts—	Cylinders 25. 8. 06	Slides 21- 7. 06	Covers 6. 11. 06	Pistons 6. 11. 06	Rods 19. 9. 06
Connecting rods	19. 9. 06	Crank shaft	19. 9. 06	Thrust shaft	4. 12. 06
Stern tube	29. 10. 06	Steam pipes tested	1. 12. 06	Engine and boiler seatings	27. 11. 06
Completion of pumping arrangements	27. 12. 06	Boilers fixed	4. 12. 06	Engines tried under steam	27. 12. 06
Main boiler safety valves adjusted	27. 12. 06	Thickness of adjusting washers	5/16" 3/8"		
Material of Crank shaft	Steel	Identification Mark on Do.	1721	Material of Thrust shaft	Steel
Material of Tunnel shafts		Identification Marks on Do.		Material of Screw shafts	Iron
Material of Steam Pipes	Solid drawn copper	Test pressure	400 lbs	Identification Marks on Do.	1721

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 & 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 $\frac{1}{2}$ L.M.C. 12.06 in the Register Book.*

The engines and boiler as above are similar to those fitted on the "Boote" No 26 in Supp. to Register Book

It is submitted that
 this vessel is eligible for
 THE RECORD. $\frac{1}{2}$ LMC 12.06

The amount of Entry Fee..	£ 1	When applied for.	31/12/1906
Special	£ 8	When received.	20/3/07
Donkey Boiler Fee	£ -		
Travelling Expenses (if any) £	- 12 8		

Committee's Minute
 Assigned

FRI. 4 JAN 1907

+ LMC 12.06

James Barclay
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
 28. 12. 06



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MACHINERY CERTIFICATE
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