

REPORT ON MACHINERY.

No. 19775

Port of Hull

Received at London Office FRI. 31 JAN 1908

No. in Survey held at Hull & Goole
Reg. Book. 28 Supp on the Steel S. K. Willet

Date, first Survey June 5/07 Last Survey 24th Jan 1908
(Number of Visits 52)

Master Goole Built at Goole By whom built Goole S. & R. Co. Ltd When built 1908
Tons { Gross 199
Net 63

Engines made at } Hull By whom made } Messrs Charles G. Ltd when made 1908
Boilers made at }

Registered Horse Power 55 Owners Kelsall, Brothers & Beeching Co. Ltd 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 7/8" 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 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 1/2" x 4 1/2" Dia. of thrust shaft under collars 6 1/2" Dia. of screw 8" - 9" Pitch of Screw 9" - 10" + 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 —
 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 One 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" In Holds, &c. One 2" to hold, two 2" to tanks and ejector suction from all parts.
 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 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 stake 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 20.1.08 of Stern Tube 20.1.08 Screw shaft and Propeller 20.1.08
 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 Sons
 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 13.12.07 No. of Certificate 1618
 Can each boiler be worked separately ✓ Area of fire grate in each boiler 24 1/2 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 11 1/2" Mean dia. of boilers 10" - 6" Length 9" - 6" Material of shell plates Steel
 Thickness 27/32" 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.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 1 1/2"
 Per centages of strength of longitudinal joint rivets 86.7 plate 80.2 Working pressure of shell by rules 161 lbs Size of manhole in shell 16" x 12"
 Size of compensating ring 30" x 28" x 27/32" No. and Description of Furnaces in each boiler Two plain Material Steel Outside diameter 2' - 10"
 Length of plain part top 6" - 4 1/2" Thickness of plates crown 31/32" Description of longitudinal joint Welded No. of strengthening rings 0
 Working pressure of furnace by the rules 176 lbs Combustion chamber plates: Material Steel Thickness: Sides 5/8" Back 3/2" 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 72.25 sq in Working pressure by rules 195 lbs End plates in steam space: Material Steel Thickness 7/8" Pitch of stays 15" - 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 in Working pressure by rules 195 lbs Material of Front plates at bottom Steel
 Thickness 7/8" Material of Lower back plate Steel Thickness 7/8" 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" + 4 3/8" 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 1/4" x 1 1/2" Length as per rule 2' - 2" Distance apart 7 1/2" Number and pitch of stays in each 2 - 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
 Poles 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			When made	Where fixed
Made at	By whom made				
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate	Fire grate area	Description of Safety
Values	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 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.
F. J. Palethorpe Manufacturer.

Dates of Survey while building	During progress of work in shops - -	SECRETARY 1907: Jun 5. 12. 17. 19. 22. 26. 29 July 4. 8. 17. 23. 30 Aug 20. 23. 30 Sep 4. 9. 12. 19. 24
	During erection on board vessel - -	Oct 10. 18. 28. Nov 1. 8. 18. 21. 22. 26. 27 Dec 2. 3. 4. 6. 7. 12. 13. 16. 18. 19. 20. 1908: Jan 1. 2. 3. 6. 7. 10. 15. 17. 20
	Total No. of visits	Jan 23. 24 = 52

Is the approved plan of main boiler forwarded herewith *Not forwarded*
 " " " donkey " " " *sent with Hull Rpt 16/19*

Dates of Examination of principal parts—Cylinders	13. 12. 07	Slides	6. 1. 08	Covers	19. 9. 07	Pistons	12. 9. 07	Rods	19. 9. 07
Connecting rods	19. 9. 07	Crank shaft	27. 11. 07	Thrust shaft	3. 1. 08	Tunnel shafts	—	Screw shaft	31. 12. 07
Stern tube	31. 12. 07	Steam pipes tested	3. 1. 08	Engine and boiler seatings	1. 1. 08	Engines holding down bolts	7. 1. 08		
Completion of pumping arrangements	24. 1. 08	Boilers fixed	7. 1. 08	Engines tried under steam	24. 1. 08				
Main boiler safety valves adjusted	7. 1. 08	Thickness of adjusting washers	1/2" 1/2"						
Material of Crank shaft	Steel	Identification Mark on Do.	1974 ATG	Material of Thrust shaft	Steel	Identification Mark on Do.	107 9AH		
Material of Tunnel shafts	—	Identification Marks on Do.	—	Material of Screw shafts	Steel	Identification Marks on Do.	107 9AH		
Material of Steam Pipes	Solid drawn Copper	Test pressure	400 lbs sq"						

General Remarks (State quality of workmanship, opinions as to class, &c. *The engines and boiler of this vessel have been built under special survey in accordance with the Rules, the materials and workmanship are good, the boiler tested by hydraulic pressure, and with the engines secure 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 L.M.C. 1.08 in the Register Book*)

These engines and boiler are similar to those fitted on the S. K. Fern. Hull Report No 19510.

It is submitted that this vessel is eligible for THE RECORD. L.M.C. 1.08.

The amount of Entry Fee..	£ 1 : . . .	When applied for,	30/1 1908
Special	£ 8 : 5 : . . .	When received,	18/3/1908
Donkey Boiler Fee .. .	£ . : . . .		
Travelling Expenses (if any)	£ . : 12 : 8 . . .		

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

Committee's Minute **TUES. 4 FEB 1908**
 Assigned *+ L.M.C. 1.08*

Certificate (if required) to be sent to

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

These pa
 Signal Lett
 Official N
 124800
 No., Date, and
 Whether Britis
 Foreign Buil
 British
 Number of De
 Number of Ma
 Rigged
 Stern
 Build
 Galleries
 Head
 Framework ar
 vessel
 Number of Bu
 Number of wa
 and their ca
 Total to quart
 at side amid
 No. of
 Engines.
 Recip
 One
 defect
 Number
 Iron or
 Pressur
 Under Tonnage
 Closed-in spaces
 Space or spac
 Poop
 Forecastle
 Round House
 Other closed-
 Spaces for mach
 Section 78 (2)
 1894, if requi
 Gross
 Deductions, as
 Regist
 Name
 No. of Owners
 Name, Residen
 Kelsa
 George Bee
 John bdm
 Dated 1/11/08
 W B & L (830)

