

REPORT ON MACHINERY.

No. 10187

Received at London Office

THU. 22 AUG. 1918

Date of writing Report 19 When handed in at Local Office 19/8/18 Port of Middlesbrough 28 Sept. 1918.
 No. in Survey held at Middlesbrough Date, First Survey 22nd Feb/18 Last Survey 13th Aug. 1918.
 Reg. Book. 55 on the "Ravens Point"
 Master Built at Liverpool By whom built H.H. Grayson (No. 102) When built 1918
 Engines made at Middlesbrough By whom made Messrs Richardson Westgarth & Co. (No. 3202) when made 1918
 Boilers made at " By whom made " when made 1918
 Registered Horse Power Owners Sir John Esplen KBE. Port belonging to Liverpool
 Nom. Horse Power as per Section 28 262 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders three No. of Cranks 3
 Dia. of Cylinders 21, 34, 56 Length of Stroke 36 Revs. per minute 114 Dia. of Screw shaft as per rule 1 1/4 as fitted 2 Material of screw shafts Equi Steel
 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 Yes If two liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 4-3
 Dia. of Tunnel shaft as per rule 10-22 as fitted 10-3/8 Dia. of Crank shaft journals as per rule 10-7/8 as fitted 10-7/8 Dia. of Crank pin 1 3/4 Size of Crank webs 1/2 x 7/4 Dia. of thrust shaft under collars 10/8 Dia. of screw 1 1/4 Pitch of Screw 15-0 No. of Blades 4 State whether moveable No Total surface 408
 No. of Feed pumps 2 Diameter of ditto 3 Stroke 2 Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 3 1/2 Stroke 2 Can one be overhauled while the other is at work Yes
 No. of Donkey Engines Three Sizes of Pumps 3 1/2 (dupl) 6 x 4 1/2 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Three 2 1/2 In Holds, &c. Forehold - two 2 1/2 aft hold two 2
 No. of Bilge Injections One sizes 5 1/2 Connected to condenser, or to circulating pump Yes 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 Yes
 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 Yes
 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 by ceiling
 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
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from ER platform

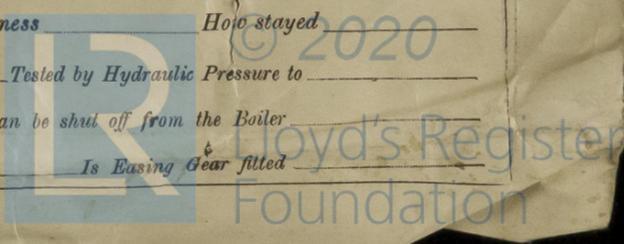
BOILERS, &c.—(Letter for record 2.) Manufacturers of Steel John Danks & Sons
 Total Heating Surface of Boilers 1840 Is Forced Draft fitted No No. and Description of Boilers 2 S.E. Cyl.
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs. Date of test 9-8-18 No. of Certificate 5020
 Can each boiler be worked separately Yes Area of fire grate in each boiler 63-25/8 No. and Description of Safety Valves to each boiler 2 Spring loaded Area of each valve 9-06 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 4-3/4 Mean dia. of boilers 14-0 Length 11-3 Material of shell plates Steel
 Thickness 1 3/16 Range of tensile strength 27-32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams 2 R laps long. seams 5-2-08 Diameter of rivet holes in long. seams 1 3/16 Pitch of rivets 8-3/8 Lap of plates or width of butt straps 18 1/2
 Per centages of strength of longitudinal joint rivets 86.8 plate 85.8 Working pressure of shell by rules 181.5 Size of manhole in shell 16-12
 Size of compensating ring 29-1 1/2 No. and Description of Furnaces in each boiler 3 Single Material Steel Outside diameter 3-8 1/2
 Length of plain part top bottom Thickness of plates crown bottom Description of longitudinal joint Weld No. of strengthening rings 4
 Working pressure of furnace by the rules 185.5 Combustion chamber plates: Material Steel Thickness: Sides 1/8 Back 2/32 Top 1/16 Bottom 1/8
 Pitch of stays to ditto: Sides 8-10 1/2 Back 9-9 1/2 Top 9-9 1/2 stays are fitted with riveted heads Working pressure by rules 193 lbs
 Material of stays Steel Area at smallest part 2-36 Area supported by each stay 700 Working pressure by rules 212 lbs End plates in steam space: Material Steel Thickness 1 1/32 Pitch of stays 8 1/2 How are stays secured hub & washers Working pressure by rules 185.5 Material of stays Steel
 Area at smallest part 6 Area supported by each stay 344 Working pressure by rules 184.5 Material of Front plates at bottom Steel
 Thickness 1 Material of Lower back plate Steel Thickness 7/8 Greatest pitch of stays 1 1/2 x 8 1/2 Working pressure of plate by rules 245 lbs
 Diameter of tubes 2 1/4 Pitch of tubes 4 1/2 x 4 3/8 Material of tube plates Steel Thickness: Front 1 Back 13/16 Mean pitch of stays 1 1/8
 Pitch across wide water spaces 1 1/4 Working pressures by rules 188.5 Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 8 x 1 3/4 Length as per rule 2-68 Distance apart 9 x 8 1/2 Number and pitch of stays in each 2 @ 9 1/2
 Working pressure by rules 180.5 Steam dome: description of joint to shell None % of strength of joint
 Diameter Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes
 Pitch of rivets Working pressure of shell by rules Crown plates Thickness How stayed

SUPERHEATER. Type _____ Date of Approval of Plan _____ Tested by Hydraulic Pressure to _____
 Date of Test _____ Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler _____
 Diameter of Safety Valve _____ Pressure to which each is adjusted _____ Is Easing Gear fitted _____

In a Report also sent on the Mill of the ship

10/10/18

002543-002549-0108



IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— *Two top & two bottom end bolts & nuts, two main bearing bolts, set of coupling bolts, set of feed & bilge pump valves, assorted bolts & nuts & iron of various sizes*

The foregoing is a correct description,

Richardsons, Westgarth & Co. Ltd

R. J. Jackson

Manufacturer.

Dates of Survey while building: During progress of work in shops -- *1918. Feb 22. Mar 19. Apr 4. 10. 16. 18. 23. 25. 29. May 1. 2. 7. 13. 14. 16. 21. 29. June 1. 3. 11.*
During erection on board vessel -- *June 6. 12. 19. 21. 24. 25. 26. 29. 30. 31. Aug 2. 7. 12. 13.*
Total No. of visits *10. 38.*

Is the approved plan of main boiler forwarded herewith *Yes.*

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Dates of Examination of principal parts—Cylinders *14-5-18* Slides *27-6-18* Covers *14-5-18* Pistons *24-5-18* Rods *24-5-18*
Connecting rods *14-6-18* Crank shaft *23-2-18* Thrust shaft *16-4-18* Tunnel shafts *15-5-18* Screw shaft *24-6-18* Propeller *24-6-18*

Stern tube *13-5-18* Steam pipes tested *24/9/18* Engine and boiler seatings *12/7/18* Engines holding down bolts *14/8/18*

Completion of pumping arrangements *18/9/18* Boilers fixed *28/9/18* Engines tried under steam *26/9/18*

Completion of fitting sea connections *6/6/18* Stern tube *12/7/18* Screw shaft and propeller *12/7/18*

Main boiler safety valves adjusted *26/9/18* Thickness of adjusting washers *Port Bl. 3/8" Star 1/32"*

Material of Crank shaft *Steel* Identification Mark on Do. *5978/23-2-18 AB* Material of Thrust shaft *Steel* Identification Mark on Do. *6011 AB*

Material of Tunnel shafts *Iron* Identification Marks on Do. *6011 AB* Material of Screw shafts *Iron* Identification Marks on Do. *443-24-6-18 T*

Material of Steam Pipes *Steel* Test pressure *540 lb sq*

Is an installation fitted for burning oil fuel *No* Is the flash point of the oil to be used over 150° F.

Have the requirements of Section 49 of the Rules been complied with

Is this machinery duplicate of a previous case *Yes* If so, state name of vessel *Heron Bridge*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery of this vessel has been built under Special Survey, the materials and workmanship are sound and good. The boilers were tested under hydraulic pressure and found satisfactory. When placed on board in accordance with the Rules this machinery, in my opinion, will be eligible to have the notation of $\frac{1}{2}$ L.M.C. with date.*

The machinery has now been satisfactorily fitted aboard and examined under steam, and is eligible in my opinion for record of + LMC 9.18. in Register book.

It is submitted that this vessel is eligible for THE RECORD. + LMC 9.18.

W.D.H. 10/10/18

Thomas Miller J. D. Milton
Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee	£	2 : 0 :	When applied for,
<i>2/3 Special</i>	£	22 : 1 :	<i>2/18/19 18</i>
Donkey Boiler Fee	£	11 : 1 :	When received,
<i>Lib. attendance</i>	£	1 : 1 : 0	<i>11.9.18</i>
Travelling Expenses (if any)	£		<i>11.9.18</i>

Committee's Minute

Assigned *L.M.C. 9.18*

Machinery Certificate



MIDDLESBRO'

Certificate (if required) to be sent to

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