

REPORT ON MACHINERY.

FRID. DEC. 27. 1912

NEWCASTLE ON TYNE No. 63455
No. 25522

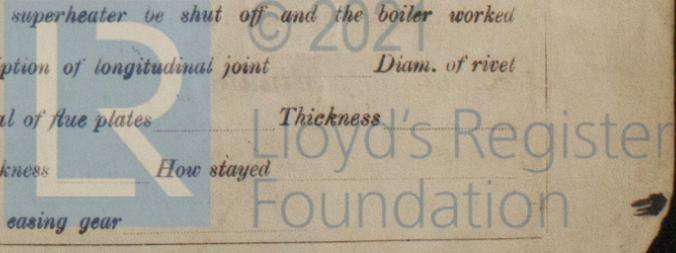
Received at London Office

MON. DEC. -9. 1912

Date of writing Report 19 When handed in at Local Office 7. 12 19 12 Port of Sunderland
 No. in Survey held at SUNDERLAND Date, First Survey 15 July Last Survey Decr 1912
 Reg. Book. 232 (Number of Visits 22)
 Master Shel S/S. "Combe" Built at Newcastle. By whom built Wood, Skinner & Co. Ltd Tons } Gross 2030
 Engines made at Sunderland By whom made J. Dickinson Sons Ltd when made 1912. Net 1222
 Boilers made at " By whom made " when made 1912.
 Registered Horse Power Owners Appenou Clarke & Co. Port belonging to London
 Nom. Horse Power as per Section 28 244 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Tri. C.P. & A. No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 21" 33" 58" Length of Stroke 39" Revs. per minute 75 Dia. of Screw shaft 12 1/2" Material of screw shaft 2 S
 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 ✓ 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 4' 3"
 Dia. of Tunnel shaft 11 1/2" Dia. of Crank shaft journals 11.10" Dia. of Crank pin 11 1/8" Size of Crank webs Patent Dia. of thrust shaft under
 collars 11 1/2" Dia. of screw 15.3" Pitch of Screw 14 ft No. of Blades 4 State whether moveable no Total surface 66 ft²
 No. of Feed pumps 2 Diameter of ditto 3" Stroke 19 1/2" Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 4" Stroke 19 1/2" Can one be overhauled while the other is at work yes
 No. of Donkey Engines 3 Sizes of Pumps 2 off 10" x 10" & 4" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 3 of 3" Sp. S. 4" In Holds, &c. two 3 1/2" in each hold.
 No. of Bilge Injections 1 sizes 4" Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room & size yes 4"
 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 ✓
 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 none How are they protected ✓
 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 5. 11. 12 of Stern Tube 5. 11. 12 Screw shaft and Propeller 24. 10. 1912
 Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door ✓ worked from ✓

OILERS, &c.—(Letter for record S) Manufacturers of Steel Spencer & Sons Ltd.
 Total Heating Surface of Boilers 3984 Is Forced Draft fitted no No. and Description of Boilers 2. S. E.
 Working Pressure 180 Tested by hydraulic pressure to 360 lbs Date of test 20. 11. 1912 No. of Certificate 3063
 Can each boiler be worked separately yes Area of fire grate in each boiler 55 1/2 ft² No. and Description of Safety Valves to
 each boiler two Spring Area of each valve 7.07" 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 5 ft. Mean dia. of boilers 14.6" Length 10.6" Material of shell plates S
 Thickness 1 1/32" Range of tensile strength 28 - 32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams A. T. back
 long. seams E. T. A. S. T. Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 1/2" Lap of plates on width of butt straps 1' 6 3/8"
 Per centages of strength of longitudinal joint rivets 92.18 Working pressure of shell by rules 181 lbs Size of manhole in shell ent. 16" x 12"
 plate 85.4 Size of compensating ring flanged No. and Description of Furnaces in each boiler 3. plain Material S Outside diameter 3' 6"
 length of plain part 6" Thickness of plates 3/4" Description of longitudinal joint weld No. of strengthening rings ✓
 Working pressure of furnace by the rules 181 lbs Combustion chamber plates: Material S Thickness: Sides 1/8" Back 1/8" Top 1/8" Bottom 1/8"
 Pitch of stays to ditto: Sides 9" x 9 1/2" Back 9 1/2" x 9 1/2" Top 9" x 10" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 181 lbs
 Material of stays S Diameter at smallest part 1.60 Area supported by each stay 90" Working pressure by rules 203 End plates in steam space:
 Material S Thickness 1 1/8" Pitch of stays 18" x 18 1/2" How are stays secured A. nuts Working pressure by rules 180 Material of stays S
 Diameter at smallest part 2.78 Area supported by each stay 333" Working pressure by rules 190 Material of Front plates at bottom S
 Thickness 7/8" Material of Lower back plate S Thickness 7/8" Greatest pitch of stays 13 1/4" x 9 1/2" Working pressure of plate by rules 198
 Diameter of tubes 3 1/2" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates S Thickness: Front 7/8" Back 7/8" Mean pitch of stays 9"
 Pitch across wide water spaces 1' 2 1/4" Working pressures by rules 249 lbs Girders to Chamber tops: Material S Depth and
 thickness of girder at centre 7/4" x 2" Length as per rule 2' 5 1/8" Distance apart 10" Number and pitch of stays in each 2 @ 9"
 Working pressure by rules 186 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
 plates Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness
 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 casing 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	Radius of do.	Stayed by		
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey		

SPARE GEAR. State the articles supplied:— *Propeller, set coupling bolts + nuts, two in all bearing bolts + nuts, set top + bottom end bolts + nuts, set of feed and bilge pump valves, main + donkey check valves, set of air + circulating pump valves, assorted iron bolts + nuts*

The foregoing is a correct description,

John D. ... Sons, Limited.

Manufacturer.

Dates of Survey while building	During progress of work in shops --	1912. Jul 15 Aug. 20. 22. 25 Sep. 13. Oct. 10. 16. 21. 22. 24. 28. 30. 31
	During erection on board vessel ---	Nov. 4. 8. 13. 18. 20. 21. 22. 26. Dec. 2 (Aug 29. Oct. 25 Nov. 5. Dec. 11. 23. of Nov)
	Total No. of visits	(22)

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

" " " donkey " " " *yes.*

Dates of Examination of principal parts—	Cylinders <i>July 15</i>	Slides <i>15/7. 1912</i>	Covers <i>15. 7. 1912</i>	Pistons <i>15. 7. 1912</i>	Rods <i>15. 7. 1912</i>
Connecting rods	<i>15. 7. 1912</i>	Crank shaft	<i>20. 8. 1912</i>	Thrust shaft	<i>22. 8. 1912</i>
Tunnel shafts		Screw shafts	<i>25. 8. 1912</i>	Propeller	<i>25. 8. 1912</i>
Stern tube	<i>22. 25/8. 4/2</i>	Steam pipes tested	<i>26. 11. 1912</i>	Engine and boiler seatings	<i>22. 11. 1912</i>
Engines holding down bolts	<i>21. 22. 11. 1912</i>	Completion of pumping arrangements	<i>23. 12. 12</i>	Boilers fixed	<i>22. 11. 1912</i>
Engines tried under steam	<i>2. 12. 1912</i>	Main boiler safety valves adjusted	<i>2. 12. 1912</i>	Thickness of adjusting washers	<i>PS f 5/16 a 5/16 S/B f 1/4 a 1/2</i>
Material of Crank shaft	<i>S</i>	Identification Mark on Do.	<i>K. 7458 4/2</i>	Material of Thrust shaft	<i>S</i>
Identification Mark on Do.	<i>K. 7624 5/2</i>	Material of Tunnel shafts	<i>✓</i>	Identification Marks on Do.	<i>✓</i>
Material of Screw shafts	<i>S.</i>	Identification Marks on Do.	<i>✓</i>	Material of Steam Pipes	<i>Copper. ✓</i>
Test pressure	<i>400 lbs</i>				

General Remarks (State quality of workmanship, opinions as to class, &c. *Machinery + boilers built under Special Survey. Materials and workmanship good. Engines and boilers examined under full pressure & found satisfactory. It is submitted that this vessel is eligible for the record of R. M. C. 12. 1912.*)

It is submitted that this vessel is eligible for THE RECORD, + LMC 12. 12.

J.W.D. J.P.R. 28/12/12

The amount of Entry Fee .. £	2 :	When applied for.
Special .. £	32. 4 :	7. 12. 1912
Donkey Boiler Fee .. £	:	When received.
Travelling Expenses (if any) £	:	as per letter from 19. 11. 12. 1912

J. Jindrayt. W. Curis
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

TUE DEC. 31. 1912

Assigned

H.M.C. 12. 12

MACHINERY CERTIFICATE
Whitby



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