

Rpt. 4.

## REPORT ON MACHINERY

No. 7427

THU. JUN. 20. 1912

Date of writing Report 12.6.12 When handed in at Local Office 12.6.12 19 12 Port of MIDDLESBROUGH-ON-TEES.  
 No. in Survey held at Stockton-on-Tees Date, First Survey 11th Jan. Last Survey 11th June 1912  
 Reg. Book. 64 Supn the Steel screw steamer "NOVINGTON" (S.S.N. 625) Gross 2441.90  
 Master A. Spencer Built at Thornaby By whom built Richardson, Duck & Co Ltd Net 2099.63  
 Engines made at Stockton By whom made Thos Blair & Co Ltd (No 1738) when made 1912  
 Boilers made at Stockton By whom made Thos Blair & Co Ltd when made 1912  
 Registered Horse Power 327 Owners Southdown S.S. Co Port belonging to London  
 Nom. Horse Power as per Section 28 327 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Tri-compound No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 25-41-67 Length of Stroke 45 Revs. per minute 62 Dia. of Screw shaft 13.78 Material of Iron  
 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 in on 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 fits tightly If two  
 liners are fitted, is the shaft lapped or protected between the liners yes Length of stern bush 5'-3"  
 Dia. of Tunnel shaft 12.16 Dia. of Crank shaft journals 12.76 Dia. of Crank pin 14" Size of Crank webs 27x9 1/2 Dia. of thrust shaft under  
 collars 14" Dia. of screw 17'-0" Pitch of Screw 15'-9" No. of Blades 4 State whether moveable no Total surface 90 sq  
 No. of Feed pumps 2 Diameter of ditto 3 1/4 Stroke 33 Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 Diameter of ditto 4 3/4 Stroke 33 Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 2 Sizes of Pumps Ballant = 10"x10" No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 3 @ 3 1/2" In Holds, &c. 2 @ 3 1/2" in each hold  
 Funnel on @ 2 1/2"  
 No. of Bilge Injections 1 sizes 6 1/4 Connected to condenser or to circulating pump yes 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 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 for hold suction How are they protected wood 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  
 Dates of examination of completion of fitting of Sea Connections 6.5.12 of Stern Tube 6.5.12 Screw shaft and Propeller 20.5.12  
 Is the Screw Shaft Tunnel watertight see hull Rpt. Is it fitted with a watertight door yes worked from top platform

BOILERS, &c.—(Letter for record (r)) Manufacturers of Steel Thos John Spencer & Sons  
 Total Heating Surface of Boilers 5169 Is Forced Draft fitted no No. and Description of Boilers 2 single ended  
 Working Pressure 170 Tested by hydraulic pressure to 340 Date of test 30.3.12 No. of Certificate 4849  
 Can each boiler be worked separately yes Area of fire grate in each boiler 67 1/2 sq No. and Description of Safety Valves to  
 each boiler 2 direct spring Area of each valve 8.29 Pressure to which they are adjusted 175 Are they fitted with easing gear yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 2'-9" Mean dia. of boilers 17'-0" Length 11'-0" Material of shell plates steel  
 Thickness 1 3/8 Range of tensile strength 28-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 2 Riv lap  
 long. seams 2 B-3 Riv Diameter of rivet holes in long. seams 1 5/16 Pitch of rivets 8 3/4 Lap of plates or width of butt straps 19 5/8 x 1 3/8  
 Per centages of strength of longitudinal joint rivets 89.0 Working pressure of shell by rules 172 Size of manhole in shell 16"x12"  
 Size of compensating ring 7 5/8 x 1 3/8 No. and Description of Furnaces in each boiler 4 Dighton Material steel Outside diameter 44.3"  
 Length of plain part top 17 Thickness of plates bottom 32 Description of longitudinal joint weld No. of strengthening rings —  
 Working pressure of furnace by the rules 185 Combustion chamber plates: Material steel Thickness: Sides 3 1/2 Back 5 7/8 Top 3 1/2 Bottom 3 1/4  
 Pitch of stays to ditto: Sides 8 1/2 x 10 Back 8 1/2 x 8 3/8 Top 10 x 8 1/2 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 174  
 Material of stays iron Diameter at smallest part 1.59 Area supported by each stay 85 Working pressure by rules 176 End plates in steam space:  
 Material steel Thickness 1 3/8 Pitch of stays 19 x 19 How are stays secured nuts & washers Working pressure by rules 175 Material of stays steel  
 Diameter at smallest part 7.24 Area supported by each stay 4.37 Working pressure by rules 173 Material of Front plates at bottom steel  
 Thickness 1" Material of Lower back plate steel Thickness 1 1/2 Greatest pitch of stays 15 3/8 x 8 5/8 Working pressure of plate by rules 222  
 Diameter of tubes 3 1/2 Pitch of tubes 4 7/8 x 4 3/8 Material of tube plates steel Thickness: Front 1 1/2 Back 1 3/8 Mean pitch of stays 11 1/8"  
 Pitch across wide water spaces 14 1/2 Working pressures by rules 181 Girders to Chamber tops: Material steel Depth and  
 thickness of girder at centre 8 x 1 3/4 Length as per rule 30" Distance apart 10" Number and pitch of stays in each 2 @ 8 1/2  
 Working pressure by rules 185 Superheater or Steam chest; how connected to boiler none 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

*See Middlesbrough Report No. 7333*

|                                      |  |                           |                                     |                                  |                       |
|--------------------------------------|--|---------------------------|-------------------------------------|----------------------------------|-----------------------|
| 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<br>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:— *Two each of con. and top end, bottom end, and main bearing bolts and nuts: one set of coupling bolts and nuts: one set of feed and bilge pump valves: One set piston rings for HP & MP. pistons: assorted bolts and nuts, and iron of various sizes*

The foregoing is a correct description,

FOR BLAIR & CO. LIMITED.

Manufacturer.

*H. Borrie*

|                                |                                     |   |
|--------------------------------|-------------------------------------|---|
| Dates of Survey while building | During progress of work in shops -- | 1912. Jan. 11. 18. 19. 22. 23. 26. 29. 31. Feb. 2. 5. 8. 9. 12. 14. 16. 19. 21. 22. Mar. 1. 4. 7. 12. 14. |
|                                | During erection on board vessel --- | 19. 20. 26. 30. Apr. 23. 26. May 3. 6. 12. 20. 21. 24. 29. June 4. 6. 7. 11.                              |
|                                | Total No. of visits                 | 41  |

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

" " " donkey " " " *yes*

|   |                                     |                                |                                   |                            |         |                             |         |             |         |
|---|-------------------------------------|--------------------------------|-----------------------------------|----------------------------|---------|-----------------------------|---------|-------------|---------|
| Dates of Examination of principal parts—Cylinders | 2.2.12                              | Slides                         | 2.2.12                            | Covers                     | 28.1.12 | Pistons                     | 8.2.12  | Rods        | 2.2.12  |
| Connecting rods                                   | 8.2.12                              | Crank shaft                    | 9.2.12                            | Thrust shaft               | 11.1.12 | Tunnel shafts               | 2.2.12  | Screw shaft | 13.5.12 |
| Stern tube  | 23.4.12                             | Steam pipes tested             | 23/4/12                           | Engine and boiler seatings | 6.5.12  | Engines holding down bolts  | 29.5.12 |             |         |
| Completion of pumping arrangements                | 6.6.12                              | Boilers fixed                  | 6.6.12                            | Engines tried under steam  | 6.6.12  |                             |         |             |         |
| Main boiler safety valves adjusted                | 6.6.12                              | Thickness of adjusting washers | P. 13lb 5-3/8" : Star 13lb 5-3/8" |                            |         |                             |         |             |         |
| Material of Crank shaft                           | Steel                               | Identification Mark on Do.     | 6723                              | Material of Thrust shaft   | By Slut | Identification Mark on Do.  | 8625-N  |             |         |
| Material of Tunnel shafts                         | By Slut                             | Identification Marks on Do.    | 8625-N                            | Material of Screw shafts   | iron    | Identification Marks on Do. | 6723    |             |         |
| Material of Steam Pipes                           | W. Iron lap weld (7" 3/8" + 5" 1/4) | Test pressure                  | 510 lbs.                          |                            |         |                             |         |             |         |

**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 and main steam pipes were tested by hydraulic pressure and the engines and boilers examined under steam and all found satisfactory.*

*The machinery is now in a good and safe working condition and eligible in my opinion to have the notation of LMC-6.12 in the Register Book.*

It is submitted that this vessel is eligible for THE RECORD + LMC 6.12.

*JUN 20/6/12*

*W. Morrison*

Engine Surveyor to Lloyd's Register of British & Foreign Shipping.

|                              |              |                   |       |
|------------------------------|--------------|-------------------|-------|
| The amount of Entry Fee      | £ 3 - 0 - 0  | When applied for, | 14. 6 |
| Special                      | £ 36 - 7 - 0 | When received,    | 17. 6 |
| Donkey Boiler Fee            | £            |                   |       |
| Travelling Expenses (if any) | £            |                   |       |

Committee's Minute

FRI. JUN. 21. 1912

Assigned

*+ LMC 6.12*



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Lloyd's Register Foundation

Rpt. 5a.

Date of writing

No. in Su Reg. Book.

Master

Engines made

Boilers made

Registered Ho

MULTITU

(Letter for rec

Boilers

No. of Certificate

safety valves to

Are they fitted

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Material of sh

5/11 Port

We

Richardson,

be Specially Surve

We her

For boiler Horse Power above 200. 1 than £2 2s.

MEM.—In all cases when to be defrayed

No. 4364

This request is ma foreign Shipping.

While the Committee us and that neither the Co report or certificate issu or for any error of jud

DEC 18 1912 SECRETARY'S REGISTER

Lloyd's Register

Dates of Survey while building

GENERAL

Special hydraulic, This boiler and saf

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Assigned

Certificate (if required) to be sent to Committee's Minute.