

REPORT ON MACHINERY.

Port of MIDDLESBROUGH-ON-TEES

THUR, 11 MAY 1899

Received at London Office

No. in Survey held at Stockton
Reg. Book.

Date, first Survey 18th October 1897 Last Survey 6th May 1899.

(Number of Visits 44)

on the

S.S. "Novington"

Tons { Gross 2537.58
Net 1616.68

Master J. Burnett Built at Thornaby By whom built Richardson, Duck Ho When built 1899.

Engines made at Stockton By whom made Blair & Co. Limd when made 1899.

Boilers made at Stockton By whom made Blair & Co. Limd when made 1899.

Registered Horse Power 244. Owners Smithdown S.S. Co Ld Port belonging to London.

Nom. Horse Power as per Section 28 244 Is Electric Light fitted no.

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3. No. of Cranks 3.
 Diameter of Cylinders 23", 34 1/2" & 61 1/2" Length of Stroke 39" Revolutions per minute 59. Diameter of Screw shaft as per rule 11.2
 Diameter of Tunnel shaft as fitted 10.2 Diameter of Crank shaft journals 11 3/4" Diameter of Crank pin 12 1/4" Size of Crank webs 19 1/2" x 8 3/8" B.
 Diameter of screw 16'-0" Pitch of screw 16'-0" No. of blades 4. State whether moveable sol. Total surface 70 1/2 sq. ft.
 No. of Feed pumps 2. Diameter of ditto 3" Stroke 28" Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2. Diameter of ditto 4 1/2" Stroke 28" Can one be overhauled while the other is at work yes
 No. of Donkey Engines 2. Sizes of Pumps Ball 7 1/2 x 9" & 4 x 8" No. and size of Suctions connected to both Bilge and Donkey pumps
 in Engine Room Three: Centre 3 1/2" & wings 3" dia In Holds, &c. Fore, main & aft holds two each
3" diameter. Tunnel well 2 1/2" diameter.
 No. of bilge injections 1 sizes 5 1/2" 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 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
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock on stocks Is the screw shaft tunnel watertight apparently
 Is it fitted with a watertight door yes worked from upper platform.

BOILERS, &c.— (Letter for record (5)) Total Heating Surface of Boilers 3748 sq. ft. Is forced draft fitted no
 No. and Description of Boilers 2. S. E. Multitubular Working Pressure 160 lb Tested by hydraulic pressure to 320 lb
 Date of test 13.3.99 Can each boiler be worked separately yes Area of fire grate in each boiler 50 sq. No. and Description of safety valves to
 each boiler two dis. act. Spring Area of each valve 7.06 sq. Pressure to which they are adjusted 165 lb Are they fitted
 with easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork 24" Outside Mean diameter of boilers 14'-9"
 Length 10'-0" Material of shell plates S. 27.32 Thickness 17/32 Description of riveting: circum. seams ind. d. r. lap long. seams d. butt st.
 Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets ind. 8 3/8 Lap of plates & width of butt straps 6 1/2" & 19 1/4"
 Percentages of strength of longitudinal joint: rivets 89. Working pressure of shell by rules 177 lb Size of manhole in shell 17" x 13"
 plate 85. Size of compensating ring 31 x 27 x 1 7/32 No. and Description of Furnaces in each boiler 3 Ribbed Material steel Outside diameter 41"
 Length of plain part top 6'-3" Thickness of plates bottom 5 1/2" Description of longitudinal joint welded No. of strengthening rings —
 Working pressure of furnace by the rules 170 lb Combustion chamber plates: Material steel Thickness: Sides 1/16" Back 1/16" Top 1/16" Bottom 1/16"
 Pitch of stays to ditto: Sides 9 3/4" x 9 5/8" Back 9" x 9 1/4" Top 9 1/4" x 9 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 174 lb
 Material of stays steel Diameter at smallest part 1 9/16" Area supported by each stay 93.8 sq. Working pressure by rules 183 lb End plates in steam space:
 Material steel Thickness 1 1/8" Pitch of stays 17 1/2" x 20" How are stays secured d. nuts Working pressure by rules 169 lb Material of stays steel
 Diameter at smallest part 2 3/4" Area supported by each stay 350 sq. Working pressure by rules 169 lb Material of Front plates at bottom steel
 Thickness 1" Material of Lower back plate steel Thickness 1 1/8" Greatest pitch of stays 13 1/2" Working pressure of plate by rules 233 lb
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 5/8" Material of tube plates 5 Thickness: Front 1" Back 1 3/16" Mean pitch of stays 9 7/8"
 Pitch across wide water spaces 14" Working pressures by rules 195 lb Girders to Chamber tops: Material steel Depth and
 thickness of girder at centre 7" x 1 1/2" Length as per rule 27 1/4" Distance apart 9 1/4" Number and pitch of Stays in each 2. 9 1/2"
 Working pressure by rules 163 lb 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 casing gear —

DONKEY BOILER— Description *Vertical Horace Patent*
 Made at *Ss Shields* By whom made *M. Straker* When made *11.98* Where fixed *Stokehold*
 Working pressure *90 lbs* Tested by hydraulic pressure to *180 lbs* No. of Certificate *5387* Fire grate area *35* Description of safety valves *d. Spring*
 No. of safety valves *2* Area of each *7.07* Pressure to which they are adjusted *90 lbs* If fitted with casing gear *yes* If steam from main boilers
 enter the donkey boiler *no* Diameter of donkey boiler *7'-6"* Length *14'-6"* Material of shell plates *steel* Thickness *1/2"*
 Description of riveting long. seams *d. n. lap* Diameter of rivet holes *1"* Whether punched or drilled *drill* Pitch of rivets *3"*
 Lap of plating *4 1/4"* Per centage of strength of joint Rivets *70* Thickness of shell crown plates *1/2"* Radius of do. *3'-8 1/2"* No. of Stays to do. *4*
 Dia. of stays *—* Diameter of furnace Top *—* Bottom *7'-4"* Length of furnace *—* Thickness of furnace plates *5/8"* Description
 joint *lap* Thickness of furnace crown plates *5/8"* Stayed by *Sph.* Working pressure of shell by rules *910*
 Working pressure of furnace by rules *91 lbs* Diameter of uptake *22"* Thickness of uptake plates *7/16* Thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *Top and bottom end bolts & nuts & G.C. Vaul*
Main bearing & scrapping bolts and nuts. Feed, bilge
and donkey pump valves. Propeller. — Bolts & nuts etc.

The foregoing is a correct description,
 FOR BLAIR & CO., LIMITED.
W. Bourie Manufacturers of Engines & Main boilers. —

Dates of Survey while building
 During progress of work in shops — *1899. Oct. 15. Nov. 24. 7. 11. 15. 21. 25. 30. Dec. 5. 12. 19. 22. 1899. Jan. 6. 9. 15. 22. Feb. 1. 11. 16. 22. 27. Mar. 6. 13. 15. 16. 21. 22.*
 During erection on board vessel — *25. 27. 29. 30. Apr. 5. 6. 10. 13. 17. 18. 20. 21. 26. May 6.*
 Total No. of visits *Forty-four*

General Remarks (State quality of workmanship, opinions as to class, &c.)
These engines and boilers have been built and tested as required by the Society's Rules for Special Survey and are of good workmanship and materials, they have been well fitted and secured on board the vessel, and were, on completion, tried under steam with satisfactory results.
*The machinery is now in a good and efficient working condition and in my opinion eligible to the notation of: **L.M.C. 5.99** in the Society's Register. —*

It is submitted that this vessel is eligible for THE RECORD. **L.M.C. 5.99.**

A.C.H.
11.5.99.
12.5.99

The amount of Entry Fee. . . £ *2* : — :
 Special £ *32* : *4* :
 Donkey Boiler Fee £ : :
 Travelling Expenses (if any) £ : :
 When applied for, *10th May 1899*
 When received, *10th May 1899*

John Anderson
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

Committee's Minute **FRI 12 MAY 1899** MACHINERY CERTIFICATE WRITTEN.
 Assigned *+ L.M.C. 5.99*

Middlesbrough, Tues. —