

REPORT ON MACHINERY.

No. 6732

FRI. 25 FEB 1910

Port of Middlebrough Received at London Office 15th Feb 1910

No. in Survey held at Stockton-on-Tees Date, first Survey 15th Feb 1909 Last Survey 15th Feb 1910

Reg. Book. on the Steel Screw Steamer "Sterndale" (Number of Visits 9) Gross 292 5.18
 Master J. Davis Built at Thornaby-on-Tees By whom built Richardson, Duck & Co Tons Net 180 8.35
 Engines made at Stockton By whom made Messrs Blair & Co Lim? (Nº 1666) when made 1910
 Boilers made at Stockton By whom made Messrs Blair & Co Lim? when made 1910
 Registered Horse Power 292 Owners Jab. S. S. S. Lucas & Co. Port belonging to Bristol
 Nom. Horse Power as per Section 28 292 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 24-40-65 Length of Stroke 42 Revs. per minute 13.3 Dia. of Screw shaft 14 3/4 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 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 no If two
 liners are fitted, is the shaft lapped or protected between the liners no Length of stern bush 5'-1"
 Dia. of Tunnel shaft 11.37 as per rule 11.37 Dia. of Crank shaft journals 11.24 as per rule 11.24 Dia. of Crank pin 13 1/2 Size of Crank webs 24 x 8 1/2 Dia. of thrust shaft under
 collars 13 1/2 as fitted 12 1/2 Dia. of screw 17'-0" Pitch of Screw 16'-6" No. of Blades 4 State whether moveable no Total surface 82 sq
 No. of Feed pumps 2 Diameter of ditto 3 Stroke 30" Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 4 1/2 Stroke 30" Can one be overhauled while the other is at work yes
 No. of Donkey Engines 2 Sizes of Pumps Blat-9x10 Ind 4x8 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 3 @ 3" bore In Holds, &c. No 1 = 2 @ 3" No 2 = 2 @ 3"
aft hold 2 @ 3" Tunnel well on at 2 1/2" bore
 No. of Bilge Injections 1 sizes 6 1/4 Connected to condenser 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 hold motions 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 6.1.10 of Stern Tube 6.1.10 Screw shaft and Propeller 31.1.10
 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 (5)) Manufacturers of Steel Messrs J. Spencer & Sons
 Total Heating Surface of Boilers 4658 Is Forced Draft fitted no No. and Description of Boilers 2 Single Ended
 Working Pressure 160 Tested by hydraulic pressure to 320 Date of test 12.1.10 No. of Certificate 4355
 Can each boiler be worked separately yes Area of fire grate in each boiler 59 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 165 lbs Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or 20" Mean dia. of boilers 15'-9" Length 10'-6" Material of shell plates steel
 Thickness 1 1/8" 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 Riv-3 Riv Diameter of rivet holes in long. seams 1 1/16 Pitch of rivets 8 3/8" Lap of plates or width of butt straps 17 3/8 x 1 1/2
5 Rivets per pitch rivets 87.7 Working pressure of shell by rules 165 lbs Size of manhole in shell 16" x 12"
 Percentages of strength of longitudinal joint plate 85.75 (monium)
 Size of compensating ring 7 1/2" x 1 1/8" No. and Description of Furnaces in each boiler 3 horizontal Material steel Outside diameter 45 1/4"
 Length of plain part top 33 bottom 24 Thickness of plates 33 bottom 24 Description of longitudinal joint welded No. of strengthening rings —
 Working pressure of furnace by the rules 174 Combustion chamber plates: Material steel Thickness: Sides 21/32 Back 21/32 Top 21/32 Bottom 3/4
 Pitch of stays to ditto: Sides 9 1/4" x 9 1/4" Back 9 1/8" x 9 1/4" Top 9 1/4" x 9 1/4" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 165
 Material of stays steel Diameter at smallest part 1.59 Area supported by each stay 90.19 Working pressure by rules 199 End plates in steam space:
 Material steel Thickness 1 1/4" Pitch of stays 21" x 21 1/2" How are stays secured nuts Working pressure by rules 162 Material of stays steel
 Diameter at smallest part 3.04 Area supported by each stay 456.75 Working pressure by rules 165 Material of Front plates at bottom steel
 Thickness 1" Material of Lower back plate steel Thickness 1" Greatest pitch of stays 16 1/2" x 9 1/4" Working pressure of plate by rules 177
 Diameter of tubes 3 1/2" Pitch of tubes 4 3/8" x 4 3/4" Material of tube plates steel Thickness: Front 1" Back 13/16" Mean pitch of stays 10'-6"
 Ch across wide water spaces 14 1/2" Working pressures by rules 170 Girders to Chamber tops: Material steel Depth and
 Thickness of girder at centre 7 1/8" x 1 1/2" Length as per rule 26 1/2" Distance apart 9 3/4" Number and pitch of stays in each 2 @ 9 1/4"
 Working pressure by rules 166 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
— Pitch of rivets — Working pressure of shell by rules — Diameter of flue — Material of flue plates — Thickness —
 Fitted 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 6080

No. one Description Multitubular Single ended
 Made at Stockton By whom made Thames Valley Bros (No 4093) When made 1910 Where fixed Upper 8k in Br
 Working pressure 90 tested by hydraulic pressure to 180 Date of test 6.1.10 No. of Certificate 4353 Fire grate area 33 sq Description of S
 Valves Spring No. of Safety Valves 2 Area of each 7.07 Pressure to which they are adjusted 95 Date of adjustment 15.2
 If fitted with easing gear yes If steam from main boilers can enter the donkey boiler no Dia. of donkey boiler 10'-0" Length 10'-0"
 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
 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 of con. rod top end, con. rod bottom end, and
main bearing bolts and nuts: one set of coupling bolts and nuts: one set fuel and
bridge pump valves, assorted bolts and nuts, iron of various sizes; one propeller; main &
donkey fuel check valves

The foregoing is a correct description,

FOR BLAIR & CO., LIMITED

Manufacturer.

Geo Middlesbrough
 Dates of Survey { During progress of work in shops - 1909. Oct. 15. 19. 21. 25. 27. 28 Nov. 1. 3. 4. 8. 10. 12. 16. 17. 18. 19. 22. 23. 24. 25. 26. 27. 28. 29. 30. Dec. 2. 3. 6. 9. 13. 14. 15. 16. 17. 20. 22. 1910 Jan. 4. 6. 10. 12. 14. 18. 20. 27. 28. Feb. 2. 3. 7. 8. 10. 11. 15. Total No. of visits 49 Is the approved plan of main boiler forwarded herewith yes

Dates of Examination of principal parts—Cylinders 18.11.09 Slides 2.12.09 Covers 3.12.09 Pistons 9.12.09 Rods 9.12.09
 Connecting rods 20.12.09 Crank shaft 14.12.09 Thrust shaft 20.11.09 Tunnel shafts 3.9.09 Screw shaft 14.1.10 Propeller 14.1.10
 Stern tube 20.12.09 Steam pipes tested 3.2.10 Engine and boiler seatings 6.1.10 Engines holding down bolts 3.2.10
 Completion of pumping arrangements 10.2.10 Boilers fixed 10.2.10 Engines tried under steam 11.2.10
 Main boiler safety valves adjusted 11.2.10 Thickness of adjusting washers Star Bk. SV = 1 1/2: PV = 1/4: P.Bk SV = 3/2: PV = 1/2
 Material of Crank shaft Iron Steel Identification Mark on Do. 6532 Material of Thrust shaft Iron Steel Identification Mark on Do. 7014
 Material of Tunnel shafts Iron Steel Identification Marks on Do. 7019.N Material of Screw shafts Iron Identification Marks on Do. 653
 Material of Steam Pipes Solid drawn copper 6 1/2 Bore x 1/4" x 5" + 1/4" Test pressure 400 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 at a wharf
and all found satisfactory

The machinery of this vessel is now in a good and safe working
condition and eligible in my opinion to have the notation of LMC-2
in the Register Book

It is submitted that
 this vessel is eligible for
 THE RECORD. + LMC. 2.10.

The amount of Entry Fee. £ 2-0-0 When applied for, 17.2.10
 Special .. £ 34-12-0 When received, 19.2.10
 Donkey Boiler Fee .. £ ✓
 Travelling Expenses (if any) £ ✓

Committee's Minute

TUES. 1 MAR 1910

Assigned

J.M. J.W.D.
Wm Morrison
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping



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 Foundation