

REPORT ON MACHINERY.

No. 8573

TUE. AUG. -4. 1914

Received at London Office

Date of writing Report 25. 7. 1914. When handed in at Local Office 1-8. 10. 14 Port of MIDDLESBRO'

No. in Survey held at Middlesbrough Date, First Survey April 28th. Last Survey July 30th 1914. Reg. Book. 11 on the S.S. "Brock" (Number of Visits 28.)

Master Built at Middlesbrough By whom built Smith's Dock Co. Ld. Engines made at Middlesbrough By whom made Smith's Dock Co. Ld. (No. 75) Boilers made at Stockton By whom made Blair & Co. Ld. Registered Horse Power Owners J. H. Ward & Sons Port belonging to Hutwood Nom. Horse Power as per Section 28 99 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3 Dia. of Cylinders 13 1/4, 23, 37 Length of Stroke 27 Revs. per minute 108 Dia. of Screw shaft as per rule 7.88 as fitted 8 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 ✓ 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 3'-2 1/2" Dia. of Tunnel shaft as per rule 6.95 as fitted 7 Dia. of Crank shaft journals as per rule 7.3 as fitted 7 1/2 Dia. of Crank pin 7 1/2 Size of Crank webs 11x4 5/8 Dia. of thrust shaft under collars 7 1/2 Dia. of screw 9-9 Pitch of Screw 11-3 No. of Blades 4 State whether moveable No Total surface 35 sq. ft. No. of Feed pumps 2 Diameter of ditto 2 3/4 Stroke 13 1/2 Can one be overhauled while the other is at work yes No. of Bilge pumps 2 Diameter of ditto 2 3/4 Stroke 13 1/2 Can one be overhauled while the other is at work yes No. of Donkey Engines Two Sizes of Pumps 6x6x6, 6x4x6 No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Two 2" In Holds, &c. Two 2" Ejector suction from all bilges & discharge overboard. No. of Bilge Injections 1 sizes 3 1/2" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size yes 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 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 bilge suction How are they protected wood casing 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 9. 6. 14 of Stern Tube 8. 6. 14 Screw shaft and Propeller 8. 6. 14 Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door ✓ worked from ✓

BOILERS, &c.—(Letter for record) Manufacturers of Steel Total Heating Surface of Boilers Is Forced Draft fitted No. and Description of Boilers Working Pressure Tested by hydraulic pressure to Date of test No. of Certificate Can each boiler be worked separately Area of fire grate in each boiler No. and Description of Safety Valves to each boiler Area of each valve Pressure to which they are adjusted Are they fitted with easing gear Smallest distance between boilers or uptakes and bunkers or woodwork Mean dia. of boilers Length Material of shell plates Thickness Range of tensile strength Are the shell plates welded or flanged Descrip. of riveting: cir. seams long. seams Diameter of rivet holes in long. seams Pitch of rivets Lap of plates or width of butt straps Per centages of strength of longitudinal joint rivets..... Working pressure of shell by rules Size of manhole in shell plate..... Size of compensating ring No. and Description of Furnaces in each boiler Material Outside diameter Length of plain part top..... Thickness of plates crown..... Description of longitudinal joint No. of strengthening rings bottom..... Working pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom Pitch of stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules Material of stays Diameter at smallest part Area supported by each stay Working pressure by rules End plates in steam space: Material Thickness Pitch of stays How are stays secured Working pressure by rules Material of stays Diameter at smallest part Area supported by each stay Working pressure by rules Material of Front plates at bottom Thickness Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules Diameter of tubes Pitch of tubes Material of tube plates Thickness: Front Back Mean pitch of stays Pitch across wide water spaces Working pressures by rules Girders to Chamber tops: Material Depth and thickness of girder at centre Length as per rule Distance apart Number and pitch of stays in each Working pressure by rules 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 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*

No. *None* Description _____
 Made at _____ By whom made _____ When made _____ Where fired _____
 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:— *Two top & two bottom-end connecting rod bolts & nuts. Two main bearing bolts & nuts. One set of coupling bolts & nuts. One set of feed & bilge pump valves. Main & donkey feed check valves. Assorted bolts & nuts etc. 1/2*
The foregoing is a correct description, J. Smiths Dock Co. Ltd.
 Manufacturer. *W. Scott*

Dates of Survey while building: During progress of work in shops - - - 1914. *Apr. 28. May. 13. 19. 20. 21. 26. 28. 29. Jun. 3. 4. 5. 8. 9. 15. 19. 22. 25. 29 Jul. 2. 7. 9. 14. 17. 21. 22. 23. 24. 30.*
 During erection on board vessel - - - _____
 Total No. of visits *28* Is the approved plan of main boiler forwarded herewith _____
 " " " donkey " " " _____

Dates of Examination of principal parts— Cylinders *28. 5. 14* Slides *5. 6. 14* Covers *5. 6. 14* Pistons *29. 5. 14* Rods *29. 5. 14*
 Connecting rods *29. 5. 14* Crank shaft *8. 5. 14* Thrust shaft *23. 4. 14* Tunnel shafts *None* Screw shaft *23. 4. 14* Propeller *4. 6. 14*
 Stern tube *4. 6. 14* Steam pipes tested *18. 7. 14* Engine and boiler seatings *9. 6. 14* Engines holding down bolts *29. 6. 14*
 Completion of pumping arrangements *23. 7. 14* Boilers fixed *23. 7. 14* Engines tried under steam *23. 7. 14*
 Main boiler safety valves adjusted *23. 7. 14* Thickness of adjusting washers *PV 1/4" SV 5/16"*
 Material of Crank shaft *Steel* Identification Mark on Do. *3719WDM* Material of Thrust shaft *Iron* Identification Mark on Do. *3719WD*
 Material of Tunnel shafts *None* Identification Marks on Do. *✓* Material of Screw shafts *Iron* Identification Marks on Do. *3719WV*
 Material of Steam Pipes *Solid drawn copper* Test pressure *360 lbs*

General Remarks (State quality of workmanship, opinions as to class, &c.)
The Engines of this vessel have been constructed under Special Survey and are of good material and workmanship.
The Engines and Boiler of this vessel have been fitted and secured on board in accordance with the Rules.
They are now in good working condition and in my opinion eligible to have the notation of +LMC 7-14 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. +LMC 7.14

W. H. G. 10.8.14
J. P. R.
W. H. G.
Thomas Miller
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee .. £ *1 : 0 :* When applied for. _____
 Special .. £ *8 : 16 :* _____
 Donkey Boiler Fee .. £ _____
 Travelling Expenses (if any) £ _____
 When received. *28.9.14*

Committee's Minute TUE. AUG. 11. 1914
 Assigned *+ LMC 7.14.*



Certificate (if required) to be sent to _____