

REPORT ON MACHINERY.

No. 4173

Port of MIDDLESBROUGH-ON-TEES.

Received at London Office

18 JUL 13 1905

No. in Survey held at Middlesbrough Date, first Survey Jan 30th 05 Last Survey June 23rd 1905

Reg. Book.

(Number of Visits 4.8)

Support the S.S. "Ballochmyle"

Tons { Gross 3289.97
Net 2105.34
When built 1905

Master Storey Built at Thornaby By whom built Craig Taylor & Co

Engines made at Middlesbrough By whom made Richardsons Westgarth & Co. Ltd when made 1905

Boilers made at Middlesbrough By whom made ditto when made 1905

Registered Horse Power _____ Owners The Kyle Transport Co. Ltd Port belonging to Liverpool

Nom. Horse Power as per Section 28 308 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 45" Revs. per minute _____ Dia. of Screw shaft as per rule 13.9 Material of Ingot Steel
 as fitted 14" screw shaft)
 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 fitting If two
 liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 4-8 1/2
 Dia. of Tunnel shaft as per rule 12.09 ✓ ¹²⁻¹³ as fitted 12.3 Dia. of Crank shaft journals as per rule 12.69 ✓ as fitted 13" Dia. of Crank pin 13" Size of Crank webs 8 1/2" x 2 1/4" Dia. of thrust shaft under
 collars 13" Dia. of screw 17-6" Pitch of screw 17 feet No. of blades 4 State whether moveable no Total surface 850 sq ft
 No. of Feed pumps 2 Diameter of ditto 3 1/4" Stroke 2.5 1/2" Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 4" Stroke 2.5 1/2" Can one be overhauled while the other is at work yes
 No. of Donkey Engines 2 duplex Sizes of Pumps Feed 7 1/2" x 5" x 6" Ballast 7" x 8" x 8" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Three of 3 1/2" In Holds, &c. Two of 3 1/2" in Nos. 1, 2, 3 Holds
One of 3 1/2" in after hold well, one of 3 1/2" in tunnel well
 No. of bilge injections 1 sizes 6" 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
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock New vessel Is the screw shaft tunnel watertight see ship report
 Is it fitted with a watertight door yes worked from Cylinder grating

BOILERS, &c.— (Letter for record (P)) Total Heating Surface of Boilers 4750 sq ft Is forced draft fitted no
 No. and Description of Boilers Two single ended Working Pressure 180 lb Tested by hydraulic pressure to 360 lb
 Date of test 22.5.05 Can each boiler be worked separately yes Area of fire grate in each boiler 700 sq ft No. and Description of safety valves to
 each boiler Two direct spring Area of each valve 9.62 sq" Pressure to which they are adjusted 185 lb Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 14" Mean dia. of boilers 16'-0" Length 10'-9" Material of shell plates Steel
 Thickness 1 1/32 Range of tensile strength 29/32 Are they welded or flanged no Descrip. of riveting: cir. seams DR Lap long. seams DR Butt, Strap
 Diameter of rivet holes in long. seams 1 5/16 Pitch of rivets 8 1/4" / row 4 1/2" 2 rows Top of plates or width of butt straps 1-7 1/2" x 1 1/32" inner 1" outer
 Per centages of strength of longitudinal joint rivets 89.7 Working pressure of shell by rules 184 lb Size of manhole in shell 12" x 16"
 plate 85
 Size of compensating ring 7 1/2" x 1 1/32" No. and Description of Furnaces in each boiler 3 Insulars Material Steel Outside diameter 4'-0 1/4"
 Length of plain part top 7'-0" Thickness of plates crown 9" Description of longitudinal joint Welded No. of strengthening rings ✓
 bottom 7'-0" bottom 9"
 Working pressure of furnace by the rules 180 Combustion chamber plates: Material Steel Thickness: Sides 4" Back 4" Top 4" Bottom 3 1/4"
 Pitch of stays to ditto: Sides 8" x 10 1/2" Back 9 1/2" x 9" Top 7 1/2" x 11" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 186
 Material of stays Area S Diameter at smallest part 2.09" Area supported by each stay 825 sq" Working pressure by rules 186 lb End plates in steam space:
 Material Steel Thickness 1 1/8" Pitch of stays 17" x 23" How are stays secured Dr. & W. Working pressure by rules 182 lb Material of stays Steel
 Area at smallest part 706 sq" Area supported by each stay 323 sq" Working pressure by rules 218 lb Material of Front plates at bottom Steel
 Thickness 7/8 Material of Lower back plate Steel Thickness 7/8 Greatest pitch of stays 15" x 8" Working pressure of plate by rules 182 lb
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates Steel Thickness: Front 1 1/8" Back 3 1/2" Mean pitch of stays 11 1/4"
 Pitch across wide water spaces 14 1/4" Working pressures by rules 201 lb Girders to Chamber tops: Material Steel Depth and
 thickness of girder at centre 10 1/2" x 1 3/4" Length as per rule 2-10 1/2" Distance apart 11" Number and pitch of Stays in each Three 7 1/2"
 Working pressure by rules 181 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 easing gear _____

If not, state whether, and when, one will be sent? Is a Report also sent on the Hull of the Ship?

W 232-0074

[2000-604-Copyable Ink.]

DONKEY BOILER— No. *One* Description *Cyl. Multitubular Two plain furnaces*
 Made at *Stockton* By whom made *Riley Bros Ld* When made *30.5.05* Where fixed *Stokehold*
 Working pressure *100 lbs* tested by hydraulic pressure to *200 lbs* No. of Certificate *3457* Fire grate area _____ Description of safety valves *Direct spring*
 No. of safety valves *2* Area of each *7.07* Pressure to which they are adjusted *100 lbs* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Dia. of donkey boiler *9'-6"* Length *9'-6"* Material of shell plates *Steel* Thickness *5/8"* Range of tensile strength *28/32* Descrip. of riveting long. seams *Treb riv lap* Dia. of rivet holes *15/16"* Whether punched or drilled *drilled* Pitch of rivets *3 3/4"*
 Lap of plating *6 1/2"* Per centage of strength of joint Rivets *75* Thickness of shell plates *27" x doub. strip top* Radius of do. *32"* Pitch No. of Stays to do. *16 x 17"*
 Dia. of stays. *2 1/4"* Steel Diameter of furnace Top *2'-10"* Bottom _____ Length of furnace *8'-3"* Thickness of furnace plates *7/8"* Description of joint *welded* Thickness of *Comb. Chamf. Back 3/8" x 2 1/2"* furnace crown plates *1 1/2" x 3/8"* Stayed by *1 1/4" S. Stays 10 x 9 pitch drilled* Working pressure of shell by rules *102.5 lb*
 Working pressure of furnace by rules *101.5 lb* Diameter of *tube 3 1/4"* Thickness of *tube 7 3/32"* Thickness of *Stay 5/16"* water tubes *7/16"*

SPARE GEAR. State the articles supplied:— *2 Bolter nuts for piston rods - connecting rods and main bearings, 1 set coupling bolts, 6 piston bolts 1 set feed & bilge pump valves 1/2 set air pump valves 2 feed check valves 1 set HP piston rings 1 P piston rings & piston valve rings, 1 set L.P. piston springs 1 donkey pump valves Propeller.*
 The foregoing is a correct description,
 For **RICHARDSONS, WESTGARTH & Co. Ltd.** Manufacturer.

A. Jackson
 Dates of Survey while building
 During progress of work in shops - *1905 Jan 30-31 Feb 2-14 20-27 Mar 1-6 8-9 10-14 14-17 21-22 23-25 28-29 31*
 During erection on board vessel - *May 2-3-5-9-12-15-16-17-18-19-22-24-26-30 June 1-5 7-8-10-17-21-25*
 Total No. of visits *Forty eight* Is the approved plan of main boiler forwarded herewith *yes*
 " " " donkey " " " *yes*

General Remarks (State quality of workmanship, opinions as to class, &c.)
This vessel's machinery has been built under special survey and tested as required by the Rules. The materials and workmanship are good and efficient.
*After fitting and securing on board the engines and boilers have been tried under full steam with satisfactory results and are now in good order and safe working condition and eligible in my opinion to have the notation **L M C 6-05**.*

It is submitted that this vessel is eligible for THE RECORD + LMC 6.05

C. M. 13.7.05
Ed. 13.7.05

The amount of Entry Fee..	£ 3 :	0 : 0	When applied for,
Special	£ 25 :	8 : 0	12. 4 1905
Donkey Boiler Fee .. .	£ :	:	When received,
Travelling Expenses (if any) £	:	:	12. 4 1905

RWD R. D. Shilston
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *FRI, 14 JUL 1905*
 Assigned *+ LMC 6.05*



Certificate (if required) to be sent to

The Surveyors are requested not to write on or below the space for Committee's Minute.