

REPORT ON MACHINERY.

No. 4169

Port of MIDDLESBROUGH-ON-TEES.

Received at London Office WED. 12 JULY 1905

No. in Survey held at Stockton & Middlesbrough Date, first Survey Apr 30 1905 Last Survey July 4 1905

Reg. Book.

(Number of Visits 24)403 on the Steel SS "Kirkwood".Master Built at Middlesbrough By whom built Thompson & Son Ltd Tons Gross 3100
Engines made at Stockton By whom made Tolson & Co Ltd Net 2000
Boilers made at Stockton By whom made Tolson & Co Ltd When built 1905Registered Horse Power Owners Continental & Pacific S.S. Co Ltd Port belonging to MiddlesbroughNom. Horse Power as per Section 28 273 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Direct acting trip expansion No. of Cylinders 3 No. of Cranks 3
Dia. of Cylinders 23½-39-64 Length of Stroke 42 Revs. per minute 67 Dia. of Screw shaft as per rule 13.8 Material of W 2m
Is the screw shaft fitted with a continuous liner the whole length of the stern tube No 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 No 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 Yes Length of stern bush 5-0
Dia. of Tunnel shaft as per rule 11.2 Dia. of Crank shaft journals as per rule 11.76 Dia. of Crank pin 13 Size of Crank webs 20½x8½ Dia. of thrust shaft under
collars 13 Dia. of screw 17-0 Pitch of screw 16-6 No. of blades 4 State whether moveable No Total surface 78 ft
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 4½ Stroke 30 Can one be overhauled while the other is at work Yes
No. of Donkey Engines Two Sizes of Pumps 7½x8 7½x10 No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room Three 3" diameter In Holds, &c. Two each hold, 3" diameter

No. of bilge injections 1 sizes 6½ 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 found Is the screw shaft tunnel watertight See ship's report
Is it fitted with a watertight door Yes worked from Top platform

BOILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 4200 ft Is forced draft fitted No
No. and Description of Boilers Two cylindrical multitubular Working Pressure 160 lb Tested by hydraulic pressure to 320 lb
Date of test 29-5-05 Can each boiler be worked separately Yes Area of fire grate in each boiler 59½ ft No. and Description of safety valves to
each boiler Two spring Area of each valve 8.29 ft 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 18 Extn dia. of boilers 15-3 Length 10-3 Material of shell plates Steel
Thickness 1½ Range of tensile strength 27½ Are they welded or flanged No Descrip. of riveting: cir. seams 2 D Riv long. seams 2 D Riv
Diameter of rivet holes in long. seams 13/16 Pitch of rivets 8½ Lap of plates or width of butt straps 1-5¾
Per centages of strength of longitudinal joint 86.2 Working pressure of shell by rules 163 lb Size of manhole in shell 17x13
Size of compensating ring 31-27-17½ No. and Description of Furnaces in each boiler 3 Iron Impure Material Steel Outside diameter 3-6½
Length of plain part 6-7 Thickness of plates 1½ Description of longitudinal joint Welded No. of strengthening rings —
Working pressure of furnace by the rules 177 lb Combustion chamber plates: Material Steel Thickness: Sides 11/16 Back 11/16 Top 11/16 Bottom 13/16
Pitch of stays to ditto: Sides 9½x9¾ Back 9½x9¾ Top 9½x9¾ If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 171.8 lb
Material of stays Steel Diameter at smallest part 19/16 Area supported by each stay 95 ft Working pressure by rules 181 lb End plates in steam space:
Material Steel Thickness 17/32 Pitch of stays 19x20 How are stays secured 2x10 Working pressure by rules 166.4 lb Material of stays Steel
Diameter at smallest part 27/8 Area supported by each stay 380 ft Working pressure by rules 170 lb Material of Front plates at bottom Steel
Thickness 1 Material of Lower back plate Steel Thickness 1½ Greatest pitch of stays 15x9¾ Working pressure of plate by rules 243 lb
Diameter of tubes 3½ Pitch of tubes 4¼x47/8 Material of tube plates Steel Thickness: Front 1 Back 13/16 Mean pitch of stays 97/8
Pitch across wide water spaces 14 Working pressures by rules 195.5 lb Girders to Chamber tops: Material Steel Depth and
thickness of girder at centre 7x1½ Length as per rule 26½ Distance apart 9½ Number and pitch of Stays in each Two 9½
Working pressure by rules 174 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 —

W1114-0102

DONKEY BOILER— No. *One* Description *Meredith's Patent. Niley No. 3510.*
 Made at *Stockton* By whom made *Niley Bros & Co* When made *1905* Where fixed *Stone Hole*
 Working pressure *100 lb* tested by hydraulic pressure to *200 lb* No. of Certificate *3464* Fire grate area *38 4* Description of safety valves *Spring*
 No. of safety valves *2* Area of each *8.27* Pressure to which they are adjusted *100 lb* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *8'-0"* Length *17'-0"* Material of shell plates *Steel* Thickness *9/16"* Range of tensile strength *27/32* Descrip. of riveting long. seams *Lap tube riv* Dia. of rivet holes *15/16"* Whether punched or drilled *Drilled* Pitch of rivets *4"*
 Lap of plating *6 1/2* Per centage of strength of joint *78.2* Rivets *78.2* Thickness of shell crown plates *9/16"* Radius of do. *Hemispherical* No. of Stays to do. *2* *Standard*
 Dia. of stays. *9/16"* Diameter of furnace Top *5'-5 1/8"* Bottom *7'-0 3/8"* Length of furnace *2'-4"* Thickness of furnace plates *1 1/16"* Description of joint *L & N riv* Thickness of furnace crown plates *1 1/16"* Stayed by *3'-0" radius* Working pressure of shell by rules *108.7 lb*
 Working pressure of furnace by rules *104 lb* Diameter of tubes *3"* Thickness of tube plates *5 5/8" 13 3/16"* Thickness of stay tubes *5/16"*

SPARE GEAR. State the articles supplied:— *Lap & bottom end connecting rods bolts & nuts*
Set of coupling bolts. Two main bearing bolts & nuts Set of feed & bulge
pinion & valves. H & M P piston rings. 4 piston pins Propeller & propeller
shaft. Bolts & nuts wanted

The foregoing is a correct description,
 FOR BLAIR & CO., LIMITED.

W. Borrie Manufacturer. *of main engines & boilers.*

SECRETARY
 Dates of Survey while building
 During progress of work in shops - *1905. Apr 3-14-18-28 May 2-3-4 8-10-13-15-16-20-23-25-26-27-29 June 1-5-8-9-14-16-17-21-24-30*
 During erection on board vessel - *July 4*
 Total No. of visits *Twenty nine* Is the approved plan of main boiler forwarded herewith *Yes*
 " " " donkey " " " *Yes*

General Remarks (State quality of workmanship, opinions as to class, &c.)

The machinery and boilers of this vessel have been constructed under special survey. The materials and workmanship are good and efficient & when tested under steam were found satisfactory & in my opinion now eligible for the notification of L.M.C. 6.05 in the Register Book.

It is submitted that
 this vessel is eligible for
 THE RECORD L.M.C. 7.05.

Sm.
12.7.05

The amount of Entry Fee. £ *2* : *0* : *0* When applied for,
 Special £ *33* : *13* : *0* *7-7-1905*
 Donkey Boiler Fee £ : : When received, *Red*
 Travelling Expenses (if any) £ : : *8-7-1905*

C. A. Milner
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

Assigned

+ L.M.C. 7.05

MACHINERY CERTIFICATE
 WRITTEN.



© 2020

Lloyd's Register
 Foundation