

REPORT ON MACHINERY.

MON, SEP 21 1896

Port of MIDDLESBROUGH-ON-TEES

Received at London Office

No. in Survey held at Middlesbrough-on-tees Date, first Survey 28th June 1895 Last Survey 16th August 1896
Reg. Book. Supp. 14 on the Screw Steamer "Commonwealth" (Number of Visits 49)

Master H. Anderson Built at Hartlepool By whom built Furness, Mitchell & Co. Ltd. When built 1896
Engines made at Middlesbrough-on-tees By whom made Sir C. Furness, Westgarth & Co. Ltd. When made 1896
Boilers made at Middlesbrough-on-tees By whom made Sir C. Furness, Westgarth & Co. Ltd. When made 1896

Registered Horse Power 260 Owners R. Stewart & Co. Port belonging to Liverpool

Nom. Horse Power as per Section 28 260

ENGINES, &c. — Description of Engines Triple Expansion No. of Cylinders Three
Diameter of Cylinders 24"-38"-64" Length of Stroke 42" Revolutions per minute 65 Diameter of Screw shaft 11 1/2"
Diameter of Tunnel shaft 10 1/4" Diameter of Crank shaft journals 11 1/4" Diameter of Crank pin 11 1/4" Size of Crank webs 14" x 8 1/2" built
Diameter of screw 14' 0" Pitch of screw 15' 6" 6 1/4' 0" No. of blades 4 State whether moveable No Total surface 82 sq. ft.
No. of Feed pumps 2 Diameter of ditto 3 1/4" Stroke 24" Can one be overhauled while the other is at work Yes
No. of Bilge pumps 2 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work Yes
No. of Donkey Engines Two Sizes of Pumps 7 1/2" x 5" x 6" 8" x 7" x 11" No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room Three : 3 1/2" dia. In Holds, &c. Fore Hold Well : one - 3 1/2" dia. Main
Hold Well : one - 3 1/2" dia. After Hold Well : one - 3 1/2" dia. Tunnel Well & Peak : one - 2 1/2" dia.
No. of bilge injections 1 sizes 5 1/2" Connected to condenser, or to circulating pump C.P. Is a separate donkey suction fitted in Engine room & size Yes : 6"
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 New vessels Is the screw shaft tunnel watertight Yes
Is it fitted with a watertight door Yes worked from top platform of engine room

OILERS, &c. — (Letter for record \$) Total Heating Surface of Boilers 3824 sq. ft.
No. and Description of Boilers Two : bylo² hull : Single ended Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs
Date of test 24/7/96 Can each boiler be worked separately Yes Area of fire grate in each boiler 60 sq. ft. No. and Description of safety valves to
each boiler Two : Direct Spring Area of each valve 9' 6" Pressure to which they are adjusted 165 lbs Are they fitted
with easing gear Yes Smallest distance between boilers or uptakes and bunkers or woodwork About 8" Mean diameter of boilers 15' 6"
Length 10' 6" Material of shell plates Steel Thickness 1 1/4" Description of riveting : circum. seams Lap Double long. seams Double Butt Strap
Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 1/4" 4' 8" Lap of plates or width of butt straps 16 1/2"
Percentage of strength of longitudinal joint 88 Working pressure of shell by rules 164 lbs Size of manhole in shell end 16" x 12"
Size of compensating ring 15" thick No. and Description of Furnaces in each boiler 3 : Monitors Material Steel Outside diameter 46 1/4"
Length of plain part 3' 6" 6" Thickness of plates 1 1/2" Description of longitudinal joint Welded No. of strengthening rings ✓
Working pressure of furnace by the rules 162 lbs Combustion chamber plates : Material Steel Thickness : Sides 9/16" Back 5/8" Top 9/16" Bottom 5/16"
Pitch of stays to ditto : Sides 8" x 8" Back 9" x 9" Top 8" x 8" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 164 lbs
Material of stays Iron Diameter at smallest part 1 1/2" diam Area supported by each stay 64" Working pressure by rules 165 lbs End plates in steam space :
Material Steel Thickness 1 1/2" Pitch of stays 14" x 15 1/2" How are stays secured Washers Working pressure by rules 141 lbs Material of stays Steel
Diameter at smallest part 1 1/2" Area supported by each stay 247" Working pressure by rules 163 lbs Material of Front plates at bottom Steel
Thickness 3/4" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 11" Working pressure of plate by rules 160 lbs
Diameter of tubes 3 1/2" Pitch of tubes 4 1/4" x 4 1/4" Material of tube plates Steel Thickness : Front 3/4" Back 3/4" Mean pitch of stays 9' 5"
Pitch across wide water spaces 14 1/2" Working pressures by rules 192 lbs 223 lbs Girders to Chamber tops : Material Iron Depth and
Thickness of girder at centre 8 1/4" x 2" Length as per rule 36" Distance apart 8" Number and pitch of Stays in each 3 : 8"
Working pressure by rules 161 lbs 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 ✓
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 ✓

DONKEY BOILER— Description *Meredith's patent.*

Made at *Stockton* By whom made *Riley Bros.*

When made *24/7/96* Where fixed *In Stockton*

Working pressure *100 lbs* tested by hydraulic pressure to *200 lbs* No. of Certificate *1320* Fire grate area *25.94* Description of safety valves *Orzel Spring*

No. of safety valves *2* Area of each *4.04* Pressure to which they are adjusted *105 lbs* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Diameter of donkey boiler *4' 0"* Length *15' 0"* Material of shell plates *Steel* Thickness *9/16"*

Description of riveting long seams *Lap Double riv* Diameter of rivet holes *5/16"* Whether punched or drilled *punched* Pitch of rivets *3"*

Lap of plating *4 1/2"* Per centage of strength of joint *88%* Rivets *70* Thickness of shell crown plates *9/16"* Radius of do. *3' 6"* No. of stays to do. *none*

Dia. of stays *1"* Diameter of furnace Top *4' 9"* Bottom *5' 11"* Length of furnace *3 feet* Thickness of furnace plates *3/32"* Description of joint *Lap Single riv* Thickness of furnace crown plates *7/16"* Stayed by *Disks to 3 feet radius* Working pressure of shell by rules *105 lbs*

Working pressure of furnace by rules *100 lbs* Diameter of uptake *3 1/2"* Thickness of uptake plates *5/8"* Thickness of water tubes *7/16"* 15' 4 1/2"

SPARE GEAR. State the articles supplied:— *2 bon. rod top end bolts & nuts, 2 bon. rod bottom end bolts & nuts, 2 main bearing bolts, 1 set of coupling bolt & nuts, 1 set of feed and bilge pump valves, 1 set of piston springs, 1 set of rings for piston valve, Nut & bolt assorted, 41 propellers.*

The foregoing is a correct description,
FOR SIR CHRISTOPHER FURNESS, WESTGARTH & CO., LD. Manufacturer.

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

Dates of Survey while building
During progress of work in shops *1895 Nov 25 Dec 1-2-20 1896 Jan 4-14-22 Feb 11-13-24-27 Mar 3-6-11-14-21-25 April 20-21-23-27 May 1-4-19-20-25 June 2-4*
During erection on board vessel *9-14-18-22-24 July 2-9-16-21-24-28-28 Aug 1-2-4-10-11-12-13-14-26*
Total No. of visits *Forty nine* W. H. Pl. 1896- July 14-18-23-24-25 Aug 14-31 Sept 4-15-16-17 Jan.

The Engines and Boilers of this vessel have been built under special survey and the workmanship throughout is good. On completion the Engines & Boilers were examined in dock under full steam and worked satisfactorily. On the day after the Engines had been tried, a slight crack was found at the front of the Condenser towards the forward end. The vessel having proceeded to Hartlepool the tubes were drawn and the Condenser carefully examined inside and out. As a result of this examination it was arranged with the consent of the owners to fit a substantial brass plate over the crack. This has now been satisfactorily completed.

The Machinery is now in good and efficient condition and eligible in our opinion to have the record of **L.M.C. 9.96** entered in the Society's Register Book.

The plans of the main & donkey Boilers are sent herewith.

Certificate (if required) to be sent to *W. H. Pl.*

The amount of Entry Fee. £ *2* : : : When applied for, *19.9.13.96*
Special £ *33* : : :
Donkey Boiler Fee £ : : : When received, *19.9.13.96*
Travelling Expenses (if any) £ : : :

Committee's Minute **TUES, SEP 22 1896**

Assigned *+ L.M.C. 9.96*

It is submitted that this vessel is eligible to have **L.M.C. 9.96** recorded *15th 24/9/96*

W. H. Pl.
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

MACHINERY CERTIFICATE

WRITTEN



© 2020

Lloyd's Register
Foundation