

## REPORT ON MACHINERY.

Port of MIDDLESBROUGH ON TEES

THUR. DEC 28 1899

Received at London

No. in Survey held at Middlebro'-on-Tees Date, first Survey 2<sup>nd</sup> October 99 Last Survey 3<sup>rd</sup> November 1899  
 Reg. Book. 12.15 on the Steel Screw Steamer Verona (Number of Visits 69)  
 Master Hansen Built at N. Hartlepool By whom built Furness, Withy & Boydin When built 1899  
 Engines made at Middlebro'-on-Tees By whom made Sir. G. Furness, Hartgarth & Co. when made 1899  
 Boilers made at " By whom made " when made 1899  
 Registered Horse Power 324 Owners H. M. Roman & Co. Port belonging to Hamburg  
 Nom. Horse Power as per Section 28 321 Is Electric Light fitted No.

ENGINES, &c.—Description of Engines Inverted, triple expansion No. of Cylinders 3 No. of Cranks 3  
 Diameter of Cylinders 25", 40", 68" Length of Stroke 48" Revolutions per minute 60 Diameter of Screw shaft as per rule 13.26  
 Diameter of Tunnel shaft as per rule 12.2 Diameter of Crank shaft journals 13 1/4" Diameter of Crank pin 13 1/4" Size of Crank webs 21" x 10"  
 Diameter of screw 18' 0" Pitch of screw 16' 3" No. of blades 4 State whether moveable no Total surface 90 #  
 No. of Feed pumps 2 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 24" Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 2 Sizes of Pumps Feed 7 1/2" x 5" x 6" Duplex No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room Three. 3 1/2" dia. In Holds, &c. One 2 1/2" in fore peak, one 2 1/2" in the  
well of each hold, one 2 1/2" in tunnel well, & one 2 1/2" in after peak.  
 No. of bilge injections 1 sizes 4" 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 valves  
 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 ✓ Is the screw shaft tunnel watertight yes  
 Is it fitted with a watertight door yes worked from upper platform

BOILERS, &c.—(Letter for record (r)) Total Heating Surface of Boilers 4642 # Is forced draft fitted no  
 No. and Description of Boilers 3. bgl, mult, single ended Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs  
 Date of test 15.5.99 Can each boiler be worked separately yes Area of fire grate in each boiler 40 # No. and Description of safety valves to  
 each boiler Two, spring loaded Area of each valve 4.04 # Pressure to which they are adjusted 185 lbs Are they fitted  
 with easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork no side bunkers Mean diameter of boilers 13' 4 1/2"  
 Length 10' 3" Material of shell plates S. 27-32 lbs Thickness 1 1/2" Description of riveting: circum. seams D. R. lap long. seams dbl. butt straps  
 Diameter of rivet holes in long. seams 1 3/16" Pitch of rivets 8" 4" Lap of plates or width of butt straps 14 5/8" x 1 1/2" thick  
 Per centages of strength of longitudinal joint 89.2 Working pressure of shell by rules 182.1 lbs Size of manhole in shell 16" x 12"  
 Size of compensating ring 24 1/2" x 24 1/2" x 1 1/2" No. and Description of Furnaces in each boiler 2: in air row Material S. Outside diameter 52"  
 Length of plain part top 4' 0" Thickness of plates crown 39" Description of longitudinal joint weld No. of strengthening rings ✓  
 Working pressure of furnace by the rules 181.5 Combustion chamber plates: Material S. Thickness: Sides 9/16" Back 5/8" Top 5/8" Bottom 1 1/2"  
 Pitch of stays to ditto: Sides 8" x 4 1/2" Back 8 1/2" x 8 1/2" Top 8 1/2" x 8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 186.8  
 Material of stays Steel Diameter at smallest part 1 5/8" Area supported by each stay 42.2 # Working pressure by rules 214.8 End plates in steam space:  
 Material S Thickness 1" Pitch of stays 14 1/2" x 13" How are stays secured D. N. & W. Working pressure by rules 199.3 Material of stays S.  
 Diameter at smallest part 2 1/2" Area supported by each stay 224.5 # Working pressure by rules 215.3 Material of Front plates at bottom S.  
 Thickness 1 1/2" Material of Lower back plate S. Thickness 3 1/4" x 5/8" doubling Greatest pitch of stays 13" Working pressure of plate by rules 323.5  
 Diameter of tubes 3 1/2" Pitch of tubes 4 3/4" x 4 3/4" Material of tube plates S Thickness: Front 1 1/2" x 5/8" dbl. Back 3/4" Mean pitch of stays 9 1/2"  
 Pitch across wide water spaces 14 1/2" Working pressures by rules 73 Girders to Chamber tops: Material S. Depth and  
 thickness of girder at centre 8' 1 1/2" Length as per rule 24' Distance apart 8 1/2' Number and pitch of Stays in each 2: 8"  
 Working pressure by rules 214.9 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 ✓



## DONKEY BOILER—

Description

*How fitted*

Made at

By whom made

When made

Where fixed

Working pressure

tested by hydraulic pressure to

No. of Certificate

Fire grate area

Description of safety valves

No. of safety valves

Area of each

Pressure to which they are adjusted

If fitted with easing gear

If steam from main boilers can

enter the donkey boiler

Diameter of donkey boiler

Length

Material of shell plates

Thickness

Description of riveting long seams

Diameter of rivet holes

Whether punched or drilled

Pitch of rivets

Lap of plating

Per centage of strength of joint

Rivets  
Plates

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

Thickness of furnace crown plates

Stayed by

Working pressure of shell by rules

Working pressure of furnace by rules

Diameter of uptake

Thickness of uptake plates

Thickness of water tubes

SPARE GEAR. State the articles supplied:—

*Propeller & propeller shaft. 3rd part crank shaft  
& main bearing bolts. 2 top end bolts. 2 bottom end bolts. 1 set of shaft  
coupling bolts all fitted with nuts. 2 eccentric shafts. 1 valve spindle  
and circulating pump rods & brackets. 1 pair of top end cranks, feed & trips  
pump valves. 1 set of O.R. packing rings, piston  
rings. 1 set of bottom end bolts.*

The foregoing is a correct description,

FOR SIR CHRISTOPHER FURNESS, WESTGARTH &amp; CO., LD.

Manufacturers of main engines &amp; boilers.

Dates

of Survey  
while  
building

During progress of

work in shops—

MANAGING DIRECTOR.

During erection on

board vessel

Total No. of visits

General Remarks

(State quality of workmanship, opinions as to class, &amp;c.)

*The Engines, and Boilers, of  
this vessel, have been built under Special Survey in accordance with  
Rule requirements. The materials, and workmanship are good.  
When completed, and fitted on board they were tried under steam  
at moorings, with satisfactory results, and are now in good  
working order, and in our opinion eligible to have notation  
\* L.M.C 12.99 in the Society's Register Book—*

It is submitted that  
this vessel is eligible for  
THE RECORD \* L.M.C 12.99.

*28.12.99*

*28.12.99*

The amount of Entry Fee..

£ 3

0

Special

£ 36

1

Donkey Boiler Fee

£

Travelling Expenses (if any) £

When applied for.

22.12.99

When received.

22.12.99

Committee's Minute

Assigned

FRI 29 DEC 1899

CERTIFICATE FRI 5 JAN 1900

+ L.M.C 12.99



© 2020

Lloyd's Register  
Foundation

W. Hantle pool

Certificate (if required) to be sent to

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