

REPORT ON MACHINERY.

Port of MIDDLESBROUGH-ON-TEES.Received at London Office THUR. MAR 2 1896No. in Survey held at Stockton-on-Tees Date, first Survey 28th Oct 1895 Last Survey 2nd Feb 1896
g. Book. (Number of Visits 59)on the Screw Steamer "Kingtor"Tons { Gross 2738
Net 1738Master Philip Symons Built at Stockton By whom built Hopner & Son When built 1896Engines made at Stockton-on-Tees By whom made Blair & Co. Ltd. when made 1896Machinery made at Stockton-on-Tees By whom made Blair & Co. Ltd. when made 1896Registered Horse Power 246 Owners J. Holman & Sons Port belonging to Londonm. Horse Power as per Section 28 246
Manufacturers H.P. 200

GINES, &c.— Description of Engines Triple expansion No. of Cylinders Three

Diameter of Cylinders 23"-37"-61" Length of Stroke 42" Revolutions per minute 60 Diameter of Screw shaft as per rule 10.9"
as fitted 12.2"

Diameter of Tunnel shaft as per rule 10.3" Diameter of Crank shaft journals 12" Diameter of Crank pin 12.2" Size of Crank webs 19 1/2" x 8 1/2" built
as fitted 11 1/2"

Diameter of screw 16' 0" Pitch of screw 16' 0" No. of blades 4 State whether moveable No Total surface 73 1/2 sq 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 4 1/2" Stroke 30" Can one be overhauled while the other is at work Yes

No. of Donkey Engines Two Sizes of Pumps (4" x 8") (9" x 10") No. and size of Suctions connected to both Bilge and Donkey pumps
Engine Room Three: 1-3 1/2" dia., 2-3" dia., 3-3" dia. In Holds, &c. Fore Hold: 1-3 1/2" dia., Main Hold: 2-3" dia.,
Aft Hold: 1-3 1/2" dia., Funnel base & peak: 1-4" dia.

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 Yes

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

How are they protected None

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 See vessel Is the screw shaft tunnel watertight Yes

Is it fitted with a watertight door Yes worked from Top platform in Engine room

BOILERS, &c.— (Letter for record R) Total Heating Surface of Boilers 3760 sq ft.

No. and Description of Boilers Two: by Ross & Co. Single ended Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs

Date of test 7/1/96 Can each boiler be worked separately Yes Area of fire grate in each boiler 52 sq ft. No. and Description of safety valves to
Two: Direct Spring

Area of each valve 4.06 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 18" Mean diameter of boilers 14' 6 1/2"

Length 10' 0" Material of shell plates Steel Thickness 1 1/2" Description of riveting: circum. seams Lap Double long. seams Butt Strap
over iron

Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 1/2" 4 1/2" Lap of plates or width of butt straps 1' 3/4"

Percentage of strength of longitudinal joint 90.6 Working pressure of shell by rules 170 lbs Size of manhole in shell 17" x 13"

Size of compensating ring 3 1/2 x 27 x 1 1/2 No. and Description of Furnaces in each boiler 3: Ribbed Material Steel Outside diameter 41"

Length of plain part top 6' 3" Thickness of plates bottom 1 1/2" Description of longitudinal joint Welded No. of strengthening rings 2

Working pressure of furnace by the rules 169 lbs Combustion chamber plates: Material Steel Thickness: Sides 3/8" Back 3/8" Top 3/8" Bottom 1 1/2"

Pitch of stays to ditto: Sides 7 1/2" x 7 1/2" Back 7 1/2" x 6 1/2" Top 7 1/2" x 7 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 182 lbs

Material of stays Iron Diameter at smallest part 1 1/2" Area supported by each stay 56" Working pressure by rules 173 lbs End plates in steam space:

Material Steel Thickness 1 1/2" Pitch of stays 15" x 15" How are stays secured 3/8" nuts & washers Working pressure by rules 185 lbs Material of stays Steel

Diameter at smallest part 2 3/8" Area supported by each stay 22.5" Working pressure by rules 174 lbs Material of Front plates at bottom Steel

Thickness 1" Material of Lower back plate Steel Thickness 1" Greatest pitch of stays 12" Working pressure of plate by rules 240 lbs

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates Steel Thickness: Front 1" Back 1 1/2" Mean pitch of stays 9 1/8"

Pitch across wide water spaces 14" Working pressures by rules 195 lbs 285 lbs Girders to Chamber tops: Material Steel Depth and

Thickness of girder at centre 7" x 13" Length as per rule 27 1/2" Distance apart 7 1/2" Number and pitch of Stays in each 3: 7 1/2"

Working pressure by rules 174 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

Stays 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 *Cylindrical boiler with 2 plain furnaces.*
Made at *Stockton* By whom made *J. Sadron & Co. Ltd.* When made *28/12/95* Where fixed *In Stockton*
Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *1183* Fire grate area *20* Description of safety valves *Direct Spring*
No. of safety valves *2* Area of each *5.94* Pressure to which they are adjusted *84 lbs* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Diameter of donkey boiler *8' 6"* Length *8' 6"* Material of shell plates *Steel* Thickness *15/32"*
Description of riveting long. seams *Lap - Quadruple* Diameter of rivet holes *13/16"* Whether punched or drilled *punched* Pitch of rivets *4 1/4"*
Lap of plating *6 5/8"* Per centage of strength of joint Rivets *89* Thickness of shell *iron* plates *3/32"* Radius of do. *pitch* No. of Stays to do. *16 1/2 x 11*
Dia. of stays *2 3/4"* Diameter of furnace Top *30"* Bottom *24"* Length of furnace *5' 9"* Thickness of furnace plates *1/16"* Description of joint *Welded* Thickness of furnace crown plates *3/32"* Stayed by *1 1/2" of iron stays 8' x 8' pitch* Working pressure of shell by rules *80 lbs*
Working pressure of furnace by rules *99 lbs* Diameter of *water* tubes *3"* Thickness of *water* plates *1/8"* Thickness of *water* tubes *11 B.W.G.*

SPARE GEAR. State the articles supplied:— *Propeller: 2 Main Bearing Bolts, 2 Crank pin Bolts, 2 Crosshead Bolts, 1 Set Coupling Bolts, 1 Set Piston springs, 1 Set Feed & Bilge pump valves, 1 Set Circulating pump valves, 6 Condenser Tubes, 6 Junk Ring Bolts, Bolts, nuts & iron granaries sizes.*

The foregoing is a correct description,

FOR BLAIR & CO, LIMITED

Manufacturers of main Engines & Boilers.

W. Borrie

SECRETARY.

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

Dates of Survey while building
During progress of work in shops 1895 Oct 25 Nov 15 16 19 21 26 28 Dec 3 5 6 10 11 13 16 17 18 20 23 24 26 30
During erection on board vessel 1896 Jan 5 5 7 12 13 14 18 19 21
Total No. of visits *Thirty nine*

The Engines and Boilers of this vessel have been built under Special Survey and the materials and workmanship are good. When fitted on board they were examined under full steam and worked satisfactorily.

The Machinery throughout is now in good and efficient condition and eligible in my opinion to have the notation **L.M.C. 2, 96**, marked in the Society's Register Book

It is submitted that this vessel is eligible for THE RECORD

L.M.C. 2.96.

S.S.
5.3.96

Pms.
5.3.96

Certificate (if required) to be sent to

The amount of Entry Fee..	£ 2 : " : "	When applied for,
Special	£ 32 : 6 "	2.3.1896
Donkey Boiler Fee	£ : :	When received,
Travelling Expenses (if any) £	: :	2.3.1896

Committee's Minute

FRI, MAR 6 1896

MACHINE CERTIFICATE
WRITTEN.

Assigned

+ L.M.C. 2.96

Wm R. Austin
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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Foundation

WB & L (43)