

REPORT ON MACHINERY.

Port of MIDDLESBROUGH-ON-TEES

Received at London Office TUES 27 JUL 1897

No. in Survey held at Stockton
eg. Book.

Date, first Survey 12th March Last Survey 25th June 1897
(Number of Visits 20)

on the S. S. "Ursula Bright" Tons { Gross 3295.43
Net 2114.45
Master S. R. Whitson Built at Sunderland By whom built J. Priestman & Co When built 1897.
Engines made at Stockton By whom made Blair & Co Ltd when made 1897.
Boilers made at Stockton By whom made Blair & Co Ltd when made 1897.
Registered Horse Power 300 Owners H. S. & J. G. Bright Port belonging to London.
Nom. Horse Power as per Section 28 300. Is Electric Light fitted no.

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3. No. of Cranks 3.
Diameter of Cylinders 24", 40" & 66" Length of Stroke 45" Revolutions per minute 57 Diameter of Screw shaft as per rule 11.6
Diameter of Tunnel shaft as per rule 11" Diameter of Crank shaft journals 1 3/4" Diameter of Crank pin 1 3/4" Size of Crank webs built
Diameter of screw 17'-0" Pitch of screw 17'-0" No. of blades 4 State whether moveable no Total surface 81 sq. ft.
No. of Feed pumps 2. Diameter of ditto 3" Stroke 33" Can one be overhauled while the other is at work yes
No. of Bilge pumps 2. Diameter of ditto 4 1/2" Stroke 33" Can one be overhauled while the other is at work yes
No. of Donkey Engines 2. Sizes of Pumps 9" x 10" Ball 4" x 8" Feed No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room Three 3 1/2" dia" In Holds, &c. Main Hold 2. 3 1/2" dia Fore Hold 2. 3 1/2"
No. of bilge injections 1 sizes 7 Connected to condenser or to circulating pump yes 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 — 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 apparently
Is it fitted with a watertight door yes worked from upper platform

OILERS, &c.— (Letter for record (3)) Total Heating Surface of Boilers 4640 sq. ft. Is forced draft fitted no.
No. and Description of Boilers 2. S. & E. Multitubular Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs
Date of test 19.5.97 Can each boiler be worked separately yes Area of fire grate in each boiler 61 sq. ft. No. and Description of safety valves to
each boiler 2 direct Act. Spring Area of each valve 8.29 sq. ft. 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 no side Mean diameter of boilers 15'-6 1/2"
Length 10'-6" Material of shell plates Steel Thickness 1 9/32" Description of riveting: circum. seams Bunkered lap long. seams d. butt str.
Diameter of rivet holes in long. seams 15/16" Pitch of rivets 8 3/4" & 4 3/8" Lap of plates or width of butt straps 19 1/4" x 1 1/4"
Per centages of strength of longitudinal joint 89.6 Working pressure of shell by rules 168 lbs Size of manhole in shell 17" x 15"
Size of compensating ring 31" x 27" x 1 9/32" No. and Description of Furnaces in each boiler 3. Corrugated Material Steel Outside diameter 46"
Length of main part 36'-9" Thickness of plates 3 17/32" Description of longitudinal joint welded No. of strengthening rings —
Working pressure of furnace by the rules 174 lbs Combustion chamber plates: Material Steel Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 15/16"
Pitch of stays to ditto: Sides 7 1/4" x 7" Back 7 3/8" x 7 1/4" Top 7 1/2" x 7 1/4" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 194 lbs
Material of stays Steel Diameter at smallest part 1 7/16" Area supported by each stay 50.7 sq. ft. Working pressure by rules 191 lbs End plates in steam space:
Material Steel Thickness 3/32" Pitch of stays 16 1/4" x 15 1/8" How are stays secured d. nuts & washers Working pressure by rules 168 lbs Material of stays Steel
Diameter at smallest part 2 3/8" Area supported by each stay 245.7 sq. ft. Working pressure by rules 162 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 1/2" Pitch of tubes 4 3/4" x 4 7/8" Material of tube plates Steel Thickness: Front 1" Back 13/16" Mean pitch of stays 9 5/8"
Pitch across wide water spaces 14 1/4" Working pressures by rules 189 lbs Girders to Chamber tops: Material Steel Depth and
thickness of girder at centre 7 1/4" x 13/8" Length as per rule 27 1/2" Distance apart 7 1/2" Number and pitch of Stays in each 3. 7 1/4"
Working pressure by rules 170 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
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 *Meredith's Patent*
 Made at *Stockton* By whom made *Riley Brothers* When made *1897* Where fixed *Stockholm*
 Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *1510* Fire grate area *26 sq* Description of safety valves *Spring*
 No. of safety valves *2* Area of each *7.072* Pressure to which they are adjusted *80 lbs* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *yes*
 Diameter of donkey boiler *7'-0"* Length *15'-0"* Material of shell plates *steel* Thickness *1/2"*
 Description of riveting long. seams *d.r. lap.* Diameter of rivet holes *15/16* Whether punched or drilled *pun.* Pitch of rivets *3/4"*
 Lap of plating *4 1/4"* Per centage of strength of joint Rivets *72* Thickness of shell crown plates *1/2"* Radius of do. *Hemispherical*
 Dia. of stays. — Diameter of furnace Top *4'-9"* Bottom *6'-1"* Length of furnace *36"* Thickness of furnace plates *5/8"* Description of joint *lap.* Thickness of furnace crown plates *9/16* Stayed by *dished 3ft rad.* Working pressure of shell by rules *94 lb*
 Working pressure of furnace by rules *85 lbs* Diameter of uptake tubes *3/4"* Thickness of uptake plates *9/16* Thickness of water tubes —

SPARE GEAR. State the articles supplied:— *1 set of connecting rod top and bottom end bolts & nuts. 2 main bearing bolts & nuts. 1 set of coupling bolts & nuts. nuts & bolts. propeller.*

The foregoing is a correct description,
 FOR **BLAIR & CO., LIMITED.** Manufacturers of Engines & main boilers
Walter Borrie

SECRETARY. 1897 Mar 12-16-30 Apr 9-22-24 May 8-10-13-15-19-24-25 June 1-2-15-16-21-24-25
 Dates of Survey while building
 During progress of work in shops —
 During erection on board vessel —
 Total No. of visits *Twenty*

General Remarks (State quality of workmanship, opinions as to class, &c.) *These engines and boilers have been built under special survey, and are of good workmanship and material, they have been well fitted and secured on board the vessel and were, on completion, tried under steam at moorings when everything worked satisfactory.*

The vessel has now gone to Sunderland to fit out. Spare gear will be put on board at that Port and the Donkey boiler safety valve adjusted.

*This vessel's machinery is now in our opinion eligible to the notation: **F.L.M.C. 97.***

Spare gear supplied & donkey boiler & safety valves adjusted to the v.p.
J. J. O'Connell

It is submitted that this vessel is eligible for **THE RECORD.**

+ £ 11. 6. 97
27/7/97

The amount of Entry Fee... £ 3 : : :
 Special ... £ 35 : : :
 Donkey Boiler Fee ... £ : : :
 Travelling Expenses (if any) £ : : :
 MACHINERY CERTIFICATE
 WRITTEN : 31/12/97

Str. John Sanderson Pat. Salmon
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **FRI 30 JUL 1897**

Assigned *+ £ 11. 6. 97*

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