

# REPORT ON MACHINERY.

Indt. No. 1433  
H.M.P. 9620

Port of *Middlesbrough*

Received at London Office

No. in Survey held at *Stockton-on-Tees*

Date, first Survey

*14<sup>th</sup> August 1894* Last Survey *13<sup>th</sup> March 1895*

Reg. Book

on the *Screw Steamer Ras Rowa*

(Number of *H.M.P.* *42*)

*11/3/95* Gross *2840*

Master *J. Season* Built at *Hartlepool*

By whom built

*Furness, Withy & Co. Ltd.* When built *1895*

Engines made at *Stockton-on-Tees* By whom made

*Blair & Co. Ltd.*

when made *1895*

Boilers made at *Stockton-on-Tees* By whom made

*Blair & Co. Ltd.*

when made *1895*

Registered Horse Power *235*

Owners

*Ras Steam Shipping Co. Ltd.* Port belonging to *London*

Nom. Horse Power as per Section 28 *236*

*Manufacturers H. 190*

## ENGINES, &c.—

Description of Engines

*Triple expansion*

No. of Cylinders

*Three*

Diameter of Cylinders *23"-37 1/2"-61 1/2"* Length of Stroke *39"* Revolutions per minute *60* Diameter of Screw shaft *as per rule 10.7"*

Diameter of Tunnel shaft *as fitted 11 1/2"* Diameter of Crank shaft journals *11 3/4"* Diameter of Crank pin *12 1/4"* Size of Crank webs *19 1/4" x 8 3/8"*

Diameter of screw *16' 0"* Pitch of screw *15' 6"* No. of blades *4* State whether moveable *No.* Total surface *41 sq. ft.*

No. of Feed pumps *2* Diameter of ditto *3"* Stroke *28"* Can one be overhauled while the other is at work *Yes.*

No. of Bilge pumps *2* Diameter of ditto *4 1/2"* Stroke *28"* Can one be overhauled while the other is at work *Yes.*

No. of Donkey Engines *Two* Sizes of Pumps *(4" x 8")* *(7 1/2" x 9")* No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room *Three: Port 3' dia. Centre 3 1/2' dia. Stbd 3' dia.* Holds, &c. *Forepeak: 1-2 1/2' dia. Forehold well*

*1-3 1/2' dia. Main hold well: 1-3 1/2' dia. After hold well: 1-5 1/2' dia. Aftermost hold well: 1-5 1/2' dia. Tunnel well: 1-2 1/2' dia.*

No. of bilge injections *1* sizes *6"* Connected to condenser, or to circulating pump *Cp.* 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 *None fitted*

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 *Never* Is the screw shaft tunnel watertight *Yes*

Is it fitted with a watertight door *Yes* worked from *Upper platform*

## BOILERS, &c.—

(Letter for record *S.*)

Total Heating Surface of Boilers *3528 sq. ft.*

*3524*

No. and Description of Boilers *Two: cylindrical water*

Working Pressure *160 lbs.* Tested by hydraulic pressure to *320 lbs.*

Date of test *24/1/94.* Can each boiler be worked separately *Yes.* Area of fire grate in each boiler *52 sq. ft.* No. and Description of safety valves to

each boiler *Two: direct spring.* Area of each valve *7.06 sq. in.* 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 *16"* Mean diameter of boilers *14' 0 3/4"*

Length *10' 0"* Material of shell plates *Steel* Thickness *1 1/2"* Description of riveting: circum. seams *Lap Double long. seams D. 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 1' 6" x 1" thick*

Per centages of strength of longitudinal joint *88.9* Working pressure of shell by rules *166 lbs.* Size of manhole in shell *14 1/2" x 18"*

Size of compensating ring *31 x 27 x 1 1/2"* No. and Description of Furnaces in each boiler *3: Corrugated* Material *Steel* Outside diameter *3' 6"*

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

Working pressure of furnace by the rules *146 lbs.* Combustion chamber plates: Material *Steel* Thickness: Sides *9/16"* Back *9/16"* Top *9/16"* Bottom *7/8"*

Pitch of stays to ditto: Sides *3/2" x 3/4"* Back *3/2" x 3/4"* Top *3/2" x 3/4"* 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 7/8"* Area supported by each stay *54 sq. in.* Working pressure by rules *149 lbs.* End plates in steam space:

Material *Steel* Thickness *3/2"* Pitch of stays *16 1/4" x 15"* How are stays secured *See nuts & washers.* Working pressure by rules *168 lbs.* Material of stays *Steel*

Diameter at smallest part *2 1/2"* Area supported by each stay *24 3/4 sq. in.* Working pressure by rules *181 lbs.* Material of Front plates at bottom *Steel*

Thickness *1"* Material of Lower back plate *Steel* Thickness *1"* Greatest pitch of stays *12 5/8"* Working pressure of plate by rules *160 lbs.*

Diameter of tubes *3 1/4"* Pitch of tubes *4 1/2" x 4 5/8"* Material of tube plates *Steel* Thickness: Front *1"* Back *3/8"* Mean pitch of stays *9 1/8"*

Pitch across wide water spaces *14 1/4"* Working pressures by rules *189 lbs. - 258 lbs.* Girders to Chamber tops: Material *Steel* Depth and

thickness of girder at centre *7 1/2" x 13 1/8"* Length as per rule *27 1/2"* Distance apart *7 3/4"* Number and pitch of Stays in each *3: 7 1/4"*

Working pressure by rules *148 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 *-*

HPL 374-0191

Lloyd's Register  
Foundation



**DONKEY BOILER**— Description *Vertical with 6 cross water tubes.*  
 Made at *Stockton* By whom made *Thos. Sudron & Co. Ltd.* When made *24/1/94* Where fixed *In Stockton*  
 Working pressure *80 lbs* Tested by hydraulic pressure to *160 lbs* No. of Certificate *987* Fire grate area *28 5* Description of safety valves *Spring*  
 No. of safety valves *2* Area of each *5.94* Pressure to which they are adjusted *80 lbs* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Diameter of donkey boiler *7' 0"* Length *14' 0"* Material of shell plates *Steel* Thickness *1 3/32"*  
 Description of riveting long. seams *Lap Double* Diameter of rivet holes *1 3/16"* Whether punched or drilled *Punched* Pitch of rivets *2 3/4"*  
 Lap of plating *4 1/4"* Per centage of strength of joint Rivets *40.4* Thickness of shell crown plates *9/16"* Radius of do. *5' 9"* No. of Stays to do. *3*  
 Dia. of stays *1 3/4"* Diameter of furnace Top *5' 3"* Bottom *6' 4 1/2"* Length of furnace *6' 6"* Thickness of furnace plates *3/32"* Description of joint *Lap Single* Thickness of furnace crown plates *5/8"* Stayed by *Same as steel crown* Working pressure of shell by rules *82 lbs*  
 Working pressure of furnace by rules *82 lbs* Diameter of uptake *16 1/2"* Thickness of uptake plates *7/16"* Thickness of water tubes *3/8"*

**SPARE GEAR.** State the articles supplied:— *Propeller, 2 main bearing bolts & nuts. 2 top end bolts & nuts, 2 bottom end bolts & nuts. 1 Set of Shaft coupling bolts & nuts. 2 feed valves. 2 bilge valves. Check valves for main & donkey feed. Piston Spring. 6 boiler tubes, nuts, bolts & iron assorted.*

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

*P. A. Blair*

Manufacturers of main Engines & Boilers.

**DIRECTOR.**

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

The Engines and Boilers of this vessel have been built under special survey and the materials and workmanship are good. When completed they were examined under full steam and worked satisfactorily.

The machinery is now in good and efficient condition and will be eligible in our opinion to have the record of **L.M.C. 3, 95** marked in the Register Book when the following work has been completed:—The Donkey Boiler to be secured in place, its mountings fitted and examined under steam the pumping arrangements to be completed as per approved plan; the Pannel to be made watertight and a w.s. door fitted; and spare gear to be examined.

The above mentioned fittings have been satisfactorily completed.

*Richard Hirst*

*[Signature]*

It is submitted that  
 this vessel is eligible for  
**THE RECORD + L.M.C. 3-95**

*H.A.*

*21-3-95*

Certificate (if required) to be sent to

The amount of Entry Fee..	£ 2 : " : "	When applied for,
Special .. .. .	£ 3.1 : 16 : "	19.3.95
Donkey Boiler Fee .. .. .	£ : : "	When received,
Travelling Expenses (if any) £	: : "	19.3.95

*Robt. Balfour*

*Wm. Austin*

Engineer, Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

**FRIDAY 22 MAR 1895**

Assigned

*+ L.M.C. 3, 95*



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