

REPORT ON MACHINERY.

8754 (N. H. H.)

Port of *Middlesbrough-on-Tees*

Received at London Office

22 MAR 1892

No. *642 (Mdt)*

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

Date, first Survey *30th Oct. 1891*

Last Survey *4th March 1892*

Reg. Book.

(Number of Visits *33*)

on the *Screw Steamer "Headlands"*

Tons *Gross 2988*
Net 1933

Master *J. R. Holman* Built at *Hartlepool* By whom built *Furness, Wm & Co* When built *1892*

Engines made at *Stockton-on-Tees* By whom made *Blair & Co Ld* when made *1892*

Boilers made at *Stockton-on-Tees* By whom made *Blair & Co Ld* when made *1892*

Registered Horse Power *250* Owners *Hardy, Wilson & Co* Port belonging to *Hartlepool*

Unsurveyed HP 200
Rule HP 245

ENGINES, &c.—

Description of Engines *Triple expansion, Inverted, Direct Acting, 3 cranks* No. of Cylinders *Three*

Diam. of Cylinders *22½" 37" 61"* Length of Stroke *42"* Rev. per minute *65* Point of Cut off, High Pressure *5* Low Pressure *5*

Diameter of Screw shaft *12½"* Diam. of Tunnel shaft *11½"* Diam. of Crank shaft journals *12"* Diam. of Crank pin *12½"* size of Crank webs *19½" x 8½"* Built

Diameter of screw *16' 0"* Pitch of screw *16' 0"* No. of blades *4* state whether moveable *no* total surface *71 Sq. ft.*

No. of Feed pumps *2* diameter of ditto *3½"* Stroke *30"* Can one be overhauled while the other is at work *Yes*

No. of Bilge pumps *2* diameter of ditto *4½"* Stroke *30"* Can one be overhauled while the other is at work *Yes*

Where do they pump from *Ballast tanks, Fore, main, after & Aftermost Holds, Engine room, Appell & peak*

No. of Donkey Engines *Two* Size of Pumps *(4" x 8") (9" x 10")* Where do they pump from *Feed - Sea, Hotwell, Tanks & Boilers*

Ballast - Sea, this Condenser, Tanks, all Holds, Engine room, after well and peak.

Are all the bilge suction pipes fitted with roses *Yes* Are the roses always accessible *Yes* Are the sluices on Engine room bulkheads always accessible *Yes*

No. of bilge injections *One* and sizes *7"* Are they connected to condenser, or to circulating pump *Circulating pump*

How are the pumps worked *By levers from the Cross head of the after Engine.*

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 accessible at all times *Yes*

Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection 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 *✓* and fitted with a sluice door *Yes* worked from *Top platform in Engine room.*

BOILERS, &c.—

No. of Boilers *Two* Description *by 10" thick, superheated* Material *Steel* Letter (for record) *S*

Working Pressure *160 lbs* Tested by hydraulic pressure to *320 lbs* Date of test *8th Feb 1892 (No 399)*

Description of superheating apparatus or steam chest *None* Heating surface *3740 Sq. ft.*

Can each boiler be worked separately *Yes* Can the superheater be shut off and the boiler worked separately *✓*

No. of square feet of fire grate surface in each boiler *51 Sq. ft.* Description of safety valves *Direct Spring* No. to each boiler *Two*

Area of each valve *7.06 sq. in.* Are they fitted with easing gear *Yes* No. of safety valves to superheater *✓* area of each valve *✓*

Are they fitted with easing gear *✓* Smallest distance between boilers and bunkers or woodwork *12"* Diameter of boilers *14' 6½"*

Length of boilers *10' 0"* description of riveting of shell long. seams *DB Sharp Ribble* circum. seams *Lap Double* Thickness of shell plates *1½"*

Diameter of rivet holes *1½"* whether punched or drilled *Drilled* pitch of rivets *8½"* *4½"* Lap of plating *1' 7"* *6½"*

Per centage of strength of longitudinal joint *84* *92.7* working pressure of shell by rules *164 lbs* size of manholes in shell *16" x 12"*

Size of compensating rings *28" x 24" x 1½"* No. of Furnaces in each boiler *3* Description of Furnaces *Corrugated*

Outside diameter *3' 8"* length *6' 3"* thickness of plates *½"* description of joint *Helical* if rings are fitted *✓*

rearest length between rings *✓* working pressure of furnace by the rules *169 lbs* combustion chamber plating, thickness, sides *9/16"* back *9/16"* top *9/16"*

h of stays to ditto, sides *¾" x ¾"* back *¾" x ¾"* top *¾" x ¾"* If stays are fitted with nuts or riveted heads *Nuts* working pressure of plating by

rules *182 lbs* Diameter of stays at smallest part *1 3/16"* working pressure of ditto by rules *143 lbs* end plates in steam space, thickness *15"*

h of stays to ditto *15" x 15"* how stays are secured *Double nuts & washers* working pressure by rules *185 lbs* diameter of stays at

smallest part *2 3/8"* working pressure by rules *144 lbs* Front plates at bottom, thickness *1"* Back plates, thickness *1"*

pitch of stays *12"* working pressure by rules *144 lbs* Diameter of tubes *3½"* pitch of tubes *4½" x 4½"* thickness of tube

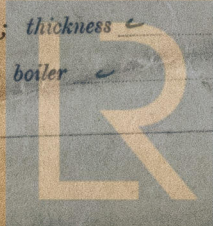
front *1"* back *1 3/16"* how stayed *Stay tubes* pitch of stays *15½" x 9½"* width of water spaces *1½" x 5"*

meter of Superheater or Steam chest *✓* length *✓* thickness of plates *✓* description of longitudinal joint *✓* diam. of rivet holes *✓*

Pitch of rivets *✓* working pressure of shell by rules *✓* diameter of flue *✓* thickness of plates *✓* If stiffened with rings *✓*

Distance between rings *✓* working pressure by rules *✓* end plates of superheater, or steam chest; thickness *✓* how stayed *✓*

Superheater or steam chest; how connected to boiler *✓*



Lloyd's Register Foundation
HPL367-0035

DONKEY BOILER— Description *Vertical with four cross water tubes*
Made at *Stockton* by whom made *J. Ludron & Co Ltd* when made *25.11.91* where fixed *In Stockton*
Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *355* fire grate area *20 sq. ft* description of safety
valves *Spring* No. of safety valves *one* area of each *8.3 sq. in* if fitted with easing gear *yes* if steam from main boilers can
enter the donkey boiler *no* diameter of donkey boiler *6' 0"* length *12' 0"* description of riveting *Vertical Lap Double*
Thickness of shell plates *3/32"* diameter of rivet holes *13/16"* whether punched or drilled *punched* pitch of rivets *2 3/4"* lap of plating *4 1/4"*
percentage of strength of joint *70.4* thickness of crown plates *3/32"* stayed by *6 stays 1 5/8"* effective diameter
Diameter of furnace, top *4' 9"* bottom *5' 4 1/2"* length of furnace *5' 7 1/2"* thickness of plates *3/32"* description of joint *Lap Single*
Thickness of furnace crown plates *9/16"* stayed by *Same as shell crown plate* working pressure of shell by rules *85 lbs*
Working pressure of furnace by rules *85 lbs* diameter of uptake *14"* thickness of plates *3/8"* thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *One propeller, A set of bolts & nuts for a
connecting rod, main bearing, & shaft coupling, A set of L.P. piston
springs. A set of valves for a feed, bilge, & circulating pump, Bolt
nuts, & Iron assorted.*

The foregoing is a correct description,

Robt Blair & Co Ltd Manufacturers of Steam Engines & Boilers.
R. Blair

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

*The Engines and Boilers of this vessel have been
constructed under special survey and the materials
and workmanship are good. The Engines when tried
under steam worked satisfactorily, while the main
Boilers on examination were found tight and sound.*

*The Machinery throughout is now in good and
efficient condition and will be eligible in my opinion
to have the notation **L.M.C.S. 92** marked in the Register
Book when the following work has been completed:— The
Cocks in the recess at the after end of the Tunnel be taken
off and non-return valves fitted, or the connection for
pumping the after peak tank be dispensed with. The tunnel
and Engine room Bulkhead doors to be completed and made
watertight. The Donkey boiler to be secured in place the
mountings to be fitted, and the safety valves etc. to be examined
under steam. Spare gear in accordance with the Rules
to be supplied.*

*The above mentioned work has been completed in a satisfactory
manner, non-return valves have been fitted in the places of
the cocks in the recess at the after end of tunnel.*

J. Stoddart
14th March 1892

Certificate (if required) to be sent to

The amount of Entry Fee .. £ 2 : : : received by me,
Special £ 32 : 5 :
Donkey Boiler Fee £ : :
19.3.18 92

(Travelling Expenses, if any, £)

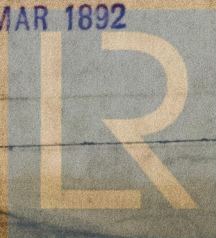
Committee's Minute

FRI 25 MAR 1892

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

TUES. 29 MAR 1892

+ L.M.C. 3, 92



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