

REPORT ON MACHINERY.

Port of *Port Hartlepool*

FRIDAY 2 NOV 1894

Received at London Office

No. in Survey held at *Port Hartlepool*Date, first Survey *4th April* Last Survey *29th Oct 1894*

Reg. Book.

(Number of Visits *54*)on the *Scour Steamer "Bendall"*Master *J. Harrison* Built at *R. A. Pool* By whom built *Turner & Phipps & Co*Tons { Gross *2389.6*
Net *1534.4*Engines made at *R. A. Pool* By whom made *J. Richardson & Sons Ltd* When built *1894*Boilers made at *do* By whom made *do* when made *1894*Registered Horse Power *220* Owners *Stephen W. Turner* Port belonging to *R. Hartlepool*Nom. Horse Power as per Section 28 *220*ENGINES, &c.— Description of Engines *Triple Expansion*No. of Cylinders *3*Diameter of Cylinders *22.35.59* Length of Stroke *39* Revolutions per minute *59* Diameter of Screw shaft *as per rule 10.38*Diameter of Tunnel shaft *as fitted 10.38* Diameter of Crank shaft journals *10.38* Diameter of Crank pin *10.38* Size of Crank webs *7 1/2 x 16 1/2*Diameter of screw *15.6* Pitch of screw *16.0* No. of blades *4* State whether moveable *no* Total surface *64.5*No. of Feed pumps *2* Diameter of ditto *2 3/4* Stroke *23* Can one be overhauled while the other is at work *yes*No. of Bilge pumps *2* Diameter of ditto *3 3/4* Stroke *23* Can one be overhauled while the other is at work *yes*No. of Donkey Engines *2* Sizes of Pumps *3 1/2 x 7, 8 1/2 x 7* No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room *Donk. 2 - 2 3/4 x 2 - 3* In Holds, &c. *Two peak one 2 1/2. No. 1 & 2 wells*No. of bilge injections *1* sizes *6"* Connected to condenser, or to circulating pump *Pump* Is a separate donkey suction fitted in Engine room & size *yes 3"*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 *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 *Below*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 *New Ship* 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 *3357 sq*No. and Description of Boilers *Cylindrical Simple ended* Working Pressure *160* Tested by hydraulic pressure to *320*Date of test *21.7.94* Can each boiler be worked separately *yes* Area of fire grate in each boiler *44.5* No. and Description of safety valves toeach boiler *2 Spring* Area of each valve *7.07* Pressure to which they are adjusted *165 lbs* Are they fittedwith easing gear *yes* Smallest distance between boilers or uptakes and bunkers or woodwork *9"* Mean diameter of boilers *13.9"*Length *9.9"* Material of shell plates *Steel* Thickness *1 1/8"* Description of riveting: circum. seams *Lap double long. seams R.T. L.H.*Diameter of rivet holes in long. seams *1 1/4"* Pitch of rivets *7 3/8"* Lap of plates or width of butt straps *19 1/2"*Per centages of strength of longitudinal joint rivets *85.6* plate *85.5* Working pressure of shell by rules *165* Size of manhole in *shell 16" x 12"*Size of compensating ring *—* No. and Description of Furnaces in each boiler *3 Morrison* Material *Steel* Outside diameter *3.6"*Length of plain part top *6.0"* bottom *6.3"* Thickness of plates crown *1 1/2"* bottom *1 1/2"* Description of longitudinal joint *Welded* No. of strengthening rings *—*Working pressure of furnace by the rules *179* Combustion chamber plates: Material *Steel* Thickness: Sides *5/8"* Back *19/32"* Top *5/8"* Bottom *13/16"*Pitch of stays to ditto: Sides *8"* Back *8 3/8"* Top *8 3/4"* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *168*Material of stays *Steel* Diameter at smallest part *1 3/8"* Area supported by each stay *710* Working pressure by rules *166* End plates in steam space:Material *Steel* Thickness *1 1/8"* Pitch of stays *18 1/2 x 16 1/2* How are stays secured *By 3 nuts* Working pressure by rules *160.5* Material of stays *Steel*Diameter at smallest part *2 5/8"* Area supported by each stay *301* Working pressure by rules *161* Material of Front plates at bottom *Steel*Thickness *13/16"* Material of Lower back plate *Steel* Thickness *2 3/8"* Greatest pitch of stays *12 1/2"* Working pressure of plate by rules *169*Diameter of tubes *3 1/4"* Pitch of tubes *4 1/2"* Material of tube plates *Steel* Thickness: Front *31/32"* Back *3/4"* Mean pitch of stays *9"*Pitch across wide water spaces *14 1/4"* Working pressures by rules *165* Girders to Chamber tops: Material *Steel* Depth andthickness of girder at centre *7 1/2 x 1 1/4"* Length as per rule *2.4"* Distance apart *8 3/4"* Number and pitch of Stays in each *2-pitch 8"*Working pressure by rules *199* Superheater or Steam chest; how connected to boiler *none* Can the superheater be shut off and the boiler workedseparately *—* Diameter *—* Length *—* Thickness of shell plates *—* Material *—* Description of longitudinal joint *—* Diameter of rivetholes *—* 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 *—* Area of safety valves with easing gear *—*

DONKEY BOILER— Description *Vertical with six crop tubes*
 Made at *Stockton* By whom made *J. Sudron & Co. Ld.* When made *1894* Where fixed *St. Richard*
 Working pressure *80* tested by hydraulic pressure to *160* No. of Certificate *853* Fire grate area *234* Description of safety valves *Spring*
 No. of safety valves *2* Area of each *5.94* Pressure to which they are adjusted *80 lb* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Diameter of donkey boiler *4.0"* Length *14.0"* Material of shell plates *Steel* Thickness *15.5"*
 Description of riveting long seams *Lap double* Diameter of rivet holes *13/16"* Whether punched or drilled *Punched* Pitch of rivets *2 3/4"*
 Lap of plating *4 1/4"* Per centage of strength of joint *70.4* Thickness of shell crown plates *9/16"* Radius of do. *5.9"* No. of stays to do. *7*
 Dia. of stays *1 3/4"* Diameter of furnace Top *5.3"* Bottom *6.4 1/2"* Length of furnace *6.0"* Thickness of furnace plates *32* Description of joint *Lap Single* Thickness of furnace crown plates *5/8"* Stayed by *Same as shell* Working pressure of shell by rules *83 lb*
 Working pressure of furnace by rules *82 lb* Diameter of uptake *15"* Thickness of uptake plates *3/16"* 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, 1 set of feed valves, 1 set of pipe valves, piston springs, nuts, bolts, & iron assorted.

The foregoing is a correct description,

For *THOMAS RICHARDSON & SONS, LIMITED* Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery has been specially surveyed during construction the material and workmanship good and renders the vessel eligible in our opinion to have the Record L.M.C. 10-94 in the Register Book of the Society.*

It is submitted that
this vessel is eligible for
THE RECORD + L.M.C. 10-94

R.A.
2-11-94

MACHINERY CERTIFICATE
WRITTEN.

Certificate (if required) to be sent to

The amount of Entry Fee... £ *2* :
 Special ... £ *31* :
 Donkey Boiler Fee ... £ :
 Travelling Expenses (if any) £ :

When applied for,

30-10-94

When received,

31-10-94

Richard Sims & J. S. Blackie
 Engineer Surveyors to Lloyd's Register of British & Foreign Shipping.

TUES. 6 NOV 1894

Committee's Minute

Assessed

+ L.M.C. 10-94



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Foundation