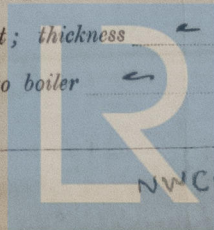


# REPORT ON MACHINERY.

26445  
 in Survey held at Newcastle  
 Book. S. S. "Benwell" Loder  
 on the Newcastle  
 Port of Newcastle  
 Date first Survey 1 April Last Survey 8 Oct 1891  
 (Number of Visits 19)  
 Gross 3200.50  
 Net 2072.69  
 Tons  
 Built at Newcastle By whom built Edmondship By Co. Ltd. When built 1891  
 Engines made at Newcastle By whom made Wallace & Slipway & Fyfe & Co. when made 1891  
 Boilers made at do By whom made do when made 1891  
 Indicated Horse Power 1687 1/10 Owners do Port belonging to do

Engines, &c.—  
 Description of Engines Triple Expansion Surface Condensing No. of Cylinders 3  
 No. of Cylinders 28" 38" & 61" Length of Stroke 45" Rev. per minute 66 Point of Cut off, High Pressure .61 Low Pressure .62  
 Diameter of Screw shaft 11 3/4" Diam. of Tunnel shaft 11 3/4" Diam. of Crank shaft journals 11 3/4" Diam. of Crank pin 12" size of Crank webs 8 1/2" x 14"  
 Diameter of screw 16.0" Pitch of screw 14.6" No. of blades 4 state whether moveable no total surface 4 1/2 sq ft  
 No. of Feed pumps 2 diameter of ditto 3 1/4" Stroke 24" Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work yes  
 Where do they pump from Hot well. Holds. Tanks. Engine space. After well & Sea.  
 No. of Donkey Engines 2 Size of Pumps 6" x 4" 6" x 8" 6" x 8" 6" x 8" Where do they pump from Tanks. Holds. Sea  
 Engine space. Hot well & after well.  
 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 1 and sizes 4 1/2" Are they connected to condenser, or to circulating pump Circulating pump  
 How are the pumps worked Levers over Condenser  
 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  
 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 do  
 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 yes and fitted with a sluice door yes worked from Upper Platform

OILERS, &c.—  
 No. of Boilers 2 Description Cylindrical Single end Material Steel Letter (for record)  
 Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs Date of test 22.6.91 No. of Cert 3628  
 Description of superheating apparatus or steam chest none  
 Can each boiler be worked separately yes Can the superheater be shut off and the boiler worked separately do  
 No. of square feet of fire grate surface in each boiler 61.5 Description of safety valves Spring No. to each boiler 2  
 Area of each valve 1.3 Are they fitted with easing gear yes No. of safety valves to superheater do area of each valve do  
 Are they fitted with easing gear do Smallest distance between boilers and bunkers or woodwork Ship Side Diameter of boilers 15.0"  
 Length of boilers 10.3" description of riveting of shell long. seams H.P. tubular circum. seams Lap & butt thickness of shell plates 1 1/32"  
 Diameter of rivet holes 1 1/32" whether punched or drilled drilled pitch of rivets 8 1/2" Lap of plating 1.7 1/4"  
 Percentage of strength of longitudinal joint 84.19 working pressure of shell by rules 163 size of manholes in shell 16" x 12"  
 Size of compensating rings 9" x 1 1/32" No. of Furnaces in each boiler 3 Description of Furnaces Hot patent  
 Outside diameter 3.9" length 6.6" thickness of plates 1 1/32" description of joint Welded if rings are fitted do  
 Greatest length between rings 6.3" working pressure of furnace by the rules 166 combustion chamber plating, thickness, sides 5/8" back 3/8" top 3/8"  
 Pitch of stays to ditto, sides 8 1/2" back 8 1/2" top 8 1/2" If stays are fitted with nuts or riveted heads nuts working pressure of plating by rules 166  
 Diameter of stays at smallest part 1 3/8" working pressure of ditto by rules 164 end plates in steam space, thickness 1"  
 Pitch of stays to ditto 18" x 1 1/2" how stays are secured By Machine working pressure by rules 170 diameter of stays at smallest part 2 3/4" x 2 1/2"  
 working pressure by rules 160 lbs Front plates at bottom, thickness 1 1/16" Back plates, thickness 2"  
 Greatest pitch of stays 12 1/2" working pressure by rules 160 Diameter of tubes 3 1/4" pitch of tubes 4 1/2" thickness of tube plates, front 1 1/8" back 1 1/16" how stayed Tubes pitch of stays 9" width of water spaces 6"  
 Diameter of Superheater or Steam chest none length do thickness of plates do description of longitudinal joint do diam. of rivet holes do  
 Pitch of rivets do working pressure of shell by rules do diameter of flue do thickness of plates do If stiffened with rings do  
 Distance between rings do working pressure by rules do end plates of superheater, or steam chest; thickness do how stayed do  
 Superheater or steam chest; how connected to boiler do





**DONKEY BOILER—**

Description *vertical with four crop tubes*

Made at *Gathead* by whom made *Clarke Chapman & Co* when made *6.8.91* where fixed *Stoke Newington*

Working pressure *80 lb* tested by hydraulic pressure to *160 lb* No. of Certificate *3668* fire grate area *30 sq* description of safety

valves *Spring* No. of safety valves *2* area of each *4.04* if fitted with easing gear *yes* if steam from main boilers can

enter the donkey boiler *no* diameter of donkey boiler *4.6"* length *14.0"* description of riveting *Lap double*

Thickness of shell plates *1/2"* diameter of rivet holes *15/16"* whether punched or drilled *drilled* pitch of rivets *3 1/4"* lap of plating *4 1/2"*

per centage of strength of joint *72* thickness of crown plates *5/8"* stayed by *9 Stays 1 1/8" off diam*

Diameter of furnace, top *5.11 1/2"* bottom *6.4 1/2"* length of furnace *6.0"* thickness of plates *5/8"* description of joint *Lap Single*

Thickness of furnace crown plates *9/16"* stayed by *Same as shell crown* working pressure of shell by rules *86 lb*

Working pressure of furnace by rules *80 lb* diameter of uptake *18"* thickness of plates *7/16"* thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *Propeller, 2 main bearing bolts & nuts, 2 top and bottom end bolts & nuts, 1 set of shaft coupling bolts & nuts, packing rings for R.P. piston, 1 set of feed pump valves, 1 set of Bilge pump valves, 2 Safety valve Springs, nuts, Bolts & iron assorted.*

The foregoing is a correct description,

FOR THE LLOYD'S REGISTER OF SHIPBUILDING & ENGINEERING CO. LTD.  
*Oct 9/91* *L. R. Allen* Manufacturer.  
*Manager*

General Remarks (State quality of workmanship, opinions as to class, &c. *The machinery has been*

*Specially Surveyed during construction the materials and workmanship good and renders the vessel eligible in my opinion to have the Record + L M C 10.91 in the Register Book of the Society.*

Heating Surface in (2) main boilers = *4220 sq*  
 in R.P. as per Rules = *265 sq ft.*

*Well*

Machinery Certificate  
 Written.

*It is submitted that this vessel is eligible for the record + L M C 10.91*  
*Oct 15 1891*

Certificate (if required) to be sent to

The amount of Entry Fee .. £ *2* : : : received by me,  
 Special *W. J. G. J.* .. £ *33* : *5* :  
 Donkey Boiler Fee .. £ : : :

*17/10/91*

*Richard Stiles*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

(Travelling Expenses, if any, £ )

Committee's Minute

FEB 16 OCT 1891

*+ L M C 10.91*

*2021*  
 Lloyd's Register  
 Foundation