

REPORT ON MACHINERY.

No. 13717

SAT. 5 JUN 1909

Port of *West Hartlepool*
 No. in Survey held at *West Hartlepool* Date, first Survey *24th Nov. 1908* Last Survey *26th May, 1909*
 Reg. Book. *S/S "Broomhill"* (Number of Visits *19*)
 Master *G. Wright* Built at *W. Hartlepool* By whom built *James S. B. & D. D. C.* Tons { Gross *1392-09*
 Engines made at *Hartlepool* By whom made *Richardsons Newcastle & C^o L^{td}* when made *1909* Net *843-09*
 Boilers made at *Hartlepool* By whom made *Richardsons Newcastle & C^o L^{td}* when made *1909*
 Registered Horse Power *1706* Owners *Broomhill Collieries L^{td}* Port belonging to *Newcastle*
 Nom. Horse Power as per Section 28 *1706* Is Refrigerating Machinery fitted for cargo purposes *No* Is Electric Light fitted *No*

ENGINES, &c.—Description of Engines *Direct Acting triple expansion* No. of Cylinders *3* No. of Cranks *3*
 Dia. of Cylinders *18 1/2 - 30 - 50* Length of Stroke *36* Revs. per minute *65* Dia. of Screw shaft *1 1/4* as per rule *1 1/2* Material of *S. Iron*
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube *No* Is the after end of the liner made water tight
 in the propeller boss *Yes* If the liner is in more than one length are the joints burned *No* If the liner does not fit tightly at the part
 between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive *Yes* If two
 liners are fitted, is the shaft lapped or protected between the liners *No* Length of stern bush *3-10*
 Dia. of Tunnel shaft *10* as per rule *9 1/2* Dia. of Crank shaft journals *10* as per rule *9 1/2* Dia. of Crank pin *10 1/2* Size of Crank webs *6 3/4 x 20* Dia. of thrust shaft under
 collars *10* Dia. of screw *13-9* Pitch of Screw *15-6* No. of Blades *4* State whether moveable *No* Total surface *59 sq*
 No. of Feed pumps *2* Diameter of ditto *2 1/2* Stroke *21* Can one be overhauled while the other is at work *Yes*
 No. of Bilge pumps *2* Diameter of ditto *3 1/4* Stroke *21* Can one be overhauled while the other is at work *Yes*
 No. of Donkey Engines *2* Sizes of Pumps *5 1/4 x 3 1/2 x 5 1/4* No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room *3 - 2 1/2* *9 x 10 x 9* In Holds, &c. *For 1st Hold 2 - 2 1/2 After 1st Hold 1 - 2 1/2*
 Tunnel Well *1 - 2 1/2*
 No. of Bilge Injections *4* Connected to condenser, or to circulating pump *Circulating a separate Donkey Suction fitted in Engine room & size 2 1/2*
 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 *Yes*
 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 *Yes*
 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*
 Dates of examination of completion of fitting of Sea Connections *4/5/09* of Stern Tube *7/5/09* Screw shaft and Propeller *10/5/09*
 Is the Screw Shaft Tunnel watertight *Yes* Is it fitted with a watertight dog *Yes* worked from *Grinding platform*

BOILERS, &c.—(Letter for record (S)) Manufacturers of Steel *John Spencer & Sons*
 Total Heating Surface of Boilers *2736 sq* Is Forced Draft fitted *No* No. and Description of Boilers *Two Cylindrical Single ended*
 Working Pressure *180 lbs* Tested by hydraulic pressure to *360 lbs* Date of test *20.2.09* No. of Certificate *3156*
 Can each boiler be worked separately *Yes* Area of fire grate in each boiler *30-16 sq* No. and Description of Safety Valves to
 each boiler *2 Spring loaded* Area of each valve *4-9-10* Pressure to which they are adjusted *185 lbs* Are they fitted with easing gear *Yes*
 Smallest distance between boilers or uptakes and bunkers or woodwork *1-4* Mean dia. of boilers *12-6* Length *10-0* Material of shell plates *Steel*
 Thickness *1/32* Range of tensile strength *25-5/32 Tons* Are the shell plates welded or flanged *No* Descrip. of riveting: cir. seams *D.R. LAP*
 long. seams *T.R.D.B.S* Diameter of rivet holes in long. seams *1 1/8* Pitch of rivets *6 3/4* Lap of plates or width of butt straps *16 3/4*
 Per centages of strength of longitudinal joint rivets *85* Working pressure of shell by rules *180.5 lbs* Size of manhole in shell *16 1/2 x 13*
 plate *83.3* Size of compensating ring *31 x 28 1/2 x 1 1/2* No. and Description of Furnaces in each boiler *2 Built* Material *Steel* Outside diameter *41 5/16*
 Length of plain part *top* Thickness of plates *crown* *1 1/32* Description of longitudinal joint *Welded* No. of strengthening rings *1*
 Working pressure of furnace by the rules *198 lbs* Combustion chamber plates: Material *Steel* Thickness: Sides *19/32* Back *9/16* Top *19/32* Bottom *13/16*
 Pitch of stays to ditto: Sides *8 1/4 x 8* Back *8 x 7 1/2* Top *8 1/4 x 8* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *182 lbs*
 Material of stays *Steel* Diameter at smallest part *1 3/8* Area supported by each stay *8 1/4 x 8* Working pressure by rules *180 lbs* End plates in steam space:
 Material *Steel* Thickness *1/32* Pitch of stays *16 1/2 x 16 1/2* How are stays secured *D.N.W.* Working pressure by rules *182.5 lbs* Material of stays *Steel*
 Diameter at smallest part *2 1/2* Area supported by each stay *16 1/2 x 16 1/2* Working pressure by rules *184 lbs* Material of Front plates at bottom *Steel*
 Thickness *29/32* Material of Lower back plate *Steel* Thickness *13/16* Greatest pitch of stays *13 1/2 x 8* Working pressure of plate by rules *185 lbs*
 Diameter of tubes *3 1/4* Pitch of tubes *2 3/4 x 4 1/2* Material of tube plates *Steel* Thickness: Front *29/32* Back *3/4* Mean pitch of stays *8 3/4 x 9*
 Pitch across wide water spaces *14 1/16* Working pressures by rules *181 lbs* Girders to Chamber tops: Material *Steel* Depth and
 thickness of girder at centre *7 x 1 3/4* Length as per rule *28 1/2* Distance apart *8* Number and pitch of stays in each *2 - 8 1/4*
 Working pressure by rules *184 lbs* Superheater or Steam chest; how connected to boiler *None* Can the superheater be shut off and the boiler worked
 separately *Yes* Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet
 Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness
 of 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

W 924 - 2044

VERTICAL DONKEY BOILER—

Manufacturers of Steel

As per report attached

No. *One*

Description

Cochran's Patent

Made at

Aman

By whom made

Cochran & Co

When made

1909

Where fixed

Stolkhol

Working pressure

tested by hydraulic pressure to

Date of test

No. of Certificate

Fire grate area

Description of Safe

Valves

No. of Safety Valves

Area of each

Pressure to which they are adjusted

Date of adjustment

If fitted with easing gear

If steam from main boilers can enter the donkey boiler

Dia. of donkey boiler

Length

Material of shell plates

Thickness

Range of tensile strength

Descrip. of riveting long seams

Dia. of rivet holes

Whether punched or drilled

Pitch of rivets

Lap of plating

Per centage of strength of joint

Rivets

Plates

Working pressure of shell by rules

Thickness of shell crown plates

Radius of do.

No. of stays to do.

Dia. of stays

Diameter of furnace Top

Bottom

Length of furnace

Thickness of furnace plates

Description of joint

Working pressure of furnace by rules

Thickness of furnace crown plates

Stayed by

Diameter of uptake

Thickness of uptake plates

Thickness of water tubes

Dates of survey

SPARE GEAR. State the articles supplied:—

Two top and bottom rods, two main bearing bolts, 2 sets of coupling bolts, set of feet and bilge pump valves, a quantity of assorted bolts and nuts.

The foregoing is a correct description,

FOR RICHARDSON, WESTGARTH & CO. LIMITED.

A. M. J. M.

Manufacturer.

Dates of Survey while building
During progress of work in shops—
During erection on board vessel—
Total No. of visits

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts—Cylinders 15/2/09 Slides 22/2/09 Covers 22/2/09 Pistons 16/2/09 Rods 19/2/09
Connecting rods 26/1/09 Crank shaft 27/1/09 Thrust shaft 12/2/09 Tunnel shafts 11/5/09 Screw shaft 19/3/09 Propeller 15/2/09
Stern tube 14/4/09 Steam pipes tested 13/5/09 Engine and boiler seatings 7/5/09 Engines holding down bolts 13/5/09
Completion of pumping arrangements 15/5/09 Boilers fixed 13/5/09 Engines tried under steam 15/5/09
Main boiler safety valves adjusted 15/5/09 Thickness of adjusting washers 13/5/09
Material of Crank shaft Identification Mark on Do. 4769 Material of Thrust shaft Identification Mark on Do. 4769
Material of Tunnel shafts Identification Marks on Do. 4769 Material of Screw shafts Identification Marks on Do. 4769
Material of Steam Pipes Lap-welded wrought iron Test pressure 600 lbs per sq. in.

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

The Machinery and Boilers of this Vessel have been constructed under Special Survey and placed on board in accordance with the Society's Rules. They are now in my opinion in safe working condition and the case is respectfully submitted for the notation **L.M.C. 5-09.**

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

L.M.C. 509

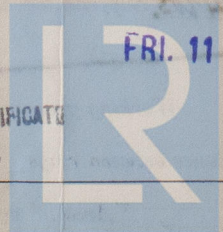
The amount of Entry Fee. £ 25 : 9 : 9
Special
Donkey Boiler Fee
Travelling Expenses (if any) £ : :
When applied for, 1.6.09
When received, 5.6.09

Committee's Minute

TUES. 8 JUN 1909

Assigned

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



Lloyd's Register Foundation