

REPORT ON MACHINERY. No. 56733

1UES. 25 MAY 1909

Port of Newcastle-on-Tyne. Received at London Office
Date, first Survey 15th Jan'y Last Survey May 17th 1909
(Number of Vents 30)

No. in Survey held at Newcastle.
Reg. Book. S/S on the "SAN ANTONIO." Tons { Gross 5300.
Net

Master Built at Newcastle. By whom built Wm. Hunter & Wm. Nelson When built 1909.

Engines made at Newcastle. By whom made H. E. Marine Eng Co Ltd. when made 1909.

Boilers made at Newcastle. By whom made H. E. Marine Eng Co Ltd. when made 1909.

Registered Horse Power Owners S. Pearson & Son Ltd. Port belonging to London.

Nom. Horse Power as per Section 28 444. Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes.

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3. No. of Cranks 3.
Dia. of Cylinders 26", 43", 72". Length of Stroke 48". Revs. per minute 72. Dia. of Screw shaft 14 1/2" Material of Light Steel.
screw shaft

Is the screw shaft fitted with a continuous liner the whole length of the stern tube Yes. 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 Yes. 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 Yes. Length of stern bush 5'-4".

Dia. of Tunnel shaft 14 1/2" Dia. of Crank shaft journals 14 1/2" Dia. of Crank pin 14 1/2" Size of Crank webs 27 1/2" x 8 1/2" Dia. of thrust shaft under
collars 14 1/2" Dia. of screw 18'-0" Pitch of Screw 16'-9" No. of Blades 4. State whether moveable Yes. Total surface 100 sq.

No. of Feed pumps 2. Diameter of ditto 4 1/2" Stroke 18" Can one be overhauled while the other is at work Yes.
No. of Bilge pumps 2. Diameter of ditto 4 1/2" Stroke 26" Can one be overhauled while the other is at work Yes.

No. of Donkey Engines 3. Sizes of Pumps 6 1/2" x 6", 7 1/2" x 5 1/2" x 8", 5 1/2" x 8" No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room Three 3 1/2" dia. In Holds, &c. 2-2 1/2" in Forward Cargo

hold connected to forward ballast pump in Cargo Hold.
No. of Bilge Injections 2 sizes 11". Connected to condenser, or to circulating pump Yes. Is a separate Donkey Suction fitted in Engine room & size Yes 3 1/2" dia.

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 7-4-09. of Stern Tube 7-4-09. Screw shaft and Propeller 14-4-09.

Is the Screw Shaft Tunnel watertight no tunnel Is it fitted with a watertight door Yes worked from John Spencer & Son Ltd.

BOILERS, &c.—(Letter for record R.) Manufacturers of Steel John Spencer & Son Ltd.

Total Heating Surface of Boilers 7899. Is Forced Draft fitted No. No. and Description of Boilers Three Single End.

Working Pressure 180 lb. Tested by hydraulic pressure to 360 lb. Date of test 19-29-3-09. No. of Certificate 7831 & 7836.

Can each boiler be worked separately Yes. Area of fire grate in each boiler 69 sq. No. and Description of Safety Valves to
each boiler 2 Spring Loaded. Area of each valve 8.29 sq. Pressure to which they are adjusted 185 lb. Are they fitted with easing gear Yes.

Smallest distance between boilers or uptakes and bunkers or woodwork 14". Mean dia. of boilers 16'-4" Length 10'-11 1/2" Material of shell plates S.

Thickness 1 1/2" Range of tensile strength 28 1/2 to 32. Are the shell plates welded or flanged both. Descrip. of riveting: cir. seams S. Lap

long. seams S. H.S. Joints Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 10". Lap of plates on width of butt straps 2 1/4"

Per centages of strength of longitudinal joint
rivets 91.4 Working pressure of shell by rules 208.7 lb. Size of manhole in shell 16" x 12".

Size of compensating rings 10 1/2" x 6 1/2" x 1 1/2" No. and Description of Furnaces in each boiler 4 Deighton Material S. Outside diameter 3'-5 1/2"

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

Working pressure of furnace by the rules 182 lb. Combustion chamber plates: Material S. Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 7/8"

Pitch of stays to ditto: Sides 8" x 8" Back 8" x 8" Top 8" x 8" If stays are fitted with nuts or riveted heads Nuts. Working pressure by rules 210 lb.

Material of stays Iron. Diameter at smallest part 2-03. Area supported by each stay 64 sq. Working pressure by rules 238 lb. End plates in steam space:

Material S. Thickness 1 1/2" Pitch of stays 23" x 17 3/8" How are stays secured Nuts & W. Working pressure by rules 206 lb. Material of stays S.

Diameter at smallest part 8-48 Area supported by each stay 399.6 sq. Working pressure by rules 220 lb. Material of Front plates at bottom S.

Thickness 15/16" Material of Lower back plate S. Thickness 15/16" Greatest pitch of stays 14 1/2" x 8". Working pressure of plate by rules 220 lb.

Diameter of tubes 3 1/2" Pitch of tubes 4 5/8" x 4 1/2" Material of tube plates S. Thickness: Front 15/16" Back 13/16" Mean pitch of stays 9 1/4" x 9".

Pitch across wide water spaces 14 1/2" Working pressures by rules 340 lb. Girders to Chamber tops: Material S. Depth and
thickness of girder at centre 9 1/4" x 1 1/2" Length as per rule 3'-0". Distance apart 8". Number and pitch of stays in each 3 @ 8".

Working pressure by rules 184 lb. Superheater or Steam chest; how connected to boiler None. Can the superheater be shut off and the boiler worked
separately Yes. Diameter Yes Length Yes Thickness of shell plates Yes Material Yes Description of longitudinal joint Yes Diam. of rivet

holes Yes Pitch of rivets Yes Working pressure of shell by rules Yes Diameter of flue Yes Material of flue plates Yes Thickness Yes

If stiffened with rings Yes Distance between rings Yes Working pressure by rules Yes End plates: Thickness Yes How stayed Yes

Working pressure of end plates Yes Area of safety valves to superheater Yes Are they fitted with easing gear Yes

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W680-0057

Lloyd's Register Foundation

VERTICAL DONKEY BOILER — Manufacturers of Steel

No. _____ Description _____

Made at _____ By whom made _____ When made _____ Where fixed _____

Working pressure _____ tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____ Fire grate area _____ Description of Safety _____

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: — Spare tail shaft, 4 c. d. propeller blades, 1 slide valve spindle, 4 valve seats for feed donkey, 12 valve seats for ballast donkey, 12 valve seats for down lower deck, 1 set of valve seats for Main feed pumps, 2 sets of valve seats for Main bilge pumps, 1 set of bucket rings for Main pumps, 1 pair of crank pin brasses, 1 eccentric shaft & strap complete, 1 main pump rod, 1 set of main pump valves, 1 set of 4 1/2" x 1 1/2" piston rings, 2 sets of bottom end ball joints, 2 main bearing ball joints, 1 set of coupling ball joints, 12 packing bolts, 6 brass nuts for packing bolts, 1 set of main & donkey feed check valves, 2 safety valve springs, 12 condenser tubes, 100 brass ferrules, 2 escape valve springs, 20 plain & 1 stay tube for boiler, 1 set of fire bars & a quantity of assorted round iron bars & bolts nuts & washers.

The foregoing is a correct description,
NORTH EASTERN MARINE ENGINEERING CO., LTD. Manufacturer.

Secretary, _____

1909
 Jan 15, Feb 25, 9, 16, 18, Mar 4, 9, 19, 22, 23, 24, 25, 26, 29, Apr 2, 7, 14, 16, 17

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 **Yes.**

" " " donkey " " **None.**

Dates of Examination of principal parts: Cylinders **28-12-08** Slides **3-12-08** Covers **3-12-08** Pistons **3-12-08** Rods **28-12-08**

Connecting rods **28-12-08** Crank shaft **5-2-09** Thrust shaft **5-2-09** Tunnel shafts ✓ Screw shaft **29-3-09** Propeller **29-3-09**

Stern tube **2-3-09** Steam pipes tested **27-4-09** Engine and boiler seatings **7-3-09** Engines holding down bolts **23-4-09**

Completion of pumping arrangements **17-5-09** Boilers fixed **22-4-09** Engines tried under steam **29-4-09**

Main boiler safety valves adjusted **29-4-09** Thickness of adjusting washers **F 7/8, F 1/2, F 3/8, F 1/4, F 3/16, F 1/8, F 3/32, F 1/16**

Material of Crank shaft **Engt. Steel** Identification Mark on Do. **J.T.F.** Material of Thrust shaft **Engt. Steel** Identification Mark on Do. **J.T.F.**

Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts **Engt. Steel** Identification Marks on Do. **J.R.**

Material of Steam Pipes **Copper** Test pressure **360 lbs.**

General Remarks (State quality of workmanship, opinions as to class, &c.) **Machinery and boilers built under Special Survey. Materials and workmanship good. Engines and boilers examined under full steam and found satisfactory.**

It is submitted that this vessel is eligible for record of **F.L.M.C. 5-09.**

The report on the electric light installation will be forwarded when received for the electricians.

It is submitted that this vessel is eligible for THE RECORD **F.L.M.C. 5-09** **ELEC LIGHT**

The amount of Entry Fee... £ **3 : 0 : 0** When applied for **4 MAY 1909**

Special ... £ **42 : 4 : 0**

Donkey Boiler Fee ... £ **45 : 4 : 0** When received **27 MAY 1909**

Travelling Expenses (if any) £ : : _____

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

Committee's Minute **FRI. 28 MAY 1909**

Assigned _____



Certificate (if required) to be sent to _____