

## REPORT ON MACHINERY.

No. 56733

JUES. 25 MAY 1909

Port of Newcastle-on-Tyne.

Received at London Office

Date, first Survey 15<sup>th</sup> Jan'yLast Survey May 17<sup>th</sup> 1909No. in Survey held at Newcastle.(Number of Vessels 30) Gross 5300.

Reg. Book.

S/S on the "SAN ANTONIO."

Tons { Gross

Net

When built 1909.

Master

Built at Newcastle.By whom built Wm. Hunter & Wm. Nelsonwhen made 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 ExpansionNo. 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

Material of Light Steel.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.Length of stern bush 5'-4".liners are fitted, is the shaft lapped or protected between the liners Yes.Dia. of Tunnel shaft 14". Dia. of Crank shaft journals 14".Dia. of Crank pin 14".Size of Crank webs 27 1/2" x 8 1/2"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", 5 1/2" x 8"In Engine Room Three 3 1/2" dia.

In Holds, &amp;c.

2-2 1/2" in Forward Cargohold connected to forward ballast pump in Cargo Hold.No. of Bilge Injections 2 sizes 1 1/2"Connected to condenser, or to circulating pump Yes. Is a separate Donkey Suction fitted in Engine room & size 4 1/2" dia.Are all the bilge suction pipes fitted with roses Yes.Are the roses in Engine room 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 aboveAre 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 Yes.Is it fitted with a watertight door Yes.worked from Yes.BOILERS, &c.—(Letter for record R.) Manufacturers of Steel John Spencer & Sons 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. ft.No. and Description of Safety Valves to Yes.each boiler 2 Spring Loaded.Area of each valve 8.29 sq. in.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 to 32.Descrip. of riveting: cir. seams S. Laplong. seams S. A.S. FullDiameter of rivet holes in long. seams 1 1/2"Pitch of rivets 10".Lap of plates on width of butt straps 2 1/2"Per centages of strength of longitudinal joint 91.4Working pressure of shell by rules 208.7 lb.Size of manhole in shell 16" x 12".Size of compensating ring 10 1/2" x 2 1/2" x 1 1/2"No. and Description of Furnaces in each boiler 4 DeightonMaterial S.Outside diameter 3'-5 1/2"Length of plain part 182 lb.Thickness of plates 1 1/2"Description of longitudinal joint Welded.No. of strengthening rings Yes.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. in.Working pressure by rules 238 lb.End plates in steam space: S.Material S. Thickness 1 1/2" Pitch of stays 23" x 17 3/8"How are stays secured Nuts & Washers.Working pressure by rules 206 lb.Material of stays S.Diameter at smallest part 8-48Area supported by each stay 399.6 sq. in.Working pressure by rules 220 lb.Material of Front plates at bottom S.Thickness 15/16" Material of Lower back plate S.Thicknes 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.Thicknes: 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 3 @ 8"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 Yes.Diam. of rivet Yes.separately Yes.Diameter Yes.Length Yes.Thickness of shell plates Yes.Material Yes.Description of longitudinal joint Yes.Thicknes Yes.holes Yes.Pitch of rivets Yes.Working pressure of shell by rules Yes.Diameter of flue Yes.Material of flue plates Yes.Thicknes Yes.How stayed Yes.If stiffened with rings Yes.Distance between rings Yes.Working pressure by rules Yes.End plates: Thicknes Yes.How stayed Yes.Working pressure of end plates Yes.Area of safety valves to superheater Yes.Are they fitted with easing gear Yes.

Lloyd's Register Foundation



## Manufacturers of Steel

SPARE GEAR. State the articles supplied:— Spare tail shaft, v.c. 2, 1 propeller blades, 1 slide valve spindle, 4 valve seats for feed donkey, 12 valve seats for ballast donkey, 12 valve seats for air cond. & dry, 1 set of valve seats for Main feed pumps, 2 sets of valve seats for Main bilge pumps, 1 set of hook rings for Main pumps, 1 pair of crank pin brasses, 1 eccentric sheave & strap complete, 1 air pump rod, 1 set of air pump valve, 1 set of H.P. & V.P. piston rings for 2 bottom end bottom nuts, 2 Main bearing bolts & nuts, 1 set of coupling bottom nuts, 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, 2 plain & 1 stay tube for boiler, 1 set of fire bars & a quantity of assorted rod and non bars & bolts nuts & washers.

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

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NORTH EASTERN MARINE ENGINEERING Co., LTD.

*Manufacturer.*

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

Secretary.

Is the approved plan of main boiler forwarded herewith

Yes.

*Howe*

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 25-3-09 27-4-09 Engine and boiler seatings 7-3-09 Engines holding down bolts 22-4-09  
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  $\frac{1}{16}$   $\frac{1}{8}$   $\frac{1}{8}$   $\frac{1}{8}$   $\frac{1}{8}$   $\frac{1}{8}$   $\frac{1}{8}$   $\frac{1}{8}$   
Material of Crank shaft hgt steel Identification Mark on Do. E. J. F. Material of Thrust shaft hgt steel Identification Mark on Do. E. J. F.  
Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts hgt steel Identification Marks on Do. E. 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 FILM 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.

ELEC LIGHT

LMC 5.09

The amount of Entry Fee..	£ 3 : 0 : 0	When applied for, 94 MAY 1900
Special .. .. .	£ 42 : 4 : 0	.....19.....
Donkey Boiler Fee .. ..	£ 45 : 4 : 0	When received, 21 MAY 1900
Travelling Expenses (if any) £	: : :	.....19.....

## Committee's Minute

FRI. 28 MAY 1909

Assigned

MACHINERY CERTIFICATE  
WRITTEN.

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



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Foundation