

REPORT ON MACHINERY.

No. 66628

Received at London Office

FRIDAY SEP. 18. 1914

Date of writing Report 11th Sept 1914 When handed in at Local Office 16th Sept 1914 Port of NEWCASTLE-ON-TYNENo. in Survey held at Newcastle Date, First Survey 18th Mar 1913 Last Survey 10th Sept 1914Reg. Book. 8th Sup on the Machinery of the S.S. *San Onofre* (Number of Plates)

Master Built at Newcastle By whom built Armstrong Whitworth & Co. When built 1914

Engines made at Newcastle By whom made North Eastern Marine Eng Co. when made 1914

Boilers made at " By whom made " when made 1914

Registered Horse Power Owners Eagle Oil Transport Co. Port belonging to London

Nom. Horse Power as per Section 28 740 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines *Quadruple* No. of Cylinders 4 No. of Cranks 4Dia. of Cylinders 28 $\frac{1}{2}$ " 41" 58" 84" Length of Stroke 54" Revs. per minute 66 Dia. of Screw shaft as per rule 17 $\frac{1}{2}$ " Material of screw shaft as fitted 17 $\frac{1}{2}$ "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 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 If two liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 6'-1 $\frac{1}{2}$ "Dia. of Tunnel shaft as per rule 15 $\frac{3}{4}$ " Dia. of Crank shaft journals as fitted 16 $\frac{1}{4}$ " Dia. of Crank pin 16 $\frac{1}{4}$ " Size of Crank webs 11 $\frac{1}{4}$ " x 24" Dia. of thrust shaft under collars 16 $\frac{1}{4}$ " Dia. of screw 20'-6" Pitch of Screw 18'-6" No. of Blades 4 State whether moveable Yes Total surface 130 $\frac{1}{2}$ "No. of Feed pumps 2 Diameter of ditto 5 $\frac{1}{2}$ " Stroke 30" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 5" Stroke 30" Can one be overhauled while the other is at work Yes

No. of Donkey Engines 4 Sizes of Pumps 2 $\frac{1}{2}$ " x 6" 10" x 13 $\frac{1}{4}$ " x 21" 12" x 14" x 15" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 3 of 3 $\frac{1}{2}$ " In Holds, &c. Oil cargo pumps

No. of Bilge Injections 1 size 15" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room of size 6"

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 stowhold 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

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 9/6/14 of Stern Tube 9/6/14 Screw shaft and Propeller 7/7/14

Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record (P) Manufacturers of Steel J. Spencer & Sons

Total Heating Surface of Boilers 11320 Is Forced Draft fitted Yes No. and Description of Boilers 4 single-ended

Working Pressure 220 lbs Tested by hydraulic pressure to 440 lbs Date of test 23/12/13, 10/3/14 No. of Certificate 86017 8629

Can each boiler be worked separately Yes Area of fire grate in each boiler 66.5 $\frac{1}{2}$ " No. and Description of Safety Valves to each boiler 2 direct spring Area of each valve 11.04 $\frac{1}{2}$ " Pressure to which they are adjusted 225 lbs Are they fitted with easing gear YesSmallest distance between boilers or uptakes and bunkers or woodwork 2'-6" Mean dia. of boilers 15'-11 $\frac{1}{2}$ " Length 12'-1" Material of shell plates steelThickness 1 $\frac{1}{16}$ " Range of tensile strength 30-34 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams d. r. laplong. seams E. r. d. butt Diameter of rivet holes in long. seams 1 $\frac{1}{16}$ " Pitch of rivets 10 $\frac{1}{2}$ " Lap of plates or width of butt straps 24 $\frac{1}{4}$ "

Per centages of strength of longitudinal joint: rivets 93.8 plate 83.9 Working pressure of shell by rules 258 lbs Size of manhole in shell 12" x 16"

Size of compensating ring flanges No. and Description of Furnaces in each boiler 4 Doughton's Material steel Outside diameter 41 $\frac{1}{2}$ "Length of plain part top Thickness of plates crown 5 $\frac{1}{8}$ " Description of longitudinal joint welded No. of strengthening ringsWorking pressure of furnace by the rules 242 lbs Combustion chamber plates: Material steel Thickness: Sides 2 $\frac{3}{32}$ " Back 2 $\frac{3}{32}$ " Top 2 $\frac{3}{32}$ " Bottom 1 $\frac{1}{8}$ "Pitch of stays to ditto: Sides 8" x 8" Back 8" x 8" Top 8 $\frac{1}{2}$ " x 8" If stays are fitted with nuts or riveted heads none Working pressure by rules 278 lbs

Material of stays iron Diameter at smallest part 2.03 Area supported by each stay 64 Working pressure by rules 236 lbs Plates in steam space

Material steel Thickness 1 $\frac{1}{16}$ " Pitch of stays 18" x 23 $\frac{1}{2}$ " How are stays secured d. r. riv Working pressure by rules 224 lbs Material of stays steel

Diameter at smallest part 11.04 Area supported by each stay 423 Working pressure by rules 272 lbs Material of Front plates at bottom steel

Thickness 1 $\frac{1}{16}$ " Material of Lower back plate steel Thickness 1 $\frac{1}{32}$ " Greatest pitch of stays 16 $\frac{1}{4}$ " x 8" Working pressure of plate by rules 224 lbsDiameter of tubes 2 $\frac{1}{2}$ " Pitch of tubes 3 $\frac{3}{4}$ " Material of tube plates steel Thickness: Front 1 $\frac{1}{16}$ " Back 1 $\frac{3}{16}$ " Mean pitch of stays 7 $\frac{1}{2}$ "Pitch across wide water spaces 14 $\frac{1}{2}$ " Working pressures by rules 232 lbs Girders to Chamber tops: Material steel Depth and thickness of girder at centre 9 $\frac{1}{8}$ " x 2" Length as per rule 38 Distance apart 8 $\frac{1}{2}$ " Number and pitch of stays in each 3 of 8"

Working pressure by rules 238 lbs Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked separately Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet

holes 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 Are they fitted with easing gear

IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded? *✓*

SPARE GEAR. State the articles supplied:—

Two top & 2 bottom end bolts, 2 main bearing bolts, 1 set of coupling bolts, 1 set of fuel & bidge pump valves, 1 set of rings for each piston, a quantity of assorted bolts nuts & iron, propeller shaft, 4 propeller blades, 1 set of bottom end brasses, valve spindle, eccentric sheave & strap complete section crank shaft, air pump, rod & minor details.

The foregoing is a correct description,

NORTH EASTERN MARINE ENGINEERING Co., LTD.

J. J. Harrison Manufacturer.

Secretary,

Dates of Survey while building
During progress of work in shops — 1913
During erection on board vessel —
Total No. of visits — 63

Is the approved plan of main boiler forwarded herewith? *Yes*

" " " donkey " " " "

Dates of Examination of principal parts—Cylinders *17/11/13* Slides *17/12/13* Covers *4/4/14* Pistons *22/5/14* Rods *17/4/14*

Connecting rods *11/4/14* Crank shaft *24/10/13* Thrust shaft — Tunnel shafts — Screw shaft — Propeller *28/8/13*

Stern tube *4/6/14* Steam pipes tested *17/8/14* Engine and boiler seatings *7/7/14* Engines holding down bolts *31/7/14*

Completion of pumping arrangements *29/8/14* Boilers fixed *31/7/14* Engines tried under steam *29/8/14*

Main boiler safety valves adjusted *29/8/14* Thickness of adjusting washers *F.S. 1/2" P.W. P.P. 3/8" S.S. 1/2" A.S. 3/8" P.W. P.S. 3/8" P.W.*

Material of Crank shaft *steel* Identification Mark on Do. *10/11/13* Material of Thrust shaft *steel* Identification Mark on Do. *15/7/13*

Material of Tunnel shafts *steel* Identification Marks on Do. *23/3/14* Material of Screw shafts *steel* Identification Marks on Do. *26/8/13*

Material of Steam Pipes *Lap welded iron* Test pressure *660 lbs*

Is an installation fitted for burning oil fuel? *Yes* Is the flash point of the oil to be used over 150°F. *no*

Have the requirements of Section 49 of the Rules been complied with? *Yes*

Is this machinery duplicate of a previous case? *Yes* If so, state name of vessel *S.S. San Sidorio*

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

The machinery of this vessel has been built under special survey, the materials used are good, and the workmanship is satisfactory, it has been properly fitted on board, and secured, and the engines have been tried under full power. An oil fuel burning installation on the Wallisnoe System has been fitted in accordance with the requirements for low flash oil. In my opinion this vessel is eligible for the record of L.M.C. 9.14 fitted for low flash oil fuel.

It is submitted that
this vessel is eligible for
THE RECORD + L.M.C. 9.14. F.D.

Fitted for low flash oil fuel. 9.14.

The amount of Entry Fee ... £ 3 :
Special ... £ 59 : 10 :
Donkey Boiler Fee ... £ :
Travelling Expenses (if any) £ :
When applied for, *SEP 16 1914*
When received, *19/9/14*

Committee's Minute *TUE SEP 22 1914*

Assigned *+ L.M.C. 9.14*

J.D. Listed for low flash oil fuel 9.14



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