

REPORT ON MACHINERY.

No. 938

Port of **NAGASAKI.**

Received at London Office **WED. OCT. 28. 1914**

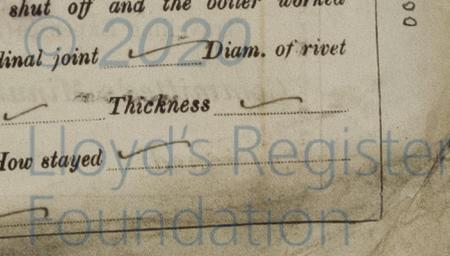
No. in Survey held at **NAGASAKI.** Date, first Survey **3rd May, 1913** Last Survey **18th Sept 1914.**
 Reg. Book. on the **Twin s.s. "Sewa Maru"** (Number of Plates **206**) Tons **Gross 11758**
Master J. Murai Built at **Nagasaki** By whom built **Mitsui Bishi Dockyard & Engine Works** when made **1914**
 Engines made at **Nagasaki** By whom made **Mitsui Bishi Dockyard & Engine Works** when made **1914**
 Boilers made at **Nagasaki** By whom made **Mitsui Bishi Dockyard & Engine Works** when made **1914**
 Registered Horse Power **1337** Owners **Nippon Yusen Kaisha** Port belonging to **Tokio**
 Nom. Horse Power as per Section 28 **1337** Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted **Yes**

ENGINES, &c.—Description of Engines **Twin screw, triple expansion** No. of Cylinders **6** No. of Cranks **6**
 Dia. of Cylinders **28" 47" & 79"** Length of Stroke **51"** Revs. per minute **88.7** Dia. of Screw shaft as per rule **16.53"** Material of (forged steel as fitted **16.5"** 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 **6.9"**
 Dia. of Tunnel shaft as per rule **14.54"** Dia. of Crank shaft journals as per rule **15.36"** Dia. of Crank pin **16"** Size of Crank webs **10.5" x 24"** Dia. of thrust shaft under collars **15.2"** Dia. of screw **17.9"** Pitch of Screw **20.6"** No. of Blades **4** State whether moveable **Yes** Total surface **102.8 sq. ft. each**
 No. of Feed pumps **4** Diameter of ditto **5"** Stroke **25.5"** Can one be overhauled while the other is at work **Yes**
 No. of Bilge pumps **4** Diameter of ditto **5"** Stroke **25.5"** Can one be overhauled while the other is at work **Yes**
 No. of Donkey Engines **3 sets Duplex** Sizes of Pumps **12" x 14" x 12"** 2 Hairs **11.5" x 15.5" x 26"** No. and size of Suctions connected to both Bilge and Donkey pumps **ash pump 13.5" x 9" x 12"** 5.5" x 3.5" x 9"
 In Engine Room **30.4"** In Boiler room **20.4"** In Holds, &c. **No. 1 Hold 20.4" No. 2 Hold 20.4" No. 3 Hold 20.4" No. 4 Hold 4.03" No. 5 Hold 20.4" No. 6 Hold 20.4" Cross Tanker 20.4" Shaft Journals 20.3" & 20.25"**
 No. of Bilge Injections **2** sizes **13"** Connected to condenser, or to circulating pump **Is a separate Donkey Suction fitted in Engine room & size 20.4"**
 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 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 **Bilge pipes** How are they protected **with steel plate cover**
 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 **26th March 1914** of Stern Tube **26th March 1914** Screw shaft and Propeller **27th July 1914**
 Is the Screw Shaft Tunnel watertight **Yes** Is it fitted with a watertight door **Yes** worked from **upper deck**

BOILERS, &c.—(Letter for record **S**) Manufacturers of Steel **Saunders Colville & Sons**
 Total Heating Surface of Boilers **19742 sq. ft.** Is Forced Draft fitted **Yes** No. and Description of Boilers **7 Single ended Scotch**
 Working Pressure **200 lbs.** Tested by hydraulic pressure to **400 lbs.** Date of test **23.12.13 and 13.1.14** No. of Certificate **57 for No. 5, 6, 7, 8**
 Can each boiler be worked separately **Yes** Area of fire grate in each boiler **63.25** No. and Description of Safety Valves to each boiler **2 Spring loaded** Area of each valve **9.62 sq. in.** Pressure to which they are adjusted **205 lbs.** Are they fitted with easing gear **Yes**
 Smallest distance between boilers or uptakes and bunkers or woodwork **12"** Mean dia. of boilers **15.6"** Length **11.9"** Material of shell plates **Steel**
 Thickness **1.76"** Range of tensile strength **28 to 32 tons** Are the shell plates welded or flanged **No** Descrip. of riveting: cir. seams **double riveted lap**
 long. seams **2 straps** Diameter of rivet holes in long. seams **1.5"** Pitch of rivets **10" x 5"** Lap of plates or width of butt straps **22"**
 Per centages of strength of longitudinal joint rivets **91.4** plate **85** Working pressure of shell by rules **211 lbs.** Size of manhole in shell **16" x 12"**
 Size of compensating ring **36.5" x 52.5" x 1.76"** No. and Description of Furnaces in each boiler **3 sets Forge Bull type** Material **Steel** Outside diameter **57.5"**
 Length of plain part top **5"** bottom **8"** Thickness of plates crown **5"** bottom **8"** Description of longitudinal joint **Welded** No. of strengthening rings **None**
 Working pressure of furnace by the rules **213 lbs.** Combustion chamber plates: Material **Steel** Thickness: Sides **1.76"** Back **1.76"** Top **1.76"** Bottom **1.5"**
 Pitch of stays to ditto: Sides **9.5" x 7.5"** Back **9" x 8.5"** Top **8.5" x 8"** If stays are fitted with nuts or riveted heads **None** Working pressure by rules **213 lbs.**
 Material of stays **Steel** Diameter at smallest part **1.32"** Area supported by each stay **76 sq. in.** Working pressure by rules **239 lbs.** End plates in steam space: Material **Steel** Thickness **1.32"** Pitch of stays **20" x 17"** How are stays secured **at both ends** Working pressure by rules **225 lbs.** Material of stays **Steel**
 Diameter at smallest part **3.78"** Area supported by each stay **340 sq. in.** Working pressure by rules **235 lbs.** Material of Front plates at bottom **Steel**
 Thickness **3.2"** Material of Lower back plate **Steel** Thickness **3.2"** Greatest pitch of stays **11.5" x 7"** Working pressure of plate by rules **206 lbs.**
 Diameter of tubes **3"** Pitch of tubes **4.5" x 4.8"** Material of tube plates **Steel** Thickness: Front **3.2"** Back **3.2"** Mean pitch of stays **8.5" x 8.2"**
 Pitch across wide water spaces **13.2"** Working pressures by rules **248 lbs.** Girders to Chamber tops: Material **Steel** Depth and thickness of girder at centre **10" x 7.8"** double Length as per rule **32.5"** Distance apart **8"** Number and pitch of stays in each **30 8.5"**
 Working pressure by rules **300 lbs.** Superheater or Steam chest; how connected to boiler **Can the superheater be shut off and the boiler worked separately**
 Diameter **11"** Length **11"** Thickness of shell plates **1.76"** Material **Steel** Description of longitudinal joint **Welded** Diam. of rivet holes **1.5"** Pitch of rivets **10" x 5"** Working pressure of shell by rules **211 lbs.** Diameter of flue **11"** Material of flue plates **Steel** Thickness **1.76"**
 If stiffened with rings **Yes** Distance between rings **11"** Working pressure by rules **211 lbs.** End plates: Thickness **1.76"** How stayed **None**
 Working pressure of end plates **211 lbs.** Area of safety valves to superheater **1.76"** Are they fitted with easing gear **Yes**

Im. 46. - I.

007465-007473-0047



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:— As per Rule, and in addition, 1 Crank shaft, 2 Propeller shafts, 4 Propeller blades, 1 Piston rod, 2 Valve rods, 2 Eccentric rods, 2 Stern bushes with lignum vitae, 1 Pair connecting rod brasses, 1 Pair cross head brasses, 1 Eccentric strap complete, 1 Air pump rod, 1 Circulating pump rod, 1 set feed check valves, 15 Cylinder cover studs & nuts, 22 total number of junk ring bolts, 30 Boiler tubes, 100 Condenser tubes, 8 Cylinder escape valve springs, 9 safety valve springs

The foregoing is a correct description, MITSUBISHI DOCKYARD & ENGINE WORKS.

Manufacturer.

1912 1914 Dates of Survey while building During progress of work in shops - - During erection on board vessel - - Total No. of visits 206 Is the approved plan of main boiler forwarded herewith Yes. donkey

Dates of Examination of principal parts—Cylinders Slides Covers Pistons Rods Connecting rods Crank shaft Thrust shaft Tunnel shafts Screw shaft Propeller Stern tube Steam pipes tested Engine and boiler seatings Engines holding down bolts Completion of pumping arrangements Boilers fixed Engines tried under steam Main boiler safety valves adjusted Thickness of adjusting washers Material of Crank shaft Identification Mark on Do. Material of Thrust shaft Identification Mark on Do. Material of Tunnel shafts Identification Marks on Do. Material of Screw shafts Identification Marks on Do. Material of Steam Pipes Lap welded wrought iron Test pressure 600lb, per sq. in.

General Remarks (State quality of workmanship, opinions as to class, &c. These Engines and Boilers have been constructed under Special Survey, and in accordance with the Rules, and of good materials and workmanship. They have been securely fitted on board and have been satisfactorily tried under full steam. The Machinery of this vessel is eligible, in my opinion, for the record of LMC 9.14 in the Register Book.

Mean Speed of 6 Runs on Trial when Half Loaded - 16.464 knots.

It is submitted that this vessel is eligible for THE RECORD. + LMC 9. 14. F.D. JWR

Certificate (if required) to be sent to (The Surveyors are requested not to write on or below the space for Committee's Minute.)

Table with 2 columns: Fee Type (Entry, Special, Donkey Boiler, Travelling Expenses) and Amount (£). Includes dates when applied for and received.

Committee's Minute FRI. OCT. 30. 1914 Assigned + L.M.C. 9. 14 F.D.

