

# REPORT ON MACHINERY.

No. 2729

Received at London Office

TUE APR. 6 1920

Date of writing Report 10 When handed in at Local Office 10 Port of Robe  
 No. in Survey held at Osaka Date, First Survey 28 Jan'y 1919 Last Survey 27 Feb'y 1920  
 Reg. Book. on the Single Screw Steamer "Shinto Maru" (Number of Visits)  
 Master Osaka Built at Osaka By whom built Fujinagata Dockyard Co When built 1919  
 Engines made at Osaka By whom made Fujinagata Dock Co when made 1919  
 Boilers made at do By whom made do when made do  
 Registered Horse Power 189 Owners Nishimoto Kisen Kaisha Port belonging to Nishinomura  
 Nom. Horse Power as per Section 28 189 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

**ENGINES, &c.**—Description of Engines Triples Expansion No. of Cylinders Three No. of Cranks 3  
 Dia. of Cylinders 18 1/2 : 30 1/2 : 51 1/2 Length of Stroke 36 Revs. per minute 80 Dia. of Screw shaft 11.4 Material of screw shaft Steel  
 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 No If two  
 liners are fitted, is the shaft lapped or protected between the liners No Length of stern bush 3' 8 1/2"  
 Dia. of Tunnel shaft 9.46 Dia. of Crank shaft journals 9.93 Dia. of Crank pin 10.4 Size of Crank webs 6 3/4 x 18 Dia. of thrust shaft under  
 collars 10 1/8 Dia. of screw 13.6 Pitch of Screw 16" 14 1/2" No. of Blades 4 State whether moveable No Total surface 56"  
 No. of Feed pumps 2 Diameter of ditto 3 1/2 Stroke 16 Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 3 1/2 Stroke 16 Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines Two Sizes of Pumps Ballast 6 1/2, 8, 9 Duplex No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room One 3" + two 2 3/4" Small Donkey pump in Holds, &c. Two 2 3/4" to each hold  
 No. of Bilge Injections 1 sizes 5" Connected to condenser, or to circulating pump Cir. p. Is a separate Donkey Suction fitted in Engine room & size Yes 3"  
 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 Now  
 Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Larger Valves: Sealed Cocks  
 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 No  
 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 17.2.19 of Stern Tube 10.2.19 Screw shaft and Propeller 17.2.19  
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper platform in E. Rm.

**BOILERS, &c.**—(Letter for record S) Manufacturers of Steel Carnegie Steel Co. Yawata Imperial Steel Works.  
 Total Heating Surface of Boilers 3135 Is Forced Draft fitted No No. and Description of Boilers Two Single Ended  
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 26/2/1919 No. of Certificate 2580  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 49.9 No. and Description of Safety Valves to  
 each boiler Two Direct Spring Area of each valve 2 1/2 dia 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 8" to 10" Mean dia. of boilers 12" 8" Length 10' 6" Material of shell plates Steel  
 Thickness 1 1/8" Range of tensile strength 28 to 32 lbs Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Mid. trch.  
 long. seams Double strap Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 8 1/4" x 4 1/8" Top of plates or width of butt straps 1" 5/8" x 7/8"  
 Per centages of strength of longitudinal joint 84.09 Working pressure of shell by rules 194 lbs Size of manhole in shell 16 x 12  
 Size of compensating ring 3' 0" x 2' 8" x 1 1/2" No. and Description of Furnaces in each boiler 3 Morrison Material Steel Outside diameter 40 1/4"  
 Length of plain part top 1/2" bottom 1/2" Thickness of plates 1/2" Description of longitudinal joint Weld No. of strengthening rings 0  
 Working pressure of furnace by the rules 187 lbs Combustion chamber plates: Material Steel Thickness: Sides 5/8" Back 7/8" Top 3/8" Bottom 3/4"  
 Pitch of stays to ditto: Sides 9 x 7 1/2" Back 7 1/2 x 7 1/2" Top 8 1/2 x 7 3/4" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 197 lbs  
 Material of stays Steel Diameter at smallest part 1.77 Area supported by each stay 9 x 7 1/2" Working pressure by rules 203 End plates in steam space:  
 Material Steel Thickness 1" Pitch of stays 15 x 17 How are stays secured Double nut Working pressure by rules 185 lbs Material of stays Steel  
 Diameter at smallest part 5.9 Area supported by each stay 17 x 15 Working pressure by rules 225 Material of Front plates at bottom Steel  
 Thickness 3/4" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 15" at 5/8" Working pressure of plate by rules 200  
 Diameter of tubes 3 1/4" Pitch of tubes 4 7/16" x 4 3/8" Material of tube plates Steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 9  
 Pitch across wide water spaces 1" 3" Working pressures by rules 190 lbs Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 7 3/4" x 7 3/4" (doub. pl. 3/4") Length as per rule 30" Distance apart 7 3/4" Number and pitch of stays in each 2 @ 8 1/2"  
 Working pressure by rules 223 lbs Superheater or Steam chest; how connected to boiler No Can the superheater be shut off and the boiler worked  
 separately No Diameter 16" Length 16" Thickness of shell plates 1/2" Material Steel Description of longitudinal joint Weld Diam. of rivet  
 holes 1 1/8" Pitch of rivets 1 1/8" Working pressure of shell by rules 194 lbs Diameter of flue 16" Material of flue plates Steel Thickness 1/2"  
 If stiffened with rings No Distance between rings 16" Working pressure by rules 194 lbs End plates: Thickness 1/2" How stayed Weld  
 Working pressure of end plates 194 lbs Area of safety valves to superheater 0 Are they fitted with easing gear No

009321-009330-8233

**VERTICAL DONKEY BOILER—** Manufacturers of Steel

No. \_\_\_\_\_ Description *None*

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 \_\_\_\_\_

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 \_\_\_\_\_ Radius of do. \_\_\_\_\_ Stayed by \_\_\_\_\_

Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

**SPARE GEAR.** State the articles supplied:— *Two main bearing bolts. 2 Cr. pin bolts & set braces. 4 Crosshead bolts. 2 sets coupling bolts. Two eccentric rods. 1 valve rod. Air & circulating pump valves. & pump rod. Feed & fly pump valves & seats. Packing ring each piston. Packing rings each piston. Safety valve springs.*

The foregoing is a correct description, *Assorted bolts & nuts. Iron various sizes.*

*Fujinagata Zosensho* Manufacturer.

Dates of Survey while building: During progress of work in shops - *28<sup>th</sup> Jan. 9 4 10 17 26 July 10 14 15 19 March 1919*  
 During erection on board vessel - *and 22<sup>nd</sup> & 27<sup>th</sup> July 1920*  
 Total No. of visits *9*

Is the approved plan of main boiler forwarded herewith \_\_\_\_\_

Dates of Examination of principal parts—Cylinders *28-1-19* Slides *10.2.19* Covers *10.2.19* Pistons *10.2.19* Rods *28.1.19*  
 Connecting rods *28.1.19* Crank shaft *28.1.19* Thrust shaft *28.1.19* Tunnel shafts *28.1.19* Screw shaft *28.1.19* Propeller *10.2.19*  
 Stern tube *10.2.19* Steam pipes tested *10.3.19* Engine and boiler seatings *10.2.19* Engines holding down bolts *15.3.19*  
 Completion of pumping arrangements *15.3.19* Boilers fixed *14.3.19* Engines tried under steam *19.3.19*  
 Main boiler safety valves adjusted *15.3.19* Thickness of adjusting washers *Coednuts*

Material of Crank shaft *Steel* Identification Mark on Do. *25* Material of Thrust shaft *Steel* Identification Mark on Do. *25*  
 Material of Tunnel shafts *Steel* Identification Marks on Do. *25* Material of Screw shafts *Steel* Identification Marks on Do. *25*  
 Material of Steam Pipes *Copper* Test pressure *360 lbs*

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

The first visit was paid on 28<sup>th</sup> Jan 1919, the request for survey being made at that time. The soleplate, columns & cylinders had already been fitted together, the pumps & condensers cast, all shafting finished & rods almost finished. The boiler combustion chambers had been riveted & the shell plate drilled ready for riveting. The shafting was forged & rough turned at the Imperial Steel Works, Manchester & finished by the Engine Builders. Certificates of inspection & testing by the Government Surveyors were produced & the test records are in accordance with the Society's Rules. The boiler shell & end plates were made by the Yawata Steel Works under Government inspection & the C.C. & furnaces at the Carnegie Steel Works & Brighton Steel Co respectively & were tested by the Society's Surveyors.

The vessel has made several coasting trips & the machinery on being opened up has been found in good condition throughout & the boiler good.

The machinery is in my opinion eligible for the notation L.M.C. 2-20.

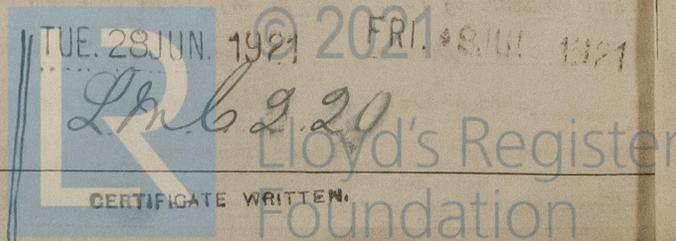
The amount of Entry Fee .. *£ 20* : When applied for, *26.2.19 20*  
 Special .. *£ 400* :  
 Donkey Boiler Fee .. *£* :  
 Travelling Expenses (if any) *£ 20* : When received, *29.7.20*

*Arthur H. Jones*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

Assigned

*Approved no action*



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