

## REPORT ON MACHINERY.

No. 3188

MON. 8 AUG. 1921

Received at London Office

Date of writing Report May 12<sup>th</sup> 1921 When handed in at Local Office

19 Port of Kobe

No. in Survey held at Osaka Date, First Survey July 4<sup>th</sup> 1920 Last Survey April 13<sup>th</sup> 1921  
Reg. Book. on the Steel Single Screw Steamer "SHINAI MARU" (Number of Visits 28) Gross 3793.57  
Master K. Hamaoki Built at Osaka By whom built Fujinagata Shipbuilding Yard When built 1921 Net 2304.64  
Engines made at Osaka By whom made Fujinagata Shipbuilding Yard when made 1921  
Boilers made at do By whom made do when made 1921  
Registered Horse Power 342 Owners Kishumoto Kisen Kaisha Port belonging to Osaka  
Nom. Horse Power as per Section 28 342 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders Three No. of Cranks 3  
Dia. of Cylinders 23:38:64 Length of Stroke 48" Revs. per minute 75 Dia. of Screw shaft 14.56" Material of 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  
Is 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 Yes Length of stern bush 5'-6<sup>3</sup>/<sub>4</sub>"  
Dia. of Tunnel shaft 12.48" as per rule 12.34" Dia. of Crank shaft journals 13.12" as per rule 13.12" Dia. of Crank pin 14" Size of Crank web 8<sup>3</sup>/<sub>4</sub>"x25<sup>1</sup>/<sub>2</sub>" Dia. of thrust shaft under  
collars 13<sup>1</sup>/<sub>2</sub>" Dia. of screw 16'-8" Pitch of Screw 18'-0" No. of Blades 4 State whether moveable Yes Total surface 87.1 sq. ft.  
No. of Feed pumps Two Diameter of ditto 4<sup>1</sup>/<sub>2</sub>" Stroke 24" Can one be overhauled while the other is at work Yes  
No. of Bilge pumps Two Diameter of ditto 4<sup>1</sup>/<sub>2</sub>" Stroke 24" Can one be overhauled while the other is at work Yes  
No. of Donkey Engines 5 Sizes of Pumps Yamamoto 8x6x2 1/2 No. and size of Suctions connected to both Bilge and Donkey pumps  
In Engine Room Four @ 4" General Service 7x4 1/2 x 6 Ballast Pump 7x4 1/2 x 6 In Holds, &c. No. 1, 2, 3 + 4 Two each @ 3<sup>1</sup>/<sub>2</sub>"  
In Tunnel Well 1 @ 2<sup>1</sup>/<sub>2</sub>"  
No. of Bilge Injections 4 sizes 8" Connected to condenser, or to circulating pump Yes 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 stoves 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 ✓  
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  
Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Top platform

OILERS, &c.—(Letter for record S) Manufacturers of Steel Worth Steel Co. David Colvill Sons Ltd.

Total Heating Surface of Boilers 4396.2 Is Forced Draft fitted Yes No. and Description of Boilers Two Single Ended  
Working Pressure 200 lbs. Tested by hydraulic pressure to 400 lbs. Date of test 19-1-21 + 21-1-21 No. of Certificate 19-1-21-1-21  
Can each boiler be worked separately Yes Area of fire grate in each boiler 53.3 No. and Description of Safety Valves to  
each boiler Two Spring loaded Area of each valve 8.296 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 14'-0" Length 11'-6" Material of shell plates Steel  
Thickness 1<sup>1</sup>/<sub>2</sub>" Range of tensile strength 28-32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Double riveted  
long. seams Double riveted Diameter of rivet holes in long. seams 1<sup>3</sup>/<sub>8</sub>" Pitch of rivets 9<sup>1</sup>/<sub>2</sub>" + 4<sup>3</sup>/<sub>4</sub>" Lap of plates or width of butt straps 1'-8<sup>1</sup>/<sub>2</sub>" x 1<sup>1</sup>/<sub>2</sub>" (in)  
Per centages of strength of longitudinal joint 88.5 Working pressure of shell by rules 212 lbs. Size of manhole in shell 12" x 16"  
Size of compensating ring 3'-1<sup>1</sup>/<sub>2</sub>" x 2'-9" x 1<sup>1</sup>/<sub>2</sub>" No. and Description of Furnaces in each boiler 3 Morrison's Material Steel Outside diameter 3'-8<sup>1</sup>/<sub>4</sub>"  
Length of plain part top 19" Thickness of plates bottom 32 Description of longitudinal joint Welded No. of strengthening rings ✓  
Working pressure of furnace by the rules 213 lbs. Combustion chamber plates: Material Steel Thickness: Sides 3/4" Back 3/4" Top 3/4" Bottom 1<sup>1</sup>/<sub>2</sub>"  
Pitch of stays to ditto: Sides 10<sup>3</sup>/<sub>4</sub>" x 7<sup>1</sup>/<sub>2</sub>" Back 10<sup>3</sup>/<sub>4</sub>" x 9" Top 11<sup>1</sup>/<sub>2</sub>" x 7" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 211 lbs.  
Material of stays Steel Area at smallest part 2.07 Area supported by each stay 91.125 Working pressure by rules 231 lbs. End plates in steam space:  
Material Steel Thickness 1<sup>3</sup>/<sub>32</sub>" Pitch of stays 18" x 20" How are stays secured Washer + Double nuts Working pressure by rules 214 lbs. Material of stays Steel  
Area at smallest part 7.669 Area supported by each stay 360 Working pressure by rules 221 lbs. Material of Front plates at bottom Steel  
Thickness 3/32" Material of Lower back plate Steel Thickness 3/32" Greatest pitch of stays 13<sup>3</sup>/<sub>4</sub>" wide Working pressure of plate by rules 222 lbs.  
Diameter of tubes 3/4" Pitch of tubes 4<sup>3</sup>/<sub>8</sub>" x 4<sup>1</sup>/<sub>2</sub>" Material of tube plates Steel Thickness: Front 3/32" Back 27/32" Mean pitch of stays 10"  
Pitch across wide water spaces 13<sup>3</sup>/<sub>4</sub>" Working pressures by rules 216 lbs. Girders to Chamber tops: Material Steel Depth and  
thickness of girder at centre 10<sup>1</sup>/<sub>2</sub>" x 2" Length as per rule 31" Distance apart 11<sup>1</sup>/<sub>2</sub>" Number and pitch of stays in each 3 x 7"  
Working pressure by rules 274 lbs. Steam dome: description of joint to shell ✓ % of strength of joint  
Diameter 19" Thickness of shell plates 32 Material Steel Description of longitudinal joint Welded Diam. of rivet holes 1<sup>3</sup>/<sub>8</sub>"  
Pitch of rivets 9<sup>1</sup>/<sub>2</sub>" + 4<sup>3</sup>/<sub>4</sub>" Working pressure of shell by rules 212 lbs. Crown plates 32 Thickness 3/4" How stayed Double nuts

UPERHEATER. Type None Date of Approval of Plan 19-1-21 Tested by Hydraulic Pressure to 400 lbs.  
Date of Test 19-1-21 Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler Yes  
Diameter of Safety Valve 1<sup>1</sup>/<sub>2</sub>" Pressure to which each is adjusted 211 lbs. Is Easing Gear fitted Yes



IS A DONKEY BOILER FITTED? No

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

2 Connecting Rod top end + 2 bottom end bolts + nuts. 2 main bearing bolts. 1 set of coupling bolts.  
1 set of feed + bilge pump valves. 1 set of piston springs. 2 Valve spindles  
1 air pump rod. 1 circulating pump impeller + shaft. 2 Eccentric rods.  
1 set check valves. 9 gunk ring bolts. 55 Condenser tubes + 160 ferrules.  
2 safety valve springs. 1 pair of Crosshead brasses. 1 pair of connecting rod brasses.

The foregoing is a correct description,

S. Nagata. Manufacturer.

Dates of Survey while building { During progress of work in shops -- 1920 July 7; Aug. 9, 25; Sept. 4, 14; Nov. 3, 15, 26; Dec. 7, 10, 15, 21, 23, 27; Jan. 12, 14,  
During erection on board vessel -- Jan. 19, 21, 29; Febr. 18, 28; Mar. 16, 18, 24, 26, 28; Apr. 2, 13.  
Total No. of visits 28.

Is the approved plan of main boiler forwarded herewith yes

Dates of Examination of principal parts—Cylinders 12-1-21; 18-2-21 Slides 18-2-21 Covers 18-2-21 Pistons 18-2-21 Rods 18-2-21  
Connecting rods 18-2-21 Crank shaft 18-2-21 Thrust shaft 21-1-21 Tunnel shafts 21-1-21 Screw shaft 21-12-20 Propeller 21-12-21  
Stern tube 10-12-20 Steam pipes tested 16-3-21 Engine and boiler seatings 21-12-20 Engines holding down bolts 16-3-21  
Completion of pumping arrangements 16-3-21 Boilers fired 16-3-21 Engines tried under steam 24-3-21  
Completion of fitting sea connections 27-12-20 Stern tube 27-12-20 Screw shaft and propeller 27-12-20

Main boiler safety valves adjusted 18-3-21 Thickness of adjusting washers Lock nuts

Material of Crank shaft Steel Identification Mark on Do. 18-2-21 Material of Thrust shaft Steel Identification Mark on Do. 18-2-21

Material of Tunnel shafts Steel Identification Marks on Do. 21-1-21 Material of Screw shafts Steel Identification Marks on Do. 21-12-20

Material of Steam Pipes Solid drawn Copper Test pressure 400 lbs.

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

Have the requirements of Section 49 of the Rules been complied with

Is this machinery duplicate of a previous case yes If so, state name of vessel 5/8" EASTERN LEADER (Kobe Rpt. No. 2)

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

The Shafting was forged + rough turned at the Japan Steel Works Ltd. Muroran and finished at the Fujinagata Shipyard.

The Engines and Boilers were built under Special Survey in accordance with the requirements of the Rules and the materials and workmanship have been found good.

The machinery is eligible in our opinion to the record L.M.C. 4-21.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 4-21. R.D.

The amount of Entry Fee ... Yen 50.-  
Special ... £ 1235.-  
Donkey Boiler Fee ... £ :  
Travelling Expenses (if any) £ :  
When applied for, Apr. 28, 1921.  
When received, 15.2.22

Committee's Minute TUE. 16 AUG. 1921

Assigned + L.M.C. 4-21

Engineer Surveyor to Lloyd's Register of Shipping.



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