

# REPORT ON MACHINERY.

No. 3183

Received at London Office FRI. JUL. 29 1921

Date of writing Report June 1st 1921 When handed in at Local Office 10 Port of Kobe  
 Date, First Survey Apr. 9th 1920 Last Survey May 10th 1921  
 No. in Survey held at Osaka (Number of Visits 35)  
 Reg. Book. on the Single Screw Steel Steamer "BUSHO MARU" Tons { Gross 2567.19  
 Net 1565.23  
 Master Built at Osaka By whom built Osaka Iron Works, Ltd. When built 1921  
 Engines made at Osaka By whom made Osaka Iron Works, Ltd. when made 1921  
 Boilers made at do By whom made do when made 1921  
 Registered Horse Power Owners Osaka Shosen Kaishiki Kaisha Port belonging to Osaka  
 n. Horse Power as per Section 28 288 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

GINES, &c.—Description of Engines Triple Expansion No. of Cylinders Three No. of Cranks 3  
 No. of Cylinders 21:35:58 Length of Stroke 39" Revs. per minute 80 Dia. of Screw shaft 12.02 as per rule 12.02 Material of Steel  
 as fitted 12 3/4" 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  
 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  
 shafts are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 4'-5"  
 Dia. of Tunnel shaft 10.85 as per rule 11.5 as fitted 11 1/4" Dia. of Crank shaft journals 12" as fitted 12" Dia. of Crank pin 12" Size of Crank webs 23x22 1/2" Dia. of thrust shaft under  
 cranks 12" Dia. of screw 14'-3" Pitch of Screw 16'-6" No. of Blades 4 State whether moveable no Total surface 70°  
 No. of Feed pumps 2 Diameter of ditto 3 1/2" Stroke 24" Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 Diameter of ditto 3 1/2" Stroke 24" Can one be overhauled while the other is at work yes  
 No. of Donkey Engines Three Sizes of Pumps 1 Indep. Feed Pump 6"x8"x21"  
1 Ballast " 8 1/2"x7 1/2"x9"  
1 Gen. Serv. " 7 1/2"x5 1/2"x6"  
 No. and size of Suctions connected to both Bilge and Donkey pumps  
 Engine Room 2 Wing @ 3"; 2 Centre @ 3 1/2" In Holds, &c. Fore Hold 2 @ 3" Grass Bunker 2 @ 3"  
Boiler Room 2 @ 3"; In Tunnel 1 @ 2 1/2" aft. Hold 2 @ 3"  
 No. of Bilge Injections 1 sizes 7" Connected to condenser, or to circulating pump ✓ Is a separate Donkey Suction fitted in Engine room & size yes 3 1/2"  
 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 ✓  
 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  
 Are all pipes 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 Upper platform  
 MFRS, &c.—(Letter for record S) Manufacturers of Steel The Illinois Steel Co. J. Marshall Co. Minnesota Steel Co.  
+ Allegheny Steel Co.

Heating Surface of Boilers 4046 Is Forced Draft fitted yes No. and Description of Boilers 2 Single Ended Scotch  
 Working Pressure 200 lbs. Tested by hydraulic pressure to 400 lbs. Date of test 17-2-21 No. of Certificate LLOYD'S TEST  
W.T. 400 LBS  
IMP. 200 LBS  
17-2-21  
V.J.B.  
 Can each boiler be worked separately yes Area of fire grate in each boiler 49.5 No. and Description of Safety Valves to  
 each boiler 2 Spring Loaded Area of each valve 4.9087 Pressure to which they are adjusted 203 lbs. Are they fitted with easing gear yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 19" Mean dia. of boilers 13'-6" Length 12'-0" Material of shell plates Steel  
 Thickness 1 1/16" Range of tensile strength 26.79 to 28 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams Doub. riveted  
 Long. seams Trieb. riveted Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 9 3/8" Lap of plates or width of butt straps 1'-9 1/4" x 1 1/2" min.  
 Percentages of strength of longitudinal joint rivets 98.09 Working pressure of shell by rules 208 lbs. Size of manhole in shell 12" x 16"  
 plate 84.66  
 No. of compensating ring 34"x38"x1 1/16" No. and Description of Furnaces in each boiler 3 Deighton's Material Steel Outside diameter 3'-4 1/4"  
 Length of plain part top ✓ Thickness of plates bottom 1 3/32" Description of longitudinal joint Welded No. of strengthening rings ✓  
 Working pressure of furnace by the rules 234 lbs. Combustion chamber plates: Material Steel Thickness: Sides 1 1/16" Back 1 1/16" Top 1 1/16" Bottom 7/8"  
 Thickness of stays to ditto: Sides 8" x 8 1/2" Back 8 1/2" x 8 3/4" Top 8" x 9 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 211 lbs.  
 Material of stays Steel Area at smallest part 1.79 Area supported by each stay 77.125 Working pressure by rules 208 lbs. End plates in steam space:  
 Material Steel Thickness 1 3/8" Pitch of stays 20" x 20" How are stays secured nuts + washers Working pressure by rules 223 lbs. Material of stays Steel  
 Area at smallest part 8.76 Area supported by each stay 400 Working pressure by rules 227 lbs. Material of Front plates at bottom Steel  
 Thickness 7/8" Material of Lower back plate Steel Thickness 7/8" Greatest pitch of stays 14 1/4" x 8 1/2" Working pressure of plate by rules 249 lbs.  
 Diameter of tubes 3" Pitch of tubes 4 1/4" x 4 3/8" Material of tube plates Steel Thickness: Front 7/8" Back 13/16" Mean pitch of stays 8 1/2" x 8 3/4" min.  
 Thickness across wide water spaces 14" x 3/4" doubling Working pressures by rules 285 lbs. Girders to Chamber tops: Material Steel Depth and  
 Thickness of girder at centre 9 1/2" x 1 1/8" Length as per rule 2'-8 1/2" Distance apart 9 1/2" Number and pitch of stays in each 3 @ 8"  
 Working pressure by rules 227 lbs. Steam dome: description of joint to shell ✓ % of strength of joint -  
 Diameter ✓ Thickness of shell plates - Material - Description of longitudinal joint - Diam. of rivet holes -  
 Pitch of rivets ✓ Working pressure of shell by rules - Crown plates - Thickness - How stayed -

SUPERHEATER. Type None Date of Approval of Plan - Tested by Hydraulic Pressure to -  
 Date of Test - Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler -  
 Diameter of Safety Valve - Pressure to which each is adjusted - Is Easing Gear fitted -



IS A DONKEY BOILER FITTED?

No

If so, is a report now forwarded?

✓

SPARE GEAR. State the articles supplied:—

Solid cast iron propeller.	Air pump rod.	Set of Conn-rod brasses for top & bot. end
1 Propeller shaft with nut.	Set of air pump valves	12 funk ring bolts.
1 Set of coupling bolts.	Set of valves + seats for feed pump.	Set of piston rings for H.P.M.P. + L.P.
1 Set of main bearing bolts.	Set of valves + seats for Bilge pump.	33 Condenser tubes + 100 ferrules
1 Set of connecting rod top end bolts.	Main + Donkey check valves + seats	Spring for each size of relief valve
1 Set of Conn-rod bottom end bolts.	2 Safety valve springs for Boilers	on main engine + pumps.
		A quantity of assorted bolts, nuts, bars + steel plates.

The foregoing is a correct description,

G. Genuone

Manufacturer.

Dates of Survey while building { During progress of work in shops - - } 1920 Apr. 9; May 14, 18, 21, 25; June 7, June 10, 23; July 2, 12; Sept. 7, 13; Oct. 6, 15, 22, 29; Nov. 3, 16, 19, 26, 30; Dec. 10, 14, 23; 1921 Jan. 12, 17, 27;  
{ During erection on board vessel - - - } Febr. 3, 17; Mar. 2, 14; Apr. 27; May 4, 8, 10<sup>th</sup>.  
Total No. of visits 35

Is the approved plan of main boiler forwarded herewith yes

" " " donkey " " " ✓

Dates of Examination of principal parts—Cylinders 22-10-20 Slides 22-10-20 Covers 22-10-20 Pistons 22-10-21 Rods 30-11-20

Connecting rods 23-12-20 Crank shaft 3-2-21 Thrust shaft 3-2-21 Tunnel shafts 3-2-21 Screw shaft 3-2-21 Propeller 3-2-21

Stern tube 15-10-20 Steam pipes tested 27-4-21 Engine and boiler seatings 2-3-21 Engines holding down bolts 27-4-21

Completion of pumping arrangements 27-4-21 Boilers fixed 27-4-21 Engines tried under steam 8-5-21

Completion of fitting sea connections 2-3-21 Stern tube 2-3-21 Screw shaft and propeller 19-11-20

Main boiler safety valves adjusted 4-5-21 Thickness of adjusting washers Lock nuts

Material of Crank shaft Steel Identification Mark on Do. 160YDS 7-9-20 Y.J.R. Material of Thrust shaft Steel Identification Mark on Do. 929132

Material of Tunnel shafts Steel Identification Marks on Do. 9-4-20: 25-5-20: 19-5-20: 14-5-20 Y.J.R. Material of Screw shafts Steel Identification Marks on Do. 25-5-20 Y.J.R.

Material of Steam Pipes Solid drawn Copper Test pressure 400 lbs. Spare: 835621 160YDS 21-5-20 Y.J.R.

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 S/S. FUKUKEN MARU (Kobe Rpt. No. 3026)

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

S/S. KISHU MARU ( " " No. 3052)  
S/S. KANAN MARU ( " " 3084)

The Machinery has been made under Special Survey in accordance with the requirements of the Rules and the materials and workmanship have been found good.

The Forging for shaftings was forged and finished at the Sumitomo Steel Works. The Machinery is eligible in our opinion to the record L.M.C 5-21.

It is submitted that  
this vessel is eligible for  
THE RECORD. + L.M.C. 5.21 FII. CL

Roll 5/8/21

The amount of Entry Fee ... Yen 40.- :  
Special ... £ 1023.- :  
ELECTRIC LIGHT INSTN. ... £ 105.- :  
Donkey Boiler Fee ... £ :  
Travelling Expenses (if any) £ 27.- :

When applied for,

May 14<sup>th</sup> 1921

When received,

30/11/21

Committee's Minute FRI. 5 AUG. 1921

Assigned

+ L.M.C 5.21

MAINTAINED

7.D. Ed

R. B. Patchett & Y. Jo.  
Engineer Surveyor to Lloyd's Register of Shipping.



© 2021

Lloyd's Register  
Foundation