

REPORT ON MACHINERY.

No. 3183

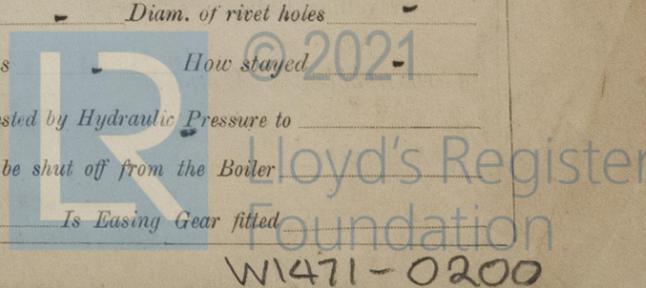
Received at London Office FRI. JUL. 29 1921

Date of writing Report June 1st 1921 When handed in at Local Office 19 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 288 Owners Osaka Shosen Kaishiki Kaisha Port belonging to Osaka
 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 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 10.95 as per rule 11.5 Dia. of Crank shaft journals 12" Dia. of Crank pin 12" Size of Crank webs 23x22 1/2" Dia. of thrust shaft under
 as fitted 1 1/4" as fitted 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" No. and size of Suctions connected to both Bilge and Donkey pumps
1 Ballast " 8 1/2"x7 1/2"x9"
1 Gen. Serv. " 7 1/2"x5 1/2"x6"
 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
 How are the 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
 MANUFACTURERS, &c.—(Letter for record S) Manufacturers of Steel The Illinois Steel Co., J. Marshall Co., Minnesota Steel Co., + Allegheny Steel Co.

Working 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 LLYD'S TEST W.T. 400 LBS W.P. 200 LBS 17-2-21 V.J.R.
 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 5/16" Range of tensile strength 26.79 to 28 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams Doub. riveted
 Longitudinal seams Trieb. riveted Diameter of rivet holes in long. seams 1 7/16" Pitch of rivets 9 3/8" Lap of plates or width of butt straps 1'-9 1/4" x 1 1/2" out.
 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 34x38x1 5/16" No. and Description of Furnaces in each boiler 3 Deighton's Material Steel Outside diameter 3'-4 1/4"
 Length of plain part top 19 1/2" Thickness of plates bottom 1 3/32" Description of longitudinal joint Welded No. of strengthening rings ✓
 Working pressure of furnace by the rules 234 lb. 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 lb.
 Material of stays Steel Area at smallest part 1.79 Area supported by each stay 77.125 Working pressure by rules 208 lb. 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 lb. Material of stays Steel
 Area at smallest part 8.76 Area supported by each stay 400 Working pressure by rules 227 lb. 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 lb.
 Diameter of tubes 3" Pitch of tubes 4 1/4" x 4 3/8" Material of tube plates Steel Thickness: Front 7/8" Back 1 3/16" Mean pitch of stays 8 1/2" x 8 3/4" min.
 Working pressures across wide water spaces 14" x 3/4" doubling Working pressures by rules 285 lb. Girders to Chamber tops: Material Steel Depth and
 thickness of girder at centre 9 1/2" x 1 7/8" 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 lb. Steam dome: description of joint to shell ✓ % of strength of joint -
 Material ✓ 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 2021

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. Genuova Manufacturer.

Dates of Survey while building

During progress of work in shops -- During erection on board vessel --- Total No. of visits	1920 Apr. 9; May 14, 18, 21, 25; June 7, 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;
	Febr. 3, 17; Mar. 2, 14; Apr. 27; May 4, 8, 10 th .
	35

Is the approved plan of main boiler forwarded herewith yes

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 overhaul - 10-5-21

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. LLOYDS 7-9-20 Y.J.R. Material of Thrust shaft Steel Identification Mark on Do. 929122

Material of Tunnel shafts Steel Identification Marks on Do. 9-4-20; 25-5-20; 19-8-20; 14-5-20 Y.J.R. Material of Screw shafts Steel Identification Marks on Do. 2-5-20 Y.J.R.

Material of Steam Pipes Solid drawn Copper Test pressure 400 lbs. Spare: - 8135621 LLOYDS 21-9-20 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 Reg. No. 3026)
S/S. KISHU MARU (" " No. 3052)
S/S. KANAN MARU (" " 3086)

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

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

Bell 5/8/21 A.F.R.

The amount of Entry Fee ... Yen 40.- : Special ... £ 1023.- : Travelling Expenses (if any) £ 27.- :

When applied for, May 14th 1921

When received, 30th May 1921

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

Committee's Minute FRI. 5 AUG. 1921

Assigned + L.M.C 5.21

