

## REPORT ON MACHINERY.

No. 3626

Received at London Office

Date of writing Report 13-5-22 When handed in at Local Office 19

Port of Kobe

No. in Survey held at Oh Harima Date, First Survey 10-8-20 Last Survey May 8<sup>th</sup> 1922

Reg. Book. on the Steel single screw steamer KANJU MARU (Number of Visits 43.)

Master Built at Oh Harima By whom built Kobe Steel Works Tons Gross 6515.24 Net 3847.18

Engines made at Kobe By whom made Kobe Steel Works when made 1922-5.

Boilers made at Oh Harima By whom made do do when made 1922-5.

Registered Horse Power Owners Goshi Sekigyo K. Kaisha. Port belonging to Tokuyama

Nom. Horse Power as per Section 28 560 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple expansion surface condensing No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 27" 45" 75" Length of Stroke 51" Revs. per minute 70-80 Dia. of Screw shaft as per rule 15.496" Material of OH Steel as fitted 16 7/16" 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 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 Length of stern bush 5'-8 1/4"

Dia. of Inter. shaft as per rule 14.17" Dia. of Crank shaft journals as per rule 14.88" Dia. of Crank pin 15 1/4" Size of Crank webs 28 1/2"-23 1/2" as fitted 14 1/4" as fitted 15

Collars 15" Dia. of screw 18-3" Pitch of Screw 20-6" No. of Blades 4 State whether moveable Yes Total surface 96.8 sq

No. of Feed pumps 2 Diameter of ditto 6" Stroke 25 1/2" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 6" Stroke 25 1/2" Can one be overhauled while the other is at work Yes

No. of Donkey Engines 5 Sizes of Pumps 10 1/2"x8"x10" 2@6 1/2"x6"x6" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 2@3 1/2" dia 4 in B.R. 3 1/2" dia: In Holds, &c. 2@3 1/2" dia forward 1@3 1/2" dia in pump room.

No. of Bilge Injections 1 sizes 8 3/4" Connected to condenser to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes 3 1/2" dia

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

What pipes are carried through the bunkers Fuel oil heating pipes only How are they protected clipped to frames & brackets & wood casings

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 Turret watertight Machy. aft. Is it fitted with a watertight door worked from Yes

BOILERS, &amp;c.—(Letter for record 5) Manufacturers of Steel Midvale &amp; Illinois Steel Cos. U.S.A.

Total Heating Surface of Boilers 7956 sq Is Forced Draft fitted Yes No. and Description of Boilers 3 Scotch, marine type

Working Pressure 200 lb Tested by hydraulic pressure to 400 lb Date of test 20/3/22, 1/3/22 No. of Certificate 11005 TEST 400 lb W.P. 200 lb 20-2-22, 1-2-22, 2-3-22, 3-3-22, 4-3-22

Can each boiler be worked separately Yes Area of fire grate in each boiler 64 sq No. and Description of Safety Valves to each boiler 4" Semi Spring loaded Area of each valve 25-1328 sq Pressure to which they are adjusted 205 lb Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers on woodwork 30" Mean dia. of boilers 15-6" Length 11-9" Material of shell plates 44 Steel

Thickness 1 1/16" Range of tensile strength 28/32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D.R. lap long. seams T.R.D.B.S. Diameter of rivet holes in long. seams 1 9/16" Pitch of rivets 10 1/2" Lap of plates or width of butt straps 22 3/4"

Per centages of strength of longitudinal joint rivets 90-29 plate 84-567 Working pressure of shell by rules 210 lb Size of manhole in shell 16x12

Size of compensating ring 31 1/2"x35 1/2"x1 7/16" No. and Description of Furnaces in each boiler 3 Morrison Material Steel Outside diameter 49 3/4"

Length of plain part top Thickness of plates crown 1 1/16" Description of longitudinal joint Welded No. of strengthening rings 23 1/2" Bottom 1 1/16" Top 1 1/16" Bottom 1 1/8"

Working pressure of furnace by the rules 227.5 lb Combustion chamber plates: Material Steel Thickness: Sides 1 1/16" Back 3/32" Top 1 1/16" Bottom 1 1/8"

Pitch of stays to ditto: Sides 9 3/8"x8 1/4" Back 9 3/8"x9" Top 9"x8 1/4" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 203 lb

Material of stays Steel Area at smallest part 2-100 Area supported by each stay 88 sq Working pressure by rules 214 lb End plates in steam space: Material Steel Thickness 1 3/32" Pitch of stays 21 1/4"x17" How are stays secured D. NUTS. Working pressure by rules 210 lb Material of stays Steel

Area at smallest part 8-296 sq Area supported by each stay 370-28 sq Working pressure by rules 233 lb Material of Front plates at bottom Steel

Thickness 1 1/32" Material of Lower back plate Steel Thickness 1 1/16" Greatest pitch of stays 16"x11" Working pressure of plate by rules 208 lb

Diameter of tubes 3-00" Pitch of tubes 4 1/4"x4 1/4" Material of tube plates Steel Thickness: Front 1 1/32" Back 3/8" Mean pitch of stays 10 5/8"

Pitch across wide water spaces 14" Working pressures by rules 361.5 lb Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 10 1/2"x1 1/2" Length as per rule 34" Distance apart 9" Number and pitch of stays in each 3 at 8 1/4"

Working pressure by rules 223 lb 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 Foster Date of Approval of Plan 1920 Tested by Hydraulic Pressure to 600 lb

Date of Test 15-2-22 B.A.O.B. Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler Yes

Diameter of Safety Valve 2 1/2" Spring Loaded Pressure to which each is adjusted 215 lb Is Easing Gear fitted Yes

W615-0143



IS A DONKEY BOILER FITTED?

No

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— one complete set of connecting rod top & bottom end bolts, nuts, & brasses, 2 main bearing bolts nuts, one complete set of coupling bolts nuts, one complete set of feed & bilge pump valves & seats, & one set of air pump valves, one complete set of piston rings & springs, one set of quadrant brasses, one set of eccentric rods (3) & straps (3), one set of safety & relief valve springs, 56 Condenser tubes & ferrules, 24 Boiler tubes, one spare impeller & shaft for circulating pump, a considerable quantity of spare parts for auxiliary machinery, hand tools, bolts & nuts, and iron of various sizes.

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building  
 During progress of work in shops — 1920 Aug. 10, 18, 25; Sept. 6; Nov. 9, 13; 1921 Mar. 8, 10, 12; May 30; June 3, 20; July 1; Aug. 8, 29; Oct. 4, 7, 26, 28;  
 During erection on board vessel — 1922 Nov. 4, 28; Dec. 12, 16, 23, 30; Jan. 3, 10, 11, 13, 15, 20, 22; Mar. 1, 3, 13, 15, 31; Apr. 14, 19, 25, 27; May 1, 8.  
 Total No. of visits

Is the approved plan of main boiler forwarded herewith

" " " donkey " " " ✓

Dates of Examination of principal parts—Cylinders 10-8-20 Slides 25-8-20 Covers 25-8-20 Pistons 10-8-20 Rods 28-11-21

Connecting rods 28-11-21 Crank shaft 13-11-20 Thrust shaft 4-10-21 INTERM Tunnel shaft 4-10-21 Screw shaft 26-10-21 Propeller 26-10-21

Stern tube 13/11/20 Steam pipes tested 14-4-22 Engine and boiler seatings 16-12-21 Engines holding down bolts 13-3-22.

Completion of pumping arrangements 8-5-22 Boilers fixed 13-4-22 Engines tried under steam 1-5-22.

Completion of fitting sea connections 10-2-22 Stern tube fitted 10-2-22 Screw shaft and propeller 11-2-22.

Main boiler safety valves adjusted 27-4-22 Thickness of adjusting washers Lock nuts fitted

Material of Crank shaft A.M. Steel Identification Mark on Do. 34634A-1 LLOYDS 9-11-20 R.B. Material of Thrust shaft A.M. Steel Identification Mark on Do. 4-10-21 LLOYDS 9-11-20 R.B.

Material of Tunnel shafts INTERM: A.M. Steel Identification Marks on Do. 9-11-20 LLOYDS 9-11-20 R.B. Material of Screw shafts A.M. Steel Identification Marks on Do. 26-10-21 LLOYDS 26-10-21 R.B.

Material of Steam Pipes Solid drawn steel Test pressure 600 lbs./sq. inch water pressure.

Is an installation fitted for burning oil fuel Yes Is the flash point of the oil to be used over 150°F. Yes

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

Is this machinery duplicate of a previous case Yes If so, state name of vessel Tachibana Maru RPT N° 3825 RPT N° 3896

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

The machinery & Boilers of this vessel have been constructed under special survey, according to the Rules and approved plans. The materials have been tested found efficient and the workmanship is good. They have now been efficiently fitted on board & tried under steam with satisfactory results. This case is now respectfully submitted for the Committee's consideration, & is eligible in my opinion to have the record of L.M.C. 5-22 and notations "Fitted for oil fuel F.P. above 150°F" "Electric Light" & "Wireless" in Register Book.

It is submitted that  
 this vessel is eligible for  
 THE RECORD, + L.M.C. 5-22. F.D. C.L.

Fitted for oil fuel 5-22. F.P. above 150°F.

17/8/22

The amount of Entry Fee ... Yen 60.-  
 Special ... £ 1545.-  
 ELECT. LIGHT Donkey Boiler Fee ... £ 195.-  
 Travelling Expenses (if any) £ :

When applied for,

May 11<sup>th</sup> 1922

When received,

May 25<sup>th</sup> 1922

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

+ L.M.C. 5-22

F.D. C.L.

Fitted for oil fuel 5-22 F.P. above 150°F



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Foundation