

REPORT ON MACHINERY.

No. 2531

Received at London Office

Date of writing Report June 29th 1919 When handed in at Local Office June 30th 1919 Port of KOBE, JAPAN.
 No. in Survey held at KOBE Date, First Survey 26-11-17. Last Survey 5th June 1919.
 Reg. Book. on the S.S. "HANKOW MARU" (Number of Visits 39.) Gross 4103 Tons Net 2524. When built 1919.

Master M. TAKEMURA Built at Kobe By whom built Kawasaki Dockyard Co. Ltd.
 Engines made at Kawasaki Dockyard By whom made Kawasaki Dockyard Co. Ltd. when made 1919
 Boilers made at do do By whom made do do do when made 1919.
 Registered Horse Power 356 Owners Kawasaki Dockyard Co. Ltd. Port belonging to KOBE.
 Nom. Horse Power as per Section 28 356 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 23½" + 39 + 65" Length of Stroke 18" Revs. per minute 84 Dia. of Screw shaft 14.35" Material of Forged steel
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube No liner Is the after end of the liner made water tight in the propeller boss ✓ 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 ✓ Length of stern bush 12.65"
 Dia. of Tunnel shaft 12.7½" Dia. of Crank shaft journals 13.3" Dia. of Crank pin 13½" Size of Crank webs 25½" x 9" Dia. of thrust shaft under collars 13½" Dia. of screw 16-6" Pitch of Screw 14'-0" to 19'-0" No. of Blades 4 State whether movable Yes Total surface 85 sq. ft.
 No. of Feed pumps one Diameter of ditto 1½" Stroke 24" Can one be overhauled while the other is at work Yes (With Weir's Independent Feed pumps)
 No. of Bilge pumps Two Diameter of ditto 1½" Stroke 24" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines Three Sizes of Pumps Ballast 10" x 11 x 12 dupl. In Holds, &c. No. 1 - two 3½" No. 2 - two 3½" No. 3 - two 3½"
 In Engine Room Three 3½" In Boiler Room two 3½" No. 4 - two 3½" Tunnel Well - one 3"
 No. of Bilge Injections 1 sizes 1½" Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes 3½"
 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 None
 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 Two 3½" bilge suction from Nos. 1 & 2 Holds How are they protected Wood covering
 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 deck level

BOILERS, &c.—(Letter for record 5) Manufacturers of Steel Illinois Steel Co. & Amer. Special Pipe Co. U.S.A.
 Total Heating Surface of Boilers 4610 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 31-3-19 and 4-4-19 No. of Certificate 31-3-19, 4-4-19
 Can each boiler be worked separately Yes Area of fire grate in each boiler 60.5 sq. ft. No. and Description of Safety Valves to each boiler Two Spring loaded Area of each valve 3¾" dia. 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 18" Mean dia. of boilers 14'-6" Length 12'-0" Material of shell plates Steel
 Thickness 1½" Range of tensile strength 28-32 tons Are the shell plates welded or flanged Welded Descrip. of riveting: cir. seams Double riv. reamed
 long. seams Double rivets Diameter of rivet holes in long. seams 1½" Pitch of rivets 8½" & 4½" Lap of plates or width of butt straps 19½" x 1¼"
 Per centages of strength of longitudinal joint 84.3 Working pressure of shell by rules 202 Size of manhole in shell 18 x 22
 Size of compensating ring 12" & 14" x 1½" No. and Description of Furnaces in each boiler Three Morrison's Material Steel Outside diameter 18½"
 Length of plain part top 21" bottom 21" Thickness of plates 21/32" Description of longitudinal joint Welded No. of strengthening rings ✓
 Working pressure of furnace by the rules 221 lbs. Combustion chamber plates: Material Steel Thickness: Sides 1½" Back 1½" Top 1½" Bottom 1½"
 Pitch of stays to ditto: Sides 8½" x 8½" Back 8½" x 9" Top 8½" x 9½" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 202
 Material of stays Steel Area at smallest part 2.10 Area supported by each stay 16.5 Working pressure by rules 247 End plates in steam space: Material Steel Thickness 1½" Pitch of stays 19½" x 20½" How are stays secured Double nuts + small washers Working pressure by rules 202 Material of stays Steel
 Area at smallest part 10-12 Area supported by each stay 10.5 Working pressure by rules 260 Material of Front plates at bottom Steel
 Thickness 1½" Material of Lower back plate Steel Thickness ¾" Greatest pitch of stays 15 x 15 Working pressure of plate by rules 225
 Diameter of tubes 3½" Pitch of tubes 11½" x 11½" Material of tube plates Steel Thickness: Front 13/16" Back 13/16" Mean pitch of stays 8¾"
 Pitch across wide water spaces 13½" x 3½" Working pressures by rules 267 Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 10¾" x 13(2) Length as per rule 34½" Distance apart 9¾" Number and pitch of stays in each Three @ 8½"
 Working pressure by rules 202 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 ✓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:—

Four main bearing Bolts + Nuts Set Packing rings + Springs for Pistons. Set Feed Check Valves + Seats
Four Crank-pin do do Pair Eccentric Rods. Centrif. Impeller + Shaft.
Four Crosshead-pin do do Valve Rod for each valve. Two Safety Valve Springs
Set Coupling Bolts + Nuts Crank-pin + Crosshead pin braces. Set Feed + Bilge P. Valves + Seats
Propeller shaft + nut ^{LLOYDS} ²¹⁻²⁻¹⁹ ^{AW R} ^{6758/21} Air Pump Rod and Nut. 1/30 Set Condenser Tubes + Glands
1/2 Set Junk-ring Bolts + Nuts. Set A.P. Head valves. Fire Bars, Accorled Bolts, nuts + studs etc.

The foregoing is a correct description,

Kawasaki Dockyard Co., Ltd.,

Per

Shanayama Manufacturer.

Secretary

Dates of Survey while building { During progress of work in shops -- Nov 1917, 26, 27; Dec 7, 27; 1918 Jan 31; Feb 26; June 25; Sept 3; Oct 24; 1919 Feb 18, 21, 22;
During erection on board vessel -- Mar. 8, 12, 15, 21, 23; Apr. 2, 4, 5, 11, 17, 19, 19; May 14, 16, 30; June 3, 5
Total No. of visits 30.

Is the approved plan of main boiler forwarded herewith No - Same as
Bldg of S.S. SHANGHAI MARU. - KOBÉ REPORT
" " " donkey " " " No 2417

Dates of Examination of principal parts—Cylinders 3-9-18 Slides 22-2-19 Covers 3-9-18 Pistons 11-4-19 Rods 7-12-17.

Connecting rods 25-6-18 Crank shaft 25-6-18 Thrust shaft 25-6-18 Tunnel shafts 26-2-18 Screw shaft 24-10-18 Propeller 17-4-19
14-5-19 Spare " 21-2-19.

Stern tube 17-4-19 Steam pipes tested 16-5-19 Engine and boiler seatings 14-5-19 Engines holding down bolts 30-5-19

Completion of pumping arrangements 30-5-19 Boilers fixed 30-5-19 Engines tried under steam 2-6-19
overhaul 3-6-19.

Completion of fitting sea connections 9-5-19 Stern tube 18-4-19 Screw shaft and propeller 19-4-19.

Main boiler safety valves adjusted 30-5-19 Thickness of adjusting washers Lock nuts on all Boilers SVs.

Material of Crank shaft Steel Identification Mark on Do. ^{LLOYDS} ²⁵⁻⁶⁻¹⁸ ^{AW R} Material of Thrust shaft Steel Identification Mark on Do. ^{LLOYDS} ²⁵⁻⁶⁻¹⁸ ^{ALJ. R}

Material of Tunnel shafts Steel Identification Marks on Do. ^{LLOYDS} ²⁶⁻²⁻¹⁸ ^{ALJ. R} Material of Screw shafts Steel Identification Marks on Do. ^{WORKING} ^{LLOYDS} ²⁴⁻¹⁰⁻¹⁸ ^{ALJ. R}

Material of Steam Pipes Whot. Steel. Test pressure 600 lbs sq in Water. ^{SAME} ^{LLOYDS} ²¹⁻²⁻¹⁹ ^{AW 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. Shanghai Maru ^{Kobe Report} ^{No. 2417}

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

The Machinery of this vessel has been made and fitted under Special Survey in accordance with the requirements of the Rules, and the Materials and Workmanship are good. It is eligible, in my opinion, for the notation + L.M.C. 6.19.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 6.19. F.II.

Roll 578/19
JPR

The amount of Entry Fee ... yen 30 : When applied for,
Special ... yen 661⁰⁰ : 7-6-1919
Donkey Boiler Fee ... £ : When received,
Travelling Expenses (if any) yen 15⁰⁰ : 9-6-1919

Committee's Minute

FRI. 8-AUG. 1919

Assigned

+ L.M.C. 6.19

Alexander Watt
Engineer Surveyor to Lloyd's Register of Shipping.



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