

REPORT ON MACHINERY.

No. 2715

Received at London Office THU. MAR. 25 1920

Report of writing Report Jan 26th 1920 When handed in at Local Office 19 Port of Kobe
 Date, First Survey July 11th 1919 Last Survey Jan. 8th 1920
 in Survey held at Kobe (Number of Visits 60)
 on the Steel Single Screw Steamer "DENMARK MARU" Tons { Gross 5869.86
 Net 4263.50
 Master K. EHARA Built at Kobe By whom built Kawasaki Dockyard Co. Ltd. When built 1919
 Engines made at Kobe By whom made Kawasaki Dockyard Co. Ltd. when made 1919
 Boilers made at do By whom made do when made 1919
 Registered Horse Power _____ Owners Kawasaki Kisen Kabushiki Kaisha Port belonging to Kobe
 Nom. Horse Power as per Section 28 440 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 26 : 43 1/2 : 72 Length of Stroke 48" Revs. per minute 70 Dia. of Screw shaft 15.41 Material of Steel
 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
 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
 shafts are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 5' - 5 1/4"
 Dia. of Tunnel shaft 13.48 as per rule 13.54 Dia. of Crank shaft journals 14.15 as per rule 14.22 Dia. of Crank pin 14 3/4" Size of Crank webs 9 1/2" x 20 1/8" Dia. of thrust shaft under
 as fitted 13 3/4" as fitted 14 3/8" as fitted 14 3/8" + 26 1/8" at pin + journal
 Dia. of screw 17' - 6" Pitch of Screw 19' - 0" Mean No. of Blades 4 State whether moveable yes Total surface 100 sq. ft.
 of Feed pumps One Diameter of ditto 5" Stroke 24" Can one be overhauled while the other is at work yes (with Weir's feed)
 of Bilge pumps Two Diameter of ditto 5" Stroke 24" Can one be overhauled while the other is at work yes
 of Donkey Engines Three Sizes of Pumps Weir's Feed 9 1/2" x 7" x 24" two No. and size of Suctions connected to both Bilge and Donkey pumps
 Engine Room Three 3 1/2" Ballast 19" x 11" x 12" dupl. Donkey 7 1/2" x 5" x 6" dupl. 5 1/2" x 3 1/2" x 9" In Holds, &c. Nos. 1, 3 + 4 Hold each two 3 1/2"
One 3 1/2" to tunnel Well No. 2 Hold two 4"
 of Bilge Injections 1 sizes 9" Connected to condenser, or to circulating pump Con. p. Is a separate Donkey Suction fitted in Engine room & size yes 3 1/2"
 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
 all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Larger Valves, Smaller Cocks
 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
 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
 at pipes are carried through the bunkers None How are they protected ✓
 all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yes
 the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges yes
 the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from Upper platform of Eng. Rm.

MAKERS, &c.—(Letter for record S.) Manufacturers of Steel Illinois Steel Co., Carnegie Stl. Co., Am. Spring Co.
2252 x 2 + 1132 (AUX. BLR.) 2. S.B. #1 Aux. S.B. (sumases)
 Heating Surface of Boilers = 5636 Is Forced Draft fitted yes No. and Description of Boilers Two S. & Aux. S. &
 Working Pressure 200 lbs. Tested by hydraulic pressure to 400 lbs. Date of test 17-11-19 20-11-19 No. of Certificate 17-11-19 20-11-19
W.L.R. W.L.R.
 each boiler be worked separately yes Area of fire grate in each boiler 60 1/2 No. and Description of Safety Valves to
 boiler Two Spring loaded Area of each valve 3 3/4" dia. Pressure to which they are adjusted 205 lbs. Are they fitted with easing gear yes
 least distance between boilers or uptakes and bunkers or woodwork 12" Mean dia. of boilers 14' - 6" Length 12' - 0" Material of shell plates Steel
 thickness 1 5/16" Range of tensile strength 2678 to 32000 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Ends doubl.
 seams Double riveted Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 8 3/4" + 4 3/8" Lap of plates or width of butt straps 19 5/8" x 1 1/4"
 percentages of strength of longitudinal joint 95.84 Working pressure of shell by rules 201 lbs. Size of manhole in shell 16" x 12"
 of compensating ring (1 1/2" flange) 1 3/8" No. and Description of Furnaces in each boiler 3 Morrison's Material Steel Outside diameter 48 1/4"
Suspension.
 thickness of plain part top ✓ Thickness of plates bottom 2 1/2" Description of longitudinal joint Weld No. of strengthening rings ✓
 Working pressure of furnace by the rules 221 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 5/8" x 8 1/2" Back 8 1/2" x 9" Top 8 1/2" x 9 3/8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 203 lbs.
 Material of stays Steel Area at smallest part 2.1 Area supported by each stay 8 1/2" x 9 3/8" Working pressure by rules 230 lbs. End plates in steam space:
 Material Steel Thickness 1 5/16" Pitch of stays 19 3/4" x 20 1/2" How are stays secured Doubl. nuts Working pressure by rules 202 lbs. Material of stays Steel
 Area at smallest part 10" Area supported by each stay 19 3/4" x 20 1/2" Working pressure by rules 260 lbs. Material of Front plates at bottom Steel
 thickness 1 3/16" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 13 1/2" at wide Working pressure of plate by rules 232 lbs.
 diameter of tubes 3 1/4" Pitch of tubes 4 1/6" x 4 5/16" Material of tube plates Steel Thickness: Front 1" Back 13/16" Mean pitch of stays 8 3/4"
 thickness across wide water spaces 13 3/4" + 5/8" doubl. Working pressures by rules 240 lbs. Girders to Chamber tops: Material Steel Depth and
 thickness of girder at centre 10 3/4" + 13/16" (2) Length as per rule 34 1/2" Distance apart 9 3/8" Number and pitch of stays in each 3 @ 8 1/2"
 Working pressure by rules 220 lbs. Steam dome: description of joint to shell ✓ % of strength of joint

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 _____

AUXILIARY
IS A ~~POWER~~ BOILER FITTED? *yes*

If so, is a report now forwarded? *yes*

SPARE GEAR. State the articles supplied:—

Four main bearing bolts + nuts. ✓ Set packing rings + springs each piston. Centrifugal pump
Two Crank pin bolts + nuts. ✓ Set junk ring bolts + nuts. ✓ impeller + shaft +
Two crosshead bolts + nuts. ✓ 1 Set of packing for each piston rods + Valve rods. A.P. rod + nu
Set coupling bolts + nuts. ✓ Propeller shaft with nut. P.332
16-12-19
W.L.R. ✓ 3 Safety valve spr
Set Feed + Bilge pump valves. ✓ 1 Feed Check valve + Seat. Cond. + Blr. tubes e
Assorted bolts + nuts + iron. ✓ Slide valve spindle each size. 1 Set A.P. Head va

The foregoing is a correct description.

Secretary.

Kawasaki Dockyard Co., Ltd.

Manufacturer.

Dates of Survey while building
During progress of work in shops - - - 1919 July 11, 14, 17, 29; Aug. 2, 6, 13, 18, 25; Sept. 2, 8, 10, 11, 13, 15, 16, 17, 18, 23; Oct. 1, 4, 8, 11, 13, 15, 20, 22, 23, 24, 25, 27, 28, 29.
During erection on board vessel - - - 1920 Nov 3, 4, 5, 6, 7, 10, 12, 13, 15, 17, 18, 20, 22, 25; Dec 2, 3, 8, 9, 10, 12, 16, 17, 22, 25, 26; Jan. 8.
Total No. of visits 60.

Is the approved plan of main boiler forwarded herewith No. 5 for S/S. SPAIN MARU Rpt. No. 2

Dates of Examination of principal parts—Cylinders 22-10-19 Slides 17-12-19 Covers 10-12-19 Pistons 10-12-19 Rods 16-12-19
Connecting rods 8-12-19 Crank shaft 25-11-19 Thrust shaft 15-11-19 Tunnel shafts 17-11-19 Screw shaft 20-10-19 Propeller 15-11-19
Stern tube 11-11-19 Steam pipes tested 25-10-19 + 3-11-19 Engine and boiler seatings 2-12-19 Engines holding down bolts 22-12-19
Completion of pumping arrangements 26-12-19 Boilers fixed 22-12-19 Engines tried under steam 7-1-20 overhaul &
Completion of fitting sea connections 2-12-19 Stern tube 17-11-19 Screw shaft and propeller 20-11-19
Main boiler safety valves adjusted 22-12-19 Thickness of adjusting washers Locknuts (Sealed by Government Inspector)
Material of Crank shaft F. steel Identification Mark on Do. LLOYDS 25-11-19 W.L.R. Material of Thrust shaft F. steel Identification Mark on Do. 15-11-19 W.L.R.
Material of Tunnel shafts F. steel Identification Marks on Do. LLOYDS 17-11-19 W.L.R. Material of Screw shafts F. steel Identification Marks on Do. 15-11-19 W.L.R.
Material of Steam Pipes S. B. Steel Test pressure 600 lbs. Working 20-11-19

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. WAR QUEEN Rpt. No. 2
S.S. WAR PRINCE " " 2
S.S. NAPLES MARU " " 2
S.S. PORTSAID MARU " " 2
S.S. ITALY MARU " " 2
S.S. FRANCE MARU " " 2
S.S. ENGLAND MARU " " 2
S.S. SPAIN MARU " " 2

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 Rule and the workmanship + materials are good.

The vessel is eligible in our opinion for the notation
⊠ LMC 1-20

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 1-20 F.D.

R.S.B. & 1 Aux. SB.

JWD
27/3/20
APR

The amount of Entry Fee ... Year 30.00 : When applied for, Jan 19th 1920
Special ... " 735.00 :
Boiler Fee ... " Included :
Travelling Expenses (if any) " 15.00 : When received, Jan 23rd 1920.

A Watt & W. Rawson
Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute TUE. MAR. 30 1920
Assigned + L.M.C. 1:20 F.D.



Certificate (if required) to be sent to the Surveyors and, requested, not to write on or below the space for Committee's Minute.

CERTIFICATE WRITTEN