

REPORT ON MACHINERY.

Date of writing Report Oct. 28th 1919 When handed in at Local Office Oct 28th 1919 Port of Kobe

No. in Survey held at Kobe Date, First Survey Feb. 18th Last Survey Oct. 12th 1919
Reg. Book. (Number of Visits 44)

on the Steel Single Screw Steamer "Scotland Maru" Tons { Gross 5863
Net 4263

Master K. MURAKAMI. 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 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 Three
 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
 as per rule 15.41" as fitted 16" screw shaft
 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 5' - 5 1/4"
 Dia. of Tunnel shaft 13.48 13.54" as per rule 14.15 14.22" as fitted 14 3/8 Dia. of Crank shaft journals _____ Dia. of Crank pin 14 3/4 Size of Crank webs 92-203 Dia. of thrust shaft under
 collars 14 3/8 Dia. of screw 17'-6" Pitch of Screw 19'-0" mean No. of Blades 4 State whether moceable yes Total surface 100 sq. feet.
 No. of Feed pumps One Diameter of ditto 5" Stroke 24" Can one be overhauled while the other is at work yes (with Weirs feed)
 No. of Bilge pumps Two Diameter of ditto 5" Stroke 24" Can one be overhauled while the other is at work yes
 No. of Donkey Engines Three Sizes of Pumps Bal. 10x11x12" Dupl. No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Three 3 1/2 Wain feed 9 1/2 x 7 x 24 two Gen. Schw. 7 1/2 x 5 x 6 dup. 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"
 No. of Bilge Injections 1 sizes 9" Connected to condenser, or to circulating pump in p. 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 None
 Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Larger Valves, Smaller Cocks
 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 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 of E. R.

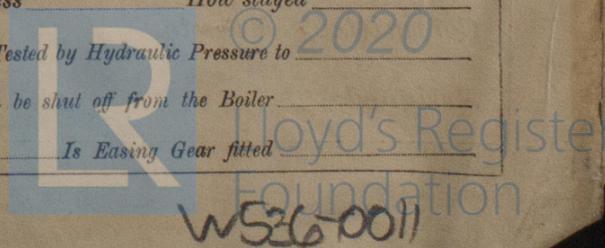
BOILERS, &c.—(Letter for record S) Manufacturers of Steel Illinois Steel Co, Carnegie Steel Co & Amer. Spiral
2252x241132 (AUX. BR) Pipe Works.
 Total Heating Surface of Boilers = 5636 Is Forced Draft fitted yes No. and Description of Boilers Two S. Co & Aux. S. Co.
 Working Pressure 200 lbs. Tested by hydraulic pressure to 400 lbs. Date of test 29-7-19 4-8-19 No. of Certificate 17 400 LBS AW R. WL R.
 Can each boiler be worked separately yes Area of fire grate in each boiler 60 1/2' No. and Description of Safety Valves to
 each 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
 Smallest 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 3/8" Range of tensile strength 2678 to 32 tons" Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Ends Dble
long. seams Double riveted Diameter of rivet holes in long. seams 1 7/16" Pitch of rivets 9 1/8" + 4 1/16" Lap of plates or width of butt straps 2 1/8" + 1 3/8"
 Per centages of strength of longitudinal joint 95.84 Working pressure of shell by rules 200 lbs. Size of manhole in shell 16" x 12"
84.28 plate
 Size of compensating ring (1/2 + flange) 1 5/16" No. and Description of Furnaces in each boiler 3 "Morison's" Material steel Outside diameter 48 1/4"
suspension.
 Length of plain part top ✓ Thickness of plates bottom 2 1/32" Description of longitudinal joint Weld No. of strengthening rings ✓
 Working pressure of furnace by the rules 221 Combustion chamber plates: Material Steel Thickness: Sides 1 1/16" Back 1 1/16" Top 1 1/16" Bottom 7/8"
 Pitch 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 5/8" Pitch of stays 19 3/4 x 20 1/2 How are stays secured Double nuts Working pressure by rules 201 lbs. Material of stays steel
+ small washers
 Area at smallest part 10" Area supported by each stay 19 3/4 x 20 1/2 Working pressure by rules 200 lbs. Material of Front plates at bottom Steel
 Thickness 13/16" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 13 1/2" at wide water space Working pressure of plate by rules 200 lbs.
 Diameter of tubes 3 1/4" Pitch of tubes 4 7/16 x 4 5/16 Material of tube plates Steel Thickness: Front 1" Back 13/16" Mean pitch of stays 8 3/4"
 Pitch across wide water spaces 13 3/4 + 3/4 doubled Working pressures by rules 210 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 _____
 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 _____

UPERHEATER. Type ✓ 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 Valves _____ Pressure to which each is adjusted _____ Is Easing Gear fitted _____

Forecastle ✓
is to be given

Length.	Water Cap.
Feet.	Ton
126	
93	

25, 26, 27, 28
No. of Visits 30



IS A DONKEY BOILER FITTED? Aux Blr only. 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 impeller
Two Crank pin	Set junk ring bolts + nuts	Crosshead + Crankpin brass
Two Crosshead	One part Crank shaft	A: B rod + nut
Set coupling	Propeller shaft. ^{P323} LLOYDS 3-10-19 W.L.R.	3 Safety valve springs
Set Feed + Bilge pump valves	Four blades + 2 sets studs + nuts	Cond. + Blr tubes etc. etc
Assorted bolts + nuts + iron	Slide valve sprindle each size	

The foregoing is a correct description, Kawasaki Dockyard Co., Ltd.

Per: J. Takane Secretary, Manufacturer.

1919.
 Dates of Survey while building { During progress of work in shops -- } Febr. 18, 28; Mar. 5, 10, 26; Apr. 24; May 30; June 5, 19, 24, 25, 27, 30; July 4, 7, 11, 12, 15, 19, 24, 25, 29, 31; Aug. 21, 12, 13, 20, 21, 22, 27, 29; Sept. 3, 8, 11, 12, 15, Oct. 12, 6, 7, 11 + 14.
 { During erection on board vessel -- }
 Total No. of visits 44.

Is the approved plan of main boiler forwarded herewith No Same for S/S. NAPLES MARU. Rpt. No 2587.

Dates of Examination of principal parts—Cylinders 24-6-19 Slides 12-9-19 Covers 3-9-19 Pistons 3-9-19 Rods 8-9-19
 Connecting rods 21-8-19 Crank shaft 13-8-19 Thrust shaft 13-8-19 Tunnel shafts 24-7-19 Screw shaft 27-8-19 Propeller 29-8-19
 Stern tube 22-8-19 Steam pipes tested 25-31-7-19 Engine and boiler seatings 8-9-19 Engines holding down bolts 6-10-19
 Completion of pumping arrangements 6-10-19 Boilers fixed 6-10-19 Engines tried under steam 10-10-19 overhaul 11-10-19
 Completion of fitting sea connections 27-8-19 Stern tube 27-8-19 Screw shaft and propeller 6-9-19
 Main boiler safety valves adjusted 7-10-19 Thickness of adjusting washers Locknuts (Caps sealed by Gov. Inspr)
 Material of Crank shaft Steel Identification Mark on Do. LLOYDS 13-8-19 W.L.R. Material of Thrust shaft Steel Identification Mark on Do. LLOYDS 13-8-19 W.L.R.
 Material of Tunnel shafts Steel Identification Marks on Do. LLOYDS 24-7-19 W.L.R. Material of Screw shafts Steel Identification Marks on Do. LLOYDS 27-8-19 W.L.R.
 Material of Steam Pipes Steel Test pressure 600 lbs.

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. Mar Queen Rpt No 2009.
S.S. War Prince " No 2031.
S.S. Naples Maru " " 2587
S.S. Port Said Maru " " 2589
S.S. Cape Town Maru " " 2622 etc. }

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

The Machinery of this vessel has been made + fitted under Special Survey in accordance with the requirements of the Rules + the workmanship + materials are good.

The Vessel is eligible in my opinion for the notation * L.M.C. 10-19.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 10-19. F.D.

R.S.B & 1 Aux. SB

The amount of Entry Fee ... Yes : 30.
 Special ... £ : 735.
 Aux. Bly Donkey Boiler Fee included : :
 Travelling Expenses (if any) Yes : 15.-

When applied for, Oct 15th 1919
 When received, Oct 20th 1919

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

Committee's Minute

TUE. 23 DEC. 1919

Assigned

RECORDED + L.M.C. 10-19



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