

REPORT ON MACHINERY

No. 3076

Received at London Office TUE. 8 MAR. 1921

Date of writing Report Jan. 20 1921 When handed in at Local Office 1st Feb 1921 Port of Kobe
 No. in Survey held at Kobe Date, First Survey 3rd Nov 1919 Last Survey 28th Dec 1920
 Reg. Book. on the Steel Single Screw Steamer "TYNE MARU" (Number of Visits 83)
 Master S. NAGAO Built at Kobe By whom built Kawasaki Dockyard Co. Ltd. Tons { Gross 5873 Net 4254 }
 Engines made at Kobe By whom made Kawasaki Dockyard Co. Ltd. when made 1921
 Boilers made at do By whom made do when made 1921
 Registered Horse Power 440 Owners Kawasaki Dockyard Co. Ltd. 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 as per rule 15.41" Material of screw shaft 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 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 as per rule 13.48" Dia. of Crank shaft journals as per rule 14.15" Dia. of Crank pin 14 3/4" Size of Crank webs 22" x 20 1/2" Dia. of thrust shaft under bars 14 3/8" Dia. of screw 17'-6" Pitch of Screw 19'-0" mean No. of Blades 4 State whether moveable yes Total surface 100 sq. feet.
 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 Seven Sizes of Pumps 3 1/2" 3" 2 1/2" 2" 1 1/2" 1" No. and size of Suctions connected to both Bilge and Donkey pumps
 Engine Room Three 3 1/2" In Holds, &c. Nos. 1, 3 + 4 Holds each two 3 1/2" No. 2 Hold two 4"
 of Bilge Injections 1 sizes 9" Connected to condenser, or to circulating pump C. 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 stances 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 Up. platform of Eng. Rm.

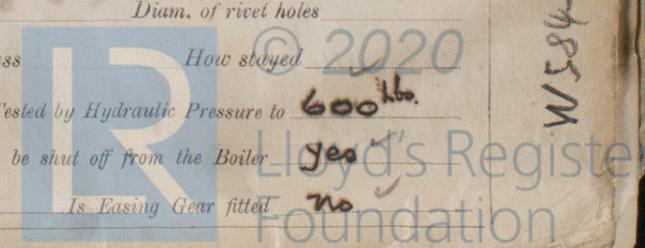
BOILERS, &c.—(Letter for record S) Manufacturers of Steel Carnegie Steel Co., Hocking Steel Co., Marine Furnace Co., Kawasaki Hyogo Works.
 Total Heating Surface of Boilers 5636 sq. ft. Is Forced Draft fitted yes No. and Description of Boilers Two 5' 6" + Cursu. 5' 6"
 Working Pressure 200 lbs. Tested by hydraulic pressure to 400 lbs. Date of test 25-6-20: 19-7-20 No. of Certificate 132
 Can each boiler be worked separately yes Area of fire grate in each boiler 60 1/2 sq. ft. 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 26-78 to 32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams ends double riveted
 Longitudinal seams Double straps Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 9/8" + 4 1/8" Lap of plates or width of butt straps 20 1/8" + 1 1/8"
 Percentages of strength of longitudinal joint rivets 95.84 Working pressure of shell by rules 212 lbs. Size of manhole in shell 16" x 12"
 of compensating ring (1 1/8" + flange) 1 1/8" No. and Description of Furnaces in each boiler 3 Morrison's Suspension Material Steel Outside diameter 48 1/4"
 Length of plain part top 2 1/2" Thickness of plates bottom 3/32" 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 1 1/8" Back 1 1/8" Top 1 1/8" Bottom 7/8"
 Length of stays to ditto: Sides 8 1/2" x 8 1/2" Back 8 1/2" x 9" Top 8 1/2" x 9 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 203 lbs.
 Material of stays Steel Area at smallest part 2.10 sq. in. Area supported by each stay 8 1/2" x 9 1/2" Working pressure by rules 230 lbs. End plates in steam space: Material Steel Thickness 1 1/8" Pitch of stays 9 1/4" x 20 1/2" How are stays secured Double nuts + small washers Working pressure by rules 202 lbs. Material of stays Steel
 Area at smallest part 10 sq. in. Area supported by each stay 19 1/4" x 20 1/2" Working pressure by rules 260 lbs. Material of Front plates at bottom Steel
 Thickness 1 3/8" 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 232 lbs.
 Diameter of tubes 3 1/2" Pitch of tubes 4 1/8" x 4 1/8" Material of tube plates Steel Thickness: Front 1" Back 5/8" Mean pitch of stays 8 3/4"
 Width across wide water spaces 13 3/4" + 3/8" double Working pressures by rules 240 lbs. Girders to Chamber tops: Material Steel Depth, and thickness of girder at centre 10 3/4" x 1 1/8" (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 None % of strength of joint ✓
 Diameter Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes
 Number of rivets Working pressure of shell by rules Crown plates Thickness How stayed
 SUPERHEATER. Type Schmidt Date of Approval of Plan 19-10-20 Tested by Hydraulic Pressure to 600 lbs.
 No. of Test 19-10-20: 29-10-20 Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler yes
 Diameter of Safety Valve 3" Pressure to which each is adjusted 210 lbs. Is Easing Gear fitted no

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Auxiliary
IS AN ~~AN~~ **DONKEY** 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 impeller shaft + nut.
 Two Crank pin bolts + nuts. ✓ Set junk ring bolts + nuts
 Two Crosshead bolts + nuts. ✓ Set of packing for each piston rods + valve rods. A.P. rod + nut.
 Set coupling bolts + nuts ✓ Propeller shaft with nut 3 Safety valve springs.
 Set feed + bilge pump valves. 1 Feed check valve + seat Cond. Blr. tubes etc.
 Assorted bolts nuts + iron ✓ Slide valve spindle each size 1 Set A.P. head valves.

The foregoing is a correct description,

Kawasaki Dockyard Co., Ltd.,

Per S. Ota Kame Secretary.

Manufacturer.

Dates of Survey while building
 During progress of work in shops -- Nov. 3, 18, 24; Dec. 1, 18, 25; Jan. 13, 27; Feb. 3, 13, 14, 21, 24, 28; Mar. 4, 29; Apr. 4, 7, 13, 20, 21, 23, 24, 27, 29, 30; May 4, 5, 8, 10, 11, 15, 19, 22; Jun. 19, 20, 25, 28
 During erection on board vessel -- May 19, 26, 31; June 1, 4, 7, 14, 16, 19, 24, 25, 26; July 6, 7, 8, 10, 13, 14, 16, 17, 21, 22, 27, 28, 31; Aug. 4, 7, 12, 31, 7, 21; Nov. 17, 27; Dec. 3, 10, 17, 18
 Total No. of visits **83**

Is the approved plan of main boiler forwarded herewith

yes

Auxiliary donkey

yes

Dates of Examination of principal parts—Cylinders 17-8-20 Slides 17-11-20 Covers 17-11-20 Pistons 17-11-20 Rods 17-11-20

Connecting rods 2-10-20 Crank shaft 13-8-20 Thrust shaft 16-7-20 Tunnel shafts 16-7-20 Screw shaft 27-7-20 Propeller 4-8-20

Stern tube 31-7-20 Steam pipes tested 10-12-20 Engine and boiler seatings 7-8-20 Engines holding down bolts 7-12-20

Completion of pumping arrangements 17-12-20 Boilers fixed 7-12-20 Engines tried under steam 20-12-20

Completion of fitting sea connections 7-8-20 Stern tube 7-8-20 Screw shaft and propeller 12-8-20

Main boiler safety valves adjusted 17-12-20 Thickness of adjusting washers Lock nuts

Material of Crank shaft steel Identification Mark on Do. Lloyd's 15-8-20 Material of Thrust shaft steel Identification Mark on Do.

Material of Tunnel shafts steel Identification Marks on Do. Material of Screw shafts steel Identification Marks on Do.

Material of Steam Pipes solid drawn steel Test pressure 600 lbs. water

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

- 1/2 ARGONNE (Kobe Report No. 194)
- 1/2 WAR QUEEN (" " " 200)
- 1/2 EASTERN OCEAN (" " " 271)
- 1/2 OREGON MARU (" " " 299)
- 1/2 PACIFIC MARU (" " " 303)

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

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

The machinery worked satisfactorily on trial - coal being used for Boilers. The Oil Fuel Section Piping from Settling Tank to Stockhold Pumps was tested to 50 lbs./sq. inch water pressure and the Pressure Piping from Pumps to Burners - to 250 lbs./sq. inch water.

The machinery of this vessel is eligible, it is submitted, for the notation L.M.C 12-20 and "Fitted for Burning Oil Fuel 12-20 F.P. above 150 Fahr."

A Blue print of arrangement of oil Fuel Piping and Shut-off valves is sent herewith.

It is submitted that this vessel is eligible for THE RECORD + L.M.C 12. 20. F.D. Fitted for oil fuel 12-20, F.P. above 150°F.

The amount of Entry Fee ... Yen 30.- : When applied for.
 Special ... £ 435.- : Dec. 29th 1920
 Auxiliary Machinery Boiler Fee ... Included. : ✓ :
 Travelling Expenses (if any) \$ 20.- : Jan. 27th 1921

A. Watt. 9/3/21
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

FRI. 11 MAR. 1921

BERTRAND WRIGHT + L.M.C. 12.20. F.D. Listed for oil fuel 12.20 F.P. above 150°F.

