

# REPORT ON MACHINERY.

Received at London Office

FRI. JUN. 11 1920

Date of writing Report 3-5-20 When handed in at Local Office 19 Port of Yokohama

No. in Survey held at Tokyo Date, First Survey 10-11-19 Last Survey 29th April, 1920

Reg. Book. on the S. S. "Taikai Maru" Tons <sup>Gross</sup>            <sub>Net</sub>           

Master            Built at Yokohama By whom built Uchida Shipbuilding & E Co When built           

Engines made at Tokyo By whom made Ishikawajima Shipbuilding & E Co when made 1920

Boilers made at Tokyo By whom made Ishikawajima Shipbuilding & E Co when made 1920

Registered Horse Power            Owners            Port belonging to           

Nom. Horse Power as per Section 28 513 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 26"-43 1/2"-72" Length of Stroke 48 Revs. per minute 79 Dia. of Screw shaft <sup>as per rule</sup> 15 1/4" <sub>as fitted</sub> 16" Material of screw shaft S

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 xx 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 Tight fit If two liners are fitted, is the shaft lapped or protected between the liners xxxx Length of stern bush 63 3/4"

Dia. of Tunnel shaft <sup>as per rule</sup> 13.6 <sub>as fitted</sub> 13 3/4 Dia. of Crank shaft journals <sup>as per rule</sup> 14.25 <sub>as fitted</sub> 14.5 Dia. of Crank pin 14 1/2 Size of Crank webs 27x9 1/2 Dia. of thrust shaft under collars 14 1/2 Dia. of screw 17'-9" Pitch of Screw 19'-1" No. of Blades 4 State whether moceable Yes Total surface 99-65 sq ft

No. of Feed pumps 2 Diameter of ditto 4 1/2 Stroke 24 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 4 1/2 Stroke 24 Can one be overhauled while the other is at work Yes

No. of Donkey Engines 1 B D Sizes of Pumps 7 x 6 x 7 No. and size of Suctions connected to both Bilge and Donkey pumps           

In Engine Room 3-3 1/2 2 Woodeson feed pump 10 1/2 x 10 1/2 x 8 In Holds, &c. No. 1 1-3 1/2, No. 2 2-3 1/2, No. 3 2-3 1/2, No. 4 2-3 1/2

Tunnel well 1-2 1/2

No. of Bilge Injections 1 sizes 8" Connected to condenser, or to circulating pump Sir P Is a separate Donkey Suction fitted in Engine room & size Yes 5"

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 Yes

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 xxxx How are they protected Wood ceiling

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 Top platform

**BOILERS, &c.**—(Letter for record S.) Manufacturers of Steel Carnegie

Total Heating Surface of Boilers 7376.4 Is Forced Draft fitted Yes No. and Description of Boilers 3 Multitubular 3 S.B.

Working Pressure 200 Tested by hydraulic pressure to 400 Date of test 3-3-20 8-3-20 13-3-20 No. of Certificate 103 104 106

Can each boiler be worked separately Yes Area of fire grate in each boiler 58.2 sq ft No. and Description of Safety Valves to each boiler 2 Spring loaded Area of each valve 1.4 sq in Pressure to which they are adjusted 205 Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 22 <sup>Inside</sup> Mean-dia. of boilers 14'-3" Length 11'-6" Material of shell plates S

Thickness 1 13/32 Range of tensile strength 28-32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D R long. seams DBSTR Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 10" Lap of plates or width of butt straps 22"

Per centages of strength of longitudinal joint <sup>rivets</sup> 93.5 Working pressure of shell by rules 223 Size of manhole in shell 16" x 12" <sub>plate</sub> 85

Size of compensating ring 36 1/2" x 3 1/2" No. and Description of Furnaces in each boiler 3 Deighton Material S Outside diameter 3'-10 1/4"

Length of plain part <sup>top</sup> xx <sub>bottom</sub> xx Thickness of plates <sup>or own</sup> 5" <sub>bottom</sub> 5" Description of longitudinal joint Weld No. of strengthening rings x 45 44 45 15

Working pressure of furnace by the rules 217 Combustion chamber plates: Material S Thickness: Sides /64" Back /64" Top /64" Bottom /16"

Pitch of stays to ditto: Sides 10 1/2" x 7 1/4" Back 8 3/8" x 8 3/8" Top 9 1/4" x 8" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 205

Material of stays S Area at smallest part 203 sq in Area supported by each stay 83 sq in Working pressure by rules 221 End plates in steam space: Material S Thickness 1 3/16" Pitch of stays 18 1/2" x 1 6 1/2" How are stays secured D. Nuts Working pressure by rules 221 Material of stays S

Area at smallest part 7.7 sq in Area supported by each stay 311 sq in Working pressure by rules 249 Material of Front plates at bottom S

Thickness 3" Material of Lower back plate S Thickness 3" Greatest pitch of stays 8.5" Working pressure of plate by rules 276

Diameter of tubes 3" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates S Thickness: Front 3/8" Back 3/8" Mean pitch of stays 8 3/8"

Pitch across wide water spaces 13 1/2" Working pressures by rules 225 Girders to Chamber tops: Material S Depth and thickness of girder at centre 8" x 1 1/2" Length as per rule 30 3/4 Distance apart 8" Number and pitch of stays in each 2 x 9 1/2"

Working pressure by rules 225 Steam dome: description of joint to shell xxx % of strength of joint xx

Diameter xx Thickness of shell plates xx Material xx Description of longitudinal joint xx Diam. of rivet holes xx

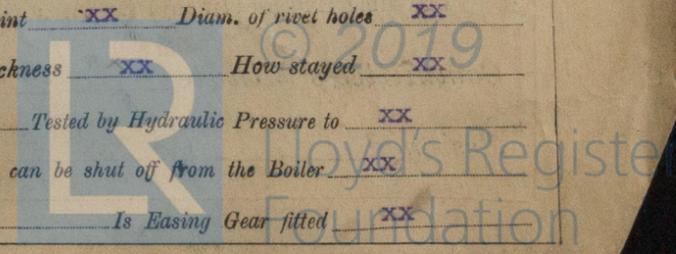
Pitch of rivets xx Working pressure of shell by rules xx Crown plates xx Thickness xx How stayed xx

**SUPERHEATER.** Type xx Date of Approval of Plan xxx Tested by Hydraulic Pressure to xx

Date of Test xx Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler xx

Diameter of Safety Valve xx Pressure to which each is adjusted xx Is Easing Gear fitted xx

W101-0056



IS A DONKEY BOILER FITTED? No If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— One crank shaft, one propeller shaft, one propeller blade, two connecting rod top - end bolts and nuts, two connecting rod bottom - end bolts and nuts, two main bearing bolts, one set of coupling bolts, one set of feed and bilge pump valves, one set of piston springs, a quantity of assorted bolts and nuts, iron of various sizes.

The foregoing is a correct description,

THE ISHIKAWAJIMA SHIP BUILDING AND ENGINEERING Co. Ltd, TOKYO.

T. Uchida Manufacturer.

Dates of Survey while building: During progress of work in shops - Nov 10, 21, 24, Dec 1, 8, 13, 20, 22, 26, 1919, Jan 9, 14, 19, 23, 30, Feb 2, 5, 9, 16, 21, 27, Mar 8, 15, 23, 31. During erection on board vessel - Feb 27, Mar 17, 18, 30, Apr 1, 5, 9, 10, 14, 16, 19, 20, 24, 27, 29. Total No. of visits 40.

Is the approved plan of main boiler forwarded herewith XX

donkey

Dates of Examination of principal parts: Cylinders 24-11-19 Slides 23-3-20 Covers 24-11-19 Pistons 23-3-20 Rods 26-3-19 Connecting rods 6-10-19 Crank shaft 4-19 Thrust shaft 4-19 Tunnel shafts 18-7-19 Screw shaft 18-7-19 Propeller 23-1-20 Stern tube 26-11-19 Steam pipes tested 31-3-20 Engine and boiler seatings 17-3-20 Engines holding down bolts 16-4-20 Completion of pumping arrangements 27-4-20 Boilers fixed 7-4-20 Engines tried under steam 27-4-20 Completion of fitting sea connections 24-4-20 Stern tube 24-4-20 Screw shaft and propeller 24-4-20 Main boiler safety valves adjusted 24-4-20 Thickness of adjusting washers Lock Nuts Material of Crank shaft S Identification Mark on Do. Z.S. Material of Thrust shaft S Identification Mark on Do. Z.S. Material of Tunnel shafts S Identification Marks on Do. Z.S. Material of Screw shafts S Identification Marks on Do. Z.S. Material of Steam Pipes Steel & Copper Test pressure 600 & 400 lbs Is an installation fitted for burning oil fuel No Is the flash point of the oil to be used over 150°F. XX Have the requirements of Section 49 of the Rules been complied with XX Is this machinery duplicate of a previous case Yes If so, state name of vessel Eastern Glen

General Remarks (State quality of workmanship, opinions as to class, &c. The machinery and boilers of this vessel) were constructed under special survey of materials tested to Rule requirements and workmanship was found sound throughout, On completion the machinery was thoroughly tested under working conditions with satisfactory results, In my opinion the machinery is eligible to be classed in the Register Book LMC 4-20. Electric Light fitted.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 4-20. F.D. 14/6/20

Handwritten signatures: JIM, JUD.

The amount of Entry Fee ... ¥ 30.00 : When applied for, Special ... ¥ 646.00 : 29-4-1920 Doukey Boiler Fee ... £ : When received, Travelling Expenses (if any) ¥ 62.00 : 4-5-1920

Signature: M. Boylan, F.R.S. Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute Assigned FRI JUN 18 1920 + L.M.C. 4-20 F.D.



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