

# REPORT ON MACHINERY.

FRI JUN 11 1920

Received at London Office

Date of writing Report 6-5-1920 When handed in at Local Office

Port of Yokohama

No. in Survey held at Tokyo & Tsurumi

Date, First Survey Nov 15-1919

Last Survey 26th April 1920

Reg. Book. on the S.S. "Erie Maru"

(Number of Visits)

Master Tsurumi

Built at

By whom built Asano Shipbuilding Co Ltd

When built 1920.

Engines made at Tokyo

By whom made Ishikawajima S. B & E Co Ltd

when made 1920.

Boilers made at Tokyo & Uraga

By whom made Ishikawajima S.B.& E, & Uraga Dk Co

when made 1920.

Registered Horse Power

Owners Kokusai Kisen Kaisha

Port belonging to Yokohama

Nom. Horse Power as per Section 28 573 5/3

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 as per rule 15" Material of screw shaft S  
 as fitted 16"

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

Dia. of Tunnel shaft as per rule 13.6" Dia. of Crank shaft journals as per rule 14.25" 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 moveable 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 2 Woodeson feed pumps 10 1/2 x 10 1/2 x 8

In Engine Room 3-3 1/2 In Holds, &c. No. 11-3 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 Cir 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 XXX 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 2458.8 Is Forced Draft fitted Yes No. and Description of Boilers 3 Multitubular

Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 27-12-19 No. of Certificate 91. 1 Boiler

Can each boiler be worked separately Yes Area of fire grate in each boiler 58-289 sq ft No. and Description of Safety Valves to each boiler Twin spring loaded Area of each valve 11.04 sq ft 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 22" Mean dia. of boilers 14'-3" Length 11'-6" Material of shell plates Steel

Thickness 13/32" Range of tensile strength 28 / 32 ton are the shell plates welded or flanged No Descrip. of riveting: cir. seams D R Lap long. seams T.R.D.B.S. 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 rivets 91.4 % Working pressure of shell by rules 223 Size of manhole in shell 16" x 12"

Size of compensating ring 36 1/2" x 32 1/2" No. and Description of Furnaces in each boiler 3 Morrison Material Steel Outside diameter 3'10 1/2"

Length of plain part top x bottom x Thickness of plates crown 5/8" bottom 5/8" Description of longitudinal joint Welded No. of strengthening rings XX

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

Pitch of stays to ditto: Sides 10 1/2" x 7 1/2" Back 8 3/4" x 8 1/2" Top 9 1/4" x 8" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 207

Material of stays Steel Area at smallest part 2.03 sq in Area supported by each stay 78.74 sq in Working pressure by rules 232 lbs End plates in steam space: Material Steel Thickness 1 3/16" Pitch of stay 16 1/2" x 19" How are stays secured D.Nuts Working pressure by rules 211 lbs Material of stays Steel

Area at smallest part 7.068 sq in Area supported by each stay 31.4 sq in Working pressure by rules 233.5 Material of Front plates at bottom Steel Thickness 3/4" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 14" x 8 1/2" Working pressure of plate by rules 257 lbs

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

Pitch across wide water spaces 13 1/2" Working pressures by rules 224.5 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9" x 1 3/4" Length as per rule 29 13/16" Distance apart 8 Number and pitch of stays in each 2 at 9 1/4"

Working pressure by rules 308 lbs 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 XXXX Tested by Hydraulic Pressure to XX

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

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

IS A DONKEY BOILER FITTED? No

If so, is a report now forwarded? xx

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 bearings 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 15, 26 Dec 2, 10, 16, 20, 27 1919, Jan 7, 12, 20, 23, 28 Feb 5, 9, 18, 27, Mar 8, 15, 23, April 6, 7, 10, 16, 19, 23, 26. During erection on board vessel - - - Total No. of visits 27.

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts—Cylinders 28-1-20 Slides 8-3-20 Covers 28-1-20 Pistons 8-3-20 Rods 10-12-19 Connecting rods 8-12-19 Crank shaft 8-12-19 Thrust shaft 25-9-19 Tunnel shafts 22-12-19 Screw shaft 3-12-19 Propeller 7-1-20 Stern tube 9-2-20 Steam pipes tested 19-4-20 Engine and boiler seatings 16-4-20 Engines holding down bolts 16-4-20 Completion of pumping arrangements 24-4-20 Boilers fixed 10-4-20 Engines tried under steam 26-4-20 Completion of fitting sea connections 7-4-20 Stern tube 6-4-20 Screw shaft and propeller 6-4-20 Main boiler safety valves adjusted 23-4-20 Thickness of adjusting washers Lock Nuts

Material of Crank shaft S Identification Mark on Do. R O B Material of Thrust shaft S Identification Mark on Do. R O B Material of Tunnel shafts S Identification Marks on Do. R O B Material of Screw shafts S Identification Marks on Do. R O B 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. xxx Have the requirements of Section 49 of the Rules been complied with xxx Is this machinery duplicate of a previous case Yes If so, state name of vessel " Ural-San Maru "

General Remarks (State quality of workmanship, opinions as to class, &c. The machinery of this vessel has been built under special survey in accordance with the approved plans and the society's Rules, the materials and workmanship are good, the machinery has been satisfactorily tried under steam, and is in my opinion eligible for the record LMC 4-20.

It is submitted that this vessel is eligible for THE RECORD. T.L.M.C. 4-20 F.D. 18/6/20

J.M.

The amount of Entry Fee ... ¥ 30.00 : When applied for, Special ... ¥ 450.00 : 27-4-1920 Donkey Boiler Fee ... £ : When received, Travelling Expenses (if any) ¥ 61.00 : 1-5-1920

J. Boylston Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute Assigned

FRI. JUN. 25 1920

T.L.M.C. 4-20 J.B.

