

# REPORT ON MACHINERY.

No. 2556  
WED. 25 FEB. 1920

Received at London Office

of writing Report 20th Dec 19 19 When handed in at Local Office 19 Port of Yokohama

in Survey held at Tokyo & Tsurumi Date, First Survey 1st Feby Last Survey 14th Novr, 19 19.  
 Book. (Number of Visits 47)

on the S. S. "Eastern Merchant" Tons } Gross 8193  
 Net 4988

ter Built at Tsurumi By whom built Asano Shipbuilding Co. Ltd. When built 1919  
 (Yard No. 17).

made at Osaka By whom made Kubota Iron Works when made 1919

made at Tokyo By whom made Ishikawajima Shipbuilding & E Co Ltd when made 1919

red Horse Power Owners United States S.B.E.F.Cpn. Port belonging to United States

Horse Power as per Section 28 703 ✓ Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

**PROPELLERS, &c.—Description of Engines**

No. of Cylinders	Length of Stroke	Revs. per minute	Dia. of Screw shaft	No. of Cranks
2	10 1/2	24	10 1/2	2

Material of screw shaft as per rule / as fitted: S

Is the after end of the liner made water tight: Yes

If the liner is in more than one length are the joints burned: Yes

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: Yes

If two shafts are fitted, is the shaft lapped or protected between the liners: Yes

Length of stern bush: 11'-6"

Dia. of Crank shaft journals as per rule / as fitted: 10 1/2

Dia. of Crank pin: 6 1/2

Size of Crank webs: 10x6x11

Dia. of thrust shaft under bars: 1 1/2

Pitch of Screw: 22"

No. of Blades: 2

State whether moveable: No

Total surface: 11.04

Diameter of ditto: 11.04

Stroke: 10 1/2

Can one be overhauled while the other is at work: Yes

Diameter of ditto: 11.04

Stroke: 10 1/2

Can one be overhauled while the other is at work: Yes

Sizes of Pumps: 2 Woodeson 10 1/2 x 8 x 24, 1 G.D. Duplex 10x6x11

No. and size of Suctions connected to both Bilge and Donkey pumps: 2, 2-3 1/2"

Engine Room: 3-3 1/2, 1 B.D. Bilge, 1 B.D. Bilge

In Holds, &c. No. 1, 2-3 1/2", No. 2, 2-3 1/2", No. 3, 2-3 1/2", No. 4, 2-3 1/2", No. 5, 2-3 1/2", tunnel well 1-3"

of Bilge Injections: 2 sizes 7 3/4

Connected to condenser or to circulating pump: Yes

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: 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: Yes

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: Forward bilges

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 Illinois, Carnegie, Nippon Kokan, American Spiral Co.**

Heating Surface of Boilers: 9835

Is Forced Draft fitted: Yes

No. and Description of Boilers: 4 Multitubular 4 S.B.

Working Pressure: 200

Tested by hydraulic pressure to: 400

Date of test: 5-7-19, 8-7-19, 14-7-19, 21-7-19

No. of Certificate: 56, 59, 57, 60.

Can each boiler be worked separately: Yes

Area of fire grate in each boiler: 58.2

No. and Description of Safety Valves to each boiler: 2 Spring loaded

Area of each valve: 11.04

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"

Mean dia. of boilers: 14'-3"

Length: 11'-6"

Material of shell plates: S

Thickness: 1 15/32

Range of tensile strength: 28-32

Are the shell plates welded or flanged: No

Descrip. of riveting: cir. seams D.R.

long. seams D.B.S.T.R

Diameter of rivet holes in long. seams: 1 1/2

Pitch of rivets: 10

Lap of plates: 22"

Percentage of strength of longitudinal joint: rivets 93, plate 85

Working pressure of shell by rules: 235

Size of manhole in shell: 16"x 12"

Size of compensating ring: 36 1/2 x 32 1/2 x 13 1/2

No. and Description of Furnaces in each boiler: 3. Deighton

Material: S

Outside diameter: 3'-10 1/2"

Length of plain part: top 45, bottom 44

Thickness of plates: crown 45, bottom 15

Description of longitudinal joint: Weld

No. of strengthening rings: xx

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 1/2, Back 8 5/8 x 8 3/8, Top 9 1/4 x 8

If stays are fitted with nuts or riveted heads: Nuts

Working pressure by rules: 207

Material of stays: S

Area at smallest part: 2.03

Area supported by each stay: 83sqin

Working pressure by rules: 221

End plates in steam space: S

Material: S

Thickness: 1 3/16

Pitch of stays: 18 3/4 x 16 1/2

How are stays secured: D. nuts & WI

Working pressure by rules: 214

Material of stays: S

Area at smallest part: 7.7

Area supported by each stay: 311sqin

Working pressure by rules: 249

Material of Front plates at bottom: S

Thickness: 3/4

Material of Lower back plate: S

Thickness: 3/4

Greatest pitch of stays: 8.5

Working pressure of plate by rules: 276

Diameter of tubes: 3

Pitch of tubes: 4 1/4 x 4 1/8

Material of tube plates: S

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: 225

Girders to Chamber tops: Material S

Depth and thickness of girder at centre: 8 x 1 3/4

Length as per rule: 30.8

Distance apart: 8

Number and pitch of stays in each: 2 x 9 1/4

Working pressure by rules: 285

Steam dome: description of joint to shell: xx

% of strength of joint: xx

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

**SUPERHEATER.** Type: \_\_\_\_\_ Date of Approval of Plan: \_\_\_\_\_ Tested by Hydraulic Pressure to: \_\_\_\_\_

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: \_\_\_\_\_

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

SPARE GEAR. State the articles supplied:— One crank shaft, one propeller shaft, one propeller, 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, of piston springs, a quantity of assorted bolts and nuts, iron of various sizes.

The foregoing is a correct description,

THE ISEIKAWAJIMA SHIP BUILDING AND ENGINEERING Co. Ltd, TOKYO

*K. Kurita* Manufacturer.

Dates of Survey while building: During progress of work in shops -- Feb 1, 2, 21, Mar 3, 10, 17, Apr 14, 16, 22, 28, 30, May 2, 13, 17, 23, 27, 30, June 4, 20, 23, 27, July 5, 8, 11, 14, 21, 28, Aug 7. During erection on board vessel --- Sept 18, 22, 29, 30, Oct 3, 14, 18, 20, 22, 27, 30, Nov 3, 8, 12, 14. Total No. of visits 47.

Is the approved plan of main boiler forwarded herewith  Yes

Dates of Examination of principal parts—	Cylinders	Slides	Covers	Pistons	Rods
Connecting rods	Crank shaft	Thrust shaft	Tunnel shafts	Screw shaft	Propeller
Stern tube	Steam pipes tested 27-10-19	Engine and boiler seatings 14-10-19	Engines holding down bolts 2	Room	
Completion of pumping arrangements 8-11-19	Boilers fixed 22-10-19	Engines tried under steam 12-11			
Completion of fitting sea connections 3-10-19	Stern tube 30-9-19	Screw shaft and propeller 3-10-			
Main boiler safety valves adjusted 3-11-19	Thickness of adjusting washers	Lock nuts			
Material of Crank shaft	Identification Mark on Do.	Material of Thrust shaft	Identification Mark on Do.		
Material of Tunnel shafts	Identification Marks on Do.	Material of Screw shafts	Identification Marks on Do.		
Material of Steam Pipes S ✓		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. xx

Have the requirements of Section 49 of the Rules been complied with  No

Is this machinery duplicate of a previous case  Yes If so, state name of vessel

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 and is in my opinion eligible for the record  LMC 12-19 and fitted for burning with date F.P. above 150° Fahr subject to the installation being completed under survey.

Duplicate vessels	" Hakushika Maru "	Report No. 2307,
	" War Helmet "	" " 2320,
	" War Armour "	" " 2328,
	" War Lance "	" " 2338.
	" Aden "	" " 2354,
	" Capitaine Faure "	" " 2363,
	" Kaikyu Maru "	" " 2484.

It is submitted that this vessel is eligible for THE RECORD.

The amount of Entry Fee	...	When applied for,
Special	£ 30.0	20-11-19
Donkey Boiler Fee	£ 560.0	When received,
Travelling Expenses (if any)	£ 45.0	22-11-19

*W. Boylan*  
Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute TUE. MAR. 2 - 1920

Assigned *+ L. Mc 11:19 J.D.*

CERTIFICATE WRITTEN.



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