

REPORT ON MACHINERY

No. 3980

WED. AUG. 7 1923

Received at London Office

Date of writing Report May 17th 1923 When handed in at Local Office

Port of Kobe

11 April 1923

in Survey held at Osaka + Imosshima

Date, First Survey May 21st 1920 Last Survey Feb. 25th 1923

on the Steel Single Screw Steamer "Heiyo Maru"

(Number of Visits 50)

Gross 4365.
Net 2735

Built at Imosshima By whom built Osaka Iron Works, Imosshima Yd. When built 1922

Engines made at Imosshima By whom made Osaka Iron Works, Imosshima Yd. when made 1922

Boilers made at Osaka By whom made Osaka Iron Works, Ltd. when made 1922

Registered Horse Power Owners Nippon Kisen Kabushiki Kaisha Port belonging to Habu.

Net Horse Power as per Section 28 390 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted Yes.

GINES, &c.—Description of Engines Triple Expansion No. of Cylinders Three No. of Cranks 3

No. of Cylinders 24" x 41" x 67" Length of Stroke 48" Revs. per minute 79 Dia. of Screw shaft as per rule 13.96 Material of steel as fitted 14 1/2" screw shaft

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

the propeller boss Yes 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 Fitted closely If two

are fitted, is the shaft lapped or protected between the liners Length of stern bush 5'-4"

No. of Tunnel shaft as per rule 12.46 Dia. of Crank shaft journals as per rule 13.00 Dia. of Crank pin 13 1/2" Size of Crank webs 8 1/2" x 25 Dia. of thrust shaft under

arms 13 1/4" Dia. of screw 17'-0" Pitch of Screw 17'-8 1/2" No. of Blades 4 State whether moveable no Total surface 90'

No. of Feed pumps Two Diameter of ditto 4" Stroke 25" Can one be overhauled while the other is at work Yes

No. of Bilge pumps Two Diameter of ditto 4 1/2" Stroke 25" Can one be overhauled while the other is at work Yes

No. of Donkey Engines Three Sizes of Pumps Ballast: 9 1/2" x 12" x 10" dupl. No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room Three 3 1/2" Donkey 6" x 4" x 5" In Holds, &c. Nos. 1, 2 + 3 holds 2 @ 3 1/2"

and 3 1/2" to Tunnel Well No. 4 hold 1 @ 3 1/2"

No. of Bilge Injections 1 sizes 7 Connected to condenser, or to circulating pump Cir. p. Is a separate Donkey Suction fitted in Engine room & size Yes 3 1/2"

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

all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Larger Valves. Smaller Cocks.

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

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

all pipes are carried through the bunkers None How are they protected

all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes

the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Yes

The Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper platform in Eng. Rm.

MANUFACTURERS, &c.—(Letter for record S) Manufacturers of Steel Illinois Stl. Co., Wm. Beardmore Co., Carnegie Stl. Co.,

and Heating Surface of Boilers 5400.4 Is Forced Draft fitted Yes No. and Description of Boilers Two Single Ended

Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 28-9-20 No. of Certificate LLOYD'S TEST

each boiler be worked separately Yes Area of fire grate in each boiler 63.25 sq. ft. No. and Description of Safety Valves to

boiler 2 Spring Loaded Area of each valve 7 sq. in. Pressure to which they are adjusted 185 lbs. Are they fitted with easing gear Yes

Least distance between boilers or uptakes and bunkers or woodwork 1'-6" Mean dia. of boilers 15'-0" Length 12'-0" Material of shell plates Steel

Thickness 1 1/2" Range of tensile strength 26-28 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams Ends Double

seam Double riveted Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 9" Lap of plates or width of butt straps 19 1/2" x 1 1/2" + 1 1/2"

Percentages of strength of longitudinal joint rivets 85.187 plate 85.41 Working pressure of shell by rules 188 lbs. Size of manhole in shell 12" x 16"

No. of compensating ring 2'-10" x 3'-2" No. and Description of Furnaces in each boiler 3 Morrison's Material steel Outside diameter 48 1/2"

Thickness of plain part top 1 1/2" bottom 1 1/2" Thickness of plates crown 1 1/2" bottom 1 1/2" Description of longitudinal joint Weld No. of strengthening rings

Working pressure of furnace by the rules 195 lbs. Combustion chamber plates: Material steel Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 7/8"

No. of stays to ditto: Sides 8 1/4" x 8 1/4" Back 8 1/2" x 8 1/2" Top 8" x 9" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 186 lbs.

Material of stays steel Area at smallest part 1.79 sq. in. Area supported by each stay 72.25 sq. in. Working pressure by rules 222 lbs. End plates in steam space:

Material steel Thickness 1 1/2" Pitch of stays 18" + 20" How are stays secured nuts Washers Working pressure by rules 194 lbs. Material of stays steel

Area at smallest part 7.50 sq. in. Area supported by each stay 362 sq. in. Working pressure by rules 215 lbs. Material of Front plates at bottom steel

Thickness 3/4" Material of Lower back plate steel Thickness 3/4" Greatest pitch of stays 14" + 1/2" double Working pressure of plate by rules 228 lbs.

Diameter of tubes 3" Pitch of tubes 4 1/2" + 4 1/4" Material of tube plates steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 8 1/2" + 12 1/4"

Distance across wide water spaces 13 1/4" + 1 1/2" double Working pressures by rules 204 lbs. Girders to Chamber tops: Material steel Depth and

Thickness of girder at centre 9 3/4" x 1 3/4" Length as per rule 33 1/2" Distance apart 9" Number and pitch of stays in each 3 @ 8"

Working pressure by rules 211 lbs. Steam dome: description of joint to shell % of strength of joint

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

No. of rivets Working pressure of shell by rules Crown plates Thickness How stayed

SAFETY VALVE. Type Yes 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

Pressure to which each is adjusted Is Easing Gear fitted

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Lloyd's Register

W1278-012

IS A DONKEY BOILER FITTED?

No

If so, is a report now forwarded?

✓

SPARE GEAR. State the articles supplied :-

4 Connecting Rod top ends bolts & nuts. A quantity of assorted bolts & nuts. 1 Air pump rod.
2 " " bot. end bolts & nuts. Iron of various sizes. 1 Circulating pump rod.
2 Main bearing bolts & nuts. 1 pair Connecting rod brasses. 1 Set Check valves.
1 Set of coupling bolts. 1 Set Crosshead brasses. 1 Set safety valve springs.
1 Set of feed & bilge pump valves. 1 Slide valve spindle each size. 1 Set bilge pump valves & seats.
1 Set each of piston packing rings. 1 Eccentric rod each size. 10 Boiler tubes.
1/30 of Condenser tubes.
1/4 set junk ring bolts, and a quantity of spare gear for the various auxiliary engines.

The foregoing is a correct description

J. Ishimaru



Dates of Survey while building
During progress of work in shops -- May 21, 22; June 3, 10, 15, 21, 23, 28; July 5, 8, 12, 26, 29; Aug. 6, 25, 28; Sept. 1, 2, 12, 28; Oct. 6, 20, 25, 29; Nov. 12, 22, 24, 30; Dec. 28; 1921 Jan. 26; Feb. 3, 28; Mar. 7, 9; May 9, 26; June 6, 14; 1922 Jan. 20, 22; Feb. 1, 25; 1922 Mar. 22, 30; Apr. 6, 11.
Total No. of visits 50

Is the approved plan of main boiler forwarded herewith

Retain for duplicate

Dates of Examination of principal parts—Cylinders 28-12-20 Slides 28-12-20 Covers 28-12-20 Pistons 28-12-20 Rods 7-2-23

Connecting rods 7-2-23 Crank shaft 9-5-21 Thrust shaft 9-5-21 Tunnel shafts 9-5-21 Screw shaft 14-6-21 Propeller 20-1-2

Stern tube 8-7-21 Steam pipes tested 22-3-23 Engine and boiler seatings 26-5-21 Engines holding down bolts 7-2-23

Completion of pumping arrangements 6-4-23 Boilers fixed 25-2-23 Engines tried under steam 11-4-23

Completion of fitting sea connections 30-3-23 Stern tube 10-7-21 Screw shaft and propeller 22-1-23

Main boiler safety valves adjusted 6-4-23 Thickness of adjusting washers Lock nuts fitted

Material of Crank shaft steel Identification Mark on Do. 790, 781, 751 Material of Thrust shaft steel Identification Mark on Do. 140, 138, 136, 134, 132, 130, 128, 126, 124, 122, 120, 118, 116, 114, 112, 110, 108, 106, 104, 102, 100, 98, 96, 94, 92, 90, 88, 86, 84, 82, 80, 78, 76, 74, 72, 70, 68, 66, 64, 62, 60, 58, 56, 54, 52, 50, 48, 46, 44, 42, 40, 38, 36, 34, 32, 30, 28, 26, 24, 22, 20, 18, 16, 14, 12, 10, 8, 6, 4, 2, 0

Material of Tunnel shafts steel Identification Marks on Do. 790, 781, 751 Material of Screw shafts steel Identification Marks on Do. 140, 138, 136, 134, 132, 130, 128, 126, 124, 122, 120, 118, 116, 114, 112, 110, 108, 106, 104, 102, 100, 98, 96, 94, 92, 90, 88, 86, 84, 82, 80, 78, 76, 74, 72, 70, 68, 66, 64, 62, 60, 58, 56, 54, 52, 50, 48, 46, 44, 42, 40, 38, 36, 34, 32, 30, 28, 26, 24, 22, 20, 18, 16, 14, 12, 10, 8, 6, 4, 2, 0

Material of Steam Pipes solid drawn steel Test pressure 540 lb. water pressure

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 5% YEIKOKU MARU Report No. 31

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

The Machinery & Boilers of this vessel have been built & fitted under special survey, the materials & workmanship are good.

The Crank, Thrust, Tunnel & Screw Shafting were forged & rough turned by the Sizer Forge Co. Buffalo N.Y. & finished at Osaka Iron Works.

This case is eligible in my opinion to have record of LMC 4-23 in Register Book.

It is submitted that

this vessel is eligible for

THE RECORD. + LMC 4. 23. FD. CL.

The amount of Entry Fee ... Yen 50.- : When applied for.

Special ... £ 1252.- : June 1923

Donkey Boiler Fee ... £ 150 : When received.

Travelling Expenses (if any) £ incl. in July 3. 8-23

Committee's Minute FRI. AUG. 10 1923

Assigned

+ Lmb. 4. 23
F. D. C. L.



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Lloyd's Register Foundation

Rpt. 13.

Port of

No. in Reg. Book

Owners

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