

REPORT ON MACHINERY.

Received at London Office SAT. JAN. 11. 1919

Date of writing Report 26th Nov. 1918 When handed in at Local Office 26th Nov. 1918 Port of **NAGASAKI.**

No. in Survey held at **NAGASAKI.** Date, First Survey 1st Aug. 1917 Last Survey 26th Nov. 1918
Reg. Book. (Number of Visits 12)

on the s.s. ~~Konan Maru~~ **KONAN MARU** Tons { Gross 5777
Net 3169

Master **K. Hayashi** Built at **Nagasaki** By whom built **Mitsubishi Zosen Kaisha** When built 1918

Engines made at **Nagasaki** By whom made **Mitsubishi Zosen Kaisha** when made 1918

Boilers made at **Nagasaki** By whom made **Mitsubishi Zosen Kaisha** when made 1918

Registered Horse Power Owners **Kobe Sanbashi Kabushiki Kaisha** Port belonging to **Kobe**

Nom. Horse Power as per Section 28 **494** Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

ENGINES, &c.—Description of Engines **Triple Expansion** No. of Cylinders **3** No. of Cranks **3**

Dia. of Cylinders **26 1/2, 44 1/2, 75** Length of Stroke **48** Revs. per minute **82** Dia. of Screw shaft as per rule **15.98** Material of screw shaft **Steel**
as fitted **16.5**

Is the screw shaft fitted with a continuous liner the whole length of the stern tube **No liner fitted.** Is the after end of the liner made water tight in 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' 6 1/8"**

Dia. of Tunnel shaft as per rule **13.74** Dia. of Crank shaft journals as per rule **14.427** Dia. of Crank pin **15** Size of Crank webs **22 1/2 x 9 1/2** Dia. of thrust shaft under collars **14.75** Dia. of screw **18.3** Pitch of Screw **19.9** No. of Blades **4** State whether moveable Total surface **96.8 sq. ft.**

No. of Feed pumps **2** Diameter of ditto **5** Stroke **24** Can one be overhauled while the other is at work **Yes.**

No. of Bilge pumps **2** Diameter of ditto **5** Stroke **24** Can one be overhauled while the other is at work **Yes.**

No. of Donkey Engines **4** Sizes of Pumps **1 Barrel Simplex 7 1/2 x 5 x 7** No. and size of Suctions connected to both Bilge and Donkey pumps **2 Feed Simplex 9 1/2 x 7 x 3 1/2**

In Engine Room **3 @ 3 1/2** In Holds, &c. **No. 1 Hold 2 @ 3 1/2 No. 2 Hold 2 @ 3 1/2**

Cross Bunker 2 @ 3 1/2 No. 3 Hold 2 @ 3 1/2 No. 4 Hold 2 @ 3 1/2 Jumper well **1 @ 2 1/2**

No. of Bilge Injections **1** sizes **8** Connected to condenser, or to circulating pump 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 **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 **Bridge deck**

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

Total Heating Surface of Boilers **6571.3** Is Forced Draft fitted **Yes.** No. and Description of Boilers **3 Cylindrical, Single ended.**

Working Pressure **200 lbs.** Tested by hydraulic pressure to **400 lbs.** Date of test **13th Aug. 1918** No. of Certificate **87**

Can each boiler be worked separately **Yes.** Area of fire grate in each boiler **54.32 sq. ft.** No. and Description of Safety Valves to each boiler **2 Spring loaded** Area of each valve **9.62 sq. ins.** 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 **9' 5"** Mean dia. of boilers **14' 0"** Length **11' 6"** Material of shell plates **Steel**

Thickness **1 5/16"** Range of tensile strength **28 to 32 tons** Are the shell plates welded or flanged **No.** Descrip. of riveting: cir. seams **double lap**

long. seams **2 straps** Diameter of rivet holes in long. seams **1 3/8"** Pitch of rivets **9 1/2, 14 3/4"** Lap of plates or width of butt straps **20 1/2"**

Per centages of strength of longitudinal joint rivets **88.6** Working pressure of shell by rules **212 lbs.** Size of manhole in shell **16" x 12"**

Size of compensating ring **37" x 33" x 1 5/16"** No. and Description of Furnaces in each boiler **3 Morrison's** Material **Steel** Outside diameter **3' 9 1/2"**

Length of plain part top **9"** Thickness of plates crown **9/16"** Description of longitudinal joint **Welded** No. of strengthening rings

Working pressure of furnace by the rules **217 lbs.** Combustion chamber plates: Material **Steel** Thickness: Sides **3/4"** Back **3/4"** Top **3/4"** Bottom **15/16"**

Pitch of stays to ditto: Sides **1 1/4" x 7 1/2"** Back **9" x 10 3/8"** Top **7" x 11 1/2"** If stays are fitted with nuts or riveted heads **Nuts** Working pressure by rules **212 lbs.**

Material of stays **Steel** Area at smallest part **2.02 sq. ins.** Area supported by each stay **81.6 sq. ins.** Working pressure by rules **223 lbs.** End plates in steam space:

Material **Steel** Thickness **1 3/2"** Pitch of stays **18" x 20"** How are stays secured **double nuts** Working pressure by rules **214 lbs.** Material of stays **Steel**

Area at smallest part **7.67 sq. ins.** Area supported by each stay **360 sq. ins.** Working pressure by rules **225 lbs.** Material of Front plates at bottom **Steel**

Thickness **3/4"** Material of Lower back plate **Steel** Thickness **3/4" + .6 doubling plate** Greatest pitch of stays **13 3/4"** Working pressure of plate by rules **236 lbs.**

Diameter of tubes **3 1/4"** Pitch of tubes **4 3/8" x 4 1/2"** Material of tube plates **Steel** Thickness: Front **3/4" x .6 doubling plate** Back **27/32"** Mean pitch of stays **11 1/8"**

Pitch across wide water spaces **13 3/2"** Working pressures by rules **224 lbs.** Girders to Chamber tops: Material **Steel** Depth and thickness of girder at centre **10 1/4" x 8 1/2"** Length as per rule **31.9"** Distance apart **11 1/2"** Number and pitch of stays in each **3 @ 7"**

Working pressure by rules **214 lbs.** Steam dome: description of joint to shell % of strength of joint

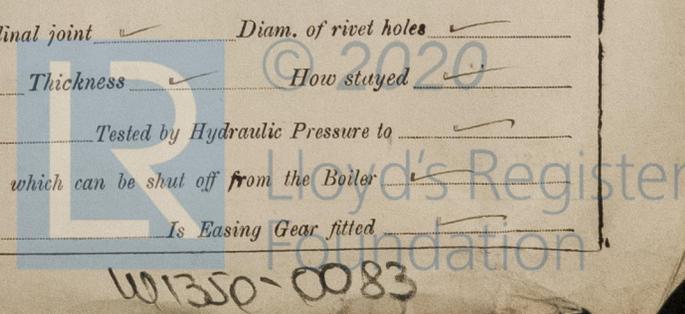
Diameter Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes

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

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

If not, state whether, and when, one will be sent



IS A DONKEY BOILER FITTED?

No. ✓

If so, is a report now forwarded? ✓

SPARE GEAR. State the articles supplied:— As per Rule and in addition 1 H.P. valve spindle, 1 L.P. valve spindle, 2 eccentric rods, 1 air pump rod, 1 set each of H.P. I.P. & L.P. packing rings, 1 set each of top & bottom brasses for one connecting rod, 13 junk ring bolts, 1 set of air pump valves, 1 impeller spindle for circulating pump, 53 condenser tubes & 160 ferrules, 1 complete set of valves & seats for main & donkey feed check, 3 cylinder escape valves & springs, 1 safety valve spring.

The foregoing is a correct description,

NAGASAKI WORKS, MITSUBISHI ZOSEN KAISHA, LTD.

[Signature]

GENERAL MANAGER.

Manufacturer.

Dates of Survey while building: During progress of work in shops - - - 1917 Aug. 1, 15, 21, 23, 24, 25, 28, 29. Sept. 6, 8, 10. Nov. 6, 16, 24. Dec. 4, 7, 12, 13, 14. 1918 Jan. 30, Feb. 16, 20, 21, 25, 28, 29. July 2, 4, 5, 10, 13, 15, 22, 26, 31. Aug. 1, 5, 6, 7, 9, 10, 12, 13, 14, 17, 19, 21, 23, 25, 29. Sept. 2, 3, 4, 5, 6, 8, 12, 13. During erection on board vessel - - - 4, 5, 6, 7, 9, 10, 11, 12, 13, 16, 17, 18, 20, 21, 23, 24, 25. Oct. 1, 2, 3, 10, 12, 14, 15, 18, 19, 21, 23, 24, 28, 30. Nov. 1, 4, 5, 6, 7, 8, 12. Total No. of visits 124.

Is the approved plan of main boiler forwarded herewith? Yes

Is the approved plan of donkey boiler forwarded herewith? Yes

Dates of Examination of principal parts: Cylinders 1. 10. 18 Slides 30. 10. 18 Covers 1. 10. 18 Pistons 30. 10. 18 Rods 30. 10. 18 Connecting rods 30. 10. 18 Crank shaft 2. 10. 18 Thrust shaft 2. 10. 18 Tunnel shafts 2. 10. 18 Screw shaft 2. 10. 18 Propeller 30. 10. 18 Stern tube 6. 8. 18 Steam pipes tested 10. 10. 18 Engine and boiler seatings 5. 11. 18 Engines holding down bolts 8. 11. 18 Completion of pumping arrangements 16. 11. 18 Boilers fixed 6. 11. 18 Engines tried under steam 19. 11. 18 Completion of fitting sea connections 1. 11. 18 Stern tube 1. 11. 18 Screw shaft and propeller 11. 11. 18

Main boiler safety valves adjusted 18. 11. 18 Thickness of adjusting washers Jamb nuts No. 146 Material of Crank shaft Steel Identification Mark on Do. A.S.W. Material of Thrust shaft Steel Identification Mark on Do. No. 146 A.S.W. Material of Tunnel shafts Steel Identification Marks on Do. A.S.W. Material of Screw shafts Steel Identification Marks on Do. No. 146 A.S.W. Material of Steam Pipes Solid drawn Steel & Copper Test pressure 600 lbs. & 400 lbs. per sq. in.

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 "Himalaya Maru."

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

These Engines and Boilers have been constructed under Special Survey, in accordance with the Rules, and of good materials and workmanship. They have been securely fitted on board, and have been satisfactorily tried under steam.

The machinery of this vessel is eligible, in my opinion, for the record of LMC 11.18 in the Register Book.

Mean speed on trial when 1/2 loaded = 14.716 knots.

It is submitted that this vessel is eligible for THE RECORD. + LMC 11.18. F.D.

[Signature] 11/11/19

a. S. Williamson Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee £ 3:0:0 When applied for, Special £ 78:6:3 29th Nov. 1918 Donkey Boiler Fee £ Travelling Expenses (if any) £ 30th Nov. 1918

Committee's Minute FRI. 17 JAN. 1919

Assigned + LMC 11.18

F.D.

MAINTENANCE CERTIFICATE



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