

# REPORT ON MACHINERY.

Received at London Office

THU. 21 AUG. 1919

Date of writing Report 7<sup>th</sup> July 1919 When handed in at Local Office 7<sup>th</sup> July 1919 Port of **NAGASAKI.**

No. in Survey held at **NAGASAKI.** Date, First Survey 3<sup>rd</sup> Sept. 1918 Last Survey 24<sup>th</sup> June 1919  
Reg. Book. (Number of Visits 68)

on the s.s. "Genoa Maru" or "Suwazan Maru" Tons } Gross 6791  
Net 5001

Master **K. Ogura** Built at **Nagasaki** By whom built **Mitsubishi Zosen Kaisha** When built **1919**

Engines made at **Nagasaki** By whom made **Mitsubishi Zosen Kaisha** when made **1919.**

Boilers made at **Nagasaki** By whom made **Mitsubishi Zosen Kaisha** when made **1919.**

Registered Horse Power Owners **Nippon Yusen Kaisha** Port belonging to **Tokio**

Nom. Horse Power as per Section 28 **518** 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 1/2, 44 1/2, 75 3/8** Length of Stroke **48** Revs. per minute **82** Dia. of Screw shaft as per rule **15.96** 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 **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 liners are fitted, is the shaft lapped or protected between the liners **Yes** Length of stern bush **5'6 1/8"**

Dia. of Tunnel shaft as per rule **13.744** 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 collar **14.75** as fitted **14** as fitted **14.75** Dia. of Crank pin **15** State whether moveable **Yes** Total surface **96.8** sq. ft.

No. of Feed pumps **3** 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 Bellows 7 1/2 x 5 1/2, 2 Feed Pumps 9 1/2 x 7 1/2, 2 7 1/2 x 7 1/2** No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room **3 @ 3 1/2"** In Holds, &c. **No. 1 Hold 2 @ 3 1/2" No. 2 Hold 2 @ 3 1/2" Tunnel 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 **Below**

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 **Bilge pipes** How are they protected **With steel plates**

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 **Shelter deck**

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

Total Heating Surface of Boilers **5302.7** sq. ft. Is Forced Draft fitted **Yes** No. and Description of Boilers **2 Cylindrical single ended 15'0" x 11'6" 13'0" x 11'6"**

Working Pressure **200 lbs.** Tested by hydraulic pressure to **400 lbs.** Date of test **30<sup>th</sup> May 1919** No. of Certificate **91**

Can each boiler be worked separately **Yes** Area of fire grate in each boiler **65.4** 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 **203 lbs.** Are they fitted with easing gear **Yes**

Smallest distance between boilers or uptakes and bunkers or woodwork **18"** Mean dia. of boilers **15'3"** Length **11'6"** Material of shell plates **Steel**

Thickness **1 1/2"** 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 7/16"** Pitch of rivets **9 1/2" x 4 3/4"** Lap of plates or width of butt straps **2 1/2"**

Per centages of strength of longitudinal joint rivets **84.8** Working pressure of shell by rules **219 lbs.** Size of manhole in shell **16" x 12"**

Size of compensating ring **36 1/2" x 32 1/2" x 1 1/2"** No. and Description of Furnaces in each boiler **3 Morrison's suspension** Material **Steel** Outside diameter **4' 1 1/2"**

Length of plain part top **5** bottom **5** Thickness of plates crown **5/8"** bottom **5/8"** Description of longitudinal joint **Headed** No. of strengthening rings **1**

Working pressure of furnace by the rules **202 lbs.** Combustion chamber plates: Material **Steel** Thickness: Sides **1 1/2"** Back **2 1/2"** Top **2 1/2"** Bottom **1"**

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

Material of stays **Steel** Area at smallest part **2.02** sq. ins. Area supported by each stay **85** sq. ins. Working pressure by rules **213 lbs.** End plates in steam space: Material **Steel** Thickness **1 1/2"** Pitch of stays **16" x 2 1/2"** How are stays secured **Double nuts washers** Working pressure by rules **206 lbs.** Material of stays **Steel**

Area at smallest part **7.669** Area supported by each stay **344.4** sq. ins. Working pressure by rules **232 lbs.** Material of Front plates at bottom **Steel**

Thickness **7/8"** Material of Lower back plate **Steel** Thickness **3/2"** Greatest pitch of stays **14 1/2"** Working pressure of plate by rules **298 lbs.**

Diameter of tubes **3"** Pitch of tubes **4 1/2" x 4 1/8"** Material of tube plates **Steel** Thickness: Front **7/8"** Back **7/8"** Mean pitch of stays **8 3/8"**

Pitch across wide water spaces **13 1/2"** Working pressures by rules **242 lbs.** Girders to Chamber tops: Material **Steel** Depth and thickness of girder at centre **10 1/2" x 7/8" double** Length as per rule **32.4"** Distance apart **7 1/2" x 8"** Number and pitch of stays in each **3 @ 7 1/2"**

Working pressure by rules **315 lbs.** Steam dome: description of joint to shell **Yes** % of strength of joint **Yes**

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

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

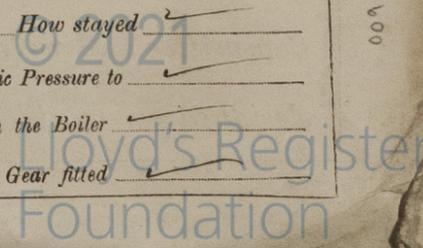
**SUPERHEATER.** Type **Yes** Date of Approval of Plan **Yes** Tested by Hydraulic Pressure to **Yes**

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

Material of Safety Valve **Yes** Pressure to which each is adjusted **Yes** Is Easing Gear fitted **Yes**

If not, state whether, and when, one will be sent? Is a Report also sent on the Hull of the ship?

009161-009164-0054



IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— 1 H.P. valve spindle, 1 L.P. valve spindle, 2 eccentric rods, 1 set each of H.P. I.P. & L.P. packing rings, 1 set each of metallic packings for piston rods & valve spindles, 1 set each of top and bottom brasses and bolts for one connecting rod, 20 total number of junk ring bolts, 1 complete set of coupling bolts, 1 complete set of main bearing bolts, 1 air pump rod, 1 set of air pump valves, 1 impeller spindle for circulating pump, 3 cylinder escape valve springs, 1 complete set of valves & seats for feed & bilge pumps, 1 complete set of valves & seats for main & donkey feed checks, 50 total number of condenser tubes, 50 total number of condenser ferrules, 100 assorted bolt nuts, 150 lbs. of assorted steel plates, 50 lbs. of assorted steel bars

The foregoing is a correct description,

NAGASAKI WORKS, MITSUBISHI ZOSEN KAISHA, LTD.

*W. Carr*  
GENERAL MANAGER

Manufacturer.

Dates of Survey while building: During progress of work in shops -- 1918 Sept. 3, 5. 1919 Jan. 16, 20, 27, 31. Feb. 1, 6, 7, 8, 15, 19, 21. Mar. 1, 7, 12, 17, 20, 26, 29. Apr. 1, 2, 4, 8. During erection on board vessel -- 1918 Sept. 9, 10, 12, 14, 16, 17, 21, 23, 26, 28, 29. 1919 May 2, 3, 5, 6, 8, 9, 10, 14, 15, 16, 20, 22, 26, 27, 29, 30, 31. June 2, 4, 5, 6. Total No. of visits (68)

Is the approved plan of main boiler forwarded herewith  Yes.

Dates of Examination of principal parts: Cylinders 21. 4. 1919 Slides 4. 6. 19 Covers 21. 4. 19 Pistons 4. 6. 19 Rods 4. 6. 19 Connecting rods 4. 6. 19 Crank shaft 20. 3. 19 Thrust shaft 2. 4. 19 Tunnel shafts 27. 10. 4. 19 Screw shaft 17. 12. 17 Propeller 29. 5. 19 Stern tube 29. 5. 19 Steam pipes tested 31. 5. 19 Engine and boiler seatings 16. 5. 19 Engines holding down bolts 9. 6. 19 Completion of pumping arrangements 17. 6. 19 Boilers fixed 7. 6. 19 Engines tried under steam 19. 6. 19 Completion of fitting sea connections 5. 6. 19 Stern tube 30. 5. 19 Screw shaft and propeller 2. 6. 19.

Main boiler safety valves adjusted 17. 6. 19 Thickness of adjusting washers *Jamb nuts*  
Material of Crank shaft *Steel* Identification Mark on Do. *No 150 A.S.W.* Material of Thrust shaft *Steel* Identification Mark on Do. *No 150 A.S.W.*  
Material of Tunnel shafts *Steel* Identification Marks on Do. *No 150 A.S.W.* Material of Screw shafts *Steel* Identification Marks on Do. *M.S. 1 R.O. B.*  
Material of Steam Pipes *Steel & Copper* Test pressure *600 lbs. & 400 lbs.*

Is an installation fitted for burning oil fuel  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 *"Kaian 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 7. 19** in the Register Book.

Mean speed on Trial in water ballast condition = 15.22 knots.

It is submitted that this vessel is eligible for THE RECORD. + LMC 6. 19. F.D.

*J.W.D.*  
23/8/19  
*J.P.R.*

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

The amount of Entry Fee *Yes* 30<sup>00</sup> : When applied for, *4 July 1919.*  
Special *Yes* 803<sup>25</sup> :  
Donkey Boiler Fee £ : :  
Travelling Expenses (if any) £ : : *8th July 1919.*

Committee's Minute FRI. 5-SEP. 1919  
Assigned *+ June 6. 19*

Certificate (if required) to be sent to Yokohama Office

The Surveyors are requested not to write on or below the space for Committee's Minute.

