

# REPORT ON MACHINERY.

Date of writing Report 20<sup>th</sup> May 1918 When handed in at Local Office 20<sup>th</sup> May 1918 Port of

Received at London Office THU. 11 JUL. 1918  
**NAGASAKI.**

No. in Survey held at **NAGASAKI.** Date, First Survey 1<sup>st</sup> Aug. 1917 Last Survey 16<sup>th</sup> May 1918  
Reg. Book. (Number of Visits 79)

on the s. s. "Tomimura Maru" Tons Gross 3810 Net 2343  
Master J. Okazaki 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 Mitsubishi Shoji Kaisha Port belonging to Tokio

Nom. Horse Power as per Section 28 342 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 23", 38" + 64" Length of Stroke 48" Revs. per minute 87 Dia. of Screw shaft as per rule 11.5" Material of screw shaft as fitted 15" steel

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' 1 3/8"

Dia. of Tunnel shaft as per rule 12.49" Dia. of Crank shaft journals as per rule 13.116" Dia. of Crank pin 14" Size of Crank webs 8 3/4" x 19 5/8" Dia. of thrust shaft under collars 13 1/2" Dia. of screw 16.6" Pitch of Screw 17.3" No. of Blades 4 State whether moveable Yes Total surface 76 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 2 Sizes of Pumps 1 Duplex 8" x 10" x 8" 1 Simplex 8" x 6" x 21" 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" No. 3 Hold 2 @ 3 1/2" No. 4 Hold 2 @ 3 1/2" Tunnel 1 @ 2 1/2"

No. of Bilge Injections 1 sizes 7" Connected to condenser, or to circulating pump Pump Is a separate Donkey Suction fitted in Engine room & size Yes, 4 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 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 Upper deck

### OILERS, &c.—(Letter for record S) Manufacturers of Steel Imperial Steel Works, & Kure Naval Works.

Total Heating Surface of Boilers 4394 sq. ft. Is Forced Draft fitted Yes No. and Description of Boilers 2 Single ended, Cylindrical

Working Pressure 200 lbs. Tested by hydraulic pressure to 400 lbs. Date of test 5.11.18 No. of Certificate 85

Can each boiler be worked separately Yes Area of fire grate in each boiler 54.31 sq. ft. No. and Description of Safety Valves to each boiler 2 Spring loaded Area of each valve 9.62 sq. in. 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 16 1/4" 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 3/4" Lap of plates or width of butt straps 20 1/2"

Percentages of strength of longitudinal joint rivets 88.6 plate 85.5 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 Suspension type Material Steel Outside diameter 3' 9 1/2"

Length of plain part top 9" bottom 16" Thickness of plates crown 9" bottom 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 8" x 11" Back 9" x 10 1/8" 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. in. Area supported by each stay 81.5 sq. in. Working pressure by rules 223 lbs. End plates in steam space: Material Steel Thickness 1 3/32" Pitch of stays 20" x 18" How are stays secured and washers Double nuts Working pressure by rules 214 lbs. Material of stays Steel

Area at smallest part 7.67 sq. in. Area supported by each stay 360 sq. in. Working pressure by rules 221 lbs. Material of Front plates at bottom Steel

Thickness 31/32" Material of Lower back plate Steel Thickness 31/32" Greatest pitch of stays 13 3/4" Working pressure of plate by rules 219 lbs.

Diameter of tubes 3 1/2" Pitch of tubes 4 1/2" x 4 3/8" Material of tube plates Steel Thickness: Front 31/32" Back 27/32" Mean pitch of stays 11 1/2"

Pitch across wide water spaces 13 3/4" Working pressures by rules 216 lbs. Girders to Chamber tops: Material Steel Depth and

Thickness of girder at centre 10 1/2" x 5" double Length as per rule 31.9" Distance apart 7 3/4" x 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

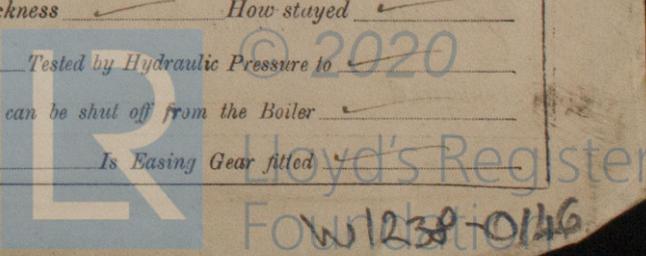
Diameter Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes

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

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



IS A DONKEY BOILER FITTED? *h.*

If so, is a report now forwarded?

Sept. 13.

SPARE GEAR. State the articles supplied:— As per Rule, and in addition one H.P. valve spindle, one L.P. valve spindle, one air pump rod, one impeller spindle for circulating pump, one set each of H.P., I.P., & L.P. packing rings, 13 junk ring bolts, two safety valve springs, one set of air pump valves, one set of valves, seats & spindles for main & aux. check valves for one boiler, one set of eccentric rods & bolts, 13 condenser tubes & 37 ferrules, &c.

The foregoing is a correct description,  
NAGASAKI WORKS, MITSUBISHI ZOSEN KAISHA LTD.

*[Signature]* GENERAL MANAGER

Manufacturer.

1917 Aug. 1, 21, 23, 24, 25, 28, Sept. 8, Oct. 2, Nov. 1, 6, 24, 30, Dec. 7, 12, 13, 14, 20, 21.  
1918 Jan. 8, 15, 29, 30, 31, Feb. 2, 6, 7, 8, 9, 13, 19, 20, 21, 22, 27, March 1, 5, 12, 14, 15, 16, 18, 19, 20, 21, 25, 26, 28, 29, 30, April 2, 4, 5, 6, 8, 9, 10, 11, 12, 13, 15, 16, 17, 18, 19, 20, 22, 24, 25, 26, 27, 29, May 1, 2, 4, 8, 10, 16.  
Total No. of visits **79**

Is the approved plan of main boiler forwarded herewith *Yes.*

" " " donkey " " "

Dates of Examination of principal parts—Cylinders 11. 4. 18 Slides 16. 4. 18 Covers 11. 4. 18 Pistons 16. 4. 18 Rods 16. 4. 18  
Connecting rods 16. 4. 18 Crank shaft 5. 4. 18 Thrust shaft 5. 4. 18 Tunnel shafts 5. 4. 18 Screw shaft 5. 4. 18 Propeller 16. 4. 18  
Stern tube 9. 4. 18 Steam pipes tested 27. 4. 18 Engine and boiler seatings 19. 4. 18 Engines holding down bolts 26. 4. 18  
Completion of pumping arrangements 2. 5. 18 Boilers fixed 22. 4. 18 Engines tried under steam 8. 5. 18  
Completion of fitting sea connections 20. 4. 18 Stern tube 17. 4. 18 Screw shaft and propeller 20. 4. 18  
Main boiler safety valves adjusted 11. 5. 18 Thickness of adjusting washers *No washers, brass jamb nuts.*  
Material of Crank shaft *Steel* Identification Mark on Do. *144 A.S.W.* Material of Thrust shaft *Steel* Identification Mark on Do. *144 A.S.W.*  
Material of Tunnel shafts *Steel* Identification Marks on Do. *144 A.S.W.* Material of Screw shafts *Steel* Identification Marks on Do. *144 A.S.W.*  
Material of Steam Pipes *Solid drawn steel and copper* Test pressure *600 lbs. & 2100 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 *"Tomura 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 5. 18**, in the Register Book.*

*Mean speed of 6 Runs on Trial when  $\frac{1}{3}$  loaded = 14.097 knots.*

It is submitted that  
this vessel is eligible for  
**THE RECORD. + LMC. 5. 18. F.D.**

*[Signature]*  
17/4/18  
*[Signature]*

The amount of Entry Fee ... £ 3.0.0 : When applied for,  
Special ... £ 55.13.0 : 20<sup>th</sup> May 1918  
Donkey Boiler Fee ... £ : : When received,  
Travelling Expenses (if any) £ : : 22<sup>nd</sup> May 1918

*a.s. Williams*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE 16 JUL 1918

Assigned

*+ LMC 5. 18*

*F. D.*

MINUTE CERTIFICATE  
WRITTEN.

REPORT

Port of **NAGASAKI**

No. in on the Iron- or  
Reg. Book Built at

Owners *Mitsubishi*

Card No. *276* Elec

DESCRIPTION OF DYNAMO

*One set of a c  
with a*

Capacity of Dynamo

Where is Dynamo fixed

Position of Main Switch B

Positions of auxiliary switch

*two amidships*

If cut outs are fitted on m

circuits *Yes.*

If vessel is wired on the a

Are the cut outs of non-ori

Are all cut outs fitted in e

are permanent instr

Are all switches and cut-o

Total number of lights p

A *Bridge deck Ca*

B *Forward*

C *aft*

D *Engine room*

E

*Two Mast head light*

*One Morse code*

*Two Side light*

If are lights, what prote

Where are the switches

DESCRIPTION OF CA

Main cable carrying

Branch cables carrying

Branch cables carrying

Leads to lamps carrying

Cargo light cables carryi

DESCRIPTION OF I

*Wire cables are*

*rubber coated to*

*and armour*

Joints in cables, how m

*and distribut*

*in cast iron b*

Are all the joints of c

*made in bunkers,*

Are there any joints i

How are the cables le

*are protected*



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Foundation

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