

REPORT ON MACHINERY.

No. 1226

11th March 1919

Date of writing Report 2nd April 1919 When handed in at Local Office 2nd April 1919 Port of NAGASAKI
 No. in Survey held at NAGASAKI Date, First Survey 15th Jan'y. 1918 Last Survey 22nd March 1919
 Reg. Book. on the s.s. "Kaian Maru" (Number of Visits 75)

Master J. Hayashi Built at Nagasaki By whom built Mitsubishi Zosen Kaisha Tons { Gross 5732
 Engines made at Nagasaki By whom made Mitsubishi Zosen Kaisha Net 3583
 Boilers made at Nagasaki By whom made Mitsubishi Zosen Kaisha When built 1919
 Registered Horse Power 490 Owners Katsuda Steamship Co. when made 1919
 Nom. Horse Power as per Section 28 490 Is Refrigerating Machinery fitted for cargo purposes No. Port belonging to Mitsugahama
 Is Electric Light fitted Yes.

ENGINES, &c.—Description of Engines

Triple Expansion

No. of Cylinders 3No. of Cranks 3

Dia. of Cylinders 26 1/2 44 1/2 57 1/2 Length of Stroke 48 Revs. per minute 80 Dia. of Screw shaft as per rule 15.98 Material of 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 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 1/2"

Dia. of Tunnel shaft as per rule 13.74 Dia. of Crank shaft journals as per rule 14.127 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 1/2 Pitch of Screw 19.9 No. of Blades 4 State whether moveable Yes 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 Ballast 1 General Service 1 Duplex 7 1/2 x 5 1/2
 In Engine Room 3 @ 3 1/2 2 Feed Sump 9 1/2 x 7 x 2 1/2 No. and size of Suctions connected to both Bilge and Donkey pumps
2 @ 3 1/2 No. 3 hold 2 @ 3 1/2 No. 4 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 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 Yes

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 B) Manufacturers of Steel Yawata Steel Works

Total Heating Surface of Boilers 6499 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 15th Feb'y. 1919 No. of Certificate 89

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. 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 9' 5" Mean dia. of boilers 14' 0" Length 11' 6" Material of shell plates Steel

Thickness 1 1/2" Range of tensile strength 25 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 x 4 1/2 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 1/2 No. and Description of Furnaces in each boiler 3 Monson's Material Steel Outside diameter 3' 9 1/4"

Length of plain part top bottom Thickness of plates crown 7 bottom 11 Description of longitudinal joint Welded No. of strengthening rings 3

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 1 1/2"

Pitch of stays to ditto: Sides 11 1/2 x 7 1/2 Back 9 x 10 1/2 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 81.6 sq. in. Working pressure by rules 223 lbs. End plates in steam space:

Material Steel Thickness 1 1/2" Pitch of stays 15 x 20 How are stays secured Double nuts and washers Working pressure by rules 214 lbs. Material of stays Steel

Area at smallest part 8.295 Area supported by each stay 360 sq. in. Working pressure by rules 239 lbs. Material of Front plates at bottom Steel

Thickness 1" Material of Lower back plate Steel Thickness 1 1/2" Greatest pitch of stays 13 1/4" Working pressure of plate by rules 241 lbs.

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

Pitch across wide water spaces 13 1/2" Working pressures by rules 229 lbs. Girders to Chamber tops: Material Steel Depth and
 thickness of girder at centre 10 1/2 x 7 1/2 double 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 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

UPERHEATER. 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

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

IS A DONKEY BOILER FITTED?

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., L.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 & rods for main & donkey feed checks, 3 cylinder escape valves & springs, 1 safety valve spring &

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

GENERAL MANAGER.

Manufacturer.

Dates of Survey while building
During progress of work in shops -- 1918 Jan. 15. 20. Feb. 20. March 1. 14. 28. April 2. 9. 16. 20. May 22. 27. 29. 31. June 12. 17. Aug 17. 19. Sept. 3. 4. 9. 13. 24. 26. Oct. 2. 4. 12. 15. Nov. 5. 8. 13. 14. 20. 26. 30. Dec. 4. 13. 23.
During erection on board vessel -- 1919 Jan. 9. 17. 20. 22. 27. 30. 31. Feb. 1. 4. 6. 7. 10. 13. 14. 15. 17. 18. 19. 20. 21. 22. 24. 25. 27. 28.
March 1. 4. 5. 7. 11. 12. 13. 15. 20. 21. 22.
Total No. of visits 75

Is the approved plan of main boiler forwarded herewith Yes.

" " " donkey " " "

Dates of Examination of principal parts—Cylinders 4.10.2.19 Slides 25.2.19 Covers 4.10.2.19 Pistons 25.2.19 Rods 25.2.19
Connecting rods 25.2.19 Crank shaft 25.2.19 Thrust shaft 21.11.17 Tunnel shafts 3.6.18 Screw shaft 2.2.19 Propeller 19.2.19
Stern tube 27.1.19 Steam pipes tested 4.7.3.19 Engine and boiler seatings 18.2.19 Engines holding down bolts 5.3.19
Completion of pumping arrangements 12.3.19 Boilers fixed 4.3.19 Engines tried under steam 15.3.19
Completion of fitting sea connections 27.2.19 Stern tube 34.2.19 Screw shaft and propeller 27.2.19.
Main boiler safety valves adjusted 12.3.19 Thickness of adjusting washers Jam & nuts
Material of Crank shaft Steel Identification Mark on Do. M.W. Material of Thrust shaft Steel Identification Mark on Do. MT
Material of Tunnel shafts Steel Identification Marks on Do. M.I. Material of Screw shafts Steel Identification Marks on Do. N.T. & ASV
Material of Steam Pipes Copper Test pressure 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 "Kohnan 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 3.19 in the Register Book

Mean speed on Trial in water ballast condition = 14.503 Knots.

It is submitted that
this vessel is eligible for
THE RECORD. + LMC 3.19. F.D.

The amount of Entry Fee ... £ 3.0.0 : When applied for,
Special ... £ 77.18.3 : 27th March 1919
Donkey Boiler Fee ... £ : : When received,
Travelling Expenses (if any) £ : : 2nd April 1912

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

WED. JUN. 11. 1919

Assigned

+ LMC 3.19

L.D.

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