

## REPORT ON MACHINERY.

No. 2017

Received at London Office

FRI. 13 JUL. 1917

Date of writing Report 5 June 1917 When handed in at Local Office 10 Port of Nobe  
No. in Survey held at Nobe Date, First Survey 20 Nov. 1915 Last Survey 31st May 1917  
Reg. Book. on the Steel Single Screw Steamer "Jaian Maru" (Number of Vessels 17 + Gross 3135 Tons) Net 1849  
Master N. Segawa Built at Nobe By whom built The Kawasaki Dryd Co. Ltd. When built 1917  
Engines made at Nobe By whom made The Kawasaki Dryd Co. Ltd. when made 1917  
Boilers made at Nobe By whom made do when made do  
Registered Horse Power Owners The Nippon Yusen Kaisha Port belonging to Tokio  
Nom. Horse Power as per Section 28 285 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders Three No. of Cranks Three  
Dia. of Cylinders 22" : 36" : 61" Length of Stroke 42" Revs. per minute 70 Dia. of Screw shaft as per rule 13.66 Material of Steel  
the screw shaft fitted with a continuous liner the whole length of the stern tube No liner 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 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  
screws are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 5' 2 1/4"  
Dia. of Tunnel shaft as per rule 11.52 Dia. of Crank shaft journals as per rule 12.1 Dia. of Crank pin 12 1/4" Size of Crank webs 8 x 17 1/2" Dia. of thrust shaft under  
bearings 12 1/4" Dia. of screw 16" 0 Pitch of Screw 16.6" 6 18.6" No. of Blades 4 State whether moveable Yes Total surface 90  
No. of Feed pumps 2 Diameter of ditto 3 1/2" Stroke 24" Can one be overhauled while the other is at work Yes  
No. of Bilge pumps 2 Diameter of ditto 3 1/2" Stroke 24" Can one be overhauled while the other is at work Yes  
No. of Donkey Engines Four Sizes of Pumps Gen. Duty 9 1/2" 21" Single No. and size of Suctions connected to both Bilge and Donkey pumps  
Engine Room Three 3 1/2" & one 3" to tunnel well In Holds, &c. No 1 hold, two 3 1/2" No 2 hold, two 3 1/2"  
Small duty pump 6 1/2" 4 1/2" 10" Sing. Duty No 3 hold, two 4"  
No. of Bilge Injections 1 sizes 7 1/2" Connected to condenser, or to circulating pump Cir. p. Is a separate Donkey Suction fitted in Engine room & size 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 Larger valves; smaller cocks  
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 Upper gratings in E. Rm.  
MANUFACTURERS, &c.—(Letter for record S) Manufacturers of Steel Beardmore & Co Leeds Forge

HEATING SURFACE OF BOILERS 3614 Is Forced Draft fitted Yes No. and Description of Boilers Two Single-ended  
Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 25 May 1916 No. of Certificate Tests witnessed by Government Surveyors  
Can each boiler be worked separately Yes Area of fire grate in each boiler 49.5 No. and Description of Safety Valves to  
boiler Two Direct spring Area of each valve 3 3/4 dia Pressure to which they are adjusted 205 lbs Are they fitted with easing gear Yes  
Least distance between boilers or uptakes and bunkers or woodwork 12" Mean dia. of boilers 13' 0" Length 11' 6" Material of shell plates Steel  
Thickness 1 1/4" Range of tensile strength 28 to 32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Double  
seams Double riv. Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 8 5/16" & 4 5/32" Edge of plates or width of butt straps 18" x 1 1/4"  
Percentages of strength of longitudinal joint rivets 96.6 Working pressure of shell by rules 213 lbs Size of manhole in shell 16" x 12"  
of compensating ring 7 1/2" x 1 3/8" No. and Description of Furnaces in each boiler Three Morrison Material Steel Outside diameter 41 9/16"  
Thickness of plates 1 1/2" Description of longitudinal joint Weld No. of strengthening rings —  
Working pressure of furnace by the rules 220 lbs Combustion chamber plates: Material Steel Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 7/8"  
of stays to ditto: Sides 7 3/8" x 8 1/2" Back 7 3/8" x 8 1/2" Top 7 3/8" x 7 3/4" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 214 lbs  
Material of stays Steel Area at smallest part 1.79 Area supported by each stay 7 3/8" x 8 1/2" Working pressure by rules 234 lbs End plates in steam space:  
Material Steel Thickness 1 1/16" Pitch of stays 23 1/4" x 19" How are stays secured Double nut Working pressure by rules 205 lbs Material of stays Steel  
at smallest part 10.12 Area supported by each stay 23 1/4" x 19" Working pressure by rules 205 lbs Material of Front plates at bottom Steel  
Thickness 13/16" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 13 3/4" x 19" Working pressure of plate by rules 200 lbs  
Pitch of tubes 4 3/8" & 4 7/16" Material of tube plates Steel Thickness: Front 13/16" Back 3/4" Mean pitch of stays 8 13/16"

Working pressures by rules 200 lbs Girders to Chamber tops: Material Steel Depth and  
Distance apart 7 3/4" Number and pitch of stays in each 3 @ 7 1/4"  
Working pressure by rules 234 Steam dome: description of joint to shell None % of strength of joint  
Thickness of shell plates — Material — Description of longitudinal joint — Diam. of rivet holes —  
Working pressure of shell by rules — Crown plates — Thickness — How stayed —  
Type — 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 —

W1593-0033



IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— Set crosshead brasses & bolts & nuts. Set crank pin brass & bolts & nuts. 2 main bearing bolts & nuts. Set coupling bolts & nuts.  $\frac{1}{4}$  total pin & nut bolts. Set packing rings & springs for each piston & piston valve. Slide valve rod each side. Pair ecc. rods & straps.  $\frac{1}{32}$  condenser tubes &  $\frac{1}{20}$  ferrules. Air pump rod & nut. A.P. head valves. Centrif. fan & shaft. Set suction & delivery valves for feed pump & set for bilge pump.  $\frac{1}{3}$  Crank shaft. 1 Propeller shaft. 2 Bronze propeller blades. Iron & bolts & nuts of assorted sizes. etc.

The foregoing is a correct description,

Kawasaki Dockyard Co., Ltd.

Per J. Mallaputra

Manufacturer.

Dates of Survey while building: During progress of work in shops -- 20 Nov. 13.15 Dec 1915. for shafting. Sundry dates in 1916 not recorded as vessel was not intended for classification. During erection on board vessel -- 18. 24. 25. 29 Jan. 2. 3. 9. 12. 15. 27 Feb. 1st March. & 22nd 29th & 31st May 1917. Total No. of visits 17+ Is the approved plan of main boiler forwarded herewith Yes

Dates of Examination of principal parts—Cylinders overhauled after trial & Exam'd 1/3/17 donkey " " " None Slides Covers Pistons Rods Connecting rods Crank shaft 15/12/15 Thrust shaft 15/12/15 etc Tunnel shafts 15/12/15 etc Screw shaft 15/12/15 etc Propeller 18/1/17 etc Stern tube Dec 1916 Steam pipes tested 3rd & 12th Feb 17 Engine and boiler seatings 24/1/17 Engines holding down bolts 9/2/17 Completion of pumping arrangements 15/2/17 Boilers fixed 29/1/17 Engines tried under steam 27/2/17 Completion of fitting sea connections 18/1/17 Stern tube 18/1/17 Screw shaft and propeller 24/1/17 Main boiler safety valves adjusted 16th Feb. 1917 Thickness of adjusting washers 1st & 2nd nuts Interval, nut to set head 3/16 1/8 1/16 1/4 S. Bl. P. Bl. F. A. F. A. Material of Crank shaft Steel Identification Mark on Do. LLOYD'S Material of Thrust shaft Steel Identification Mark on Do. LLOYD'S Material of Tunnel shafts Steel Identification Marks on Do. 15.12.15 ALJ Material of Screw shafts Steel Identification Marks on Do. 15.12.15 ALJ Material of Steam Pipes Steel & c.s. flanges riveted on Test pressure 600 lbs. 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 No. If so, state name of vessel

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

Please see Kobe letter of 2nd Feb. & London reply of 19th March.

The machinery & boilers have been seen in all stages while under construction side by side with engines & boilers intended for classification & the materials & workmanship are good. The shafting was made under survey at the Mitsubishi Dryd. & S. Works, Kobe.

A report upon the Electric lighting is forwarded.

The machinery is in my opinion eligible for the notation + LMC 5.17.

It is submitted that this vessel is eligible for THE RECORD. + LMC 5.17.

F.D. ARL

J.W.D. 16.7.17.

Arthur L. Jones

Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... Yen 20 : When applied for, Special ... Yen 514 : 20.3.1917 Shafting ... Yen 120 : 21.12.15 Donkey Boiler Fee ... : When received, Travelling Expenses (if any) £ : 23.3.1917

Committee's Minute

Assigned

+ L.M.C. 5.17 F.D.

MACHINERY CERTIFICATE WRITTEN.



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