

# REPORT ON MACHINERY.

Port of Kobe

Received at London Office

No. in Survey held at Kobe Date, first Survey 8 July 1907 Last Survey 30 Jan'y 1909

Reg. Book. 1175 on the Steel Twin Screw Steamer "Mishima Maru" (Number of Vents         )

Master A. E. Moses Built at Kobe By whom built The Kawasaki Dockyard Co. Ltd. Tons Gross 8500  
Net 5270

Engines made at Kobe By whom made The Kawasaki Dockyard Co. Ltd. when made 1909-1900

Boilers made at do By whom made do when made do

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

Nom. Horse Power as per Section 28 975 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion, Two sets No. of Cylinders Six No. of Cranks Six

Dia. of Cylinders 25" : 41 1/2" : 69" Length of Stroke 48" Revs. per minute 85 Dia. of Screw shaft as per rule 14.39 Material of screw shaft Iron

Is the screw shaft fitted with a continuous liner the whole length of the stern tube Yes 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          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 6" 0 1/8"

Dia. of Tunnel shaft as per rule 13.41 Dia. of Crank shaft journals as per rule 14.08 Dia. of Crank pin 14 3/4" Size of Crank webs 9 1/2" x 26 1/2" Dia. of thrust shaft under

collars 14 3/8" Dia. of screw 16" 6" Pitch of Screw 18" 0" to 19" 0" No. of Blades 4 State whether moveable Yes Total surface 85" each screw

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

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

No. of Donkey Engines four Sizes of Pumps Ballast 10" x 13" x 12" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Three 3 1/2" General 8" x 5" x 8" Small 7 1/2" x 4 1/2" x 6" In Holds, &c. Two 3 1/2" to each of Nos. 1, 2, 3, 4 & 5 holds

and to cross bunker. Two 3" to tunnels & one 3" to tunnel well.

No. of Bilge Injections 2 sizes 10 1/2" Connected to condenser, or to circulating pump As per Is a separate Donkey Suction fitted in Engine room & size Yes, 4"

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         

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

Dates of examination of completion of fitting of Sea Connections 10.4.08 of Stern Tube 16.4.08 Screw shaft and Propeller 18.4.08

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper Eng. Platform

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Plater & Colville & Sons Ltd. Furnaces; Leeds Forge.

Total Heating Surface of Boilers 14317 Is Forced Draft fitted Yes No. and Description of Boilers Six Single Ended

Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 23.4.08 No. of Certificates 2 & 3

Can each boiler be worked separately Yes Area of fire grate in each boiler 56.37 No. and Description of Safety Valves to

each boiler Two Direct Spring Area of each valve 9.94 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 1" 6" Mean dia. of boilers 14" 3" Length 11" 6" Material of shell plates Steel

Thickness 1 1/32" Range of tensile strength 28 to 32 tons Are the shell plates welded or flanged No. Descrip. of riveting: cir. seams Double riv.

long. seams Double riv. Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 10" x 5" Lap of plates or width of butt straps 1" 10" x 1 1/32"

Per centages of strength of longitudinal joint 86.6 Working pressure of shell by rules 233 lbs Size of manhole in shell 16" x 12" 9 1/8"

Size of compensating ring 36" x 17" x 1 1/32" No. and Description of Furnaces in each boiler 3 Morrison bulb Material Steel Outside diameter 46 1/4"

Length of plain part          Thickness of plates 5/8" Description of longitudinal joint Weld. No. of strengthening rings         

Working pressure of furnace by the rules 207 lbs Combustion chamber plates: Material Steel Thickness: Sides 11/16" Back 11/16" Top 11/16" Bottom 15/16"

Pitch of stays to ditto: Sides 9 1/2" x 7 1/2" Back 8 1/2" x 8 1/2" Top 9" x 8 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 220 lbs

Material of stays Steel Diameter at smallest part 2.36" Area supported by each stay 9" x 8 1/2" Working pressure by rules 246 lbs End plates in steam space:

Material Steel Thickness 1 1/32" Pitch of stays 16 1/2" x 19 1/4" How are stays secured Double nuts Working pressure by rules 220 lbs Material of stays Steel

Diameter at smallest part 3 1/8" Area supported by each stay 16 1/2" x 19 1/4" Working pressure by rules 240 lbs Material of Front plates at bottom Steel

Thickness 3/4" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 13 3/8" Working pressure of plate by rules 200 lbs

Diameter of tubes 3" Pitch of tubes 4 7/16" x 4 1/8" Material of tube plates Steel Thickness: Front 13/16" Back 3/4" Mean pitch of stays 8 7/16"

Pitch across wide water spaces 13 3/8" Working pressures by rules 200 lbs Girders to Chamber tops: Material C. Steel Depth and

thickness of girder at centre 10" x 1 3/4" Length as per rule 29 1/2" Distance apart 8 1/4" Number and pitch of stays in each Two at 9"

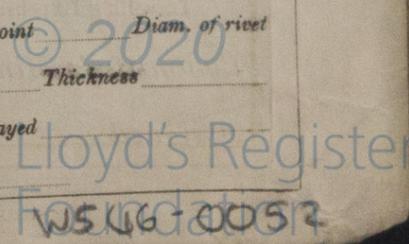
Working pressure by rules 200 + Superheater or Steam chest; how connected to boiler          Can the superheater be shut off and the boiler worked

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

holes          Pitch of rivets          Working pressure of shell by rules          Diameter of flue          Material of flue plates          Thickness         

If stiffened with rings          Distance between rings          Working pressure by rules          End plates: Thickness          How stayed         

Working pressure of end plates          Area of safety valves to superheater          Are they fitted with easing gear         



VERTICAL DONKEY BOILER— Manufacturers of Steel

No. \_\_\_\_\_ Description No Donkey Boiler.

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_

Working pressure tested by hydraulic pressure to \_\_\_\_\_ Date of test \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of Safety \_\_\_\_\_

Valves \_\_\_\_\_ No. of Safety Valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ Date of adjustment \_\_\_\_\_

If fitted with easing gear \_\_\_\_\_ If steam from main boilers can enter the donkey boiler \_\_\_\_\_ Dia. of donkey boiler \_\_\_\_\_ Length \_\_\_\_\_

Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_ Range of tensile strength \_\_\_\_\_ Descrip. of riveting long. seams \_\_\_\_\_

Dia. of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ Rivets \_\_\_\_\_ Plates \_\_\_\_\_

Working pressure of shell by rules \_\_\_\_\_ Thickness of shell crown plates \_\_\_\_\_ Radius of do. \_\_\_\_\_ No. of stays to do. \_\_\_\_\_ Dia. of stays \_\_\_\_\_

Diameter of furnace Top \_\_\_\_\_ Bottom \_\_\_\_\_ Length of furnace \_\_\_\_\_ Thickness of furnace plates \_\_\_\_\_ Description of joint \_\_\_\_\_

Working pressure of furnace by rules \_\_\_\_\_ Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_

Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

SPARE GEAR. State the articles supplied:— 4 Bolts & nuts for top end connecting rods, & 2 for bottom end of 2 main bearing bolts & nuts. 1 set coupling bolts & nuts. 1 set feed & bilge pump valves. 1 set packing for each piston, each engine. 100 Assorted bolts & nuts. Iron of various sizes. 2 Tail shafts. 1 crank shaft. 4 Propeller blades & 24 studs. 2 Stern bushes. 1 Pair main bearing bushes. 1 Pr. crank pin brasses. 1 Pr. cross head brasses. 1 Piston rod. 1 Slide valve rod. 2 Guide shoes. Condenser & boiler etc. etc.

The foregoing is a correct description, Y. Kawasaka Manufacturer. Vice President.

Dates of Survey while building: During progress of work in shops— From July 1907 to June 1908  
 During erection on board vessel— From June 1908 to January 1909  
 Total No. of visits Continuous attendance. Is the approved plan of main boiler forwarded herewith Yes

Dates of Examination of principal parts—	Cylinders	4.2.08	Slides	26.3.08	Covers	2.5.08	Pistons	23.3.08	Rods	4.11.08	
Connecting rods	31.10.08	Crank shaft	23.12.07	Thrust shaft	23.12.07	Tunnel shafts	9.12.07	Screw shaft	28.2.08	Propeller	3.3.08
Stern tube	19.3.08	Steam pipes tested	2.2.08	Engine and boiler seatings	15.5.08	Engines holding down bolts	12.6.08	Engines tried under steam	26 Dec. 1908		
Completion of pumping arrangements	11.1.09	Boilers fixed	24.10.08	Engines holding down bolts	12.6.08	Engines tried under steam	26 Dec. 1908				
Main boiler safety valves adjusted	27 & 29 Jan. 09	Thickness of adjusting washers	Locknuts	7/16 5 1/2" clearance before nuts & heads of nuts							
Material of Crank shaft	Steel	Identification Mark on Do.	1950 AF	Material of Thrust shaft	Steel	Identification Mark on Do.	1950 A				
Material of Tunnel shafts	Steel	Identification Marks on Do.	1950 AF	Material of Screw shafts	Lockfast	Identification Marks on Do.	4556				
Material of Steam Pipes	Steel & riveted steel flanges	Test pressure	400 lbs.								

General Remarks (State quality of workmanship, opinions as to class, &c.) The machinery has been made under special survey, the Rules have been complied with & the workmanship has been found good.

The whole of the shafting, excepting the propeller shafts, has been made & machined by Messrs W Beardmore & Co.

The propeller shafts have been made by Messrs Richardson Westgarth & Co. of lockfast iron.

The cylinders have been tested by water pressure to 290 lbs (H.P.) 200 lbs (L.P.) & 100 lbs per sq in (L.P.) & the Condensers (cylindrical & of cast iron) to 30 lbs per sq in.

Howden's system of forced draft is fitted.  
The vessel ran a satisfactory trial.  
The Report on Electric lighting, will be forwarded soon.

It is submitted that this vessel is eligible for THE RECORD + LMC. 1.09. Elec. light F.D.  
Arthur Jones  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee	£ 30.00	3	When applied for,	29.1.1909
Special	£ 105.00		When received,	2.2.1909
Donkey Boiler Fee	£			
Travelling Expenses (if any)	£			

Committee's Minute  
 Assigned  
 TUES. 2 MAR 1909  
 L.M.B. 1.09  
 Elec. light F.D.



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