

# REPORT ON MACHINERY.

Received at London Office

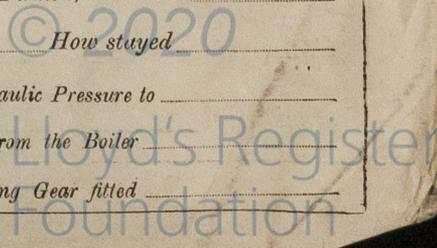
Date of writing Report 6<sup>th</sup> Jan'y 1919 When handed in at Local Office 19 Port of Kobe  
 No. in Survey held at Osaka Date, First Survey 13 March 1918 Last Survey 7<sup>th</sup> Jan'y 1919  
 Reg. Book. on the Steel Single Screw Steamer "Sutabaya Maru" Number of Visits 37 Gross 4386  
 Master S. Yano Built at Osaka By whom built The Osaka Iron Works, Ltd. When built 1918 Net 2730  
 Engines made at Osaka By whom made The Osaka Iron Works, Ltd. when made 1918 Yard No. 922  
 Boilers made at do By whom made do when made do  
 Registered Horse Power 390 Owners The Osaka Shosen Kaisha Port belonging to Osaka  
 Nom. Horse Power as per Section 28 390 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 3  
 Dia. of Cylinders 24" 41" 67" Length of Stroke 48" Revs. per minute 65 Dia. of Screw shaft 13.96 Material of screw shaft Steel  
 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 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 Tightly fitted two liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 5" 4"  
 Dia. of Tunnel shaft 12.46 Dia. of Crank shaft journals 13.09 Dia. of Crank pin 13 1/2" Size of Crank webs 8 1/2" x 25" Dia. of thrust shaft under collars 13 1/4" Dia. of screw 17.0" Pitch of Screw 17.0" No. of Blades 4 State whether moveable No. Total surface 90 sq ft  
 No. of Feed pumps Two Diameter of ditto 4" Stroke 25" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps Two Diameter of ditto 4 1/2" Stroke 25" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines Two Sizes of Pumps Bal. 9 1/2" x 12" x 10" dup. No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room Well 3 1/2" Two wings 3 1/2" Ser. 7 1/2" x 5 1/2" x 6" "In Holds, &c. Nos. 1 & 2 holds Each 3 1/2" cen & two 2 3/4" wings  
Tunnel well 3 1/2" After (No 3) hold, two 3 1/2" cen & two 2 3/4" wings.  
 No. of Bilge Injections 1 sizes 7" Connected to condenser, or to circulating pump Cir. p. 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 Large 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 Eng. Rm. upper platform

**BOILERS, &c.**—(Letter for record S.) Manufacturers of Steel Dukens Iron & Steel Co. Allegheny Steel Co.  
Beighton's Patent Fire & Tube Co.  
 Total Heating Surface of Boilers 5400 Is Forced Draft fitted Yes No. and Description of Boilers Two Single Ended  
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 30/10/18: 3/11/18 No. of Certificate LLOYD'S M.S.D. TEST 360 LBS  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 63 1/4 sq ft No. and Description of Safety Valves to each boiler Two Direct Spring Area of each valve 3" dia Pressure to which they are adjusted 185 lbs Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 12" Mean dia. of boilers 15' 0" Length 12' 0" 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 long. seams Double  
 Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 9" x 11 1/2" Top of plates or width of butt straps 19 1/2" x 1 1/8"  
 Per centages of strength of longitudinal joint rivets 89.25 Working pressure of shell by rules 188 lbs Size of manhole in shell 12" x 16"  
 plate 85.41  
 Size of compensating ring 2' 10" x 3' 2" No. and Description of Furnaces in each boiler 3 Beighton's Material Steel Outside diameter 48 1/4"  
 Length of plain part top 19 1/2" Thickness of plates bottom 19 1/2" Description of longitudinal joint Weld No. of strengthening rings 0  
 Working pressure of furnace by the rules 199 Combustion chamber plates: Material Steel Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 7/8"  
 Pitch of stays to ditto: Sides 8 x 8 1/2" Back 8 1/2 x 8 1/2" Top 9 x 8" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 187 lbs  
 Material of stays Steel Area at smallest part 1.79 sq ft Area supported by each stay 8 1/2" x 8 1/2" Working pressure by rules 187 lbs End plates in steam space: Material Steel Thickness 1 1/2" Pitch of stays 18 x 20" How are stays secured Double Working pressure by rules 194 lbs Material of stays Steel  
 Area at smallest part 7.5 sq ft Area supported by each stay 18 x 20" Working pressure by rules 216 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 3/4" bottom Working pressure of plate by rules 180 lbs  
 Diameter of tubes 3" Pitch of tubes 4 1/2" 4 1/4" Material of tube plates Steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 9 1/2"  
 Pitch across wide water spaces 13 1/4" Working pressures by rules 180 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9 1/2" x 7" Length as per rule 34" Distance apart 9" Number and pitch of stays in each 3 @ 8"  
 Working pressure by rules 212 lbs Steam dome: description of joint to shell 0 % of strength of joint 0  
 Diameter 0 Thickness of shell plates 0 Material 0 Description of longitudinal joint 0 Diam. of rivet holes 0  
 Pitch of rivets 0 Working pressure of shell by rules 0 Crown plates 0 Thickness 0 How stayed 0

**SUPERHEATER.** Type None Date of Approval of Plan 0 Tested by Hydraulic Pressure to 0  
 Date of Test 0 Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler 0  
 Diameter of Safety Valve 0 Pressure to which each is adjusted 0 Is Easing Gear fitted 0

W1350-0180



IS A DONKEY BOILER FITTED? No.

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

4 Crosshead bolts & nuts. ✓ Set valve spindles Set feed check valves & seats  
 2 Crank pin bolts & nuts. ✓ Set eccentric rods 2 Safety valves & springs  
 Set coupling bolts & nuts ✓ Air pump rod Assorted bolts & nuts ✓  
 2 main bearing bolts & nuts. ✓ Circulating pump rod Steel plate Etc. etc. ✓  
 Piston springs for all pistons ✓ Set feed & air pump valves ✓  
 Crank pin & Crosshead brasses. ✓ + seats.

The foregoing is a correct description,



*[Signature]*

Dates of Survey while building  
 During progress of work in shops -- 13.30 Mar. 5.18.23 Apr. 1.10.22 May 10.20.29 June 5.9.16 July 6.9.13.27.26.28.29 August  
 During erection on board vessel --- 16.18.25.30. Sept 3.8.10.24.30 Oct. 5.9.20.29 Nov.  
 Total No. of visits 37. 12.17.23 Dec. 1918 7 Jan 1919

Is the approved plan of main boiler forwarded herewith Yes (Photo must be put in)  
 " " " donkey " " " None

Dates of Examination of principal parts—Cylinders 13/3/18 Etc Slides 5/4/18 Covers 18/4/18 Pistons 18/4/18 Rods 30/9/18  
 Connecting rods 10/10/18 Crank shaft 18/9/18 Thrust shaft 29/11/18 Etc Tunnel shafts 29/8/18 Screw shaft 20/11/18 Propeller 20/11/18  
 Stern tube 18/9/18 Steam pipes tested 12/12/18 Engine and boiler seatings 20/11/18 Engines holding down bolts 17/12/18  
 Completion of pumping arrangements 23/12/18 Boilers fixed 12/12/18 Engines tried under steam 17/12/18  
 Completion of fitting sea connections 29/11/18 Stern tube 9/11/18 Screw shaft and propeller 29/11/18  
 Main boiler safety valves adjusted 17/12/18 Thickness of adjusting washers Star. Ber. 3/4 x 7/8 Port Ber. 7/8 x 1"

Material of Crank shaft Steel Identification Mark on Do. LLOYDS 18.9.18 Material of Thrust shaft Steel Identification Mark on Do. LLOYDS 29.1.18  
 Material of Tunnel shafts Steel Identification Marks on Do. LLOYDS 9/8/18, 13/8/18, 27/11/18, 36/8/18 ALJ. P. 29/8/18, 29/8/18 Y. D. P. 22.8.18  
 Material of Steam Pipes S. D. Steel 5/16 thick. 6 bore Test pressure 340 lbs ALJ. P. LLOYDS 22.8.18  
 Is an installation fitted for burning oil fuel No ✓ Is the flash point of the oil to be used over 150°F. ✓ LLOYDS 20.11.18  
 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 Toku Maru, Yamato Maru, "Warmaid" etc ✓

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

The machinery has been made & fitted under Special Survey in accordance with the Rule requirements & the materials & workmanship have been found good.

The vessel is eligible in my opinion for the notation + L.M.C. 1.1919

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 1.19. F.D.

*[Signature]*  
 28/2/19  
 Arthur L. Jones  
 Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... Yen 30 : When applied for,  
 Special ... Yen 691 : 11<sup>th</sup> Jan 1919  
 Donkey Boiler Fee ... £ : When received,  
 Travelling Expenses (if any) Yen :10 : 21<sup>st</sup> Jan 1919

Committee's Minute 11<sup>th</sup> MAY 6 - 1919  
 Assigned + L.M.C. 1.19 F.D.

MACHINERY CERTIFICATE WRITTEN.



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