

# REPORT ON MACHINERY.

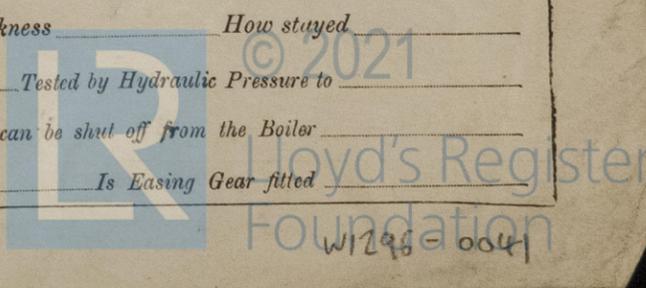
Received at London Office

Date of writing Report 6 Jan 1919 when handed in at Local Office Osaka Port of Kobe  
 No. in Survey held at Osaka Date, First Survey 1st March Last Survey 26 Dec 1918  
 Reg. Book. on the Steel Single Screw Steamer "Taiho Maru" (Number of Volls 45) Tons } Gross 6097  
 Master N. Santo Built at Osaka By whom built The Osaka Iron Works Ltd Yard No. 950 When built 1918  
 Engines made at Osaka By whom made The Osaka Iron Works Ltd when made 1918  
 Boilers made at do By whom made do when made do  
 Registered Horse Power \_\_\_\_\_ Owners Mehida Kisen Kaisha Port belonging to Osaka  
 Nom. Horse Power as per Section 28 553 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

**ENGINES, &c.**—Description of Engines Triples Expansion No. of Cylinders Three No. of Cranks 3  
 Dia. of Cylinders 27.45 x 75 Length of Stroke 51 Revs. per minute 65 Dia. of Screw shaft as per rule 13.27 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 Lightly fitted If two liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 5' 6"  
 Dia. of Tunnel shaft as per rule 13.17 Dia. of Crank shaft journals as per rule 14.35 Dia. of Crank pin 14 7/8 Size of Crank webs 9 1/2 x 2 1/2 Dia. of thrust shaft under collars 14 7/8 Dia. of screw 18 x 3 Pitch of Screw 18 x 3 No. of Blades 4 State whether moveable Yes Total surface 100 sq ft.  
 No. of Feed pumps Two Diameter of ditto 4 Stroke 27 Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps Two Diameter of ditto 4 1/2 Stroke 27 Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines Three Sizes of Pumps Bal. 10 x 13 x 13 Dupl No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room Two 3 1/2 x 4 1/2 blr in two 3 1/2 x 4 1/2 blr In Holds, &c. 3 1/2 each side each hold  
 Tunnel way one 2 1/2 Small 6 x 4 x 6 deep Nuts 10 1/2 x 8 x 21 top  
 No. of Bilge Injections 1 sizes 9 Connected to condenser, or to circulating pump Yes 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 Now  
 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 Sunk air pipes How are they protected Strong wood casings  
 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. top platform

**BOILERS, &c.**—(Letter for record S) Manufacturers of Steel Yawata Superior Steel Works Beighton Pat. Ken & Taka Cabin  
 Total Heating Surface of Boilers 8100 Is Forced Draft fitted Yes No. and Description of Boilers Three S. E.  
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 25.11.18, 2.12.18 No. of Certificate LLOYD'S HYD. TEST 360 LBS 25/11/18; 2/12/18 Y.J.  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 6370 No. and Description of Safety Valves to each boiler Two Spring loaded Area of each valve 3 dia Pressure to which they are adjusted 135 lbs Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 20 Mean dia. of boilers 15.0 Length 12.0 Material of shell plates Steel  
 Thickness 1 1/8 Range of tensile strength 28 to 32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lock riv  
 long. seams Double Shear Diameter of rivet holes in long. seams 1 1/8 Pitch of rivets 4 x 4 1/2 Lap of plates or width of butt straps 19 1/2 x 1 1/4  
 Per centages of strength of longitudinal joint 80.75 Working pressure of shell by rules 187 Size of manhole in shell 12 x 16  
 Size of compensating ring 34 x 38 x 1 1/2 No. and Description of Furnaces in each boiler 3 Morrison's Material Steel Outside diameter 48 1/2  
 Length of plain part top 21 Thickness of plates crown 19/32 Description of longitudinal joint Weld No. of strengthening rings  
 Working pressure of furnace by the rules 195 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 1/2 x 8 1/2 Back 8 1/2 x 8 1/2 Top 8 x 9 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 Area supported by each stay 72 1/4 Working pressure by rules 222 End plates in steam space:  
 Material Steel Thickness 1 1/2 Pitch of stays 18 x 20 How are stays secured Double nuts Working pressure by rules 193 lbs Material of stays Steel  
 Area at smallest part 7.06 Area supported by each stay 18 x 20 Working pressure by rules 204 Material of Front plates at bottom Steel  
 Thickness 3/4 Material of Lower back plate Steel Thickness 3/4 Greatest pitch of stays 13 1/4 Working pressure of plate by rules 180 lbs  
 Diameter of tubes 3 Pitch of tubes 4 1/4 x 4 1/2 Material of tube plates Steel Thickness: Front 3/4 Back 3/4 Mean pitch of stays 10  
 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 13 Length as per rule 33 1/2 Distance apart 9 Number and pitch of stays in each 3 @ 8  
 Working pressure by rules 202 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 \_\_\_\_\_  
 Diameter of Safety Valve \_\_\_\_\_ Pressure to which each is adjusted \_\_\_\_\_ Is Easing Gear fitted \_\_\_\_\_



IS A DONKEY BOILER FITTED? No

so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

Set packing rings & springs each piston  
 Crank pin & Xhd brasses  
 Slide valve rods & ecc rods  
 Piston rod each size  
 A.P. rod & valves

Two balls & nuts for Xhd  
 Two balls & nuts for ecc pins  
 4 main bearing bolts  
 Set Coupling bolts  
 Feed & bilge pump valves  
 Assorted bolts & nuts

Iron various sizes  
 Junk ring bolts  
 Propeller shaft & nuts  
 4 2 blades  
 Centrif pump impeller  
 to shaft.  
 Safety Valve Springs  
 etc. etc.

The foregoing is a correct description,

*G. Y. ...*



Dates of Survey while building  
 During progress of work in shops -- 1.12.19. 22 Mar. 19 Apr. 1.10.20. 31 May. 4.11.18 21.28 June. 2.12.23. 31 July.  
 During erection on board vessel -- 2.13.24. 30 Aug. 4.7.11. 16.20.26 Sep. 3.8.18. 24.30 Oct.  
 Total No. of visits 45

Is the approved plan of main boiler forwarded herewith

Yes  
None

Dates of Examination of principal parts—Cylinders 24/8/18 Slides 26/9/18 Covers 26/9/18 Pistons 13/8/18 Rods 20/11/18  
 Connecting rods 7/11/18 Crank shaft 26/9/18 Thrust shaft 2/7/18 Tunnel shafts 13/8/18 Screw shaft 20/11/18 Propeller 20/11/18  
 Stern tube 30/10/18 Steam pipes tested 12 & 21 Dec. Engine and boiler seatings 25 Nov. Engines holding down bolts 21/12/18

Completion of pumping arrangements 19.12.18 Boilers fixed 19.12.18 Engines tried under steam 23/12/18  
 Completion of fitting sea connections 23.12.18 Stern tube 26/9/18 Screw shaft and propeller 2.12.18

Main boiler safety valves adjusted 23/12/18 Thickness of adjusting washers & locknuts Intervals Port Ber. P. 9/16. S 7/32  
 Material of Crank shaft Steel Identification Mark on Do. 26/9/18 Lloyd's Material of Thrust shaft Steel Identification Mark on Do. 2/7/18  
 Material of Tunnel shafts Steel Identification Marks on Do. Lloyd's Material of Screw shafts Steel Identification Marks on Do. 2.7.18  
 Material of Steam Pipes S.D. Steel 5 1/2 bore x 5 1/16 4.21.28/6/18 23/7/18 2/12/8/18 A.L.J. D. Test pressure 540 lbs Lloyd's 18.6.18  
 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 Yes If so, state name of vessel Notaisan Maru. Koyeisan Maru

General Remarks (State quality of workmanship, opinions as to class, &c.)  
 The machinery has been made & fitted under Special Survey in accordance with the requirements of the Rules & the materials & workmanship have been found good.  
 (Excepting that in the present vessel no Donkey Blr. has been fitted)

The vessel is in my opinion eligible for the notation ÷ L.M.C. 12.18

It is submitted that this vessel is eligible for THE RECORD. + LMC 12.18. F.D.

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

The amount of Entry Fee ... £ per 30 : When applied for,  
 Special ... £ per 834 : 26 Dec 1918  
 Donkey Boiler Fee ... £ :  
 Travelling Expenses (if any) £ per 10 : 13 Jan 1919

*J.W.D.*  
*25/1/19*  
*A.L.J.*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute 28.12.18  
Assigned + L.M.C. 12.18

MADE BY CERTIFICATE WRITER

