

# REPORT ON MACHINERY.

No. 2867

Received at London Office

Date of writing Report July 22<sup>nd</sup> 1920 When handed in at Local Office Kobe Port of Kobe  
 No. in Survey held at Kobe & Yokohama Date, First Survey 3<sup>rd</sup> Decbr Last Survey 1<sup>st</sup> April 1920  
 Reg. Book. on the Steel Single Screw Steamer "Daiho Maru No. 1" (Number of Visits 8) (Gross 1977.46 Tons) (Net 1152.52 Tons)  
 Master K. Miyajima Built at Kobe By whom built Teikoku Steamship Coy When built 1920  
 Engines made at Kobe (Steel Works) By whom made Kobe Steel Works when made 1920  
 Boilers made at Kobe By whom made Kobe Steel Works when made 1920  
 Registered Horse Power \_\_\_\_\_ Owners Hayashi Kisen Kabushiki Kaisha Port belonging to Hikata, Wakayama  
 Nom. Horse Power as per Section 28 256 Is Refrigerating Machinery fitted for cargo purposes  Is Electric Light fitted yes

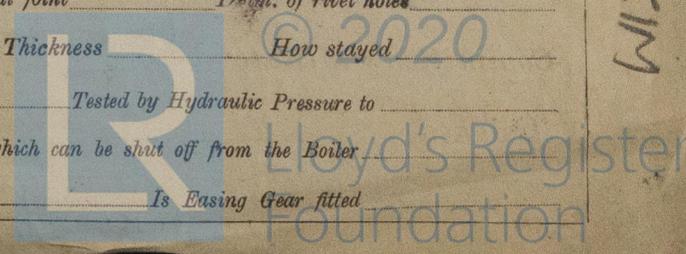
**ENGINES, &c.**—Description of Engines Triple Expansion No. of Cylinders Three No. of Cranks Three  
 Dia. of Cylinders 20 : 33 : 55 Length of Stroke 39 Revs. per minute \_\_\_\_\_ Dia. of Screw shaft as per rule 11.75 Material of screw shaft Steel  
 Is the screw shaft fitted with a continuous liner 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  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 4-5  
 Dia. of Tunnel shaft as per rule 10.58 Dia. of Crank shaft journals as per rule 11.4 Dia. of Crank pin 11.4 Size of Crank webs 31x21x7 Dia. of thrust shaft under collars 11.4 Dia. of screw 14-3 Pitch of Screw 15-6 No. of Blades 4 State whether moveable No Total surface sepd. 66.66 sq. ft.  
 No. of Feed pumps Two Diameter of ditto 3 3/4 Stroke 1-7 1/2 Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps Two Diameter of ditto 3 3/4 Stroke 1-7 1/2 Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 3 sets Sizes of Pumps \_\_\_\_\_ No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 4 @ 2 1/2 In Holds, &c. Each 2 @ 2 1/2" dia.  
 Tunnel well 1 @ 2 1/2  
 No. of Bilge Injections 1 sizes 6" Connected to condenser, or to circulating pump Direct to a separate Donkey Suction fitted in Engine room & size Yes  
 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 Yes  
 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 No  
 What pipes are carried through the bunkers Bilge pipes How are they protected Wood casing  
 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 Main deck

**BOILERS, &c.**—(Letter for record S) Manufacturers of Steel Carnegie Steel Works, LISA  
 Total Heating Surface of Boilers 3572.6 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 26 Febry No. of Certificate WP 400 LBS 200 LBS 26.2.20 R  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 45.774 sq. ft. No. and Description of Safety Valves to each boiler Two Spring loaded Area of each valve 3 3/4 dia Pressure to which they are adjusted 200 lbs Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork  Mean dia. of boilers 13-0" Length 10-10" Material of shell plates Steel  
 Thickness 1/4" Range of tensile strength 28-32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams DRL  
 long. seams TRDBS. Diameter of rivet holes in long. seams 1 5/16 Pitch of rivets 9 5/16 Lap of plates or width of butt straps 1 7/16 x 1 1/8  
 Per centages of strength of longitudinal joint rivets 86.44 Working pressure of shell by rules 218 lbs. Size of manhole in shell 16 x 12  
 plate 85.90  
 Size of compensating ring 33 x 29 x 1 1/8 No. and Description of Furnaces in each boiler 3 Morrison Material Steel Outside diameter 40.5  
 Length of plain part top  bottom  Thickness of plates crown 9/16" Description of longitudinal joint weld No. of strengthening rings 1  
 Working pressure of furnace by the rules 244 lbs Combustion chamber plates: Material Steel Thickness: Sides 1/16" 25/32 Back 1/16" Top 1/16" Bottom 25/32  
 Pitch of stays to ditto: Sides 9 1/4 x 8 1/2 Back 8 3/4 x 8 3/4 Top 8 1/2 x 8 1/2 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 207 lbs  
 Material of stays Steel Area at smallest part 2.10 sq. ft. Area supported by each stay 78.90 Working pressure by rules 239 lbs End plates in steam space:  
 Material Steel Thickness 1 1/8" Pitch of stays 17 x 16 How are stays secured BY N. Working pressure by rules 220 lbs Material of stays Steel  
 Area at smallest part 6.41 sq. ft. Area supported by each stay 272.25 Working pressure by rules 244 lbs Material of Front plates at bottom Steel  
 Thickness 1" Material of Lower back plate Steel Thickness 1" Greatest pitch of stays 10 1/2 x 18 Working pressure of plate by rules 206  
 Diameter of tubes 3" Pitch of tubes 4 1/2 x 4 1/2 Material of tube plates Steel Thickness: Front 1" Back 3/4" Mean pitch of stays 8 1/2 x 8 1/4  
 Pitch across wide water spaces 13 1/8 Working pressures by rules 208 lbs. Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9 x 1 1/2 Length as per rule 30" Distance apart 8" Number and pitch of stays in each 2 @ 8 1/2"  
 Working pressure by rules 25 1/6 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 \_\_\_\_\_

If used, state whether, and where, one will be used

W1203-0075



IS A DONKEY BOILER FITTED? No If so, is a report now forwarded? ✓

SPARE GEAR. State the articles supplied:—

- 2 Connecting Rod top end bolts & nuts
- 2 Connecting Rod bottom end bolts & nuts
- 2 Main bearing bolts
- 1 set Coupling bolts
- 1 set of feed and bilge pump valve
- Crank shaft propeller bolts cover bolts 7 pump ring bolts 12 boiler tubes 33
- Condenser tubes 100 boiler 2 safety valve springs 3 cyl escape valve springs
- 1 set piston springs
- Quantity assorted bolts & nuts
- Iron of various sizes
- Slide valve spindle 2nd check valve seal

The foregoing is a correct description,  
THE TEIKOKU STEAMSHIP CO., LTD.

*Tokuji*  
Director  
Manufacturer.

Dates of Survey while building: During progress of work in shops - 3<sup>rd</sup> December and continuous attendance at Kobe Steel Works.  
During erection on board vessel - March 17, 19, April 1, 2, 7, 10, 13, 14  
Total No. of visits: 8  
Is the approved plan of main boiler forwarded herewith? Yes

Dates of Examination of principal parts—Cylinders Dec 3<sup>rd</sup> Slides Dec 3<sup>rd</sup> Gears Dec 3<sup>rd</sup> Pistons Dec 3<sup>rd</sup> Rods 14/10/19  
 Connecting rods - 23/9/19 Crank shaft - 23/7/19 Thrust shaft - 2/10/19 Tunnel shafts - 20/12/19 Screw shaft - 7/11/19 Propeller 7/11/19  
 Stern tube 7/11/19 Steam pipes tested 1/4/20 Engine and boiler settings 2/4/20 Engines holding down bolts 2/4/20  
 Completion of pumping arrangements 7/4/20 Boilers fixed 2/4/20 Engines tried under steam 10/4/20  
 Completion of fitting sea connections 19/3/20 Stern tube 17/3/20 Screw shaft and propeller 19/3/20  
 Main boiler safety valves adjusted 10/4/20 Thickness of adjusting washers Lock nuts  
 Material of Crank shaft Steel Identification Mark on Do. 30 Lloyds. 10 Lloyds. 9.12.19 17.3.20 ROB Material of Thrust shaft Steel Identification Mark on Do. ST. 41. S. LLOYDS 20.12.19 ROB  
 Material of Tunnel shafts Steel Identification Marks on Do. 51.18.25.35.45.55 LLOYDS 17.3.20 ROB Material of Screw shafts Steel Identification Marks on Do. 44.5.19 ROB  
 Material of Steam Pipes Copper Test pressure 400 lb.  
 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? Engines only.  
Is this machinery duplicate of a previous case? Engines only. If so, state name of vessel Paga Maru

General Remarks (State quality of workmanship, opinions as to class, &c.)  
The machinery has been made and fitted under special survey in accordance with the requirements of the Rules and the materials and workmanship have been found good.  
In our opinion the machinery is eligible for the Record of + L.M.C. 4.20.

It is submitted that this vessel is eligible for THE RECORD, + L.M.C. 4.20 F.D

Roll  
1/9/20 J.P.

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

The amount of Entry Fee ... £ Gen: 20 When applied for, June 19<sup>th</sup> 1920  
 Special ... £ Gen 574  
 Testing Machinery Donkey Boiler Fee ... £ 50 When received, June 30<sup>th</sup> 1920  
 Travelling Expenses (if any) £ :

*R. P. Batcher* & *W. Dawson*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. SEP. 3 1920  
Assigned + L.M.C. 4.20  
MACHINERY CERT. WRITTEN.

