

REPORT ON MACHINERY.

No. 2416

Received at London Office

Writing Report 10 When handed in at Local Office 10 Port of Kobe
 Survey held at Osaka Date, First Survey 17 Jan Last Survey 10 May 1919
 on the Steel Single Screw Steamer "Heijin Maru" (Number of Vials 22) Gross 4363.91
M. Matsumoto Built at Osaka By whom built The Osaka Iron Works, Ltd. Tons Net 2719.18
 when built 1919
 es made at Osaka By whom made The Osaka Iron Works, Ltd. when made 1919
 s made at do By whom made do when made do
 erted Horse Power Owners Natsuda Risen Kaisha Port belonging to Shinkama
 Horse Power as per Section 28 390 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes
 LINES, &c.—Description of Engines Triple Expansion No. of Cylinders Three No. of Cranks 3
 of Cylinders 24:41:67 Length of Stroke 48 Revs. per minute 65 Dia. of Screw shaft as per rule 13.91 Material of Steel
 as fitted 14 1/2 screw shaft
 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
 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
 on the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive Fitted close If two
 are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 5.4
 of Tunnel shaft as per rule 12.46 Dia. of Crank shaft journals as per rule 13.09 Dia. of Crank pin 13 1/2 Size of Crank webs 8 1/2 x 25 Dia. of thrust shaft under
 as fitted 12 3/4 as fitted 13 1/2
 s 13 1/2 Dia. of screw 17.0 Pitch of Screw 17.0 No. of Blades 4 State whether moveable No Total surface 90
 of Feed pumps Two Diameter of ditto 4 Stroke 25 Can one be overhauled while the other is at work Yes
 of Bilge pumps Two Diameter of ditto 4 1/2 Stroke 25 Can one be overhauled while the other is at work Yes
 of Donkey Engines Two Sizes of Pumps Bal. 9 1/2 x 12 x 10 Dupl. No. and size of Suctions connected to both Bilge and Donkey pumps
 Engine Room Three 3 1/2" and 3 1/2" x tunnel well. Gen. Serv. 7 1/2 x 5 1/2 x 6 In Holds, &c. No. 1 & 2 holds each 3 1/2 Centre & 2 1/4 Wings
After hold two 2 1/2 Centre & two 2 1/4 Wings
 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"
 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
 all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Larger valves: Smaller: Cocks
 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
 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
 at pipes are carried through the bunkers None How are they protected ✓
 all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes
 the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Yes
 es of examination of completion of fitting of Sea Connections 9 Apr. 1919 of Stern Tube 14 Apr. 1919 Screw shaft and Propeller 9 Apr. 1919
 he Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper platform in Eng. Rm.
 LERS, &c.—(Letter for record S.) Manufacturers of Steel Cuckey's Iron & Steel Co. Allegheny Steel Co.
Amer. Spiral Tube Works (Pittsburgh)
 Heating Surface of Boilers 5407 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 8 Mar. 19 No. of Certificate 360 LBS
8/3/1919 Y. U. R.
 each boiler be worked separately Yes Area of fire grate in each boiler 63.9 No. and Description of Safety Valves to
 boiler Two Spring loaded Area of each valve 3" dia. Pressure to which they are adjusted 185 lbs Are they fitted with easing gear Yes
 ellest 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 5/16" Range of tensile strength 2679-32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D. riv.
 given . seams 2 1/2" riv. Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 9" x 4 1/2" width of butt straps 1' 7 1/2" x 1' 10"
same straps rivets 85.0 Working pressure of shell by rules 188 lbs Size of manhole in shell 12 x 16
 centages of strength of longitudinal joint plate 85.4
 of compensating ring 2' 10" x 3' 2" x 1 5/16" No. and Description of Furnaces in each boiler 3 Morrison's Material Steel Outside diameter 48 1/4"
 length of plain part top 21 1/32" crown 21 1/32" Description of longitudinal joint Butt No. of strengthening rings ✓
 bottom 21 1/32"
 working pressure of furnace by the rules 219 Combustion chamber plates: Material Steel Thickness: Sides 5/8 Back 5/8 Top 5/8 Bottom 7/8
 ch of stays to ditto: Sides 8 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
 material of stays Steel Section 1 1/2" mod. sec. Area supported by each stay 72 1/4 sq. in. Working pressure by rules 223 End plates in steam space:
 114.28" Steel Thickness 1 1/2 Pitch of stays 18 x 20 How are stays secured 43 male washers Working pressure by rules 194 lbs Material of stays Steel
 at smallest part 7.5 Area supported by each stay 18 x 20 Working pressure by rules 216 Material of Front plates at bottom Steel
 thickness 3/4" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 14" at end Working pressure of plate by rules 180 lbs
 diameter of tubes 3" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates Steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 9 3/4"
 ch across wide water spaces 13 3/4" Working pressures by rules 180 lbs Girders to Chamber tops: Material Steel Depth and
 thickness of girder at centre 9 3/4" x 15 1/16" Length as per rule 2' 9 3/8" Distance apart 9" Number and pitch of stays in each 3 @ 8"
 working pressure by rules 226 Superheater or Steam chest; how connected to boiler None 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
 Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness
 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. *dky. blr.*

No. _____ Description _____

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 _____

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 _____ Radius of do. _____ Stayed by _____

Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— 4 Crank bolts & nuts. 2 Cr. pin bolts & nuts. Set Coupling 2 main bearing bolts & nuts. Piston springs for all pistons. Cr. pin & crank brasses. Valve spindles. Ecc. rods. A & C pump rods. Set feed & bidge pump valves & seats. Feed check valves & seats. 2 Safety valves & springs. Assorted bolts & nuts, steel plates.

The foregoing is a correct description of the boiler.

Dates of Survey while building

During progress of work in shops - - -

During erection on board vessel - - -

Total No. of visits *22*



17.20.22.25 Jan. 8.15.18.20.21 Feb. 8.12.18.20.27 Mar. 1.9.22.23.25.28 Apr. 10 May 1919 & later at Steel Works

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts—Cylinders 17.1.19 Slides 20.1.19 Covers 20.1.19 Pistons 20.1.19 Rods 28.1.19

Connecting rods 22.1.19 Crank shaft 8/3/19 Thrust shaft 8/3/19 Tunnel shafts 20/3/19 Screw shaft 20/3/19 Propeller 1/4

Stern tube 27/3/19 Steam pipes tested 22/4/19 Engine and boiler seatings 27.3.19 Engines holding down bolts 28.4

Completion of pumping arrangements 30 Apr. 1919 Boilers fixed 23/4/19 Engines tried under steam 25/4/19 & 28

Main boiler safety valves adjusted 25/4/19 Thickness of adjusting washers Lock nuts. Intervals Port B. 6.1" 54.13

Material of Crank shaft Steel Identification Mark on Do. Lloyd's 30/10/18 & 31/1/18 Material of Thrust shaft Steel Identification Mark on Do. Lloyd's 30/10/18 & 31/1/18

Material of Tunnel shafts Steel Identification Marks on Do. Lloyd's 11/10/18 : 20/11/18 : 18/1/18 : 20/11/18 : 15/1/18 Material of Screw shafts Steel Identification Marks on Do. Lloyd's 11/10/18 : 20/11/18 : 18/1/18 : 20/11/18 : 15/1/18

Material of Steam Pipes Steel Test pressure 540 lbs

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

The machinery has been made & fitted under Special Survey in accordance with the Rules & the materials & workmanship are good.

The vessel is eligible in my opinion for the notation + LMC 5.1919

It is submitted that this vessel is eligible for THE RECORD + LMC. 5.19. FII.

Handwritten signature and date 8.7.19

The amount of Entry Fee .. *4/6* : 20 : When applied for, 8th May 1919

Special .. *6/9* : 691 : When received, 21st May 1919

Donkey Boiler Fee .. *2* : :

Travelling Expenses (if any) *4/6* : 15 :

Committee's Minute

Assigned

TUE. JUL. 15. 1919

+ LMC 5.19

MACHINERY-CERTIFICATE WRITTEN



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Lloyd's Register Foundation

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

Registered deposit of hull 19.16 ft. to upper deck & 28.11 ft. to hull deck.