

## REPORT ON MACHINERY.

No. 2294

Received at London Office

TUE 29 OCT 1918

Date of writing Report

When handed in at Local Office

10

Port of *Osaka*in Survey held at  
on the *Steel Twin Screw Steamer "Altai Maru"**Osaka*Date, First Survey *28 Aug 1917*Last Survey *1st Aug 1918*(Number of Visits *46*)Gross *7772*Net *4847*When built *1918*

Master

Built at *Osaka*By whom built *The Osaka Iron Works Ltd*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 *The Osaka Shosen Kaisha Port belonging to Osaka*Horse Power as per Section 28 *655*Is Refrigerating Machinery fitted for cargo purposes *No*Is Electric Light fitted *Yes*ENGINES, &c.—Description of Engines *Triple Expansion 2 sets*No. of Cylinders *3 each*No. of Cranks *3 each*Dia. of Cylinders *21 1/2 35 58*Length of Stroke *48*Revs. per minute *45*Dia. of Screw shaft *as per rule 13 1/8*Material of *Steel*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

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 *Fits tightly*

If two liners are fitted, is the shaft lapped or protected between the liners

Length of stern bush *4' 9"*Dia. of Tunnel shaft *as per rule 4-02 11-93*Dia. of Crank shaft journals *as per rule 12-53*Dia. of Crank pin *12 3/4*Size of Crank webs *8 1/2 17 1/2*

Dia. of thrust shaft under

Collars *12 3/4*Dia. of screw *15 1/2*Pitch of Screw *18 1/2*mean No. of Blades *4*State whether moveable *Yes*Total surface *24 1/2 23 1/2 at four rpm*No. of Feed pumps *2*Diameter of ditto *3 1/2*Stroke *24*Can one be overhauled while the other is at work *Yes*No. of Bilge pumps *2*Diameter of ditto *3 1/2*Stroke *24*Can one be overhauled while the other is at work *Yes*No. of Donkey Engines *Three*Sizes of Pumps *Pal. 9 1/2 12 10 duplex*

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room *Three 3 1/2*In Holds, &c. *Two 3 1/2 in each hold*No. of Bilge Injections *2*sizes *7 1/2*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 *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 *10/6/18*of Stern Tube *4/6/18*Screw shaft and Propeller *10/6/18*Is the Screw Shaft Tunnel watertight *Yes*Is it fitted with a watertight door *Yes*worked from *Upper platform in E Room*BOILERS, &c.—(Letter for record *S*)Manufacturers of Steel *John Spencer & Sons Ltd Brighton Tube Co.*Total Heating Surface of Boilers *7929 + 1403 (Auxiliary)*Is Forced Draft fitted *Yes*No. and Description of Boilers *Three S.E. & one Aux. S.E.*Working Pressure *200 lbs*Tested by hydraulic pressure to *400 lbs*Dates of test *9/16/2/18*No. of Certificate *400 LBS R*

No. and Description of Safety Valves to

Can each boiler be worked separately *Yes*Area of fire grate in each boiler *61' 8"*

No. and Description of Safety Valves to

each boiler *Two Spring loaded*Area of each valve *3" dia*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 *15' 6"*Length *12' 0"*Material of shell plates *Steel*Thickness *1 1/2"*Range of tensile strength *28 632 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 7/16"*Pitch of rivets *9 3/4 4 1/2*Lap of plates or width of butt straps *21 1/4 1 1/4 in*

Per centages of strength of longitudinal joint

rivets *91.9*Working pressure of shell by rules *203 lbs*Size of manhole in shell *12' 16"*Size of compensating ring *34" x 38" 1 1/2"*No. and Description of Furnaces in each boiler *3 Brighton*Material *Steel*Outside diameter *47 1/2"*

Length of plain part

top *5/8"*Description of longitudinal joint *Weld*

No. of strengthening rings

Working pressure of furnace by the rules *213 lbs*Combustion chamber plates: Material *Steel*Thickness: Sides *21/32"*Back *21/32"*Top *21/32"*Bottom *7/8"*Pitch of stays to ditto: Sides *8 1/4 x 8 1/2*Back *8 1/4 x 8 3/4*Top *8 x 9*If stays are fitted with nuts or riveted heads *Nuts*Working pressure by rules *206 lbs*Material of stays *Steel*Diameter at smallest part *1 7/8"*Area supported by each stay *72"*Working pressure by rules *223 lbs*

End plates in steam space

Material *Steel*Thickness *1 9/16"*Pitch of stays *18" x 20"*How are stays secured *Double nuts*Working pressure by rules *215 lbs*Material of stays *Steel*Diameter at smallest part *8 29/32"*Area supported by each stay *18" x 20"*Working pressure by rules *215 lbs*Material of Front plates at bottom *Steel*Thickness *13/16"*Greatest pitch of stays *14 3/4"*Working pressure of plate by rules *200 lbs*Diameter of tubes *3 1/2"*Pitch of tubes *4 3/8 x 4 1/2"*Material of tube plates *Steel*Thickness: Front *13/16"*Back *13/16"*Mean pitch of stays *10 3/4"*Pitch across wide water spaces *14"*Working pressures by rules *200 lbs*Girders to Chamber tops: Material *Steel*

Depth and

thickness of girder at centre *10 1/4 x 7 (two)*Length as per rule *34 1/2"*Distance apart *9'*Number and pitch of stays in each *3 @ 8"*Working pressure by rules *246 lbs*Superheater or Steam chest; how connected to boiler *Schmidt type*

Can the superheater be shut off and the boiler worked

separately *Yes*Diameter *3"*Length *10' 6"*Thickness of shell plates *3"*Material *Steel*Description of longitudinal joint *Double riv.*

Diam. of rivet

holes *3"*

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 *3"*Are they fitted with easing gear *No*

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Working pressure of end plates



IS A DONKEY BOILER FITTED? Yes

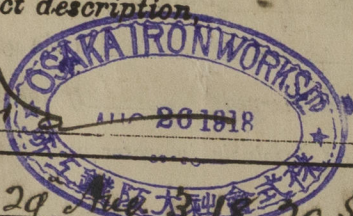
If so, is a report now forwarded? Yes

SPARE GEAR. State the articles supplied:-

Set packing rings & springs	4	Bolts & nuts for Crossheads	Propeller shaft & nut
Each piston.	2	" " " " Crank pins	2 Propeller blades
Crank pins & xhd brasses	4	" " " " main bearings	Centrif. impeller shaper
Slide valve rods		Set coupling bolts & nuts	Safety valve springs
Eccentric rods		Feed & help pump valves	Jump ring bolts
Piston rod each size		Assorted bolts & nuts	etc etc
A.P. rod & valves		Iron various sizes	

The foregoing is a correct description

*G. Yemm*



Manufacturer.

Dates of Survey while building  
During progress of work in shops - 28/29 Aug. 3/18, 20 Sept. 20, 26 Oct. 21, 27 Nov. 14, 25 Dec. 1917.  
During erection on board vessel - 22, 24 Jan. 5, 7, 8, 9, 12, 13, 15, 19 Feb. 5, 7, 19 Mar. 5, 16, 23, 26 April.  
Total No. of visits 6, 9, 11, 15, 22, 27 May.  
4, 6, 8, 10, 20, 22, 29 June. 2, 16, 24 July. 1<sup>st</sup> Aug. 1918

Is the approved plan of main boiler forwarded herewith? Yes  
Sent to Rpt. No. 2140 on 10/10/18

Dates of Examination of principal parts - Cylinders 7/2/18 etc Slides 22/1/18 Covers 24/1/18 Pistons 20/9/17 Rods 20/9/17  
Connecting rods 25/12/17 Crank shaft 15/5/18 Thrust shaft 17/5/18 Tunnel shafts 19/2/18 etc Screw shafts 27/5/18 Propeller 9/5/18  
Stern tube 19/3/18 Steam pipes tested 4/6/18 Engine and boiler seatings 10/6/18 Engines holding down bolts 20/6/18  
Completion of pumping arrangements 29/6/18 Boilers fixed 20/6/18 Engines tried under steam 27/7/18  
Main boiler safety valves adjusted 27/7/18 Thickness of adjusting washers Locknuts  
Material of Crank shaft Steel Identification Mark on Do. LLOYD'S 15.5.18 Material of Thrust shaft Steel Identification Mark on Do. LLOYD'S 17/2/18  
Material of Tunnel shafts Steel Identification Marks on Do. LLOYD'S 5, 8, 12, 15, 19/2/18 Material of Screw shafts Steel Identification Marks on Do. LLOYD'S 27/11/17  
Material of Steam Pipes Steel Test pressure 600 lbs Spare 23/4/18

Is an installation fitted for burning oil fuel? No Is the flash point of the oil to be used over 150°F. Yes

Have the requirements of Section 49 of the Rules been complied with? Yes

Is this machinery duplicate of a previous case? Yes If so, state name of vessel Alps Maru Yard No. 87 Rpt. No. 214

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

The machinery has been made & fitted under Special Survey & the materials & workmanship have been found good.

The vessel is in my opinion eligible for the notation + L.M.C. 8.1918

The Electric Lighting Rpt will be sent shortly.

It is submitted that  
this vessel is eligible for  
THE RECORD. + L.M.C. 8.18 F.D.

*J.H. 18*  
31-10-18

*APR*

*Arthur L. Jones*

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee ... Yen 30  
Special ... Yen 791  
Donkey Boiler Fee ... Yen 20  
Travelling Expenses (if any) ... Yen 20

When applied for,  
8<sup>th</sup> Aug. 1918

When received,  
12 Aug. 1918

Committee's Minute

FRI. 1-NOV. 1918

FRI. FEB. 27. 1920

Assigned

+ L.M.C. 8.18

TUE. AUG. 10 1920

MACHINERY CERTIFICATE  
WRITTEN.



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Foundation