

Rpt. 4.

## REPORT ON MACHINERY.

No. 2359

Received at London Office

Date of writing Report 18 Nov. 1918 When handed in at Local Office

Port of Kobe

No. in Survey held at Osaka

Date, First Survey 15 March Last Survey 2nd Oct. 1918

Reg. Book.

on the Twin Screw Steel Steamer 'Andes Maru'

(Number of Visits)

Master

Built at Osaka

By whom built The Osaka Iron Works Co.

Tons } Gross 7772 25  
Net 4846 39

Engines made at Osaka

By whom made The Osaka Iron Works, Ltd.

When built 1918

Boilers made at do

By whom made do

when made 1918

Registered Horse Power

Owners The Osaka Shosen Kaisha

Port belonging to Osaka

Nom. Horse Power as per Section 28 655

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted Yes

ENGINES, &amp;c.—Description of Engines Triple Expansion, Two sets

No. of Cylinders 3+3

No. of Cranks 3+3

Dia. of Cylinders 21 1/2": 35": 58"

Length of Stroke 48"

Revs. per minute 75

Dia. of Screw shaft as per rule 13-18

Material of 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 Its tightly

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 11-93

Dia. of Crank shaft journals as per rule 12-52

Dia. of Crank pin 12 3/4

Size of Crank webs 8 1/2" x 17 1/2"

Dia. of thrust shaft under

collars 12 3/4

Dia. of screw 5-15-9"

Pitch of Screw 18-6"

No. of Blades 4

State whether moveable Yes

Total surface 78 sq. ft.

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 Bal. 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" +

Small 6-4-6 duplex.

In Holds, &amp;c. Two 3 1/2" in each hold.

No. of Bilge Injections 2 sizes 4 1/2"

Connected to condenser, or to circulating pump

Cw. p. Is a separate Donkey Suction fitted in Engine room &amp; 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

Is the Screw Shaft Tunnel watertight Yes

Is it fitted with a watertight door Yes

worked from Upper platform in Eng. Room

BOILERS, &amp;c.—(Letter for record 5)

Manufacturers of Steel Jno. Spencer &amp; Sons Ltd.

Deighton Tube Co.

Total Heating Surface of Boilers 9332

Is Forced Draft fitted Yes

No. and Description of Boilers Three S.E. (V one aux. S.E.)

Working Pressure 200 lbs

Tested by hydraulic pressure to 400 lbs

Date of test 9.19.23

No. of Certificate 11040'S

Stamped 11040'S

No. of Safety Valves to 400 TEST ALJ

Can each boiler be worked separately Yes

Area of fire grate in each boiler 61.8 sq. ft.

No. and Description of Safety Valves to 400 TEST ALJ

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 18"

Mean dia. of boilers 15'-0"

Length 12'-0"

Material of shell plates Steel

Thickness 1 1/2"

Range of tensile strength 28 t. 32 t.

Are the shell plates welded or flanged No.

Descrip. of riveting: cir. seams Double riv.

long. seams Sub. riv. Diameter of rivet holes in long. seams 1 7/16"

Pitch of rivets 9 3/4" x 4 1/2"

Top of plates or width of butt straps 21 1/2" x 1 1/2"

1 1/2" in.

Per centages of strength of longitudinal joint rivets 91.9

plate 85.2

Working pressure of shell by rules 203 lbs

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 Deighton

Material Steel

Outside diameter 47 1/2"

Length of plain part top

Thickness of plates crown 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 2 1/32"

Back 2 1/32"

Top 2 1/32"

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

Area at smallest part 1.79 sq. ft.

Area supported by each stay 72 sq. ft.

Working pressure by rules 223 lbs

End plates in steam space:

Material Steel

Thickness 1 9/32"

Pitch of stays 18 x 20"

How are stays secured Double nuts

Working pressure by rules 215 lbs

Material of stays Steel

Area at smallest part 8.29 sq. ft.

Area supported by each stay 18 x 20"

Working pressure by rules 215 lbs

Material of Front plates at bottom Steel

Thickness 13/16"

Material of Lower back plate Steel

Thickness 3/4"

Greatest pitch of stays 14 3/4" at mid.

Working pressure of plate by rules 200 lbs

Diameter of tubes 3 1/4"

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 7/4"

Pitch across wide water spaces 14" in 8"

Working pressures by rules 200 lbs

Girders to Chamber tops: Material Steel

Depth and

thickness of girder at centre 10 1/4" x 7"

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

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

UPERHEATER. Type Schmidt

Date of Approval of Plan

Tested by Hydraulic Pressure to 600 lbs

Date of Test 2nd + 5th Sept. 1918

Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler Yes

Diameter of Safety Valve 3" dia

Pressure to which each is adjusted 205 lbs

Is Easing Gear fitted No

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

UPERHEATER. Type Schmidt

Date of Approval of Plan

Tested by Hydraulic Pressure to 600 lbs

Date of Test 2nd + 5th Sept. 1918

Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler Yes

Diameter of Safety Valve 3" dia

Pressure to which each is adjusted 205 lbs

Is Easing Gear fitted No

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

UPERHEATER. Type Schmidt

Date of Approval of Plan

Tested by Hydraulic Pressure to 600 lbs

Date of Test 2nd + 5th Sept. 1918

Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler Yes

Diameter of Safety Valve 3" dia

Pressure to which each is adjusted 205 lbs

Is Easing Gear fitted No

Lloyds Register Foundation


5510-0155



IS A DONKEY BOILER FITTED? *Aux. blr.* If so, is a report now forwarded? *Yes*

SPARE GEAR. State the articles supplied:—  
*Two crank pin bolts & nuts ✓*  
*Two crosshead bolts & nuts ✓*  
*Set coupling bolts & nuts ✓*  
*Two main bearing bolts & nuts ✓*  
*Four ring bolts ✓*  
*Assorted bolts & nuts ✓*  
*Assorted steel sheet.*

The foregoing is a correct description,

*G. Yemuda*  Manufacturer.

Dates of Survey while building  
During progress of work in shops -- *15 March to August 1918*  
During erection on board vessel -- *August 15 to 2nd October 1918*  
Total No. of visits *Continuous attendance*

Is the approved plan of main boiler forwarded herewith? *Sent in Rpt 214*

Dates of Examination of principal parts—Cylinders *7/6/18* &c Slides *24/4/18* &c Covers *7/6/18* Pistons *24/4/18* &c Rods *13/7/18*  
Connecting rods *13/7/18* Crank shaft *3/7/18* &c Thrust shafts *13/8/18* Tunnel shafts *15/3/18* &c Screw shaft *23/4/18* Propeller *3/8/18*  
Stern tube *23/7/18* Steam pipes tested *2/9/18* and *16/9/18* Engine and boiler seatings *3/8/18* Engines holding down bolts *7/9/18*

Completion of pumping arrangements *21/9/18* Boilers fixed *16/9/18* Engines tried under steam *25/9/18*

Completion of fitting sea connections *20/8/18* Stern tube *20/8/18* Screw shaft and propeller *22/8/18*

Main boiler safety valves adjusted *21/9/18* Thickness of adjusting washers *Locknuts.*

Material of Crank shaft *Steel* Identification Mark on Do. *3/7/18* Material of Thrust shafts *Steel* Identification Mark on Do. *3/7/18*

Material of Tunnel shafts *Steel* Identification Marks on Do. *19/3/18* Material of Screw shafts *Steel* Identification Marks on Do. *23/4/18*

Material of Steam Pipes *S. D. Steel* Test pressure *600 lbs*

Is an installation fitted for burning oil fuel *No.* Is the flash point of the oil to be used over 150°F *LINEAR FITTED 19.8*

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 *Alps Maru (Rpt No. 2140)*

*Altai Maru ( " " 2294 )*

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 have been found good.*

*A report upon the Electric Lighting is enclosed.*

*The vessel is eligible in my opinion for the notation + LMC 10-18.*

It is submitted that this vessel is eligible for THE RECORD. + LMC 10-18 F.D.

The amount of Entry Fee *Yes 30* : When applied for, *10 Oct 1918*  
Special *Yes 791* :  
Donkey Boiler Fee *Yes* : When received, *19 Oct 1918*  
Travelling Expenses (if any) *Yes 20* :

Committee's Minute *FRI. 7 FEB. 1919*  
Assigned *+ L.M.C. 10-18*  
*F.D.*

*Arthur Jones*  
Engineer Surveyor to Lloyd's Register of Shipping  
© 2020 Lloyd's Register Foundation