

Rpt. 4.

## REPORT ON MACHINERY.

No. 2380

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  
Reg. Book.

Kobe

Date, First Survey 8 April

Last Survey 6 Novem. 1918

on the Single Screw Steamer "Raifuku Maru"

(Number of Visits 37)

Master

Built at

Kobe

By whom built Kawasaki Dry Dock Co. Ltd.

Gross Tons

Net Tons

When built 1918

Engines made at

Kobe

By whom made

The Kawasaki Dry Dock Co. Ltd.

when made

1918

Boilers made at

do

By whom made

do

when made

do

Registered Horse Power

Owners

The Kawasaki Dry Dock Co. Ltd.

Port belonging to

Kobe

Nom. Horse Power as per Section 28

440

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

Yes

ENGINES, &amp;c.—Description of Engines

Triple Expansion

No. of Cylinders

Three

No. of Cranks

Three

Dia. of Cylinders

26: 43½: 72"

Length of Stroke

48"

Revs. per minute

70

Dia. of Screw shaft

as per rule 15.41  
as fitted 16"

Material of screw shaft

Steel

Is the screw shaft fitted with a continuous liner the whole length of the stern tube

No liner

Is the after end of the liner made water tight

in the propeller boss

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

5' 5¼"

Dia. of Tunnel shaft

as per rule 13.48  
as fitted 13¾"

Dia. of Crank shaft journals

as per rule 14.15  
as fitted 14¾"

Dia. of Crank pin

14¾"

Size of Crank webs

9½ x 26"

Dia. of thrust shaft under

collars

14¾"

Dia. of screw

17' 6"

Pitch of Screw

19' 0"

No. of Blades

4

State whether moveable

Yes

Total surface

100 sq ft

No. of Feed pumps

One

Diameter of ditto

5"

Stroke

24"

Can one be overhauled while the other is at work

Yes

with Deir's feed.

No. of Bilge pumps

Two

Diameter of ditto

5"

Stroke

24"

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

Three

Sizes of Pumps

Bal. 16" 11" 12" Duplex  
Weir 9½" 7" 24" Two

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

In Engine Room

Three 3½" + one 3½"

to tunnel well

In Holds, &amp;c.

Nos. 1, 3 + 4 holds two 3½" To each hold

No. of Bilge Injections

1

size

9"

Connected to condenser, or to circulating pump

C.D.P.

Is a separate Donkey Suction fitted in Engine room &amp; size

Yes 3½"

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

S)

Manufacturers of Steel Worth Bros (Steel), Illinois (C.C. &amp; H. Co.), Leeds Forge, Carnegie (Rivets), Yawata, Man Wood (Rivets)

Total Heating Surface of Boilers

5741 sq ft (Law Ber)

Is Forced Draft fitted

Yes

No. and Description of Boilers 2 S.E. + Ave S.E. 2SB + 1AUX SB

Working Pressure

200 lb

Tested by hydraulic pressure to

400 lb

Date of test

20 + 26 Sep 1918

No. of Certificate

20/9/18: 26/9/18 ALJ

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

60½ sq ft

No. and Description of Safety Valves to

each boiler Two Spring loaded

Area of each valve

3¾ dia

Pressure to which they are adjusted

205 lb

Are they fitted with easing gear

Smallest distance between boilers or uptakes and bunkers or woodwork

12"

Mean dia. of boilers

14' 6"

Length

12' 0"

Material of shell plates

Steel

Thickness

1½"

Range of tensile strength

29-32 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

1¾"

Pitch of rivets

8¾ x 4¾"

Top of plates or width of butt straps

19½" 1¼"

Per centages of strength of longitudinal joint

rivets 95.8  
plate 84.3

Working pressure of shell by rules

209 lb

Size of manhole in shell

16" x 12"

Size of compensating ring

(7½" + flange) 1¾"

No. and Description of Furnaces in each boiler

Three

Material

Steel

Outside diameter

48½"

Length of plain part

top  
bottom

Thickness of plates

crown 5/8"  
bottom 3/8"

Description of longitudinal joint

Weld

No. of strengthening rings

—

Working pressure of furnace by the rules

Combustion chamber plates: Material

Steel

Thickness: Sides

1/16"

Back

1/16"

Top

1/16"

Bottom

7/8"

Pitch of stays to ditto: Sides

8½ x 8½"

Back

9 x 8½"

Top

9½ x 8½"

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules

203 lb

End plates in steam space:

Material of stays

Steel

Area at smallest part

2.1 sq in

Area supported by each stay

9½ x 8½"

Working pressure by rules

230 lb

Material of stays

Steel

Area at smallest part

10 sq in

Area supported by each stay

19½ x 20½"

Working pressure by rules

260 lb

Material of Front plates at bottom

Steel

Thickness

3/4"

Material of Lower back plate

Steel

Thickness

3/4"

Greatest pitch of stays

13½" at ends

Working pressure of plate by rules

200 lb

Material of tube plates

Steel

Diameter of tubes

3½"

Pitch of tubes

4½ x 4½"

Material of tube plates

Steel

Thickness: Front

13/16"

Back

13/16"

Mean pitch of stays

8¾"

Pitch across wide water spaces

13¾"

Working pressures by rules

200 lb

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

Length as per rule

34½"

Working pressure by rules

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

—

Pressure to which each is adjusted

—

Is Easing Gear fitted

—

Diameter of Safety Valve

—

—

—

—

—

W659-0053



IS A DONKEY BOILER FITTED? *Ans. No.*

If so, is a report now forwarded? *Yes*

SPARE GEAR. State the articles supplied:—

*Four main bearing bolts & nuts ✓*  
*Two crank pin do do ✓*  
*Two crosshead do do ✓*  
*Set coupling do do ✓*  
*Set feed & bilge pump valves ✓*  
*Assorted bolts & nuts & sheet steel ✓*

*Set packing rings & springs each piston ✓*  
*Set pump ring bolts & nuts ✓*  
*One part crank shaft. Propeller shaft ✓*  
*Four prop. blades & 2 sets studs & nuts ✓*  
*Slide valve spindle each size ✓*  
*Centrifugal impeller & shaft ✓*  
*Crosshead trusses & crank pin trusses. ✓*  
*A.P. rod & nut. Three safety valve springs ✓*  
*Condensed tubes. Boiler tubes & bars ✓*  
*Uc. etc. ✓*

The foregoing is a correct description,  
**Kawasaki Dockyard Co., Ltd.,**

Per *Shakayama*  
Secretary

Manufacturer.

Dates of Survey while building { During progress of work in shops - - - *8.18.26. Apr. 8.13.21.24.28.29. May. 1.3.17 June. 16.25 July. 28.21.28 Aug. 2.10.19*  
During erection on board vessel - - - *1.10.15.21.23.26.28.29 Oct. 3.4.5.6 Nov. 1918.*  
Total No. of visits *37*

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts—Cylinders *28/5/18* Slides *1/6/18* Covers *28/5/18* Pistons *16/7/18* Rods *26/4/18*  
Connecting rods *30/5/18* Crank shaft *8/5/18* Thrust shaft *8/5/18* Tunnel shafts *24 & 30/5/18* Screw shaft *1/10/18* Propeller *1/10/18*  
Stern tube *14/10/18* Steam pipes tested *18/9/18: 23/10/18* Engine and boiler seatings *26 Oct 1918* Engines holding down bolts *28 Oct 1918*  
Completion of pumping arrangements *28/10/18* Boilers fixed *4/11/18* Engines tried under steam *5 Nov. 1918*  
Completion of fitting sea connections *26/10/18* Stern tube *24/10/18* Screw shaft and propeller *29 Oct 1918*  
Main boiler safety valves adjusted *4 Nov. 1918* Thickness of adjusting washers *Locknuts.*  
Material of Crank shaft *Steel* Identification Mark on Do. *LLOYD'S 8.5.18 A.L.J.R.* Material of Thrust shaft *Steel* Identification Mark on Do. *LLOYD'S 8.5.18 A.L.J.*  
Material of Tunnel shafts *Steel* Identification Marks on Do. *LLOYD'S 5.6.18 (two): 25.5.18 (two): 30.5.18 (two).* Material of Screw shafts *Steel* Identification Marks on Do. *LLOYD'S 1.14.18 A.L.J.*  
Material of Steam Pipes *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. *✓ Spar shaft. LLOYD'S 15.10.18 A.L.J.*

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

*War Queen War Prince East Cape. Easterling etc etc*

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.*

*The vessel is eligible in my opinion for the notation + LMC 11-18.*

It is submitted that  
this vessel is eligible for  
THE RECORD. + LMC 11-18. FD.

*A.L.J.*  
*6/2/19*  
*J.W.D.*

The amount of Entry Fee ... *Yes 30* : When applied for,  
Special ... *Yes 735* : *7 Nov. 1918.*  
Donkey Boiler Fee ... *X* : When received,  
Travelling Expenses (if any) *Yes 15* : *11 Nov. 1918.*

Committee's Minute

Assigned

FRI 7 FEB 1919

*+ LMC 11.18*  
*J.D.*

*A.L.Jones*

Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation