

# REPORT ON MACHINERY.

No. 4187

Received at London Office

MON. 28 JAN. 1924

Date of writing Report 13<sup>th</sup> Dec. 1923 When handed in at Local Office

Port of Kobe

To. in Survey held at Osaka & Kobe

Date, First Survey

Last Survey 7<sup>th</sup> Dec. 1923

Reg. Book. on the S.S. "KWAYO MARU"

(Number of Visits)

Gross 4363.75  
Net 2762.18

Master Built at Kobe

By whom built Osaka Iron Works, Ltd.

When built 1923

Engines made at Osaka

By whom made Osaka Iron Works, Ltd.

when made 1923

Boilers made at do.

By whom made do.

when made 1923.

Registered Horse Power

Owners Osaka Iron Works, Ltd.

Port belonging to Nakayoshi

Com. Horse Power as per Section 28 391

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted Yes

## ENGINES, &c.—Description of Engines

No. of Cylinders

No. of Cranks

Dia. of Cylinders

Length of Stroke

Revs. per minute

Dia. of Screw shaft

as per rule

Material of

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

Is the after end of the liner made water tight

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

Dia. of Tunnel shaft

Dia. of Crank shaft journals

Dia. of Crank pin

Size of Crank webs

Dia. of thrust shaft under

Blades

Pitch of Screw

No. of Blades

State whether moveable

Total surface

No. of Feed pumps

Diameter of ditto

Stroke

Can one be overhauled while the other is at work

No. of Bilge pumps

Diameter of ditto

Stroke

Can one be overhauled while the other is at work

No. of Donkey Engines

Sizes of Pumps

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

Engine Room

In Holds, &c.

No. of Bilge Injections

sizes

Connected to condenser, or to circulating pump

Is a separate Donkey Suction fitted in Engine room & size

Are all the bilge suction pipes fitted with roses

Are the roses in Engine room always accessible

Are the sluices on Engine room bulkheads always accessible

Are all connections with the sea direct on the skin of the ship

Are they Valves or Cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates

Are the Discharge Pipes above or below the deep water line

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel

Are the Blow Off Cocks fitted with a spigot and brass covering plate

Are the pipes carried through the bunkers

How are they protected

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times

Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges

Is the Screw Shaft Tunnel watertight

Is it fitted with a watertight door

worked from

## BOILERS, &c.—(Letter for record S)

Manufacturers of Steel Illinois Steel Co., Yawata Imp. Steel Works, Will. Beardmore & Co.

Heating Surface of Boilers 2700

Is Forced Draft fitted Yes

No. and Description of Boilers Starb. boiler (single ended)

Working Pressure 180 lbs.

Tested by hydraulic pressure to 360 lbs.

Date of test 27-12-20

No. of Certificate 360 lbs. Y.J.

Can each boiler be worked separately Yes

Area of fire grate in each boiler 63.25

No. and Description of Safety Valves to

h boiler 2 spring loaded

Area of each valve 3" dia.

Pressure to which they are adjusted 185 lbs.

Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 12"

INT. dia. of boilers 15'-0"

Length 12'-0"

Material of shell plates Steel

Thickness 1/16"

Range of tensile strength 26,863-30,800

Are the shell plates welded or flanged No

Descrip. of riveting: cir. seams D.R.

g. seams T.R.D.B.S.

Diameter of rivet holes in long. seams 1 5/16"

Pitch of rivets 9"

Lap of plates or width of butt straps 19 1/2" x 1 1/2"

Percentages of strength of longitudinal joint rivets 85-3

plate 85-4

Working pressure of shell by rules 198 lbs.

Size of manhole in shell 12" x 16"

Area of compensating ring 3'-2" x 2'-10"

No. and Description of Furnaces in each boiler 3 Horizon

Material Steel

Outside diameter 4'-0 1/4"

Length of plain part top

bottom

Thickness of plates

crown 19"

bottom 32"

Description of longitudinal joint Weld

No. of strengthening rings

Working pressure of furnace by the rules 196 lbs.

Combustion chamber plates: Material Steel

Thickness: Sides 5/8"

Back 1/2"

Top 5/8"

Bottom 7/8"

Ch of stays to ditto: Sides 8 1/2" x 8 1/2"

Back 9" x 8 1/2"

Top 9" x 8"

If stays are fitted with nuts or riveted heads Nuts

Working pressure by rules 186 lbs.

Material of stays Steel

Area at smallest part 2.79

Area supported by each stay 76.5-9

Working pressure by rules 247

End plates in steam space: Material Steel

Thickness 1 1/4"

Pitch of stays 18" x 20"

How are stays secured D.N.W.

Working pressure by rules 205 lbs.

Material of stays Steel

Area at smallest part 7.67

Area supported by each stay 18" x 20"

Working pressure by rules 221

Material of Front plates at bottom Steel

Thickness 3/4"

Material of Lower back plate Steel

Thickness 3/4"

Greatest pitch of stays 14 5/8" x 8 1/2"

Working pressure of plate by rules 257 lbs.

Diameter of tubes 3"

Pitch of tubes 4 1/4" x 4 1/8"

Material of tube plates Steel

Thickness: Front 3/4"

Back 3/4"

Mean pitch of stays 8 3/8"

Ch across wide water spaces 13 1/4"

Working pressures by rules 248 lbs.

Girders to Chamber tops: Material Steel

Depth and

Thickness of girder at centre 10 1/2" x 7/8" x 2

Length as per rule 2'-9 1/16"

Distance apart 9"

Number and pitch of stays in each 3 @ 8"

Working pressure by rules 267 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

No. 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

No. 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

W1347-0138



IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

The foregoing is a correct description,

*S. Takaki*

Manufacturer.

Dates of Survey while building { During progress of work in shops - - }  
 { During erection on board vessel - - - }  
 Total No. of visits

Is the approved plan of main boiler forwarded herewith *Yes*

" " " donkey " " "

Dates of Examination of principal parts—Cylinders Slides Covers Pistons Rods  
 Connecting rods Crank shaft Thrust shaft Tunnel shafts Screw shaft Propeller  
 Stern tube Steam pipes tested Engine and boiler seatings Engines holding down bolts  
 Completion of pumping arrangements Boilers fixed Engines tried under steam  
 Completion of fitting sea connections Stern tube Screw shaft and propeller  
 Main boiler safety valves adjusted Thickness of adjusting washers  
 Material of Crank shaft Identification Mark on Do. Material of Thrust shaft Identification Mark on Do.  
 Material of Tunnel shafts Identification Marks on Do. Material of Screw shafts Identification Marks on Do.  
 Material of Steam Pipes Test pressure  
 Is an installation fitted for burning oil fuel 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  
 Is this machinery duplicate of a previous case If so, state name of vessel

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

This boiler has been constructed and fitted on board in accordance with the requirements of the Rules and the approved plans. The materials and workman are good.

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

The amount of Entry Fee	... £	:	:	When applied for,
Special	... £	:	:	19.
Donkey Boiler Fee	... £	:	:	When received,
Travelling Expenses (if any)	£	:	:	19.

Committee's Minute

FRI. FEB 11 1924

Assigned

(For M. Lanza, S.G. Fry &amp; seq.)

*L. H. F. Young*

Engineer Surveyor to Lloyd's Register of Shipping



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Foundation