

Rpt. 4.

## REPORT ON MACHINERY.

No. 3100

Received at London Office SAT. 16 APR. 1921

Date of writing Report

19

When handed in at Local Office

19

Port of Kobe

No. in Survey held at  
Reg. Book.Date, First Survey 1<sup>st</sup> Sept. 1919 Last Survey 14<sup>th</sup> Decr. 1920

(Number of Visits 31)

on the Steel Single Screw Steamer "YEIKOKU MARU"

Tons { Gross 4370.21  
Net 2732.56  
When built 1920

Master

Built at Imposhima

By whom built Osaka Iron Works, Imposhima

Engines made at

Imposhima

By whom made

Osaka Iron Works, Imposhima

when made 1920

Boilers made at

Osaka

By whom made

Osaka Iron Works,

when made 1920

Registered Horse Power

Owners Nippon Kisen Kaishiki Kaisha

Port belonging to Kobe

Nom. Horse Power as per Section 28

390

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 3

Dia. of Cylinders

24" 41" 67"

Length of Stroke

48"

Revs. per minute

79

Dia. of Screw shaft

as per rule 13.96

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

Fitted closely

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

✓

Length of stern bush

5'-4"

Dia. of Tunnel shaft

as per rule 12.46

as fitted 12 3/4"

Dia. of Crank shaft journals

as per rule 13.00

as fitted 13 1/4"

Dia. of Crank pin

13 1/2"

Size of Crank webs

8 1/2" x 25"

Dia. of thrust shaft under

collars

13 1/4"

Dia. of screw

17'-0"

Pitch of Screw

17'-8 1/2"

No. of Blades

4

State whether moveable

No

Total surface

90°

No. of Feed pumps

Two

Diameter of ditto

4"

Stroke

25"

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

Two

Diameter of ditto

4 1/2"

Stroke

25"

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

Three

Sizes of Pumps

Ballast 9 1/2" x 12" x 10" dupl.

Donkey 6" x 4" x 5"

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

In Engine Room

Three 3 1/2"

In Holds, &amp;c.

No. 1, 2, 3 holds 2 @ 3 1/2"

No. 4 hold 1 @ 3 1/2"

No. of Bilge Injections

1

sizes

7

Connected to condenser, or to circulating pump

C.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. Rm.

OILERS, &amp;c.—(Letter for record

S)

Manufacturers of Steel

Illinois Stl. Co. Horn Beardmore Co. Carnegie Steel Co.

Total Heating Surface of Boilers

5400 4

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

26-6-20

No. of Certificate

LLOYD'S TEST

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

63.25 7

No. and Description of Safety Valves to

each boiler

2 Spring loaded

Area of each valve

7"

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

1'-6"

Mean dia. of boilers

15'-0"

Length

12'-0"

Material of shell plates

Steel

Thickness

1 5/16"

Range of tensile strength

26-28 tons

Are the shell plates welded or flanged

No

Descrip. of riveting: cir. seams

Ends Double

long. seams

Double riveted

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 1/4" + 1 1/2"

Per centages of strength of longitudinal joint

rivets 85.127

Working pressure of shell by rules

188 lbs.

Size of manhole in shell

12" x 16"

Size of compensating ring

2'-10" x 3'-2"

No. and Description of Furnaces in each boiler

3 Monisons

Material

Steel

Outside diameter

48 1/4"

Length of plain part

top

✓

Thickness of plates

crown 19 1/32"

Description of longitudinal joint

Weld

No. of strengthening rings

✓

Working pressure of furnace by the rules

195 lbs.

Combustion chamber plates: Material

Steel

Thickness: Sides

5/8"

Back

5/8"

Top

5/8"

Pitch of stays to ditto: Sides

8 1/4" 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

186 lbs.

Material of stays

Steel

Area at smallest part

1.79 0"

Area supported by each stay

72.25 0"

Working pressure by rules

222 lbs.

End plates in steam space:

Material

Steel

Material

Steel

Thickness

1 1/32"

Pitch of stays

18" + 20"

How are stays secured

nuts + washers

Working pressure by rules

194 lbs.

Area at smallest part

7.50 0"

Area supported by each stay

362 0"

Working pressure by rules

215 lbs.

Material of Front plates at bottom

Steel

Thickness

3/4"

Material of Lower back plate

Steel

Thickness

3/4"

Greatest pitch of stays

14" + 1/2" double

Working pressure of plate by rules

228 lbs.

Diameter of tubes

3"

Pitch of tubes

4 1/8" + 4 1/4"

Material of tube plates

Steel

Thickness: Front

3/4"

Back

3/4"

Mean pitch of stays

8 1/4" + 12 1/4"

Pitch across wide water spaces

13 1/4" + 1/2" double

Working pressures by rules

204 lbs.

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

9 3/4" x 1 3/4"

Length as per rule

Working pressure by rules

211 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

UPPERHEATER. 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

Diameter of Safety Valve

Pressure to which each is adjusted

Is Easing Gear fitted

Foundation

W1283-0260

Foundation

Foundation

Foundation

Foundation

Foundation



## IS A DONKEY BOILER FITTED?

No

*If so, is a report now forwarded?*

✓

*SPARE GEAR.* State the articles supplied:—

4 Connecting rod top end bolts + nuts.	A quantity of assorted bolts + nuts.	1 Air pump rod.	$\frac{1}{30}$ of Condenser tubes.
2 " " bot. end bolts + nuts.	Iron of various sizes.	1 Circulating pump rod.	$\frac{1}{4}$ set junk ring bolts.
2 Main bearing bolts + nuts.	1 pair connecting rod brasses.	1 Set check valves.	and a quantity of
1 Set of coupling bolts.	1 Set crosshead brasses.	1 Set safety valve springs.	Spare gear for the
1 Set of feed + bilge pump valves.	1 Slide valve spindle each size	1 Set bilge pump valves + seats	various auxiliary
1 Set each of piston packing rings.	1 Eccentric rod each size	10 Boiler tubes.	Engines.

*The foregoing is a correct description,*

OSAKA IRON WORKS, LTD.  
 UTSUNOMIYA BRANCH.

*A. Krigatoni*  
1919 1920

*Manufacturer.*

		1919	1920
Dates of Survey while building	During progress of work in shops - -	Sept. 4; Apr. 19, 22; May 3, 4, 5, 8, 13, 14, 15, 21, 28, 31; June 1, 23, 28; July 10; Aug. 6, 20; Sept. 8, 20, 27; Oct. 20,	
	During erection on board vessel - - -	Oct. 29; Nov. 12, 15, 22, 25, 30; Dec. 6, 14.	
	Total No. of visits	31	
		Is the approved plan of main boiler forwarded herewith <u>yes</u>	

Is the approved plan of main boiler forwarded herewith yes

” ” ” *donkey* ” ”

Dates of Examination of principal parts—Cylinders 10-7-20 Slides 10-7-20 Covers 10-7-20 Pistons 23-6-20 Rods 10-7-20

Connecting rods 23-6-20 Crank shaft 4-6-20 Thrust shaft 22-4-20 Tunnel shafts 4-6-20 Screw shaft 4-6-20 Propeller 4-6-20

Stern tube 31-7-20 Steam pipes tested 15-11-20 Engine and boiler seatings 20-8-20 Engines holding down bolts 12-11-20

Completion of pumping arrangements 1-11-20 Boilers fixed 30-10-20 Engines tried under steam 30-11-20

Completion of fitting sea connections 10-11-20 Stern tube 26-10-20 Screw shaft and propeller 28-10-20

Main boiler safety valves adjusted 25-11-20 Thickness of adjusting washers Lock nuts

Material of Crank shaft Steel Identification Mark on Do. 6-5-18 F.H.O. 1-8 3-5-18 PH-18 Material of Thrust shaft Steel Identification Mark on Do.

Material of Tunnel shafts Steel Identification Marks on Do. LLOYDS Material of Screw shafts Steel Identification Marks on Do.

Material of Steam Pipes	Steel	27-1/2 FWT	19-1/2 FWT	22-1/2 FWT	25-1/2 FWT	Test pressure	540 lbs.
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Is an installation fitted for burning oil fuel No

*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 yes If so, state name of vessel

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

S/S.	FUKU MARU	(Koku Rpt No.	2679
S/S.	WAR MAID	" "	2684
S/S.	HEIJIN MARU	" "	2684
S/S.	HEIMEI MARU	" "	265

The machinery has been made & fitted under special survey in accordance with the requirements of the Rules & the materials & workmanship are good.

The Crank Shaft, Thrust Shaft - Tunnel Shaft - Screw Shaft  
were forged + rough turned at Buffalo and finished at Osaka  
Iron Works.

It is eligible in my opinion for the notation ✱ L.M.C. 12-20

It is submitted that  
this vessel is eligible for

THE RECORD. + LMC. 12.20 FD. CL

Reck

STM 26/4/21

The amount of Entry Fee ... *Yes 30.-* When applied for,

Special ... .. £ 602.-: Dec. 23<sup>rd</sup> 1920

Donkey Boiler Fee	...	£	:	:	When received,

Travelling Expenses (if any) £ : : Jan. 13<sup>th</sup> 1921

FRI. APR. 29 1921

## Committee's Minute

*Assigned*

+ Ltnl B. 20

F. D. C. L.

TUE. 28 JUN. 1971

FRI. 15 JUL. 1921

Lloyd's Register  
Foundation