

## REPORT ON MACHINERY.

No. 2586

Received at London Office

Date of writing Report

19

When handed in at Local Office

19

Port of Kobe

No. in Survey held at

Kobe and O'Harima.

Date, First Survey

Jan 3 (Feb 10<sup>th</sup>)

Last Survey

May 26. 19

Reg. Book.

on the Steel Single Screw Steamer "Yugao Maru"

(Number of Visits during erection. 2937.05.  
+ continuous attendance while building. Tons)

Master Takumatsu Takara.

Built at O'Harima

By whom built

Harima Dockyard Co.

When built

1791.25.

Engines made at

Kobe (Steel Works.)

By whom made

Kobe Steel Works.

when made

1919.

Boilers made at

Kobe (Steel Works.)

By whom made

Kobe Steel Works

when made

1919

Registered Horse Power

Owners

Takoku Steamship Co. Ltd.

Port belonging to

Kobe.

Nom. Horse Power as per Section 28

290 289

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

22. 37. 61.

Length of Stroke

42.

Revs. per minute

73.

Dia. of Screw shaft

as per rule 2.97  
as fitted 13 1/2

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

✓

If two

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

✓

Length of stern bush

4' 10.

Dia. of Tunnel shaft

as per rule 11.60  
as fitted 12

Dia. of Crank shaft journals

as per rule 12.18  
as fitted 12 1/2

Dia. of Crank pin

12 1/2

Size of Crank webs

7 3/4 x 24

Dia. of thrust shaft under

collars

12 1/2

Dia. of screw

15' 9"

Pitch of Screw

16' 6"

No. of Blades

4

State whether moveable

No

Total surface

74 sq.

No. of Feed pumps

2

Diameter of ditto

4"

Stroke

22

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

2

Diameter of ditto

4

Stroke

22

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

3.

Sizes of Pumps

Baker 9. 12. 10.  
GSD. 7 x 5 x 7.  
Huns. 10 1/2 x 8 x 24.

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

In Engine Room

2 @ 3"

In Holds, &amp;c.

No 1 hold. 2 @ 3" (1 ft. &amp; 1 stbd) No 2 hold

No. of Bilge Injections

1

sizes

6"

Connected to condenser, or to circulating pump

Circ. 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

✓

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

✓

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 ER top platform.

OILERS, &amp;c.—(Letter for record

S.)

Manufacturers of Steel

Fusdale Steel Co.

Cambria Steel Co

Total Heating Surface of Boilers

3704 sq.

Is Forced Draft fitted

Yes

No. and Description of Boilers

Two Single ended.

Working Pressure

200 lbs.

Tested by hydraulic pressure to

400 lbs.

Date of test

31. 3. 19.

No. of Certificate

LLOYD'S TEST.  
430 LBS.  
31. 3. 19.  
J.S.R.  
ALT.  
R.

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

47. 25 sq.

No. and Description of Safety Valves

each boiler

Two Spring loaded.

Area of each valve

9.62 sq.

Pressure to which they are adjusted

200 lbs.

Are they fitted with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

✓

Mean dia. of boilers

13' 6"

Length

11' 6"

Material of shell plates

Steel

Thickness 1 5/16

Range of tensile strength

Are the shell plates welded or flanged

No

Descrip. of riveting: cir. seams

DRL

long. seams

TR DBS.

Diameter of rivet holes in long. seams

1 5/16

Pitch of rivets

8 3/4

Lap of plates or width of butt straps

19"

Per centages of strength of longitudinal joint

rivets 87.5  
plate 85

Working pressure of shell by rules

206 lbs.

Size of manhole in shell

12" x 16"

Size of compensating ring

2' 9 1/2" x 2' 5 1/2"

No. and Description of Furnaces in each boiler

3 Deighton

Material

Steel

Outside diameter

3' 4 1/2"

Length of plain part

top ✓  
bottom ✓

Thickness of plates

crown 9/16  
bottom 9/16

Description of longitudinal joint

Weld.

No. of strengthening rings

21

23

25

27

Working pressure of furnace by the rules

217 lbs.

Combustion chamber plates: Material

Steel

Thickness: Sides

31

Back

32

Top

32

Bottom

32

Pitch of stays to ditto: Sides

8 x 10

Back

7 1/4 x 8 1/2

Top

8 x 10 1/2

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

200 lbs

Material of stays

Steel

Area at smallest part

7 1/2 x 203

Area supported by each stay

8 x 10 1/2

Working pressure by rules

209

End plates in steam space:

Material

Steel

Thickness

1 1/8

Pitch of stays

16 x 18 1/4

How are stays secured

DR P. Haslows

Working pressure by rules

210

Material of stays

Steel

Area at smallest part

6.33 sq.

Area supported by each stay

303 sq.

Working pressure by rules

217

Material of Front plates at bottom

Steel

Thickness

29/32

Material of Lower back plate

Steel

Thickness

29/32

Greatest pitch of stays

14"

Working pressure of plate by rules

207 lbs

Diameter of tubes

3"

Pitch of tubes

4 1/2 x 4 1/2"

Material of tube plates

Steel

Thickness: Front

29/32

Back

7/8"

Mean pitch of stays

8 3/4"

Pitch across wide water spaces

14"

Working pressures by rules

270 lbs

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

11 1/2 x 17 1/2"

Length as per rule

34.468

Distance apart

8 1/4"

Number and pitch of stays in each

3 @ 8"

%

of strength of joint

240 lbs

Working pressure by rules

240 lbs

Steam dome: description of joint to shell

Diam.

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

Diameter of Safety Valve

Pressure to which each is adjusted

Is Easing Gear fitted

Lloyd's Register

Foundation

W1212 - 0212



IS A DONKEY BOILER FITTED? *h*

*If so, is a report now forwarded?*

*SPARE GEAR.* State the articles supplied:—

Two Crosshead bolts & nuts  
Two Crank pin bolts & nuts  
Two main bearing bolts & nuts.  
One set of coupling bolts & nuts  
One set of feed pump valves.  
One set of bilge pump valves.

The set of piston springs  
The safety valve spring.  
Assorted bolts & nuts  
I run of various sizes.

*The foregoing is a correct description,*  
**THE TEIKOKU STEAMSHIP CO., LTD.**

*Manufacturer.*

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

Imprest Continuous attendance at Robt Blue Works 10/2/19 - 30/4/19.  
 Bokers. Jan 3. Feb 4. 5. Mar. 10. 11. 15. 17. 21. 31. April 1.  
 April 19. 26. 28. May 5. 6. 8. 12. 14. 16. 19. 22. 23 + 26<sup>th</sup>  
 13 during erection.

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts—		Cylinders	Slides	Covers	Pistons	Rods
Connecting rods	18/9/18. 27/9/18	11/4/19	11/4/19	11/4/19	11/4/19	
Crank shaft	10.9.18	12 Feb.	9 Apr.	2nd Oct. 18	5.9.18	
Thrust shaft	8/1/19	18/11/18	9 Apr.	9th Apr. 19	24/10/18	
Tunnel shafts						
Screw shaft						
Propeller						
Stern tube	29/3/19	Steam pipes tested May 12th	Engine and boiler seatings April 8th		Engines holding down bolts	
Completion of pumping arrangements	May 22nd	Boilers fixed May 12th		Engines tried under steam May 2nd		
Completion of fitting sea connections	April 16.	Stern tube March 25th		Screw shaft and propeller Apr 12.		
Main boiler safety valves adjusted	May 23rd	Thickness of adjusting washers	lock nuts.			
Material of Crank shaft	Steel	Identification Mark on Do.		Material of Thrust shaft	Steel	Identification Mark on Do.
Material of Tunnel shafts	Steel	Identification Marks on Do.		Material of Screw shafts	Steel	Identification Marks on Do.
Material of Steam Pipes	Solid drawn Copper	Test pressure			4400 lbs	

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 P.P. "Ar Amazon". P.P. "Eastern"

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

The Machinery has been made and fitted under special supervision in accordance with the requirements of the Rules and the materials and workmanship have been found good. In my opinion the machinery is eligible for the record of L.M.C. 5.19.

*It is submitted that  
this vessel is eligible for  
THE RECORD.* + LMC. 5.19. F.D

Roll.

14/10/19

AR

The amount of Entry Fee	...	£	20.00	When applied for, May 30 <sup>a</sup> 19
Special	...	£	6.03.00.	
Donkey Boiler Fee	...	£	:	
Travelling Expenses (if any)	£	:	:	

When received,  
 June 5<sup>th</sup> 19

Committee's Minute

*Assigned*

R. B. Batcher.

Engineer Surveyor to Lloyd's Register of Shipping