

REPORT ON MACHINERY.

No. 1817

Received at London Office
19 JUL 1916

Date of writing Report

When handed in at Local Office

Port of Kobe

No. in Survey held at
Reg. Book.

Osaka

Date, First Survey

Last Survey 29 May 1916

on the

Single Screw Steamer "Toda Maru"

(Number of Visits)

Master

Built at

Osaka

By whom built

The Osaka Iron Works Ltd

Gross Tons

Net

When built 1916-5

Engines made at

Osaka

By whom made

The Osaka Iron Works, Ltd.

when made 1916-5

Boilers made at

do

By whom made

do

when made do

Registered Horse Power

Owners

Kobe Towa S.S. Co. Ltd.
Nippon Kisen Kaisha

Port belonging to

Amagasaki

Nom. Horse Power as per Section 28

288

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

Yes

ENGINES, &c.—Description of Engines

Triple Expansion

No. of Cylinders

3

No. of Cranks

3

Dia. of Cylinders

22:34:61

Length of Stroke

42

Revs. per minute

40

Dia. of Screw shaft

as per rule 12.8

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

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

Tightly fitted

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

Length of stern bush

4' 8 3/4"

Dia. of Tunnel shaft

as per rule 11.2

Dia. of Crank shaft journals

as per rule 11.4

Dia. of Crank pin

12

Size of Crank webs

7 3/8 x 23

Dia. of thrust shaft under

collars

12"

Dia. of screw

16' 0"

Pitch of Screw

16' 0"

No. of Blades

4

State whether moveable

No

Total surface

43 1/2"

No. of Feed pumps

Two

Diameter of ditto

3 1/4"

Stroke

24"

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

Two

Diameter of ditto

3 1/2"

Stroke

24"

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

Two

Sizes of Pumps

Ballast 7 x 8 1/2 x 9 Dup.
General 4 x 6 x 6 Dup.

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

In Engine Room

Two 3" x 1 in Blr. rm. two 3"

In Holds, &c.

Two 3" in each hold. After side 3 1/2"

No. of Bilge Injections

1

size 4"

Connected to condenser, or to circulating pump

C.P.

Is a separate Donkey Suction fitted in Engine room & 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

Yes

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

Dates of examination of completion of fitting of Sea Connections

10 May

of Stern Tube

6 May

Screw shaft and Propeller

10 May 1916

Is the Screw Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from

Upper platform Eng. Rm.

BOILERS, &c.—(Letter for record

3)

Manufacturers of Steel

Beardmore & Leeds Forge

Total Heating Surface of Boilers

3824

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

14/4/16

No. of Certificate

LLOYD'S TEST

360 LBS

14.4.16 ALJ

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

45

No. and Description of Safety Valves to

each boiler

Two Direct Spring

Area of each valve

3 1/4"

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

10"

Mean dia. of boilers

13.6"

Length

11.6"

Material of shell plates

Steel

Thickness

1 3/32"

Range of tensile strength

28 3/4 - 32 tons

Are the shell plates welded or flanged

No

Descrip. of riveting: cir. seams

Double riv.

long. seams

Lap riv.

Diameter of rivet holes in long. seams

1 3/16"

Pitch of rivets

8 1/8 x 4 1/16"

Lap of plates or width of butt straps

14 3/4 x 1"

Per centages of strength of longitudinal joint

rivets 92.9 x 88.5 comb.

plate 85.4 x 86.4

Working pressure of shell by rules

184 lbs

Size of manhole in shell

12 x 16 in End plate

Size of compensating ring

Flanged End Pl.

No. and Description of Furnaces in each boiler

3 Doughton

Material

Steel

Outside diameter

40 1/4"

Length of plain part

top

Thickness of plates

crown 1/2"

Description of longitudinal joint

Weld

No. of strengthening rings

Working pressure of furnace by the rules

187 lbs

Combustion chamber plates: Material

Steel

Thickness: Sides 23/32"

Pitch of stays to ditto: Sides

9 x 10"

Back

8 3/4 x 10"

Top

9 x 10 1/2"

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules

187 lbs

Material of stays

Steel

Diameter at smallest part

2.1"

Area supported by each stay

94 1/2"

Working pressure by rules

200 lbs

End plates in steam space

Material

Steel

Thickness

1 3/8"

Pitch of stays

25 x 19"

How are stays secured

Double nut.

Working pressure by rules

181 lbs

Material of stays

Steel

Diameter at smallest part

3 1/4"

Area supported by each stay

25 x 19"

Working pressure by rules

180 lbs

Material of Front plates at bottom

Steel

Thickness

1"

Material of Lower back plate

Steel

Thickness

15/16"

Greatest pitch of stays

14"

Working pressure of plate by rules

180 lbs

Diameter of tubes

3"

Pitch of tubes

4 3/8 x 4 1/4"

Material of tube plates

Steel

Thickness: Front

1"

Back 13/16"

Mean pitch of stays

10 1/2"

Pitch across wide water spaces

14"

Working pressures by rules

180 lbs

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

9 1/2 x 13 (4 in)

Length as per rule

32"

Distance apart

10 1/2"

Working pressure by rules

202 lbs

Superheater or Steam chest; how connected to boiler

Can the superheater be shut off and the boiler worked

separately

Diameter

Length

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivet

holes

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

If stiffened with rings

Distance between rings

Working pressure by rules

End plates: Thickness

How stayed

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Yes

IS A DONKEY BOILER FITTED?

No

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:-

2 Crosshead bolts & nuts. 2 Crank pin bolts & nuts.
2 main bearing bolts & nuts. Feed & bilge pump valves. Set piston springs.
Set coupling bolts & nuts. Assorted iron & bolts & nuts.

The foregoing is a correct description



Dates of Survey while building
During progress of work in shops - - Dec 1st 6th 15th 16th 22nd 24th 25th 30th 1915
During erection on board vessel - - Mar. 5th 8th 14th 23rd 29th 31st April. 3rd 10th 14th 16th 20th 26th
Total No. of visits 37 Launch 1916

Is the approved plan of main boiler forwarded herewith *Forwarded with Rep 1737 on 9th Tensho Maru*

Dates of Examination of principal parts—Cylinders 3/2/16 etc Slides 14/4/16 etc Covers 14/4/16 etc Pistons 3/3/16 etc Rods 28/3/16 etc
Connecting rods 28/3/16 etc Crank shaft 29/3/16 etc Thrust shaft 30/3/16 etc Tunnel shafts 22/12/15 etc Screw shaft 26/4/16 etc Propeller 14/4/16 etc
Stern tube 6/5/16 etc Steam pipes tested 19th May. Engine and boiler seatings 6th May Engines holding down bolts 19th May
Completion of pumping arrangements 19th May Boilers fixed 19th May Engines tried under steam 25th May 1916
Main boiler safety valves adjusted 25th May Thickness of adjusting washers 7/16
Material of Crank shaft Steel Identification Mark on Do. 29.3.16 Material of Thrust shaft Steel Identification Mark on Do. 17/3/16 ALJ
Material of Tunnel shafts Steel Identification Marks on Do. 17.3.16 Material of Screw shafts Steel Identification Marks on Do. 17/3/16 ALJ
Material of Steam Pipes Steel Test pressure 540 lbs per sq. in.

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 *Yasaki Maru*

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 workmanship has been found good.

The shafting has been made at The Kobe Steel Works & the Certificate (copy) is enclosed.

A report on the Electric lighting is enclosed.

The vessel is eligible in my opinion for the record + LMC 5.16.

It is submitted that this vessel is eligible for THE RECORD + LMC 5.16. ED.

JWD.

Arthur L. Jones 20/7/16

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee ... £20.00
Special ... £5.16
Donkey Boiler Fee ... £
Travelling Expenses (if any) £
When applied for, 30th May 1916
When received, 4th June 1916

Committee's Minute FRI. 21 JUL 1916

Assigned + Lmb 5.16

MACHINERY CERTIFICATE
WRITTEN