

REPORT ON MACHINERY.

No. 2729

Received at London Office

TUE APR. 6 1920

Date of writing Report

10

When handed in at Local Office

10

Port of Kobe

No. in Survey held at
Reg. Book.

Osaka

Date, First Survey 28 Jan'y 1919 Last Survey 27 Feb'y 1920

(Number of Visits)

on the

Single Screw Steamer "Shinto Maru"

Tons

Gross 2214.55

Net 1302.66

Master

Built at

Osaka

By whom built Fujinagata Dockyard Co

When built 1919

Engines made at

Osaka

By whom made

Fujinagata Dock Co

when made 1919

Boilers made at

do

By whom made

do

when made do

Registered Horse Power

Owners

Kishimoto Kisen Kaisha

Port belonging to

Nishinomura

Nom. Horse Power as per Section 28

189

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

Yes

ENGINES, &c.—Description of Engines

Triple Expansion

No. of Cylinders

Three

No. of Cranks

3

Dia. of Cylinders

18 1/2 : 30 1/2 : 51 1/2

Length of Stroke

36

Revs. per minute

80

Dia. of Screw shaft

as per rule 11.4
as fitted 11.7/16

Material of

Steel

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

No

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 3' 8 1/2"

Dia. of Tunnel shaft

as per rule 9.46
as fitted 9.2"

Dia. of Crank shaft journals

as per rule 9.93
as fitted 10.8"

Dia. of Crank pin

10 1/4"

Size of Crank webs

6 3/4 x 18

Dia. of thrust shaft under

collars 10 1/8"

Dia. of screw

13.6"

Pitch of Screw

16"

No. of Blades

4

State whether moveable

No

Total surface

56"

No. of Feed pumps

2

Diameter of ditto

3 1/2"

Stroke

16"

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

2

Diameter of ditto

3 1/2"

Stroke

16"

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

Two

Sizes of Pumps

Ballast 6 1/2, 8, 9

Duplex

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

In Engine Room

One 3" + two 2 3/4"

Small Donkey pump

In Holds, &c.

Two 2 3/4" to each hold

No. of Bilge Injections

1

size 5"

Connected to condenser, or to circulating pump

Yes

Is a separate Donkey Suction fitted in Engine room & size

Yes 3"

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

No

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

Dates of examination of completion of fitting of Sea Connections

17.2.19

of Stern Tube

10.2.19

Screw shaft and Propeller

17.2.19

Is the Screw Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from upper platform in E. Rm.

BOILERS, &c.—(Letter for record

S)

Manufacturers of Steel

Carnegie Steel Co.

Yawata Imperial Steel Works.

Total Heating Surface of Boilers

3135

Is Forced Draft fitted

No

No. and Description of Boilers

Two Single Ended

Working Pressure

180 lbs

Tested by hydraulic pressure to

360 lbs

Date of test

26.2.19

No. of Certificate

LLOYD'S TEST
360 lbs
26.2.19

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

49.9

No. and Description of Safety Valves to

each boiler

Two Direct Spring

Area of each valve

2 1/2 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

8" to main

Mean dia. of boilers

12" 8"

Length

10" 6"

Material of shell plates

Steel

Thickness

1 1/8"

Range of tensile strength

28 to 32 lbs

Are the shell plates welded or flanged

No

Descrip. of riveting: cir. seams

Mid. trch.

long. seams

Double riv.

Diameter of rivet holes in long. seams

1 1/16"

Pitch of rivets

8" x 4 1/2"

Top of plates or width of butt straps

1" 5" x 7/8"

Per centages of strength of longitudinal joint

rivets 100%
plate 84.0%

Working pressure of shell by rules

194 lbs

Size of manhole in shell

16 x 12"

Size of compensating ring

3' 0" x 2' 8" x 1 1/16"

No. and Description of Furnaces in each boiler

3 Morrison

Material

Steel

Outside diameter

40 1/4"

Length of plain part

top
bottom

Thickness of plates

crown 1/2"
bottom

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

5/8"

Back

7/8"

Top

3/8"

Bottom

3/4"

Pitch of stays to ditto: Sides

9 x 7 1/2"

Back

7 1/2 x 7 1/2"

Top

8 1/2 x 7 1/2"

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules

203

End plates in steam space:

Material of stays

Steel

Diameter at smallest part

1.77"

Area supported by each stay

9 x 7 1/2"

Working pressure by rules

185 lbs

Material of stays

Steel

Material of Front plates at bottom

Steel

Thickness

1"

Pitch of stays

15 x 17"

How are stays secured

Double nut

Working pressure by rules

225

Material of stays

Steel

Material of Front plates at bottom

Steel

Diameter at smallest part

5.9"

Area supported by each stay

17 x 15"

Working pressure by rules

225

Material of stays

Steel

Material of Front plates at bottom

Steel

Material of stays

Steel

Thickness

3/4"

Material of Lower back plate

Steel

Thickness

3/4"

Greatest pitch of stays

15" at 5/8"

Working pressure of plate by rules

200

Material of stays

Steel

Diameter of tubes

3 1/4"

Pitch of tubes

4 1/2" x 4 3/8"

Material of tube plates

Steel

Thickness: Front

3/4"

Back

3/4"

Mean pitch of stays

9"

Pitch across wide water spaces

1" 3"

Working pressures by rules

190 lbs

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

7 3/4" (doub. pl. 3/4")

Length as per rule

30"

Distance apart

7 3/4"

Number and pitch of stays in each

2 @ 8 1/2"

Working pressure by rules

223 1/2

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

-

VERTICAL DONKEY BOILER—

Manufacturers of Steel

No. *None* Description *None*

Made at _____ By whom made _____ When made _____ Where fixed _____

Working pressure _____ tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____ Fire grate area _____ Description of _____

Valves _____ No. of Safety Valves _____ Area of each _____ Pressure to which they are adjusted _____ Date of adjustment _____

If fitted with easing gear _____ If steam from main boilers can enter the donkey boiler _____ Dia. of donkey boiler _____ Length _____

Material of shell plates _____ Thickness _____ Range of tensile strength _____ Descrip. of riveting long. seams _____

Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____ Lap of plating _____ Per centage of strength of joint _____ Rivets _____ Plates _____

Working pressure of shell by rules _____ Thickness of shell crown plates _____ Radius of do. _____ No. of stays to do. _____ Dia. of stays _____

Diameter of furnace Top _____ Bottom _____ Length of furnace _____ Thickness of furnace plates _____ Description of joint _____

Working pressure of furnace by rules _____ Thickness of furnace crown plates _____ Radius of do. _____ Stayed by _____

Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— Two main bearing bolts. 2 Cr. pin bolts & set braces. 4 Cross head bolts. 2 sets coupling bolts. Two eccentric rods. 1 valve rod. Air & Circulating pump valves. & pump rod. Feed & fly pump valves & seats. Packing ring each piston. Packing rings each piston. Safety valve springs. The foregoing is a correct description, Assorted bolts & nuts. Iron various sizes.

Fujinagata Zashiki Manufacturer.

Dates of Survey while building { During progress of work in shops - 28th Jan. 1919 4 10 17 26 Feb. 10 14 15 19 March 1919
During erection on board vessel - and 22nd & 27th Feb 1920
Total No. of visits 9

Is the approved plan of main boiler forwarded herewith _____

Dates of Examination of principal parts—Cylinders 28-1-19 Slides 10.2.19 Covers 10.2.19 Pistons 10.2.19 Rods 28.1.19 Connecting rods 28.1.19 Crank shaft 28.1.19 Thrust shaft 28.1.19 Tunnel shafts 28.1.19 Screw shaft 28.1.19 Propeller 26.2.19 Stern tube 10.2.19 Steam pipes tested 10.3.19 Engine and boiler seatings 10.2.19 Engines holding down bolts 15.3.19 Completion of pumping arrangements 15.3.19 Boilers fixed 14.3.19 Engines tried under steam 19.3.19 Main boiler safety valves adjusted 15.3.19 Thickness of adjusting washers *locknuts*. Material of Crank shaft *Steel* Identification Mark on Do. *15* Material of Thrust shaft *Steel* Identification Mark on Do. *15* Material of Tunnel shafts *Steel* Identification Marks on Do. *15* Material of Screw shafts *Steel* Identification Marks on Do. *15* Material of Steam Pipes *Copper* Test pressure *360 lbs*

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

The first visit was paid on 28th Jan 1919, the request for survey being made at that time. The soleplate, columns & cylinders had already been fitted together, the pumps & condensers cast, all shafting finished & rods almost finished. The boiler combustion chambers had been riveted & the shell plate drilled ready for riveting. The shafting was forged & rough turned at the Imperial Steel Works, Manchester & finished by the Engine Builders. Certificates of inspection & testing by the Government Surveyors were produced & the test records are in accordance with the Society's Rules. The boiler shell & end plates were made by the Yawata Steel Works under Government inspection & the C.C. & furnaces at the Carnegie Steel Works & Brighton H.C. Co respectively & were tested by the Society's Surveyors.

The vessel has made several coasting trips & the machinery on being opened up has been found in good condition throughout & the boiler good.

The machinery is in my opinion eligible for the notation L.M.C. 2-20.

The amount of Entry Fee .. £ 20 : When applied for, 26.2.19
Special .. £ 400 :
Donkey Boiler Fee .. £ :
Travelling Expenses (if any) £ 20 : When received, 29.2.20

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

Committee's Minute

Assigned

Arthur H. Jones

Arthur H. Jones

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

TUE. 28 JUN. 1921

Lloyd's Register

Foundation

CERTIFICATE WRITTEN

Certificate (if required) to be sent to the Committee's Minute.