

REPORT ON MACHINERY.

No. 2546

Received at London Office

Date of writing Report 28 Aug 1919 When handed in at Local Office

Port of Kobe

No. in Survey held at Reg. Book.

Date, First Survey 31st Dec. 1918 Last Survey 4 August 1919

(Number of Visits 36)

Gross 4363

Net 2719

When built 1919-7

Master Built at Osaka

By whom built The Osaka Iron Works Ltd

Engines made at Osaka

By whom made The Osaka Iron Works Ltd

when made 1919

Boilers made at do

By whom made do

when made do

Registered Horse Power

Owners Katsuda Kisen Kaisha

Port belonging to Mitsui-gumi

Nom. Horse Power as per Section 28 382

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 24" 41" 67"

Length of Stroke 48

Revs. per minute 65

Dia. of Screw shaft

as per rule 13.96" Material of screw shaft 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 on length 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 tightly If two

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" Dia. of Crank shaft journals

as per rule 13.09" Dia. of Crank pin

13 1/2" Size of Crank webs

8 1/2" 25" Dia. of thrust shaft under

collars 13 1/4"

Dia. of screw

17" 0" Pitch of Screw

17" 0" 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 Two

Sizes of Pumps

3 1/2" x 12" 10" Dupl.

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

In Engine Room

Three 3 1/2" and one 3 1/2" to tunnel well

In Holds, &c.

No. 1 & 2 holds each 3 1/2" centre & two 2 3/4" wings

No. of Bilge Injections 1

sizes 7"

Connected to condenser, or to circulating pump

Cir. 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

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 Up' grating in E. Rm.

BOILERS, &c.—(Letter for record 5.)

Manufacturers of Steel

Duckenshaw & St. Co. Girders St. Co. Champion Riset Co.

deeds Forge Co.

Total Heating Surface of Boilers 5186

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 2nd June 1919

No. of Certificate

LLOYD'S REG. TEST 360 LBS 2.6.19 Y.S. R

Can each boiler be worked separately Yes

Area of fire grate in each boiler

61.8

No. and Description of Safety Valves to

each boiler

Two 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"

Mean dia. of boilers

13" 0"

Length 11" 6"

Material of shell plates Steel

Thickness 1 1/2"

Range of tensile strength

26.79-32 tons

Are the shell plates welded or flanged No.

Descrip. of riveting: cir. seams double riv.

long. seams

Double shape

Diameter of rivet holes in long. seams

1 3/8"

Pitch of rivets

9 5/16" 4 3/4"

Top of plates or width of butt straps 19 7/8" 1 1/4 in.

Per centages of strength of longitudinal joint

rivets 88.0

plate 85.2

Working pressure of shell by rules

194 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 Morrison Ball

Material Steel

Outside diameter

48 5/8"

Length of plain part

top 1' 3/2"

Thickness of plates

bottom 9 1/16"

Description of longitudinal joint

Weld

No. of strengthening rings

Working pressure of furnace by the rules 257

Combustion chamber plates: Material

Steel

Thickness: Sides

2 1/32"

Back 2 1/32"

Top 2 1/32"

Bottom 3/4"

Pitch of stays to ditto: Sides

7 1/2" x 8 1/2"

Back 8 1/2" x 8 1/2"

Top 7 1/2" x 9"

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules 206 lbs

Material of stays

Steel

Area at smallest part

1.79"

Area supported by each stay

8 1/2" x 8 1/2"

Working pressure by rules

223

End plates in steam space:

Material

Steel

Thickness

1 3/8"

Pitch of stays

18" 20"

How are stays secured

Double nuts

Working pressure by rules 246 lbs

Area at smallest part 8.76"

Area supported by each stay

18 x 20

Working pressure by rules

252

Material of Front plates at bottom

Steel

Working pressure of plate by rules 206 +

Thickness

13 1/16"

Material of Lower back plate

Steel

Thickness

13 1/16"

Greatest pitch of stays

13 3/4" wide sp

Working pressure of plate by rules 206 +

Diameter of tubes

3"

Pitch of tubes

4 1/2" x 4 1/2"

Material of tube plates

Steel

Thickness: Front

13 1/16"

Back 13 1/16"

Mean pitch of stays 10 1/2"

Pitch across wide water spaces 13 3/4"

Working pressures by rules

200 +

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

9 3/4" x 7 1/8"

Working pressure by rules

Steam dome: description of joint to shell

% of strength of 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

IS A DONKEY BOILER FITTED?

No.

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:-

4 Crosshead bolts & nuts. 2 Crank pin bolts & nuts. Set coupling bolts & nuts. 2 Main bearing bolts & nuts. Piston springs all pistons. Crank & crosshead "brasses". Valve spindles. Ecc. rods. A & C pump rods. Set feed & bilge pump valves & seats. Feed check valves & seats. 2 Safety valves & springs. Assorted bolts & nuts, steel plate etc.

The foregoing is a correct description,

Kahachi Shoji



Dates of Survey while building { During progress of work in shops -- Dec. 21, 26, 1918. Jan. 27. Feb. 3, 14, 17, 18, 26, 28 Mar. 8, 10, 18
During erection on board vessel -- Apr. 7, 9, 10, 16, 25, 30 May 2, 9, 10, 17, 22, 23, 28, 31. June 2, 10, 11, 17
Total No. of visits 36 July 4, 7, 22, 25, 29. Aug 4, 1919 Is the approved plan of main boiler forwarded herewith yes

Dates of Examination of principal parts—Cylinders 31-5-19 Slides 10-4-19 Covers 31-5-19 Pistons 7-4-19 Rods 9-5-19

Connecting rods 9-5-19 Crank shaft 27-1-19 Thrust shaft 30-9-18 Tunnel shafts 26-2-19 Screw shaft 28-2-19 Propeller 10-6-1

Stern tube 17-6-19 Steam pipes tested 22-7-19 Engine and boiler seatings 17-6-19 Engines holding down bolts 22-7-19

Completion of pumping arrangements 25-7-19 Boilers fixed 22-7-19 Engines tried under steam 25-7-19 at morning 26-7-19 off

Completion of fitting sea connections 7-7-19 Stern tube 17-6-19 Screw shaft and propeller 7-7-19

Main boiler safety valves adjusted 25-7-19 Thickness of adjusting washers Port B $\frac{1}{2}$ Star B $\frac{1}{2}$ Locking device

Material of Crank shaft Steel Identification Mark on Do. 27-1-19 Material of Thrust shaft Steel Identification Mark on Do. 30-9-18

Material of Tunnel shafts Steel Identification Marks on Do. 22-7-19 Material of Screw shafts Steel Identification Marks on Do. 10-3-19

Material of Steam Pipes Steel 3-2-19, 26-2-19, 14-3-19, 17-2-19, 10-3-19 Test pressure 540 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 "Fuku Maru", "Yamato Maru", "Mas"

General Remarks (State quality of workmanship, opinions as to class, &c. "Keijin Maru" etc

The machinery has been made & fitted under Special Survey in accordance with the Rules & the materials & workmanship are good.

The vessel is eligible in my opinion for the notation + LMC 8.19.

It is submitted that this vessel is eligible for THE RECORD. + LMC 8.19. FD.

R. H. 14/10/19

A. L. Jones

The amount of Entry Fee ... You : 30: When applied for, 31st July 1919
Special ... You : 69: When received, 8th Aug 1919
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) You : 15:

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

+ LMC 8.19

F. D.



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