

REPORT ON MACHINERY.

No. 2728

Received at London Office MON. NOV. 15 1920

Date of writing Report 22-9-1920 When handed in at Local Office

Port of YOKOHAMA

No. in Survey held at URAGA

Date, First Survey May 6thLast Survey SEPT 24th 1920

Reg. Book.

on the STEEL, SINGLE SCREW STEAMER MORIOKA MARU

(Number of Visits)

Master NAOTO KAMADA

Built at

URAGA

By whom built

URAGA DOCK CO LTD

Tons Gross 4468.51

Net 3096.48

When built 9-1920

Engines made at URAGA

By whom made

URAGA DOCK CO LTD

when made 9-1920

Boilers made at DO

By whom made

DO DO

when made 9-1920

Indicated Horse Power

Owners NIPPON YUSEN KAISHA

Port belonging to TOKYO

Horse Power as per Section 28 341

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted YES

NES, &c.—Description of Engines

TRIPLE EXPANSION SURFACE COND.

No. of Cylinders 3

No. of Cranks 3

No. of Cylinders 22-36 1/2-61

Length of Stroke 48

Revs. per minute 70-80

Dia. of Screw shaft

as per rule 13.60

Material of STEEL

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

propeller boss YES

If the liner is in more than one length are the joints burned SOLID

If the liner does not fit tightly at the part

in the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive YES

If two

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

Length of stern bush 62"

Dia. of Tunnel shaft

as per rule 12.16

Dia. of Crank shaft journals

as per rule 12.75

Dia. of Crank pin 13 1/2"

Size of Crank webs 24 3/4 x 8 1/4"

Dia. of screw 13 1/8"

Pitch of Screw 17-3"

No. of Blades 4

State whether moveable YES

Total surface 866

No. of Feed pumps 2

Diameter of ditto 4"

Stroke 24"

Can one be overhauled while the other is at work YES

No. of Bilge pumps 2

Diameter of ditto 4"

Stroke 24"

Can one be overhauled while the other is at work YES

No. of Donkey Engines 4

Sizes of Pumps 10 1/2 x 8 x 18

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

No. 1, 2-3 1/2"

No. 2, 2-3 1/2"

Engine Room 4 at 2 1/2" DIA.

In Holds, &c. No. 1, 2-3 1/2"

No. 2, 2-3 1/2"

No. of Bilge Injections 1

sizes 7 1/2"

Connected to condenser, or to circulating pump PUMP

Is a separate Donkey Suction fitted in Engine room & size YES 3 1/2" DIA.

all the bilge suction pipes fitted with roses YES

Are the roses in Engine room always accessible YES

Are the stances on Engine room bulkheads always accessible

all connections with the sea direct on the skin of the ship YES

Are they Valves or Cocks BOTH

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 YES EXCEPT

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

all pipes are carried through the bunkers NONE

How are they protected

all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times YES

the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges YES

the Screw Shaft Tunnel watertight YES

Is it fitted with a watertight door YES

worked from UPPER DECK LEVEL

MILERS, &c.—(Letter for record 18)

Manufacturers of Steel YAWATA & CARNAGIE STEEL COS

Total Heating Surface of Boilers 46584

Is Forced Draft fitted YES

No. and Description of Boilers TWO CYLINDRICAL SCOTCH.

Working Pressure 200 LBS

Tested by hydraulic pressure to 400 LBS

Date of test 5-8-20

No. of Certificate 124

in each boiler be worked separately YES

Area of fire grate in each boiler 59.7

No. and Description of Safety Valves to

each boiler 3 1/2" TWIN SPRING LOADED

Area of each valve 9.62

Pressure to which they are adjusted 205 LBS

Are they fitted with easing gear YES

smallest distance between boilers or uptakes and bunkers or woodwork 18"

Mean dia. of boilers 14 1/2" ID

Length 11' 6"

Material of shell plates STEEL

thickness 1 1/2"

Range of tensile strength 28/32 TONS

Are the shell plates welded or flanged NO

Descrip. of riveting: cir. seams DR. LAP.

ing. seams T.R.D.B.S.

Diameter of rivet holes in long. seams 1 1/2"

Pitch of rivets 10"

Lap of plates or width of butt straps 28"

percentages of strength of longitudinal joint

rivets 93.7%

plate 85%

Working pressure of shell by rules 224 LBS

Size of manhole in shell 16 x 12"

Size of compensating ring 36 1/2 x 32 1/2 x 1 1/2"

No. and Description of Furnaces in each boiler 3 MORISONS

Material STEEL

Outside diameter 44 1/4"

length of plain part

top

Thickness of plates

bottom

Description of longitudinal joint WELDED

No. of strengthening rings

Working pressure of furnace by the rules 217.5 LBS

Combustion chamber plates: Material STEEL

Thickness: Sides 7/16"

Back 7/16"

Top 7/16"

Bottom 7/8"

Pitch of stays to ditto: Sides 7 1/4 x 10 1/4"

Back 8 3/8 x 8 3/4"

Top 8 1/2 x 9"

stays are fitted with nuts or riveted heads NUTS

Working pressure by rules 219 LBS

Material of stays STEEL

Area at smallest part 1.79

Area supported by each stay 73.4

Working pressure by rules 219.6 LBS

End plates in steam space:

Material STEEL

Thickness 1 1/8"

Pitch of stays 16 1/2 x 19 1/2"

How are stays secured D. NUTS

Working pressure by rules 204.4 LBS

Material of stays STEEL

Area at smallest part 7.67

Area supported by each stay 322

Working pressure by rules 248 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 x 8 3/4"

Working pressure of plate by rules 286 LBS

Diameter of tubes 3" OD

Pitch of tubes 4 1/4 x 4 3/16"

Material of tube plates STEEL

Thickness: Front 3/4 x 5/8"

Back 3/4"

Mean pitch of stays 9 1/2"

Pitch across wide water spaces 13 1/2"

Working pressures by rules 222 LBS

Girders to Chamber tops: Material Steel

Depth and

thickness of girder at centre 8 1/2 x 1 1/4"

Length as per rule 32 3/8"

Distance apart 8 1/4"

Number and pitch of stays in each 2 AT 9"

Working pressure by rules 202 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

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

No

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— 7 Connecting rods top end bolts & nuts, 2. bottom end bolts & nuts; 2 main bearing bolts & nuts; 6 coupling bolts & nuts; one set of feed & bilge pump valves; one set of piston rings & springs for main engines, & all auxiliaries; one interchangeable crank shaft; One propeller shaft; 4 propeller (bronz) blades; 2 pair top end & 1 pair bottom end brass one set of link brasses; one eccentric strap complete; one air pump rod; one circ. pump impeller & shaft one H.P. & one L.P. valve spindles; 2 eccentric rods; one set of check valves; 6 cyl. covers & 6 junk ring bolts; 4 valve chest cover bolts; 2 doz. boiler tubes & 3 doz. condenser tubes; 1 set of safety valve springs & 1 escape & a large quantity of assorted bolts & nuts. Iron of various sizes; & a considerable quantity of hardware & spare gear for auxiliary machinery.

The foregoing is a correct description.

K. Ushioku

Manufacturer.

Dates of Survey while building	During progress of work in shops - -	MAY 6, 23, 31, JUNE 1, 2, 3, 9, 15, 17, 23, 25, JULY 5, 7, 9, 12, 16, 19, 21, 22, 23, 26, 29, AUG. 3, 5, 6, 9, 10, 12, 16, 18, 20
	During erection on board vessel - - -	25, 27, 30, SEPT. 3, 6, 7, 11, 13, 14, 16, 20, 21, 22, 24.
	Total No. of visits	46

Is the approved plan of main boiler forwarded herewith **YES**

" " " *donkey* " " "

Dates of Examination of principal parts—Cylinders 26-7-20 Slides 9-7-20 Covers 26-7-20 Pistons 9-7-20 Rods 3-8-20
 Connecting rods 3-8-20 Crank shaft 9-8-20 Thrust shaft 5-8-20 Tunnel shafts 5-8-20 Screw shaft 5-8-20 Propeller 6-8-20
 Stern tube 16-7-20 Steam pipes tested 6-9-20 Engine and boiler seatings 23-7-20 Engines holding down bolts 25-8-20
 Completion of pumping arrangements 13-9-20 Boilers fixed 10-8-20 Engines tried under steam 13-9-20
 Completion of fitting sea connections 21-7-20 Stern tube fitted 21-7-20 Screw shaft and propeller 8-9-20
 Main boiler safety valves adjusted 11-9-20 Thickness of adjusting washers LOCK NUTS FITTED.

Material of Crank shaft STEEL Identification Mark on Do. 9-8-20 Material of Thrust shaft STEEL Identification Mark on Do. 5-8-20
Material of Tunnel shafts STEEL Identification Marks on Do. 5-8-20 Material of Screw shafts STEEL Identification Marks on Do. 5-8-20
Material of Steam Pipes SOLID DRAWN STEEL (NATIONAL TUBE) Test pressure 600 LBS. WATER PRESS.

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 S.S. YEHIME MARU "REPT. NO 2587"

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

Main Engine Crank shaft was made by Oshima Steel works, rough machined & assembled at
Spare crank shaft material supplied by Kobe Steel works rough machined
Thrust & Propeller shafting made by Kobe Steel works rough turned.
Tunnel shafting & Spare tail shaft made by Japan Steel works Muroran, rough

The machinery & Boilers of this vessel have been constructed under special survey & according to approved plans, the materials have been tested found efficient & the workmanship is good. They have now been efficiently fitted on board & tested under steam with satisfactory results. Eligible in my opinion to have record in L.M.C. with date of build 9-20, in Register Book.

It is submitted that
this vessel is eligible for
THE RECORD. + LMC, 9.20 FII

Roll 23/11/20

905

The amount of Entry Fee	...	£ EN 30:00	:	When applied for,
Special	...	\$ 648:00	:	21-9-1920
Donkey Boiler Fee	...	£ ✓ :	:	When received,
Travelling Expenses (if any)		\$ SEE HULL RPT.	:	25-9-1920

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. NOV. 26 1920

Assigned

+ Lib. 9.20

7. D.

20

CERTIFICATE WRITTEN

© 2020

Lloyd's Register
Foundation