

Rpt. 4.

## REPORT ON MACHINERY.

No. 2869

TUE. SEP. 28 1920

Received at London Office

Date of writing Report July 28<sup>th</sup> 1920 When handed in at Local Office

Port of Kobe

No. in Survey held at Kobe

Date, First Survey Dec 8. 19.

Last Survey June 7 19 20.

Reg. Book.

on the Steel Single Screw Steamer "MALACCA MARU"

(Number of Visits)

Gross 5373.76

Net 3209.71

Master L. Shinomiya Built at Kobe

By whom built Mitsubishi Zosen Kaisha Ltd. When built 1920

Engines made at Kobe

By whom made Mitsubishi Zosen Kaisha Ltd. when made 1920

Boilers made at do

By whom made do when made 1920

Registered Horse Power 493

Owners Nippon Yusen Kaisha Port belonging to Tokyo

Nom. Horse Power as per Section 28

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 3

Dia. of Cylinders 26½": 44½": 75" Length of Stroke 48"

Revs. per minute

Dia. of Screw shaft

as per rule 15.25

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 Yes

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 Yes

If two

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

Length of stern bush 6'-0"

Dia. of Tunnel shaft as per rule 13.75

Dia. of Crank shaft journals as per rule 14.48

Dia. of Crank pin 15"

Size of Crank webs 28"x9½"

Dia. of thrust shaft under

collars 14¾" Dia. of screw 18"-3"

Pitch of Screw 19'-8½"

No. of Blades 4

State whether moveable Yes

Total surface 96.8

No. of Feed pumps 2

Diameter of ditto 5"

Stroke 24"

Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2

Diameter of ditto 5"

Stroke 24"

Can one be overhauled while the other is at work Yes

No. of Donkey Engines Four

Sizes of Pumps

Feed 2 sets Mumps 9½"x12"x10"

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

In Engine Room 3 @ 3½"

In Holds, &amp;c. Nos. 1, 2, 3 + 4 Holds 2 @ 3½"

Reserve bunkers + Cross bunker 2 @ 3½"; Dry tank + Tunnel Well 1 @ 3½"

No. of Bilge Injections 1 sizes 8"

Connected to condenser, or to circulating pump Cir. Pp.

Is a separate Donkey Suction fitted in Engine room &amp; size Yes 3½"

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 Yes

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 Yes

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

Is the Screw Shaft Tunnel watertight Yes

Is it fitted with a watertight door Yes

worked from Engine room top

BOILERS, &amp;c.—(Letter for record S.)

Manufacturers of Steel Wm. Beardmore &amp; Co, David Gilchrist &amp; Sons.

Total Heating Surface of Boilers 6569.1

Is Forced Draft fitted Yes

No. and Description of Boilers Three, Single ended

Working Pressure 200 lbs.

Tested by hydraulic pressure to 400 lbs.

Date of test 24<sup>th</sup> Apr. 1920

No. of Certificate

No. and Description of Safety Valves to

Can each boiler be worked separately

Area of fire grate in each boiler 54

No. and Description of Safety Valves to

each boiler 2 spring loaded

Area of each valve 19.24"

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 14'-0"

Length 11'-6"

Material of shell plates Steel

Thickness 17½" Range of tensile strength

Are the shell plates welded or flanged No

Descrip. of riveting: cir. seams D.R.L.

long. seams TR.D.B.S.

Diameter of rivet holes in long. seams 17½"

Pitch of rivets 9½"

Lap of plates or width of butt straps 21½"

Per centages of strength of longitudinal joint

rivets 88.39

plate 84.87

Working pressure of shell by rules 233 lbs.

Size of manhole in shell (3'-1"x2'-9") 12"x16"

Size of compensating ring 3'-1"x2'-9"

No. and Description of Furnaces in each boiler 3 Morrison's

Material Steel

Outside diameter 3'-7¼"

Length of plain part top

Thickenss of plates crown 5/8"

Description of longitudinal joint Weld

No. of strengthening rings

Bottom 15/16"

Top 1/16"

Bottom 1/16"

Working pressure of furnace by the rules 230 lbs.

Combustion chamber plates: Material Steel

Thickness: Sides 1/16"

Back 1/16"

Top 1/16"

Bottom 1/16"

Pitch of stays to ditto: Sides 8½"x9¼"

Back 8"x9"

Top 9¾"x7"

If stays are fitted with nuts or riveted heads Nuts

Working pressure by rules 207 lbs.

Material of stays Steel

Area at smallest part 2.03

Area supported by each stay 79.5

Working pressure by rules 229 lbs.

End plates in steam space:

Material Steel

Thickenss 1 3/32"

Pitch of stays 20"x18"

How are stays secured DN + W.

Working pressure by rules

Material of Front plates at bottom Steel

Area at smallest part 7.67

Area supported by each stay 360

Working pressure by rules 214 lbs.

Material of Front plates at bottom Steel

Thickenss 3/4"

Material of Lower back plate Steel

Thickenss 3/4"

Greatest pitch of stays 13¾"x8"

Working pressure of plate by rules 290 lbs.

Mean pitch of stays 9"x8¾"

Diameter of tubes 3/4"

Pitch of tubes 4½"x4¾"

Material of tube plates Steel

Thickness: Front 3/4"

Back 3/4"

Mean pitch of stays 9"x8¾"

Pitch across wide water spaces 13¾"

Working pressures by rules 245 lbs.

Girders to Chamber tops: Material Steel

Depth and

thickness of girder at centre 10¼"x1¾"

Length as per rule 2'-7¾"

Distance apart 9¾"

Number and pitch of stays in each 3 @ 7"

Working pressure by rules 266 lbs.

Steam dome: description of joint to shell

% of strength of joint

Diameter

Thickenss of shell plates

Material

Description of longitudinal joint

Diam. of rivet holes

Pitch of rivets

Working pressure of shell by rules

Crown plates

Thickenss

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

Is Easing Gear fitted

Diameter of Safety Valve

Pressure to which each is adjusted

Lloyd's Register

427-0048



IS A DONKEY BOILER FITTED?

No

If so, is a report now forwarded?

Rpt. 13.

SPARE GEAR. State the articles supplied:—

- |  |  |  |
|--|--|--|
| 1 Complete set of Connecting rod top & bottom bolts.               | 2 Propeller blades.                      | 1 Complete set of Valve - Seat for main & auxy. feed check valve for 1 Boiler. |
| 2 Main bearing bolts.  | 1 Set top & bottom braces for Conn. rod. | 13 Junk ring bolts, cylinder casing cover bolts.                               |
| 1 Set of coupling bolts.   | 1 pair Eccentric rods                    | 1 each size of escape valve for main engine.                                   |
| 1 Set of Traction & delivery seats & valves for feed & bilge pump. | 1 Air pump rod with nut.                 | 3 off safety valve springs.  |
| 1 Set of each piston packing ring.                                 | 1 impeller shaft for Centrifugal pump.   | 53 Condenser tubes.  |
| 1 Propeller shaft.   | 1 of each size of Valve rod.             | 150 Fire bars.   |

The foregoing is a correct description,

Kobe Works, Mitsubishi, Japan

Mototaru Haranishi

Manufacturer.

Dates of Survey while building	During progress of work in shops	1919 Dec. 8, 29; Jan. 7, 14, 15, 16; Feb. 3, 13, 16, 19, 25; Mar. 4, 6, 14, 18, 22, 26; Apr. 2, 6, 8, 12, 17, 23, 24, 26, 28; May 1.
	During erection on board vessel	May 5, 6, 11, 19, 24, 26, 27, 29 June 3, 7.
	Total No. of visits	36

Is the approved plan of main boiler forwarded herewith

yes

" " " donkey " " "

Dates of Examination of principal parts—Cylinders 8-12-19 Slides 8-12-19 Covers 8-12-19 Pistons 8-12-19 Rods 8-12-19

Connecting rods 8-12-19 Crank shaft 36, 20 Thrust shaft 8-12-19 Tunnel shafts 15-11-1920 Screw shaft 24 April Propeller May

Stern tube April 12 Steam pipes tested 25-5-20 Engine and boiler seatings Apr 28 Engines holding down bolts May 19

Completion of pumping arrangements May 29 Boilers fixed May 19 Engines tried under steam 3-6-1920

Completion of fitting sea connections May 26 Stern tube May 4 Screw shaft and propeller 4-5-1920

Main boiler safety valves adjusted May 27 Thickness of adjusting washers Lock nuts.

Material of Crank shaft Steel Identification Mark on Do. Lloyd's 8-12-19 20 B 20 Material of Thrust shaft Steel Identification Mark on Do. Lloyd's 8-12-19 20 B 20

Material of Tunnel shafts Steel Identification Marks on Do. Lloyd's 8-12-19 20 B 20 Material of Screw shafts Steel Identification Marks on Do. Lloyd's 26-12-19 A 20 B 20

Material of Steam Pipes Steel Test pressure 600 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 If so, state name of vessel Practically same as "Eastern Victor"

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

The Machinery has been made and fitted under special survey and the materials and workmanship have been found good.

In my opinion the machinery is eligible for the Record of + L.M.C. 6. 20.

Note: no certificate. Shafting not forged Kobe.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 6. 20 F1

Roll 1/10/20

R. Satchell

Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee	£ 30	When applied for,
Special	782	June 7 1920
Donkey Boiler Fee		When received,
Travelling Expenses (if any)		June 22 1920

Committee's Minute

Assigned

TUE. OCT. 25 1920

+ L.M.C. 6. 20

F.D.

CERTIFICATE WRITTEN.



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