

## REPORT ON MACHINERY.

No. 4187

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Date of writing Report 13<sup>th</sup> Dec. 1923 When handed in at Local Office

19 Port of Kobe

No. in Survey held at Osaka &amp; Kobe

Date, First Survey 8-7-20.

Last Survey 7<sup>th</sup> Dec. 1923

Reg. Book. on the S.S. "KWAYO MARU"

(Number of Visits 31)

Tons { Gross 4363.75  
Net 2762.18

Master Built at Kobe By whom built Osaka Iron Works, Ltd. When built 1923

Engines made at Osaka By whom made Osaka Iron Works, Ltd. when made 1923

Boilers made at do. By whom made do. when made 1923

Registered Horse Power Owners Osaka Iron Works Port belonging to Nippon Yusen Kaisha

Nom. Horse Power as per Section 28 391 390 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &amp;c.—Description of Engines Triple Expansion No. of Cylinders 3 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 13.97" Material of screw shaft as fitted 14 1/2" 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 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 close 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 12.47" Dia. of Crank shaft journals as per rule 13.08" Dia. of Crank pin 13 1/2" Size of Crank webs 8 1/2" x 25" Dia. of thrust shaft under

collars 13 1/2" Dia. of screw 17'-0" Pitch of Screw 19'-0" No. of Blades 4 State whether moveable No Total surface 90' #

No. of Feed pumps 2 Diameter of ditto 4 1/2" Stroke 25" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 25" Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2 Sizes of Pumps Cal. 9 1/2" x 12" x 10" duplex No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Three 3 1/2" &amp; one 3 1/2" in tunnel well In Holds, &amp;c. No. 1 &amp; 2 holds each two 3 1/2"

Nos. 3 &amp; 4 holds each two 3 1/2"

No. of Bilge Injections 1 sizes 7" Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room &amp; 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 No

Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Large 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 upper platform in E.R.

OILERS, &amp;c.—(Letter for record S) Manufacturers of Steel Midvale Steel &amp; Ordnance Co., Union Steel Co.

Total Heating Surface of Boilers 5400 Is Forced Draft fitted Yes No. and Description of Boilers 2 single ended

Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 23-12-20. No. of Certificate 360 LBS. Y.J.

Can each boiler be worked separately Yes Area of fire grate in each boiler 63.25' # No. and Description of Safety Valves to

each boiler 2 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" INT. Mean dia. of boilers 15'-0" Length 12'-0" Material of shell plates Steel

Thickness 1 5/8" Range of tensile strength 26.8 &amp; 30.8 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D.R.

long. seams T.R.D.B.S. Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 9 3/4" Lap of plates or width of butt straps 22" x 1 1/2"

Per centages of strength of longitudinal joint rivets 102.8 Working pressure of shell by rules 196 lbs. Size of manhole in shell 3 1/2" x 16"

Size of compensating ring 3'-2" x 2'-10" x 1 5/8" No. and Description of Furnaces in each boiler 3 horizontal Material Steel Outside diameter 4'-0 1/4"

Length of plain part top Thickness of plates crown 19" Description of longitudinal joint Weld No. of strengthening rings

Working pressure of furnace by the rules 196 lbs. Combustion chamber plates: Material Steel Thickness: Sides 1 1/8" Back 1 1/8" Top 1 1/8" Bottom 1 1/8"

Pitch of stays to ditto: Sides 8 1/2" x 8 1/2" Back 9" x 8 1/2" Top 9" x 8" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 213 lbs.

Material of stays Steel Area at smallest part 2.79 sq. ft. Area supported by each stay 76.6 sq. ft. Working pressure by rules 247 lbs. End plates in steam space:

Material Steel Thickness 1 3/8" Pitch of stays 18" x 20" How are stays secured D.N.W. Working pressure by rules 216 lbs. Material of stays Steel

Area at smallest part 7.67 sq. ft. Area supported by each stay 18" x 20" Working pressure by rules 221 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 5/8" x 8 1/2" Working pressure of plate by rules 257 lbs.

Diameter of tubes 3" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates Steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 8 3/8"

Pitch across wide water spaces 13 1/4" Working pressures by rules 248 lbs. Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 10 1/2" x 8" x 2 Length as per rule 2'-9 1/8" Distance apart 9" Number and pitch of stays in each 3 @ 8"

Working pressure by rules 267 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

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