

REPORT ON MACHINERY.

No. 2838.

Date of writing Report May 25th 1920 When handed in at Local Office 1920 Port of Kobe Received at London Office FRI. AUG. 6 1920

No. in Survey held at Osaka - Imposhima Date, First Survey June 14th 1919 Last Survey Mar. 29th 1920
 Reg. Book. on the STEEL SINGLE SCREW STEAMER "HAVANA MARU" (Number of Visits 33) Tons { Gross 5823.06
 Net 3589.66

Master _____ Built at Imposhima By whom built Osaka Iron Works, Imposhima branch When built 1920

Engines made at Osaka By whom made Osaka Iron Works, Ltd when made 1920

Boilers made at do By whom made do when made 1920

Registered Horse Power _____ Owners The Osaka Shosen Kaisha Ltd. Port belonging to Osaka

Nom. Horse Power as per Section 28 559.3 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 26 1/2" : 44 1/2" : 74 1/2" Length of Stroke 51" Revs. per minute 79.5 Dia. of Screw shaft as per rule 15.41" Material of screw shaft steel
 as fitted 15 3/4"

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 ✓ If two liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 5'-6 1/2"

Dia. of Tunnel shaft as per rule 14.02" Dia. of Crank shaft journals as per rule 14.72" Dia. of Crank pin 14 1/8" Size of Crank webs 9 1/4 x 2 1/2" Dia. of thrust shaft under collars 14 1/8" Dia. of screw 18'-3" Pitch of Screw 18'-3" No. of Blades 4 State whether moveable yes Total surface 100°

No. of Feed pumps Two Diameter of ditto 4" Stroke 27" Can one be overhauled while the other is at work yes

No. of Bilge pumps Two Diameter of ditto 4 1/2" Stroke 27" Can one be overhauled while the other is at work yes

No. of Donkey Engines Three Sizes of Pumps Weirs feed 8" x 10 1/2" x 21" dupl. Ballast 9 1/2" x 12" x 10" Gen. Sew. 7 1/2" x 5 1/2" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Two @ 3 1/2" In Holds, &c. Nos. 1, 2, 4 + 5 two @ 3 1/2"

No. of Bilge Injections 1 sizes 9" Connected to condenser, or to circulating pump in pp. 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 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 Telemotor pipe + voice tube How are they protected Covered with wood + iron bands

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 Grating

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Midvale Stl. - Ordnance Co. Am. spiral pipe Works; Cambria Stl. Co.; Champion Rivet Co.

Total Heating Surface of Boilers 7988.4 Is Forced Draft fitted yes No. and Description of Boilers Three Single ended 3SB

Working Pressure 200 lbs. Tested by hydraulic pressure to 400 lbs. Date of test 12/2/20 + 12/2/20 No. of Certificate 110 Y 25 H 29 183 12-23-20 Y. J. B.

Can each boiler be worked separately yes Area of fire grate in each boiler 61.1 No. and Description of Safety Valves to each boiler Two Spring loaded Area of each valve 7.068" 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 About 2'-2" Mean dia. of boilers 15'-0" Length 12'-0" Material of shell plates Steel

Thickness 1 1/2" Range of tensile strength 2679 to 32 ton Are the shell plates welded or flanged no Descrip. of riveting: cir. seams Doub. riveted 1 3/8 (in)
 long. seams Doub. riveted Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 9 1/8", 4 1/8" Lap of plates or width of butt straps 1'-10" x 1 1/8 (in)

Per centages of strength of longitudinal joint rivets 88.7 Working pressure of shell by rules 228 lbs. Size of manhole in shell 12" x 16"
 plate 84.8

Size of compensating ring 34" x 38" x 1 1/2" No. and Description of Furnaces in each boiler 3 Morrison's Material Steel Outside diameter 48 3/4"

Length of plain part top ✓ Thickness of plates crown 2 1/32" Description of longitudinal joint Weld No. of strengthening rings ✓
 bottom ✓

Working pressure of furnace by the rules 219 lbs. Combustion chamber plates: Material steel Thickness: Sides 1/16" Back 1/16" Top 1/16" Bottom 15/16"

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

Material of stays steel Area at smallest part 2.1 Area supported by each stay 76.5 Working pressure by rules 247 lbs. End plates in steam space: Material steel Thickness 1 3/32" Pitch of stays 18" x 20" How are stays secured Doub. nuts + 8" x 3/4" washers Working pressure by rules 214 lbs. Material of stays steel

Area at smallest part 7.66 Area supported by each stay 360 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 1/2" Sec. stay Working pressure of plate by rules 200 lbs.
Wide space doubled 1/16"

Diameter of tubes 3" Pitch of tubes 4 1/8" x 4 1/4" 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 200 lbs. Girders to Chamber tops: Material steel Depth and thickness of girder at centre 10 1/2" : 7 1/8" x 2" Length as per rule 34 1/16" Distance apart 9" Number and pitch of stays in each 3 @ 8"

Working pressure by rules 249 lbs. Steam dome: description of joint to shell ✓ % of strength of joint _____

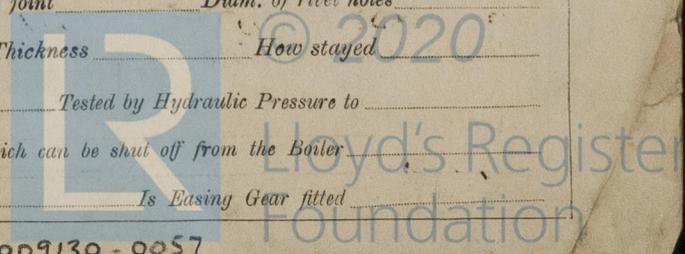
Diameter _____ Thickness of shell plates _____ Material _____ Description of longitudinal joint _____ Diam. of rivet holes _____

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 _____



IS A DONKEY BOILER FITTED?

No

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

- | | | |
|--|--------------------------|--|
| 1 Pair Bolts + nuts for Crosshead brasses. | 1 Set Crosshead brasses | Bolts + nuts assorted |
| 2 Bolts + nuts for Crank pin brasses | 1 Set Crank pin brasses. | 1 Piston rod with nut. |
| 4 Main bearing bolts + nuts | 2 Propeller blades. | 1 Set of Cylinder escape valves + springs. |
| 1 Set of Coupling bolt + nut for main shaftings. | 1 Propeller Shaft. | Iron of various sizes |
| 1 Set of Eccentric Rods. | 1 Set of Check Valves. | |
| 1 Air pump Rod. | 1 Safety valve spring | |

The foregoing is a correct description,



Manufacturer.

M. Kaji

Dates of Survey while building

During progress of work in shops --	1919 June 14; Aug. 6; Sept. 3, 26; Oct. 11, 15, 21, 25, 27, 30; Nov. 3, 4, 11; Dec. 4, 8, 13, 16, 19, 22; Jan. 1920
During erection on board vessel ---	1920 Jan. 15, 26, 29, 30; Febr. 9, 12, 18; Febr. 27; March 3, 8, 15, 27 + 29
Total No. of visits	33.

Is the approved plan of main boiler forwarded herewith

" " " donkey " " "

Dates of Examination of principal parts—Cylinders 13-12-19; 9-2-20 Slides 15-1-20; 9-2-20 Covers 9-2-20 Pistons 13-12-19; 9-2-20 Rods 16-12-19 etc

Connecting rods 29-1-20 etc Crank shaft 12-11-19 etc Thrust shaft 3-9-19 Tunnel shafts 6-8-19 etc Screw shaft 14-6-19 etc Propeller 26-2-20

Stern tube 14-2-20 Steam pipes tested 22-3-20 Engine and boiler seatings 22-3-20 Engines holding down bolts 22-3-20

Completion of pumping arrangements 23-3-20 Boilers fixed 20-3-20 Engines tried under steam 2-4-20

Completion of fitting sea connections 5-3-20 Stern tube 2-3-20 Screw shaft and propeller 3-3-20

Main boiler safety valves adjusted 29-3-20 Thickness of adjusting washers Lock nuts

Material of Crank shaft Steel Identification Mark on Do. LLOYDS 12-11-19; 10-11-19 Y.J.R. Material of Thrust shaft Steel Identification Mark on Do. LLOYDS 3-9-19; 3-9-19 Y.J.R.

Material of Tunnel shafts Steel Identification Marks on Do. LLOYDS 27-10-19; 3-11-19; 4-11-19 Y.J.R. Material of Screw shafts Steel Identification Marks on Do. LLOYDS 25-10-19; 25-10-19 Y.J.R.

Material of Steam Pipes Steel Test pressure 600 lbs. Spare :- LLOYDS 14-6-19; 14-6-19 Y.J.R.

Is an installation fitted for burning oil fuel 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 S/S. "HAGUE MARU" (Kobe Reg. No. 276)

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

The Shafting was forged + rough turned at The Sizer Forge Company, Buffalo, + finished at the Osaka Iron Works, Ltd.

The Machinery has been made + fitted under Special Survey in accordance with the requirements of the Rules + the materials and workmanship have been found good.

The Machinery is in our opinion eligible for the record of L.M.C. 3-20

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 3.20 F.D

RM

9/8/20

J.G. Fry + Y. Jo. Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... Yen : 30.- When applied for,

Special ... £ 840.- 9th Apr. 1920

Donkey Boiler Fee ... £ : : When received,

Travelling Expenses (if any) £ : 83.- 4th May 1920

Committee's Minute

FRI. AUG. 13 1920

Assigned

+ d. M.C. 3.20 J.G.

CERTIFICATE WRITTEN



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Certificate (if required) to be sent to

The Surveyors are requested not to write on or below the space for Committee's Minute.