

REPORT ON MACHINERY.

Received at London Office

MON 17 MAR. 1919

Date of writing Report 19 When handed in at Local Office 19 Port of Kobe

No. in Survey held at Osaka and Imosshima. Date, First Survey January 22nd Last Survey October 23rd 1918.
 Reg. Book. on the Steel Screw Steamer "Hoyeisan Maru" (Number of Visits 29)

Master K. Tsugi. Built at Imosshima By whom built Osaka Iron Works. Innosshima branch. Tons } Gross 6079.05
 Net 3850.07
 When built 1918.

Engines made at Osaka. By whom made Osaka Iron Works. when made 1918

Boilers made at Osaka. By whom made Osaka Iron Works. when made 1918.

Registered Horse Power _____ Owners Mitsui bussan Kaishiki Kaisha Port belonging to Kobe

Nom. Horse Power as per Section 28 553. 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 Three

Dia. of Cylinders 27" 45" 75" Length of Stroke 51" Revs. per minute 65. Dia. of Screw shaft as per rule 15.27 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"

Dia. of Tunnel shaft as per rule 13.67 Dia. of Crank shaft journals as per rule 14.35 Dia. of Crank pin 1 1/8" Size of Crank webs 9 1/4 x 27 1/2" Dia. of thrust shaft under collars 14 7/8" Dia. of screw 18-3" Pitch of Screw 18-3" No. of Blades 4 State whether moveable Yes Total surface 100 sq ft

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 bal. 10x13x13. 8x8. 6x6. 7 1/2 x 5 1/2 x 4. 10 1/2 x 8 x 21. No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Two 3 1/2" Boiler Room 2 @ 3 1/2" & 2 @ 2 1/2" In Holds, &c. 3 1/2" to each side in each hold.

No. of Bilge Injections 1 sizes 9" Connected to condenser, or to circulating pump Circ. 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 Vank air pipes. How are they protected Strong wood casing

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 Plating in Eng. Room

BOILERS, &c.—(Letter for record (S)) Manufacturers of Steel Dukens Iron & Steel Coy. Reading Iron Coy.
Deighton's Patent tube & fittings.

Total Heating Surface of Boilers 8100 sq ft. Is Forced Draft fitted Yes No. and Description of Boilers Three Single ended.

Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 15.7.18. 2.9.18. No. of Certificate LLOYD'S HYD. TEST. 360 LBS. 15.7.18. 2.9.18. ALTR. R.

Can each boiler be worked separately Yes Area of fire grate in each boiler 63 1/4 sq ft. No. and Description of Safety Valves to each boiler Two Spring loaded. Area of each valve 3" dia. Pressure to which they are adjusted 180 lbs. Are they fitted with easing gear Yes.

Smallest distance between boilers or uptakes and bunkers or woodwork _____ Mean dia. of boilers 15'0" Length 12'0" Material of shell plates Steel

Thickness 1 5/16" Range of tensile strength 2679-32000 Are the shell plates welded or flanged No. Descrip. of riveting: cir. seams DRL
 long. seams TRDBS Diameter of rivet holes in long. seams 1 5/16 + 1/16" Pitch of rivets 9" Lap of plates or width of butt straps 1'-7 1/2"

Per centages of strength of longitudinal joint rivets 85 Working pressure of shell by rules 188 Size of manhole in shell 12 x 16"
 plate 85.3

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

Length of plain part top 19 1/2" Thickness of plates bottom 19 1/2" Description of longitudinal joint Weld. No. of strengthening rings ✓

Working pressure of furnace by the rules 195 lbs. Combustion chamber plates: Material Steel Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 7/8"

Pitch of stays to ditto: Sides 8 1/4 x 8 1/2" Back 8 1/2 x 8 1/2" Top 8 x 9" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 187 lbs.

Material of stays Steel Area at smallest part 1.79 sq in. Area supported by each stay 72 1/4 sq in. Working pressure by rules 222 lbs. End plates in steam space: Material Steel Thickness 1 1/32" Pitch of stays 18" x 20" How are stays secured D. Nuts. Working pressure by rules 193 lbs. Material of stays Steel

Area at smallest part 7.50 Area supported by each stay 18 x 20" Working pressure by rules 204 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" incl. Working pressure of plate by rules 180 lbs.

Diameter of tubes 3" Pitch of tubes 4 1/4" x 4 1/8" Material of tube plates Steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 10"

Pitch across wide water spaces 13 1/4" Working pressures by rules 180 lbs. Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9 3/4" x 1 3/4" Length as per rule 33 1/2" Distance apart 9" Number and pitch of stays in each 3 @ 8"

Working pressure by rules 192 lbs. Steam dome: description of joint to shell _____ % of strength of joint _____

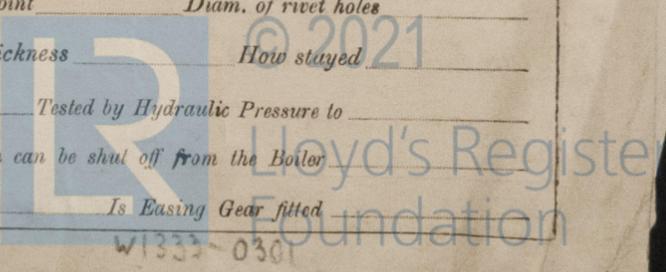
Diameter _____ Thickness of shell plates _____ Material _____ Description of longitudinal joint _____ Diam. of rivet holes _____

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 _____



If not, state whether, and when, one will be sent

To a Report also sent on the Hull of the ship

5.

IS A DONKEY BOILER FITTED? *Yes.*

If so, is a report now forwarded? *Yes.*

SPARE GEAR. State the articles supplied:—

Two Connecting Rod bolts & nuts. ✓ Iron of Various sizes. ✓ Set of Eccentric Rods (Ahead & Aft)
 Two Connecting Rod bottom end bolts & nuts. One Spare Propeller Shaft. Air Pump Rod.
 Two Main bearing bolts. ✓ One Propeller Blade (Bruntz metal) ✓ Set Sea Check Valves & Seats.
 One Set of Feed & Bilge Pump Valves. One Set Crank Pin & Crosshead Brasses. Two Safety Valve Springs.
 One Set of Piston Springs. ✓ One Set of Coupling bolts. ✓ One Quadrant.
 Quantity of assorted bolts & nuts. ✓ Set of Slide Valve Rods. ✓ 20 plain boiler tube. ✓

The foregoing is a correct description,

Kahachi Abe



Dates of Survey while building
 During progress of work in shops -- Jan 22, 24, 28, Feb 1, 7, 13, 23, March 6, 19, 30, Apr 5, 11, May 9, June 7
 During erection on board vessel -- 20, 29, July 1, August 13, 15, 20
 Total No. of visits -- Sept 8, 11, 13, 21, 23, Oct 1, 7, 13, 23
 Is the approved plan of main boiler forwarded herewith *Yes.*
 29. Visits.

Dates of Examination of principal parts—Cylinders Jan 24th Slides Feb 7th Covers Feb 7th Pistons Feb 7th Rods Feb 7th
 Connecting rods 28/6/18 Crank shaft 26.8.18. Thrust shaft 26.6.18. Tunnel shafts 9.8.18. Screw shaft 1.7.18. Propeller Sept 8th
 Stern tube Aug 8th Steam pipes tested 16th & 21st Sept. Engine and boiler seatings Sept 8. Engines holding down bolts Sept 21
 Completion of pumping arrangements Sept 28th Boilers fixed Sept 23rd Engines tried under steam Sept 29th
 Completion of fitting sea connections Sept 23rd Stern tube August 13th Screw shaft and propeller Sept 11th
 Main boiler safety valves adjusted Sept 25. Thickness of adjusting washers lock nuts.
 Material of Crank shaft *Steel* Identification Mark on Do. *Y. 26.8.18.* Material of Thrust shaft *Steel* Identification Mark on Do. *LLOYD'S 26.6.18. A.L.J.R.*
 Material of Tunnel shafts *Steel* Identification Marks on Do. *Y. 9.8.18. A.L.J.R.* Material of Screw shafts *Steel* Identification Marks on Do. *LLOYD'S 1.7.18. A.L.J.R.*
 Material of Steam Pipes *Steel* ✓ 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 *S.S. Noaisan Maru T.S.S. Taibu Maru*
Report nos. 2441 and.

General Remarks (State quality of workmanship, opinions as to class, &c.)
*The Machinery has been made and fitted under Special Survey in accordance with the requirements of the Rules and the materials and workmanship have been found good.
 The Machinery is in my opinion eligible for the Record of + L.M.C. 10.18.*

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 10.18. F.D.

R.B. Alchelor
 Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... *Yen 30.* : When applied for,
 Special ... *Yen 7.5.* : *Oct 15 1918*
 Donkey Boiler Fee ... £ : :
 Travelling Expenses (if any) £ : : *Oct 22 1918*

Committee's Minute TUE. 1-APR. 1919
 Assigned + L.M.C. 10:18 F.D.



Certificate (if required) to be sent to the Surveyors are requested not to write on or below the space for Committee's Minute.