

REPORT ON MACHINERY.

No. 2586

Received at London Office

MON OCT 13 1919

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

No. in Survey held at Kobe and O'Harima Date, First Survey Jan 3 (Feb 10th) Last Survey May 26. 19

Reg. Book. on the Steel Single Screw Steamer "Yugao Maru" (Number of Visits during erection. Gross 2937.05. Net 1791.25. When built 1919.)

Master Fukumatsu Takera Built at O'Harima By whom built Narima Dockyard Coy.

Engines made at Kobe (Steel Works) By whom made Kobe Steel Works when made 1919

Boilers made at Kobe (Steel Works) By whom made Kobe Steel Works when made 1919

Registered Horse Power 290 289 Owners Tokoku Steamship Coy. Ltd. Port belonging to Kobe

Nom. Horse Power as per Section 28 290 289 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 22. 37. 61. Length of Stroke 42. Revs. per minute 73. Dia. of Screw shaft as per rule 2.97 as fitted 13 1/2 Material of screw shaft 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 ✓ If two liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 4'-10.

Dia. of Tunnel shaft as per rule 11.60 as fitted 12 Dia. of Crank shaft journals as per rule 12.18 as fitted 12 1/2 Dia. of Crank pin 12 1/2 Size of Crank webs 7 3/4 x 2 1/2 Dia. of thrust shaft under collars 12 1/2 Dia. of screw 15'-9" Pitch of Screw 16'-6" No. of Blades 4 State whether moveable no Total surface 74 sq.

No. of Feed pumps 2 Diameter of ditto 4" Stroke 22 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 4 Stroke 22 Can one be overhauled while the other is at work Yes

No. of Donkey Engines 3 Sizes of Pumps Baker 9. 12. 10. GSD. 7 x 5 x 7. Huns. 10 1/2 x 8 x 24. No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 2 @ 3" In Holds, &c. no 1 hold. 2 @ 3" (1 ft v 1 stbd) no 2 hold

2 @ 3" no 3 hold. 2 @ 3" Tunnel well. 1 @ 3"

No. of Bilge Injections 1 sizes 6" Connected to condenser, or to circulating pump Circ. Pumps 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 ✓

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 ✓ 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 ER top platform.

OILERS, &c.—(Letter for record S.) Manufacturers of Steel Yudrate Steel Coy. Cambria Steel Co. David Colville & Sons Ltd.

Total Heating Surface of Boilers 3704 sq. Is Forced Draft fitted Yes No. and Description of Boilers Two Single ended.

Working Pressure 200 lbs. Tested by hydraulic pressure to 400 lbs. Date of test 31. 3. 19. 1. 4. 19. No. of Certificate 31. 3. 19. 1. 4. 19. ALT B.

Can each boiler be worked separately Yes Area of fire grate in each boiler 47. 25 sq. No. and Description of Safety Valves to each boiler Two Spring loaded. Area of each valve 9.62 sq. 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 13'-6" Length 11'-6" Material of shell plates Steel

Thickness 1 5/16 Range of tensile strength Are the shell plates welded or flanged no Descrip. of riveting: cir. seams DRL

long. seams TR DBS. Diameter of rivet holes in long. seams 1 5/16 Pitch of rivets 8 3/4 Lap of plates or width of butt straps 19"

Per centages of strength of longitudinal joint rivets 87.5 plate 85 Working pressure of shell by rules 206 lbs. Size of manhole in shell 12" x 16"

Size of compensating ring 2'-9 1/2 x 2'-5 1/2 No. and Description of Furnaces in each boiler 3 Deighton Material Steel Outside diameter 3'-4 1/2

Length of plain part top bottom ✓ Thickness of plates crown bottom 9/16 Description of longitudinal joint weld No. of strengthening rings ✓

Working pressure of furnace by the rules 217 lbs. Combustion chamber plates: Material Steel Thickness: Sides 3/32 Back 2/32 Top 3/32 Bottom 25/32

Pitch of stays to ditto: Sides 8 x 10 Back 7 1/4 - 8 1/2 Top 8 - 10 1/2 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 200 lbs

Material of stays Steel Area at smallest part 7 1/2 x 2 3/4 Area supported by each stay 8 x 10 1/2 Working pressure by rules 209 End plates in steam space:

Material Steel Thickness 1 1/8 Pitch of stays 16 x 18 1/4 How are stays secured W.R. Washers Working pressure by rules 210 Material of stays Steel

Area at smallest part 6.63 sq. Area supported by each stay 303 sq. Working pressure by rules 217 Material of Front plates at bottom Steel

Thickness 29/32 Material of Lower back plate Steel Thickness 29/32 Greatest pitch of stays 14" Working pressure of plate by rules 207 lbs

Diameter of tubes 3" Pitch of tubes 4 1/2 x 4 1/2 Material of tube plates Steel Thickness: Front 29/32 Back 7/8 Mean pitch of stays 8 3/4

Pitch across wide water spaces 14" Working pressures by rules 270 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 11 1/2 x 1 7/8 Length as per rule 34.468 Distance apart 8 1/4 Number and pitch of stays in each 3 @ 8"

Working pressure by rules 240 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 ✓

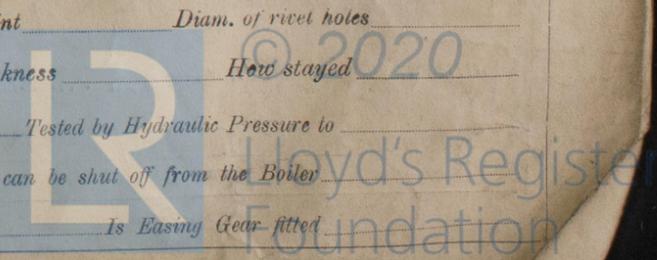
Pitch of rivets ✓ Working pressure of shell by rules ✓ Crown plates ✓ Thickness ✓ How stayed ✓

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 ✓

W1212 - 0212



IS A DONKEY BOILER FITTED? *no.*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

Two Crosshead bolts & nuts
 Two Crank pin bolts & nuts
 Two main bearing bolts & nuts.
 One set of coupling bolts & nuts.
 One set of feed pump valves.
 One set of bilge pump valves.

One set of piston springs.
 One safety valve spring.
 Assorted bolts & nuts
 In m of various sizes.

The foregoing is a correct description,
THE TEIKOKU STEAMSHIP CO., LTD.

J. H. Lewis
Director

Manufacturer.

Dates of Survey while building
 During progress of work in shops --
 During erection on board vessel --
 Total No. of visits

Imprest Continuous attendance at Kobe Steel Works 10.2/19 - 30/4/19.
 Bolkers. Jan 3. Feb 4. 5. Mar. 10. 11. 15. 17. 21. 31. April 1.
 April 19. 26. 28. May 5. 6. 8. 12. 14. 16. 19. 22. 23 & 26th
 13 during erection.

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts—Cylinders 7/4/19 Slides 11/4/19 Covers 11/4/19 Pistons 11/4/19 Rods 17.1.19
 Connecting rods 18/9/18. 27/9/18 Crank shaft 10.9.18 Thrust shaft 9th Apr. Tunnel shafts 9th Apr. 19. Screw shaft 5.9.18 Propeller 24/10/18.
 Stern tube 29/3/19 Steam pipes tested May 12th Engine and boiler seatings April 8th Engines holding down bolts
 Completion of pumping arrangements May 22nd Boilers fixed May 12th Engines tried under steam May 23rd
 Completion of fitting sea connections April 16. Stern tube March 25th Screw shaft and propeller Apr 12.
 Main boiler safety valves adjusted May 23rd Thickness of adjusting washers lock nuts.
 Material of Crank shaft Steel. Identification Mark on Do. Lloyd's 9.11.18 Rob. 420 5.11.18 R. Material of Thrust shaft Steel Identification Mark on Do.
 Material of Tunnel shafts Steel. Identification Marks on Do. 16.29.36 Lloyd's 46759 5.4.19 Rob. R. Material of Screw shafts Steel. Identification Marks on Do.
 Material of Steam Pipes Solid drawn Copper Test pressure 400 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. "Mar Amazon". S.S. "Eastern"*

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. In my opinion the machinery is eligible for the Reclassification of + L.M.C. 5.19.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 5.19. F.D.

Retl. 14/10/19 *J. R. B.*

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

Certificate (if required) to be sent to

The amount of Entry Fee ... £ *Yes* 20.00 When applied for, May 30th 19
 Special ... £ 603.00
 Donkey Boiler Fee ... £ : :
 Travelling Expenses (if any) £ : : June 5th 19

Committee's Minute FRI. 17 OCT. 1919

Assigned *L.M.C. 5.19*

