

REPORT ON MACHINERY.

Received at London Office WED. 19 JUL. 1916

Date of writing Report _____ When handed in at Local Office _____ Port of Nobe

No. in Survey held at Osaka Date, First Survey _____ Last Survey 29th May 1916

Reg. Book. _____ on the Single Screw Steamer "Toda Maru" (Number of Visits _____)

Master _____ Built at Osaka By whom built The Osaka Iron Works Ltd Gross Tons _____ Net Tons _____ When built 1916-5

Engines made at Osaka By whom made The Osaka Iron Works, Ltd. when made 1916-5

Boilers made at do By whom made do when made do

Registered Horse Power _____ Owners Nobe Towa S.S. Co. Ltd. Port belonging to Amagasaki

Nom. Horse Power as per Section 28 288 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 22 : 34 : 61 Length of Stroke 42 Revs. per minute 40 Dia. of Screw shaft 12.8 Material of screw shafts 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 Tightly fitted If two liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 4" 8 3/4"

Dia. of Tunnel shaft 11.2 Dia. of Crank shaft journals 11.44 Dia. of Crank pin 12 Size of Crank webs 7 3/8 x 23 Dia. of thrust shaft under collars 12 Dia. of screw 16.0 Pitch of Screw 16.0 No. of Blades 4 State whether moveable No Total surface 43 1/2"

No. of Feed pumps Two Diameter of ditto 3 1/4 Stroke 24 Can one be overhauled while the other is at work Yes

No. of Bilge pumps Two Diameter of ditto 3 1/2 Stroke 24 Can one be overhauled while the other is at work Yes

No. of Donkey Engines Two Sizes of Pumps Ballast 7 x 8 1/2 x 9 Dupl. General 4 x 6 x 6 Dupl. No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Two 3" : 4 in Blr. rm. two 3" In Holds, &c. Two 3" in each hold. After hold 3 1/2"

No. of Bilge Injections 1 size 4" Connected to condenser, or to circulating pump Yes 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 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.

Dates of examination of completion of fitting of Sea Connections 10th May of Stern Tube 6th May Screw shaft and Propeller 10th May 1916

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper platform Eng Rm.

BOILERS, &c.—(Letter for record 3) Manufacturers of Steel Beardmore & Leeds Forge

Total Heating Surface of Boilers 3824 Is Forced Draft fitted Yes No. and Description of Boilers Two Single Ended.

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 14/4/16 No. of Certificate LLOYDS TEST 360 LBS R 14.4.16 ALJ

Can each boiler be worked separately Yes Area of fire grate in each boiler 45 No. and Description of Safety Valves to each boiler Two Direct Spring Area of each valve 3 1/4 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 10" Mean dia. of boilers 13.6 Length 11.6 Material of shell plates Steel

Thickness 1 3/32 Range of tensile strength 28 3/4 - 32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Double riv.

long. seams Straps Diameter of rivet holes in long. seams 1 3/16 Pitch of rivets 8 1/2 x 4 1/16 Lap of plates or width of butt straps 14 3/4 x 1"

Per centages of strength of longitudinal joint rivets 92.9 x 88.5 comb. plate 85.4 x 86.4 for strap Working pressure of shell by rules 184 lbs Size of manhole in shell 12" x 16 in End plate

Size of compensating ring Flanged End pl. No. and Description of Furnaces in each boiler 3 Doughton Material Steel Outside diameter 40 1/4"

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

Working pressure of furnace by the rules 184 lbs Combustion chamber plates: Material Steel Thickness: Sides 23/32 Back 23/32 Top 23/32 Bottom 4/8"

Pitch of stays to ditto: Sides 9" x 10" Back 8 3/4" x 10" Top 9" x 10 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 184 lbs

Material of stays Steel Diameter at smallest part 2.1 Area supported by each stay 94 1/2" Working pressure by rules 200 lbs End plates in steam space _____

Material Steel Thickness 1 3/8" Pitch of stays 25 x 19 How are stays secured Double nut. Working pressure by rules 181 lbs Material of stays Steel

Diameter at smallest part 3 1/4" Area supported by each stay 25 x 19 Working pressure by rules 180 lbs Material of Front plates at bottom Steel

Thickness 1" Material of Lower back plate Steel Thickness 15/16 Greatest pitch of stays 14" Working pressure of plate by rules 180 lbs

Diameter of tubes 3" Pitch of tubes 4 3/8" x 4 1/2" Material of tube plates Steel Thickness: Front 1" Back 13/16" Mean pitch of stays 10 1/2"

Pitch across wide water spaces 14" Working pressures by rules 180 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9 1/2" x 13 (top) Length as per rule 32" Distance apart 10 1/2" Number and pitch of stays in each 2 @ 9"

Working pressure by rules 202 lbs Superheater or Steam chest; how connected to boiler _____ Can the superheater be shut off and the boiler worked separately _____

Diameter _____ Length _____ Thickness of shell plates _____ Material _____ Description of longitudinal joint _____ Diam. of rivet holes _____ Pitch of rivets _____ Working pressure of shell by rules _____ Diameter of flue _____ Material of flue plates _____ Thickness _____

If stiffened with rings _____ Distance between rings _____ Working pressure by rules _____ End plates: Thickness _____ How stayed _____

Working pressure of end plates _____ Area of safety valves to superheater _____ Are they fitted with easing gear _____

IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied: - 2 Crosshead bolts & nuts. 2 Crank pin bolts & nuts. 2 main bearing bolts & nuts. Feed & bilge pump valves. Set piston springs. Set coupling bolts & nuts. Assorted iron bolts & nuts.

The foregoing is a correct description



G. Yamada

Dates of Survey while building: During progress of work in shops - Dec 1st 6. 15. 16. 22. 24. 25. 30 1915; During erection on board vessel - Mar. 5. 8. 14. 23. 29. 31; May 1st 6. 10. 13. 25. 19. 29. April. 3rd 10. 14. 16. 20. 26. Total No. of visits 37. Launch 1916.

Is the approved plan of main boiler forwarded herewith *forwarded* with Rep 1737 on *Yesaki Maru* " donkey "

Dates of Examination of principal parts - Cylinders 3/2/16 etc Slides 14/4/16 etc Covers 14/4/16 etc Pistons 3/3/16 etc Rods 28/3/16 etc Connecting rods 28/3/16 etc Crank shaft 29/3/16 etc Thrust shaft 30/3/16 etc Tunnel shafts 22/12/15 etc Screw shaft 26/4/16 etc Propeller 14/4/16 etc Stern tube 6/5/16 etc Steam pipes tested 19th May. Engine and boiler seatings 6th May. Engines holding down bolts 19th May. Completion of pumping arrangements 19th May. Boilers fixed 19th May. Engines tried under steam 25th May 1916. Main boiler safety valves adjusted 25th May. Thickness of adjusting washers 7/16. Material of Crank shaft *Steel* Identification Mark on Do. *R 29.3.16* Material of Thrust shaft *Steel* Identification Mark on Do. *R 17/3/16 ALJ* Material of Tunnel shafts *Steel* Identification Marks on Do. *R 17.3.16 A.L.J.* Material of Screw shafts *Steel* Identification Marks on Do. *R 17/3/16 ALJ* Material of Steam Pipes *Steel* Test pressure 540 lbs per sq in.

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 *Yesaki Maru*

General Remarks (State quality of workmanship, opinions as to class, &c.)
The machinery has been made & fitted under Special Survey, in accordance with the requirements of the Rules & the workmanship has been found good.
The shafting has been made at the Kobe Steel Works & the Certificate (copy) is enclosed.
A report on the Electric lighting is enclosed.
The vessel is eligible in my opinion for the record + LMC 5.16.

It is submitted that this vessel is eligible for THE BROOD + LMC 5.16. ED.

Certificates (if required) to be sent to

The amount of Entry Fee ... *£20.00* When applied for, *30 May 1916*
Special ... *£5.16.00*
Donkey Boiler Fee ... *£* When received, *4 June 1916*
Travelling Expenses (if any) *£*

Arthur L. Jones 20/7/16
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *FRI. 21 JUL 1916*
Assigned *+ Lmb 5.16*

MACHINERY CERTIFICATE
WRITTEN



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