

REPORT ON MACHINERY

SAT. 5 - AUG. 1916

Received at London Office

Date of writing Report 28th June 1916 when made at Local Office Osaka Port of Kobe

No. in Survey held at Osaka + Inosshima Date, First Survey 15 Dec 1915 Last Survey 11th June 1916

Reg. Book. on the Single Screw Steamer "Mikasan Maru" (Number of Volls 30) Gross 3178.63 Net 1986.87

Master S. Fujisaki Built at Inosshima By whom built The Osaka Iron Works, Inosshima When built 1916-6

Engines made at Osaka By whom made The Osaka Iron Works when made do

Boilers made at do By whom made do when made do

Registered Horse Power 288 Owners The Mitsui Bussan Kaisha Port belonging to Kobe

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 Three No. of Cranks Three

Dia. of Cylinders 22:34:61 Length of Stroke 42 Revs. per minute 70 Dia. of Screw shaft as per rule 12.8 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' 8 3/4"

Dia. of Tunnel shaft as per rule 11.2 Dia. of Crank shaft journals as per rule 11.77 Dia. of Crank pin 12 Size of Crank webs 4 3/4 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 73 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 disp. In Engine Room Two 3" + in boiler room two 3" In Holds, &c. Two 3" in each hold. After well 3 1/2"

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

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 28 May 1916 of Stern Tube 22 May 1916 Screw shaft and Propeller 28 May 1916

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

BOILERS, &c.—(Letter for record S.) Manufacturers of Steel Beardmore & Co. & Leeds Forge & Sth Durham

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 Apr 1916 No. of Certificate LLOYDS TEST 360 lbs A.L.S. 14-4-16

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 Spring loaded Area of each valve 3 1/2" 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 long. seams Straps Diameter of rivet holes in long. seams 1 3/16" Pitch of rivets 8 1/2" x 4 1/2" Lap of plates or width of butt straps 17 1/2 x 1"

Per centages of strength of longitudinal joint 92.9 & 88.5 comb. plate 85.46 & 86.4 for inner shell 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 plate No. and Description of Furnaces in each boiler 3 "Beighton" Material Steel Outside diameter 40 1/4"

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

Working pressure of furnace by the rules 187 lbs Combustion chamber plates: Material Steel Thickness: Sides 23/32" Back 23/32" Top 23/32" Bottom 1/8"

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 187 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" wide Working pressure of plate by rules 180 lbs

Diameter of tubes 3" Pitch of tubes 4 3/8" x 4 1/4" 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 13/16" (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 ✓

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

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 ✓

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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. Set coupling bolts + nuts. Set bilge pump valves. Set piston springs. Assorted bolts + nuts. Iron of various sizes.

The foregoing is a correct description,
OSAKA IRON WORKS, LTD

T. Yamaguchi Manufacturer.
MANAGING DIRECTOR

Dates of Survey while building: During progress of work in shops - 15. 21. 28 Dec 1915. 12. 14. 18 Jan. 4. 9. 27. 29 Feb. 4. 5. 8. 14. 16. 20. 28. 31
During erection on board vessel - 3. 10. 14. 24. 26 Apr. 6. 10. 16. 19. 24. 28 May 6. 11. June 1916
Total No. of visits 30

Is the approved plan of main boiler forwarded herewith With repl. No 1737 on Tensho Maru
" " " " " " " " " " " "
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Dates of Examination of principal parts—Cylinders 5. 3. 16 Slides 8. 3. 16 Covers 8. 3. 16 Pistons 8. 3. 16 Rods 16. 3. 16
Connecting rods 16. 3. 16 Crank shaft 5. 4. 16 Thrust shaft 5. 4. 16 Tunnel shafts 17. 3. 16 Screw shaft 26. 4. 16 Propeller 16. 5. 16
Stern tube 16. 5. 16 Steam pipes tested 6. 6. 16 Engine and boiler seatings 16. 5. 16 Engines holding down bolts 6. 6. 16
Completion of pumping arrangements 11. 6. 16 Boilers fixed 6. 6. 16 Engines tried under steam 11. 6. 16
Main boiler safety valves adjusted 11. 6. 16 Thickness of adjusting washers 5/16"
Material of Crank shaft Steel Identification Mark on Do. R. 5 1/4 AL Material of Thrust shaft Steel Identification Mark on Do. R. 5 1/4 AL
Material of Tunnel shafts Steel Identification Marks on Do. R. 17/3 1/6 AL Material of Screw shafts Steel Identification Marks on Do. R. 5 1/4 AL
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 "Pekin Maru" "Kosaku Maru" "Meikai Maru" "Tensho Maru" "Totai Maru" etc etc

General Remarks (State quality of workmanship, opinions as to class, &c.)
The machinery has been made & fitted under Special Survey in accordance with the Rules & the workmanship has been found good.
The shafting has been made under survey at the Kobe Steel Works & a report is enclosed.
A report on the Electric Lighting is forwarded.
The machinery in my opinion renders the vessel eligible for the notation + LMC in the Register with date 6. 16.

It is submitted that this vessel is eligible for THE RECORD. + LMC 6. 16 FD

Arthur L. Jones
5. 8. 16

The amount of Entry Fee ... yen 20 : When applied for, 19. 6. 1916
Special ... yen 516 :
Donkey Boiler Fee ... £ : When received, 23. 6. 1916
Travelling Expenses (if any) £ :

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

Committee's Minute: TUE. AUG. 8 - 1916
Assigned + LMC 6. 16 J. D.

MACHINERY CLASSIFICATE WRITTEN.

Rpt. 13.
Port of
No. in Reg. Book
Owners The
Yard No. 8
DESCRIPTION
Compound Vertical
Capacity of Dym
Where is Dym
Position of Ma
Positions of au
Upper bridge
Switches, on
If fuses are f
circuits
If vessel is win
Are the fuses
Are all fuses
are perma
Are all switche
Total number of
A
B
C
D
E
2 Mast
2
If arc lights, u
Where are the
DESCRIPTION
Main cable carr
Branch cables ca
Branch cables ca
Leads to lamps
Cargo light cable
DESCRIPTION
Insulated
Joints in cables,
Cables are
Are all the joint
positions,
Are there any j
How are the ca
wooden bo