

REPORT ON MACHINERY.

No. 2005

Received at London Office SAT 12 MAY 1917

of writing Report 18 Mar 1917 When handed in at Local Office 10 Port of Kobe
 in Survey held at Kobe Date, First Survey 13 Jan 1916 Last Survey 27 Feb 1917
 on the Steel Single Screw Steamer "Ayaha Maru" (Number of Visits 64) Gross 5722
 Built at Kobe By whom built The Mitsui Bishi Dry Dock & E. Works When built 1917
 By whom made The Mitsui Bishi Dry Dock & E. Works when made 1917 - 2
 Owners Satsumura Nisem Kaisha Port belonging to Nishinomiyama
 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

GINES, &c. — Description of Engines Triple Expansion No. of Cylinders Three No. of Cranks Three
 as per rule 15 1/2 Material of Steel
 as fitted 15 7/16 screw shafts
 of Cylinders 26 1/2 : 43 : 72 Length of Stroke 48 Revs. per minute 66 Dia. of Screw shaft 15 7/16
 the screw shaft fitted with a continuous liner the whole length of the stern tube No liner Is the after end of the liner made water tight
 the propeller boss 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
 are fitted, is the shaft lapped or protected between the liners Length of stern bush 5' 7"
 as per rule 13.16 Dia. of Crank shaft journals as per rule 13.82 Dia. of Crank pin 14" Size of Crank webs 9 1/2 x 26 Dia. of thrust shaft under
 as fitted 13 3/16 as fitted 13 7/8 shaped
 of Tunnel shaft 13 7/8 Dia. of screw 18" 0" Pitch of Screw 18" 0" No. of Blades 4 State whether moveable Yes Total surface 100.0
 of Feed pumps 2 Dia. of ditto 8" Stroke 21" Can one be overhauled while the other is at work Yes
 of Bilge pumps 2 Dia. of ditto 5" Stroke 24" Can one be overhauled while the other is at work Yes
 of Donkey Engines Three Sizes of Pumps Gen. Service 8 1/2 x 6 x 9 duplex No. and size of Suctions connected to both Bilge and Donkey pumps
 Engine Room Three 3 1/2" Ballast 10 x 12 x 12 In Holds, &c. Two 3 1/2" 5 each hold (Nos 1, 2, 3 + 4)
 Tunnel with 3 1/2"
 of Bilge Injections 1 sizes 9 3/8 Connected to condenser, or to circulating pump 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 No
 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
 That pipes are carried through the bunkers Inward bilge suction How are they protected Strong wood casings
 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 6 Jan 1917 of Stern Tube 26 Dec 1916 Screw shaft and Propeller 6 Jan 1917
 the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper grating in Eng. Room
 Manufacturers of Steel David Colville & Sons Ltd. & Leeds Forge.

BOILERS, &c. — (Letter for record 5) Is Forced Draft fitted Yes No. and Description of Boilers Three Single Ended
 Total Heating Surface of Boilers 7618.0 Tested by hydraulic pressure to 360 lbs Date of test Nov 1 1916 No. of Certificate 360 lbs
 Working Pressure 180 lbs Area of fire grate in each boiler 61.19 No. and Description of Safety Valves to
 Can each boiler be worked separately Yes Area of each valve 3 1/2" dia. Pressure to which they are adjusted 185 lbs Are they fitted with easing gear Yes
 Each boiler Two direct spring Area of each valve 3 1/2" dia. Pitch of rivets 9 3/16 x 14 1/9 Top of plates or width of butt straps 19 1/2 x 1 1/8 in
 Smallest distance between boilers or uptakes and bunkers or woodwork 3 ft Mean dia. of boilers 15' 0" Length 11' 6" Material of shell plates Steel
 Thickness 1 1/2 Range of tensile strength 28/32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Double
 Long. seams 3/16 diam. rivets 89.8 Working pressure of shell by rules 183 lbs Size of manhole in shell 16 x 12
 Per centages of strength of longitudinal joint plate 85.7 No. and Description of Furnaces in each boiler 3 Morrison Material Steel Outside diameter 48 3/4"
 Size of compensating ring 7 1/2 x 1 7/32 + flange No. and Description of longitudinal joint Weld No. of strengthening rings
 Length of plain part top 19/32 Description of longitudinal joint Weld No. of strengthening rings
 Working pressure of furnace by the rules 193 lbs Combustion chamber plates: Material Steel Thickness: Sides 11/32 Back 11/32 Top 11/32 Bottom 3/4"
 Pitch of stays to ditto: Sides 8 1/2 x 8 5/8 Back 8 1/2 x 9 Top 8 1/2 x 8 1/2 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 180 lbs End plates in steam space
 Material of stays Steel Diameter at smallest part 1 1/2 Area supported by each stay 8 1/2 x 9 Working pressure by rules 180 lbs Material of stays Steel
 Material Steel Thickness 1 3/16 Pitch of stays 20 3/8 x 18 How are stays secured Small washers Working pressure by rules 180 lbs Material of Front plates at bottom Steel
 Section Diameter at smallest part 6.33 Area supported by each stay 20 3/8 x 18 Working pressure by rules 180 lbs Material of Front plates at bottom Steel
 Thickness 3/4 Material of Lower back plate Steel Thickness 11/16 + 7/8 Greatest pitch of stays 14 5/8 and 5/8 Working pressure of plate by rules 180 lbs
 Diameter of tubes 3 Pitch of tubes 11 1/4 x 11 1/4 Material of tube plates Steel Thickness: Front 3/4 Back 3/4 Mean pitch of stays 9 3/8
 Pitch across wide water spaces 13 1/2 with Working pressures by rules 180 lbs Girders to Chamber tops: Material Steel Depth and
 thickness of girder at centre 10" 3/4 Length as per rule 35 3/8 Distance apart 8 1/2 Number and pitch of stays in each 3 @ 8 1/2
 Working pressure by rules 194 lbs Superheater or Steam chest; how connected to boiler Can the superheater be shut off and the boiler worked
 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:— 1 Complete set of crosshead & crank pin brasses & bolts & nuts for same. Two main bearing bolts. Set coupling bolts for one coupling. Set feed pump valves. Set bilge pump valves. Set packing rings for each piston. Assorted bolts & nuts. Iron of various sizes. 1 of each size valve spindle. 1 Air pump rod. 1 Cr. pump rod. $\frac{1}{4}$ inch total joint ring bolts. Escape valve springs, one set. 1 Safety valve spring each boiler. Set boiler checks (main & donkey) for one boiler. Air & cr pump valves. Set ecc. rods & bolts. etc. etc.

The foregoing is a correct description,

YAMAGUCHI DOCKYARD & ENGINE WORKS, KOBE.

Manufacturer.

Manager.

Dates of Survey while building { During progress of work in shops -- 13 Jan. 8. 15. 26 Feb. 5. 17. 25. 29 Mar. 18 April 1. 15 May 1. 15. 19 June 3. 19. 20. 27 July 5. 21. 24. 30 Aug. 2. 4. 7. 14. 16. 26 Sept. 7. 10. 13. 19. 21. 24. 25. 27. 31 Oct. 1. 6. 11. 13. 27 Nov. Total No. of visits 7. 10. 11. 13. 16. 20. 26 Dec. 1916 Is the approved plan of main boiler forwarded herewith Yes 64 6. 8. 10. 12. 14. 15. 19. 27 Jan. 3. 7. 10. 12. 21. 23. 27 Feb. 1917 " " " donkey " " " None

Dates of Examination of principal parts—Cylinders 21/10/16 etc Slides 10/10/16 etc Covers 10/10/16 etc Pistons 1/11/16 etc Rods 25/10/16 etc Connecting rods 25/10/16 etc Crank shaft 13/10/16 etc Thrust shaft 26/9/16 etc Tunnel shafts 25/10/16 etc Screw shaft 14/9/16 etc Propeller 16/12/16 etc Stern tube 20/12/16 etc Steam pipes tested 7/2/17 Engine and boiler seatings 8/1/17 Engines holding down bolts 19/1/17 Completion of pumping arrangements 19/1/17 Boilers fixed 24/1/17 Engines tried under steam 12/2/17 Main boiler safety valves adjusted 10/2/17 Thickness of adjusting washers Lock nuts Material of Crank shaft Steel Identification Mark on Do. P. 13/10/16 Material of Thrust shaft Steel Identification Mark on Do. P. 25/10/16 Material of Tunnel shafts Steel Identification Marks on Do. P. 25/10/16 Material of Screw shafts Steel Identification Marks on Do. P. 26/12/16 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 No If so, state name of vessel

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

The machinery has been made & fitted under Special Survey & the materials & workmanship have been found good & the sizes & arrangements are in accordance with the requirements of the Rules.

The machinery is eligible in my opinion for the notation + LMC 2.17.

A report on the Electric Lighting is forwarded.

It is submitted that this vessel is eligible for THE RECORD. + LMC 2.17. F.D.

J.W.D. 8/6/17

W.R.A.

The amount of Entry Fee ... Yen 30 : When applied for, Special ... Yen 682 : 26 Feb 1917 Donkey Boiler Fee ... \$: When received, Travelling Expenses (if any) £ : 28 Feb 1917

Arthur H. Jones

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

Committee's Minute FRI 8 JUN 1917

Assigned

+ LMC 2.17 F.D.

MACHINERY CERTIFICATE WRITTEN



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