

## REPORT ON MACHINERY.

No. 2866.

Received at London Office

Writing Report 20<sup>th</sup> May 1920 When handed in at Local Office Toba Port of Kobe  
 in Survey held at Toba Date First Survey 4<sup>th</sup> Dec 1919 Last Survey March 12<sup>th</sup> 1920  
 Book. Blue Single Screw Steamer "Shima Maru" (Number of Visits 5)  
 on the Shima Maru Tons { Gross 1975 Net 1153  
 ter Built at Toba By whom built Toba Dockyard Coy When built 1920  
 nes made at Kobe By whom made Kobe Steel Works when made 1918  
 ers made at Toba By whom made Toba Dockyard Compy. when made 1920  
 istered Horse Power 249 Owners Teikoku Steamship Coy Port belonging to TOBA  
 Horse Power as per Section 28 249 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  
 of Cylinders 18: 30: 49 Length of Stroke 39" Revs. per minute 85 Dia. of Screw shaft 11-108 Material of Steel  
 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  
 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 yes If two  
 rs are fitted, is the shaft lapped or protected between the liners yes Length of stern bush 3'-8"  
 of Tunnel shaft as per rule 9.92 Dia. of Crank shaft journals as per rule 10.42 Dia. of Crank pin 10 1/2 Size of Crank webs 20 1/2 x 15 1/2 x 6 3/4 Dia. of thrust shaft under  
 ars 10 1/2 Dia. of screw 13'-6" Pitch of Screw 15-0" No. of Blades 4 State whether moveable no Total surface 65 sq ft  
 of Feed pumps 2 Diameter of ditto 3 1/2 Stroke 19 1/2 Can one be overhauled while the other is at work yes  
 of Bilge pumps 2 Diameter of ditto 3 1/2 Stroke 19 1/2 Can one be overhauled while the other is at work yes  
 of Donkey Engines 3 Sizes of Pumps G.S.D. 7 1/2 x 4 1/2 No. and size of Suctions connected to both Bilge and Donkey pumps  
 Engine Room 4 @ 2 3/4 In Holds, &c. nos 1 & 2 holds 2 @ 2 3/4. nos 3 & 4: 2 @ 2 3/4  
 Tunnel well 1 @ 2 3/4  
 of Bilge Injections 1 sizes 4" Connected to condenser, or to circulating pump Cpp Is a separate Donkey Suction fitted in Engine room & size yes 2 3/4  
 e 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  
 e all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Large Valves: Smaller Cocks  
 e 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  
 e 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  
 hat pipes are carried through the bunkers yes How are they protected yes  
 e all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yes  
 e the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges yes  
 the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from E.R. top platform

**ROLLERS, &c.—(Letter for record)** North Steel Coy.  
 otal Heating Surface of Boilers 3879.5 sq ft Forced Draft fitted yes No. and Description of Boilers Two Single ended  
 orking Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 20:10:19 No. of Certificate LLOYD'S TEST  
 an each boiler be worked separately yes Area of fire grate in each boiler 40 sq ft No. and Description of Safety Valves 2 @ 200 lbs  
 ch boiler 2 Spring loaded Area of each valve 11.04 sq ft Pressure to which they are adjusted 205 lbs Are they fitted with easing gear yes  
 smallest distance between boilers or uptakes and bunkers or woodwork 19" Mean dia. of boilers 13'-1 1/4 Length 10.3 3/4 Material of shell plates Steel  
 thickness 1 1/4" Range of tensile strength 28-32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams DRL  
 ng. seams TR DBS Diameter of rivet holes in long. seams 1 5/16 Pitch of rivets 8 1/8 Lap of plates or width of butt straps 18 1/2  
 given per centages of strength of longitudinal joint 89.85 Working pressure of shell by rules 211 lbs Size of manhole in shell 12 x 16  
 Size of compensating ring 2-9 x 2-5 No. and Description of Furnaces in each boiler Two Morrison Material Steel Outside diameter 3'-10"  
 Length of plain part top 5 1/2 Thickness of plates bottom 5 1/8 Description of longitudinal joint yes No. of strengthening rings yes  
 Working pressure of furnace by the rules 219 lbs Combustion chamber plates: Material Steel Thickness: Sides 3/4 Buck 1 1/16 Top 3/4 Bottom 7/8  
 Pitch of stays to ditto: Sides 8 x 8 Back 8 3/4 x 8 Top 8 x 7 1/2 If stays are fitted with nuts or riveted heads yes Working pressure by rules 276  
 Material of stays Steel Area at smallest part 2.07 sq ft Area supported by each stay 70.28 sq ft Working pressure by rules 265 End plates in steam space:  
 Material Steel Thickness 1 1/8 Pitch of stays 17 x 15 How are stays secured DN + W Working pressure by rules 230 Material of stays Steel  
 Area at smallest part 6.41 sq ft Area supported by each stay 25.7 sq ft Working pressure by rules 259 Material of Front plates at bottom Steel  
 Thickness 1" Material of Lower back plate Steel Thickness 1" Greatest pitch of stays 13 1/2 Working pressure of plate by rules 286  
 Diameter of tubes 3" Pitch of tubes 4 x 4 Material of tube plates Steel Thickness: Front 1" Back 7/8 Mean pitch of stays 8 x 8  
 Pitch across wide water spaces 13 1/2 Working pressures by rules 222 Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 9 1/2 x 1 1/2 Length as per rule 2'-5" Distance apart 8" Number and pitch of stays in each 2 @ 8"  
 Working pressure by rules 294 Steam dome: description of joint to shell yes % of strength of joint  
 Diameter 1" Thickness of shell plates 1" Material Steel Description of longitudinal joint yes Diam. of rivet holes 1"  
 Pitch of rivets 1" Working pressure of shell by rules 222 Crown plates 1" Thickness 1" How stayed yes

**SUPERHEATER.** Type Horizontal Date of Approval of Plan 1919 Tested by Hydraulic Pressure to 220 lbs  
 Date of Test 1919 Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler yes  
 Diameter of Safety Valve 1" Pressure to which each is adjusted 220 lbs Is Easing Gear fitted yes



no.

*If so, is a report now forwarded?*

SPARE GEAR. State the articles supplied:—

2 Connecting Rod top end bolts & nuts  
2 " " bottom end bolts & nuts  
6 Coupling bolts & nuts.  
1 set Feed and oil pump Valves & Seats  
1 set of piston rings  
Quantity assorted bolts & nuts  
Nm of various sizes.

The foregoing is a correct description.

One pair Crosshead bars  
 One pair crank pin bars of  
 One air pump rod & nut in  
 One circulating pump rod & nut 300 lb  
 One valve spindle rs.  
 2 sets Feed check valve No.  
 7 pump ring bolts & nuts RIPT  
 18 Condenser tubes & 100 feet C.  
 2 Safety valve springs pe  
 turer.

*Manufacturer*

Dates of Survey while building	During progress of work in shops - -		During erection on board vessel - -		Total No. of visits
	1	2	3	4	
1871					
1872					
1873					
1874					
1875					
1876					
1877					
1878					
1879					
1880					
1881					
1882					
1883					
1884					
1885					
1886					
1887					
1888					
1889					
1890					
1891					
1892					
1893					
1894					
1895					
1896					
1897					
1898					
1899					
1900					
1901					
1902					
1903					
1904					
1905					
1906					
1907					
1908					
1909					
1910					
1911					
1912					
1913					
1914					
1915					
1916					
1917					
1918					
1919					
1920					
1921					
1922					
1923					
1924					
1925					
1926					
1927					
1928					
1929					
1930					
1931					
1932					
1933					
1934					
1935					
1936					
1937					
1938					
1939					
1940					
1941					
1942					
1943					
1944					
1945					
1946					
1947					
1948					
1949					
1950					
1951					
1952					
1953					
1954					
1955					
1956					
1957					
1958					
1959					
1960					
1961					
1962					
1963					
1964					
1965					

Decr 4. <sup>a</sup> Feb 14 <sup>m</sup> 27 <sup>m</sup> March 11 <sup>a</sup> & 12 <sup>a</sup>

Is the approved plan of main boiler forwarded herewith

*Dates of Examination of principal parts—Cylinders*

Connecting rods \_\_\_\_\_ Crank shaft \_\_\_\_\_ Thrust shaft \_\_\_\_\_ Slides \_\_\_\_\_ Covers \_\_\_\_\_ Pistons \_\_\_\_\_ Rods \_\_\_\_\_  
Stern tube \_\_\_\_\_ Tunnel shafts \_\_\_\_\_  
Steam pipes tested 14.2.20 Engine and boiler \_\_\_\_\_ Screw shaft \_\_\_\_\_ Propeller \_\_\_\_\_

Completion of pumping arrangements	4.3.20	Engine and boiler seatings	6.12.19	Engines holding down bolts	14.
Completion of fitting		Boilers fixed	6.12.19		

Completion of fitting sea connections	4.5.20	Boilers fixed	6.12.19	Engines holding down bolts	14.
	23.20	Engines tried under steam	5.3.20		

Main boiler safety valves adjusted	5.3.20	Stern tube	29.1.20	Screw shaft and propeller	3.3.20
------------------------------------	--------	------------	---------	---------------------------	--------

Material of Crank shaft *Steel* Identification Mark on Do. *LOCK nuts*

Material of Tunnel shafts Steel Identification Mark on Do. 15 Material of Thrust shaft Steel Identification Mark on Do. 15

Material of Steam Pipes Copper Identification Marks on Do. \_\_\_\_\_

Material of Screw shafts Steel Identification Marks on Do. \_\_\_\_\_

Is an installation fitted for burning oil fuel upper Test pressure 400 lbs. Identification Marks on Do. 750

Have the requirements of Section 49 of the Rules been complied with ☐ Is the flash point of the oil to be used over 150°F. ☐

Is this machinery duplicate of a previous case no If so state \_\_\_\_\_

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

The Engines were built at Robt Stead Works but not under survey, (in 1918). The particulars of test have now been ascertained as per attached & the sizes of shafting verified.

The boilers were built under special survey in accordance with the requirements of the M.L.A. and materials and workmanship have been found good.

This vessel is Sligibh in my opinion to the  
Record of L. M. C. 3. 20.

It is submitted that  
this vessel is eligible for  
**THE RECORD. LMC. 3.20 F.T.**

The amount of Entry Fee	...	£	Yen	:	20	When applied for
Special	...	£	Yen	:	568	8
Donkey Boiler Fee	...	£	:	:	:	19
Travelling Expenses (if any)	£	:	:	:	:	When received
						35

When applied for

When received

*Committee's Minute*

FRI. AUG. 6 1920

*Assigned*

Lmc 3.20

CERTIFICATE WRITTEN

Engineer Surveyor to Lloyd's Register of Shipping

© 2021

Lloyd's Register  
Foundation