

Rpt. 4.

# REPORT ON MACHINERY.

No. 6937

Port of

Received at London Office

No. in Survey held at Stockton-on-Tees Date, first Survey 14th March Last Survey 20th July, 1911

Reg. Book. on the Steel Screw Steamer "ROKKOSAN MARU" (No. 560) (Number of Vistas 55)

Master M. Maeda Built at Middlesbrough By whom built Sir Raylton Dixon & Co. Ltd. Tons { Gross 2020.23 Net 1101.13 When built 1911

Engines made at Stockton By whom made Messrs Blair & Co. (No. 1702) when made 1911

Boilers made at Stockton By whom made Messrs Blair & Co. Ltd. when made 1911

Registered Horse Power Owners Mitsui Bussan Kaisha Ltd Port belonging to Mitsui

Nom. Horse Power as per Section 28 240 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Tri-compound No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 21-35-57 Length of Stroke 39 Revs. per minute 70 Dia. of Screw shaft as per rule 12.06 Material of Ing Steel  
 as fitted 13.5 screw shaft)  
 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 in one 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 file tightly If two  
 liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 4-6"  
 Dia. of Tunnel shaft as per rule 10.57 Dia. of Crank shaft journals as per rule 11.09 Dia. of Crank pin 12" Size of Crank webs 23 1/4 x 7 1/4 Dia. of thrust shaft under  
 collars 12" Dia. of screw 15-0" Pitch of Screw 16-3" No. of Blades 4 State whether moveable yes Total surface 64 3/4 sq  
 No. of Feed pumps 2 Diameter of ditto 2 1/2" Stroke 28 Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 Diameter of ditto 4 Stroke 28 Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 2 Sizes of Pumps Ballast - 10" x 10" No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 3 @ 3" In Holds, &c. 2 @ 3" in each hold

No. of Bilge Injections 1 sizes 4 1/2" Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes - 3"  
 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 both  
 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  
 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 30.5.11 of Stern Tube 26.5.11 Screw shaft and Propeller 15.6.11  
 Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record (S)) Manufacturers of Steel Messrs J. Spencer & Sons  
 Total Heating Surface of Boilers 3963 Is Forced Draft fitted no No. and Description of Boilers 2 Single ended  
 Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 9.6.11 No. of Certificate 4667  
 Can each boiler be worked separately yes Area of fire grate in each boiler 60 sq No. and Description of Safety Valves to  
 each boiler 2 direct spring Area of each valve 9.62 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 15" External 15-0" Length 10-0" Material of shell plates steel  
 Thickness 1 1/2 Range of tensile strength 28-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 2 Riv Lap  
 long. seams 2 B-3 Riv Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 1/2" Lap of plates or width of butt straps 18 x 1 1/2  
5 Rivs per pitch rivets 88.1 Working pressure of shell by rules 185 Size of manhole in shell 16" x 12"  
 Per centages of strength of longitudinal joint plate 85.29  
 Size of compensating ring 7 1/2 x 1 1/2 No. and Description of Furnaces in each boiler 3 Morrison Material steel Outside diameter 45 3/8  
 Length of plain part top 9 Thickness of plates crown 7/8 Description of longitudinal joint welded No. of strengthening rings ✓  
 bottom 7/8  
 Working pressure of furnace by the rules 192 Combustion chamber plates: Material steel Thickness: Sides 1/2 Back 1/2 Top 1/2 Bottom 25/32  
 Pitch of stays to ditto: Sides 9 1/2 x 9 1/2 Back 9 x 9 Top 10 x 8 1/2 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 185  
 Material of stays steel Diameter at smallest part 1.59 Area supported by each stay 87.5 Working pressure by rules 205 End plates in steam space:  
 Material steel Thickness 1 1/2 Pitch of stays 20 1/2 How are stays secured nuts & 9" x 1" loose washer Working pressure by rules 185 Material of stays steel  
 Diameter at smallest part 3.04 Area supported by each stay 385 Working pressure by rules 195 Material of Front plates at bottom steel  
 Thickness 1 1/2 Material of Lower back plate steel Thickness 1 1/2 Greatest pitch of stays 14 1/2 x 19 Working pressure of plate by rules 224  
 Diameter of tubes 3 1/4 Pitch of tubes 4 1/2 x 4 5/8 Material of tube plates steel Thickness: Front 1 1/2 Back 1 1/2 Mean pitch of stays 10"  
 Pitch across wide water spaces 14 1/4 Working pressures by rules 187 Girders to Chamber tops: Material steel Depth and  
 thickness of girder at centre 7 1/4 x 1 1/2 Length as per rule 26 1/2 Distance apart 10" Number and pitch of stays in each 2 @ 8 1/4  
 Working pressure by rules 194 Superheater or Steam chest; how connected to boiler none 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 ✓

Lloyd's Register Foundation

W1348-6060

Rpt. 5a  
 Date of writing  
 No. in Reg. Book.  
 Master  
 Engines ma  
 Boilers ma  
 Registered  
 Sir Rayl  
 be Specially  
 For Horse above 2 than 2  
 Me all case to be d  
 or No. 42  
 This request Foreign Shipp  
 While the Comm stood that neither report or certifica y, or for any error  
 he Secretary, Lloyd's R  
 Working pres  
 separately  
 holes  
 If stiffened wit  
 Working pres  
 Dates of Survey while building  
 Dur wor  
 Dur  
 boa  
 GENERAL  
 Special A  
 pressure  
 This  
 value  
 Survey Fee  
 Travelling  
 Committee  
 Assigned

VERTICAL DONKEY BOILER—

Manufacturers of Steel. See Middlesbrough Report No 6868

No. \_\_\_\_\_ Description \_\_\_\_\_

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_

Working pressure tested by hydraulic pressure to \_\_\_\_\_ Date of test \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of Safety \_\_\_\_\_

Valves \_\_\_\_\_ No. of Safety Valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ Date of adjustment \_\_\_\_\_

If fitted with easing gear \_\_\_\_\_ If steam from main boilers can enter the donkey boiler \_\_\_\_\_ Dia. of donkey boiler \_\_\_\_\_ Length \_\_\_\_\_

Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_ Range of tensile strength \_\_\_\_\_ Descrip. of riveting long. seams \_\_\_\_\_

Dia. of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ Rivets \_\_\_\_\_ Plates \_\_\_\_\_

Working pressure of shell by rules \_\_\_\_\_ Thickness of shell crown plates \_\_\_\_\_ Radius of do. \_\_\_\_\_ No. of stays to do. \_\_\_\_\_ Dia. of stays \_\_\_\_\_

Diameter of furnace Top \_\_\_\_\_ Bottom \_\_\_\_\_ Length of furnace \_\_\_\_\_ Thickness of furnace plates \_\_\_\_\_ Description of joint \_\_\_\_\_

Working pressure of furnace by rules \_\_\_\_\_ Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_

Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

SPARE GEAR. State the articles supplied:— 2 each of con. rod top end, bottom end and main beam bolts and nuts; one set coupling bolts & nuts; one set feed & bilge pump valves; one set piston ring for each cylinder; assorted bolts & nuts; iron of various sizes; one tail shaft; one propeller blade one valve spindle; one eccentric rod; one each, feed air & circulating pump rods; one pair bottom end bush & minor gear.

The foregoing is a correct description,

Manufacturer.

W. Borrie  
 MANAGING DIRECTOR.

Dates of Survey while building  
 During progress of work in shops— 1911. Mar. 6. 8. 9. 12. 14. 15. 16. 17. 20. 22. 24. 27. 28. 29. 30. 31. Apr. 3. 4. 5. 7. 11. 12. 14. 18. 20. 24. 26. May 8. 10. 12. 16. 19. 22. 24. 26. 29. 30.  
 During erection on board vessel— June 3. 8. 9. 15. 19. 20. 21. 26. 27. 29. July 4. 10. 13. 17. 20.  
 Total No. of visits 15

Is the approved plan of main boiler forwarded herewith yes

Dates of Examination of principal parts—Cylinders 13. 3. 11 Slides 29. 3. 11 Covers 13. 3. 11 Pistons 5. 4. 11 Rods 24. 3. 11  
 Connecting rods 24. 3. 11 Crank shaft 30. 3. 11 Thrust shaft 16. 3. 11 Tunnel shafts none Screw shaft 25. 5. 11 Propeller 12. 4. 11  
 Stern tube 19. 5. 11 Steam pipes tested 26. 6. 11 Engine and boiler seatings 30. 5. 11 Engines holding down bolts 26. 6. 11  
 Completion of pumping arrangements 13. 7. 11 Boilers fixed 29. 6. 11 Engines tried under steam 29. 6. 11  
 Main boiler safety valves adjusted 29. 6. 11 Thickness of adjusting washers P 13h. PV = 13/32, SV = 3/8; Stan 13h. PV = 5/16 B. SV = 3/8  
 Material of Crank shaft By Steel Identification Mark on Do. 6635 Material of Thrust shaft By Steel Identification Mark on Do. 7758-A  
 Material of Tunnel shafts — Identification Marks on Do. — Material of Screw shafts By Steel Identification Marks on Do. 6635  
 Material of Steam Pipes Solid drawn copper (4 1/2 x 3/8) Test pressure 400 lb

General Remarks (State quality of workmanship, opinions as to class, &c. The machinery of this vessel has been built under special survey; The boilers and main steam pipes have been tested by hydraulic pressure and the engines and boilers examined under steam and all found satisfactory: The materials and workmanship are sound and good.  
The machinery is now in a good and safe working condition and eligible in my opinion to have the notation of LMC-7-11.

The report on the electric light will be forwarded in a few days

It is submitted that this vessel is eligible for THE RECORD + LMC 7.11.

JWP 1/8/11  
 W. Morrison

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

Rule No. P = 240		
The amount of Entry Fee. £	2.00.0	When applied for, 21. 7. 1911
Special	92.00.0	
Donkey Boiler Fee	£	When received, 1. 8. 11
Travelling Expenses (if any) £	:	

Committee's Minute  
 Assigned - LMB 7.11  
 TUE. AUG. 1 - 1911



Certificate (if required) to be sent to, Committee's Minute.