

## REPORT ON MACHINERY

No. 32498.  
WED. APR. 2-1913

Date of writing Report 29.3.13. When handed in at Local Office 29.3.13 Port of Glasgow.  
 No. in Survey held at Glasgow. Date, First Survey 29-8-12 Last Survey 28.3.1913.  
 Reg. Book. 128 Sup. on the S.S. "SHAHZADA CAMBAY" (Number of Visits 40.)  
 Master A. C. Glandus Built at Anarossan By whom built Anarossan Dry Dock S.B. 6 (N. 252) Tons Gross 725 Net 498 348.  
 Engines made at Glasgow By whom made Miller & Macfie Ltd (N. 91) when made 1913.  
 Boilers made at do. By whom made David Rowan & Co when made 1913.  
 Registered Horse Power Owners J. Birch & Co. Port belonging to Bombay.  
 Nom. Horse Power as per Section 28 111. Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion, Surf. Cond. No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 15" 25" 40" Length of Stroke 24" Revs. per minute 111. Dia. of Screw shaft as per rule 7.97 as fitted 8.21 Material of screw shaft Iron  
 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 3'-2"  
 Dia. of Tunnel shaft as per rule 7.45 as fitted 7.83 Dia. of Crank shaft journals as per rule 1 7/8 Dia. of Crank pin 4 7/8 Size of Crank webs 5 x 14 1/2 Dia. of thrust shaft under  
 collars 4 7/8 Dia. of screw 9'-0" Pitch of Screw 11'-0" No. of Blades 4 State whether moveable No Total surface 34.5 #  
 No. of Feed pumps 2 Diameter of ditto 2 3/4" Stroke 12" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 2 3/4" Stroke 12" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 2 Sizes of Pumps 6 x 4 x 6 Duplex Ballast General Service No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 2-2 1/2" & 1-2 1/2" special In Holds, &c. 2-2" for  
 No. of Bilge Injections 1 sizes 4" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size Yes - 2 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 Yes  
 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 Yes  
 What pipes are carried through the bunkers Cold suction How are they protected Wood casing  
 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 24.1.13 of Stern Tube 24.1.13 Screw shaft and Propeller 24.1.13.  
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door worked from

## OILERS, &amp;c.—(Letter for record ) Manufacturers of Steel

Total Heating Surface of Boilers 1996 # Is Forced Draft fitted No No. and Description of Boilers One S.E. Marine  
 Working Pressure 180 lb. Tested by hydraulic pressure to 360 lbs. Date of test 29.1.13 No. of Certificate 11959.  
 Can each boiler be worked separately Yes Area of fire grate in each boiler No. and Description of Safety Valves to  
 each boiler Pair spring loaded. Area of each valve 5.94 # 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 4'-8" Mean dia. of boilers Length Material of shell plates  
 Thickness Range of tensile strength Are the shell plates welded or flanged Descrip. of riveting: cir. seams  
 ong. seams Diameter of rivet holes in long. seams Pitch of rivets Lap of plates or width of butt straps  
 Per centages of strength of longitudinal joint rivets Working pressure of shell by rules Size of manhole in shell  
 Size of compensating ring No. and Description of Furnaces in each boiler Material Outside diameter  
 Length of plain part top Thickness of plates crown Description of longitudinal joint No. of strengthening rings  
 bottom Working pressure of furnace by the rules Combustion chamber plates Material Thickness: Sides Back Top Bottom  
 Pitch of stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules  
 Material of stays Diameter at smallest part Area supported by each stay Working pressure by rules End plates in steam space:  
 Material Thickness Pitch of stays How are stays secured Working pressure by rules Material of stays  
 Diameter at smallest part Area supported by each stay Working pressure by rules Material of Front plates at bottom  
 Thickness Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules  
 Diameter of tubes Pitch of tubes Material of tube plates Thickness: Front Back Mean pitch of stays  
 Pitch across wide water spaces Working pressures by rules Girders to Chamber tops: Material Depth and  
 thickness of girder at centre Length as per rule Distance apart Number and pitch of stays in each  
 Working pressure by rules 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



# VERTICAL DONKEY BOILER—

Manufacturers of Steel

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 casing 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 \_\_\_\_\_  
 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 \_\_\_\_\_ Radius of do. \_\_\_\_\_ Stayed by \_\_\_\_\_  
 Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

SPARE GEAR. State the articles supplied:— 2 top end bolts & nuts, 2 bottom end bolts & nuts, 2 main bearing bolts & nuts, 1 set coupling bolts, 1 set feed & bridge pump valves, 1 set air & circulating pump valves, 1 set donkey pump valves, 1 main feed check, 1 donkey feed check, 1 propeller, rim of various sizes, quantity bolts & nuts, boiler tubes, condenser tubes & ferrules, fire bars &c.

The foregoing is a correct description,

FOR MILLER & MADFIE LIMITED.

Manufacturer.

Secretary

Dates of Survey { During progress of work in shops - - 1912. Aug 29. Sept 2. 5. Oct. 3. 8. 14. 18. 21. 29. Nov. 4. 11. 15. 18. 21. 25. 29. Dec. 2. 9. 12. 16. 24. 27.  
 while building { During erection on board vessel - - 1913. Jan. 10. 16. 21. 24. 27. 30. Feb. 6. 18. 21. 25. 27. March 5. 6. 10. 20. 21. 25. 28.  
 Total No. of visits 40.

Is the approved plan of main boiler forwarded herewith

Yes  
 Yes

Dates of Examination of principal parts—Cylinders 29. 10. 12 Slides 12. 12. 12 Covers 12. 12. 12 Pistons 12. 12. 12 Rods 25. 11. 12  
 Connecting rods 25. 11. 12 Crank shaft 2. 12. 12 Thrust shaft 2. 12. 12 Tunnel shafts ✓ Screw shaft 2. 12. 12 Propeller 12. 12. 12  
 Stern tube 21. 1. 13. Steam pipes tested 5. 3. 13. Engine and boiler seatings 24. 1. 13. Engines holding down bolts 6. 3. 13.  
 Completion of pumping arrangements 6. 3. 13 Boilers fixed 24. 2. 13. Engines tried under steam 25. 3. 13.  
 Main boiler safety valves adjusted 21. 3. 13. Thickness of adjusting washers 3/8" (each)  
 Material of Crank shaft Steel Identification Mark on Do. F. 332 Material of Thrust shaft Steel Identification Mark on Do. F. 332  
 Material of Tunnel shafts — Identification Marks on Do. — Material of Screw shafts Iron Identification Marks on Do. F. 332  
 Material of Steam Pipes Copper Test pressure 360 lbs.

General Remarks (State quality of workmanship, opinions as to class, &c.) The materials and workmanship are good. The machinery and boilers of this vessel have been built under special survey in accordance with the Rules and approved plans, securely fitted aboard and tried with satisfactory results under steam and are, in my opinion, eligible for classification and to have record + L.M.C. 3, 13.

It is submitted that this vessel is eligible for THE RECORD.

L.M.C. 3. 13. ELEC LIGHT.

Recd. 2. 4. 13.

The amount of Entry Fee .. £ 20.00 : When applied for, 31. 3. 13.  
 Special .. £ 10.00 :  
 Donkey Boiler Fee .. £ :  
 Travelling Expenses (if any) £ 10.00 : When received, 2/4/13

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

Committee's Minute GLASGOW 1- APR 1913

Assigned - L.M.C. 3, 13. jhl



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Glasgow

Certificate (if required) to be sent to

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