

# REPORT ON MACHINERY.

Port of Glasgow

Received at London Office JUL 3 1902

No. in Survey held at Glasgow

Date, first Survey 20<sup>th</sup> March 1901 Last Survey 21<sup>st</sup> June 1902

Reg. Book. on the S.S. "Tarquah"

(Number of Visits 64) Tons { Gross 3858.75  
Net 2440.52

Master C. Harvelly Built at Glasgow By whom built A. Stephen & Sons Lim When built 1902

Engines made at Glasgow By whom made A. Stephen & Sons Lim when made 1902

Boilers made at Glasgow By whom made A. Stephen & Sons Lim when made 1902

Registered Horse Power Owners African S.S. Co. Port belonging to Liverpool

nom. Horse Power as per Section 28 525 Is Refrigerating Machinery fitted yes Is Electric Light fitted yes

**ENGINES, &c.**—Description of Engines Triple expansion No. of Cylinders three No. of Cranks 3

Dia. of Cylinders 27, 43, 72 Length of Stroke 48 Revs. per minute 90 Dia. of Screw shaft as per rule 14.74 as fitted 15.74 Lgth. of stern bush 60

Dia. of Tunnel shaft as per rule 13.1 as fitted 13.34 Dia. of Crank shaft journals as per rule 13.5 as fitted 14.4 Dia. of Crank pin 14.4 Size of Crank webs 9.5 x 26.4 Dia. of thrust shaft under bars 14.4 Dia. of screw 16.6 Pitch of screw 17.6 No. of blades 4 State whether moceable yes Total surface 75 sq ft

No. of Feed pumps 2 Diameter of ditto 3.75 Stroke 27 Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 4 Stroke 27 Can one be overhauled while the other is at work yes

No. of Donkey Engines two Sizes of Pumps 12" 6x3.5x5-42x3x4 No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room Iron 32 In Holds, &c. Iron 32

No. of bilge injections 2 sizes 6" Connected to condenser, or to circulating pump pump Is a separate donkey suction fitted in Engine room & size yes 3.5"

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 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

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

When were stern tube, propeller, screw shaft, and all connections examined in dry dock before launch Is the screw shaft tunnel watertight apparently

Is it fitted with a watertight door yes worked from top platform

**BOILERS, &c.**— (Letter for record 2) Total Heating Surface of Boilers 7863 sq ft Is forced draft fitted yes

No. and Description of Boilers 2 Main 1 Aux & single ended Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs

Date of test Can each boiler be worked separately yes Area of fire grate in each boiler 73.4 No. and Description of safety valves to each boiler 1 pair dual spring Area of each valve 12.57 Pressure to which they are adjusted 180 lbs Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 18" Mean dia. of boilers 16-3 Length 12' Material of shell plates steel

Thickness 1/2" Range of tensile strength 28.5-32 Are they welded or flanged no Descrip. of riveting: cir. seams double lap long. seams triple butt

Diameter of rivet holes in long. seams 1 9/16" Pitch of rivets 9 3/32" Lap of plates or width of butt straps 22 7/16"

Percentages of strength of longitudinal joint rivets. 86.3 Working pressure of shell by rules 215 lbs Size of manhole in shell 16 x 12" plate 86.8

No. of compensating ring 3 No. and Description of Furnaces in each boiler 4 Material steel Outside diameter 44"

Length of plain part top 17" Thickness of plates crown 17/32" Description of longitudinal joint welded No. of strengthening rings 1 bottom 3/32"

Working pressure of furnace by the rules 180 lbs Combustion chamber plates: Material steel Thickness: Sides 19/32" Back 19/32" Top 19/32" Bottom 13/16"

No. of stays to ditto: Sides 7 13/16" Back 7 13/16" Top 7 13/16" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 215 lbs

Material of stays steel Diameter at smallest part 1.5" Area supported by each stay 61" Working pressure by rules 198 lbs End plates in steam space:

Material steel Thickness 1 3/32" Pitch of stays 15 1/4" x 15 1/4" How are stays secured 27 nuts Working pressure by rules 258 lbs Material of stays steel

Area supported by each stay 232" Working pressure by rules 230" Material of Front plates at bottom steel

Thickness 13/16" Material of Lower back plate steel Thickness 13/16" Greatest pitch of stays 18 1/2" Working pressure of plate by rules 360 lbs

Diameter of tubes 2 1/2" Pitch of tubes 3 3/8" x 3 3/8" Material of tube plates steel Thickness: Front 13/16" Back 13/16" Mean pitch of stays 9 7/16"

Arch across wide water spaces 13 1/2" Working pressures by rules 290 lbs Girders to Chamber tops: Material steel Depth and thickness of girder at centre 8 7/16" x 7/8" Length as per rule 2-6 3/8" Distance apart 7 13/16" Number and pitch of Stays in each (3) 7 13/16"

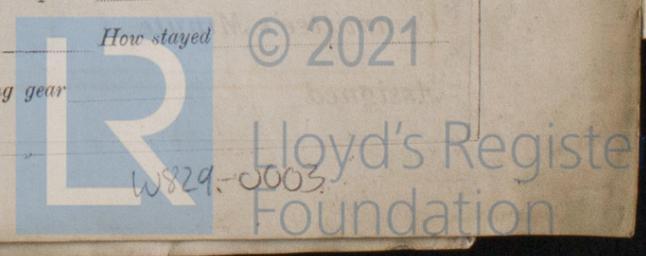
Working pressure by rules 280 lbs Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked separately

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

Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness

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



**DONKEY BOILER**— No. \_\_\_\_\_ Description iron  
 Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_  
 Working pressure tested by hydraulic pressure to \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of safety valves \_\_\_\_\_  
 No. of safety valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ If fitted with easing gear \_\_\_\_\_ If steam from main boilers \_\_\_\_\_  
 enter the donkey boiler \_\_\_\_\_ Dia. of donkey boiler \_\_\_\_\_ Length \_\_\_\_\_ Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_ Range of tens \_\_\_\_\_  
 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 \_\_\_\_\_ 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 \_\_\_\_\_  
 joint \_\_\_\_\_ Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_  
 Working pressure of furnace by rules \_\_\_\_\_ Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_

**SPARE GEAR.** State the articles supplied:— 1 set of coupling bolts & nuts 1 set top end bolts & nuts 1 set bottom end bolts and nuts 2 main bearing bolts & nuts 1 set of 2nd & bilge pump valves, iron of various sizes & bolts & nuts assorted.

The foregoing is a correct description,  
 Alex. Stephen Jones & Co. Manufacturer.  
 Alex. Scott, Secretary

Dates of Survey while building  
 During progress of work in shops: 1901: Mar. 20, 29, Apr. 5, 9, 12, 15, 23, May 10, 23, 30, Jun. 3, 4, 21, 24, May 10, 23, 30, Jun. 3, 4, 21, 24, July 9, Aug 10, 17, 21, 26, Mar. 7, 19, 20, Apr. 9, 15, May 5, 6, 20, Jun 2, 3, 21  
 During erection on board vessel: 12, 29, Sep 2, 13, 19, 25, 30, Oct. 15, 20, Nov. 4, 13, 16, 27, Dec. 6, 20, 25, 27, 1902: Jan. 14, 15, 22, 27, 28, 30, Feb. 3, 5, 10, 17, 21, 26, Mar. 7, 19, 20, Apr. 9, 15, May 5, 6, 20, Jun 2, 3, 21  
 Total No. of visits 64.  
 Is the approved plan of main boiler forwarded herewith Yes  
 S.S. Beaman

**General Remarks** (State quality of workmanship, opinions as to class, &c. good L.M.C. 6.02.)

Material of screw shaft Lock fast bar 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 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 yes  
 non-corrosive If two liners are fitted, is the shaft lapped or protected between the liners yes

This machinery has been built under special survey, it has been well fitted on board and tried under steam and is in my opinion eligible to have the above notification in the Register book

One forging report is hereto appended

Glasgow

The Surveyors are requested not to write on or below the space for Committee's Minute.

It is submitted that this vessel is eligible for THE RECORD - L.M.C. 6.02 F.D. Elec. Light. Ref. Machinery

The amount of Entry Fee..	£ 3	:	:	When applied for,	7.7.02
Special .. .. .	£ 46 5	:	:	28/6/1902	
Donkey Boiler Fee .. .. .	£	:	:	When received,	
Travelling Expenses (if any) £		:	:	28/6/1902	

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

Committee's Minute **GLASGOW, 23 JUL 1902**  
 Assigned **+ d.m.b. 6.02**

