

REPORT ON MACHINERY.

No. 24918
WED. 7 JUL 1909

Received at London Office

to of writing Report

10

When handed in at Local Office

6/7/1909 Port of Glasgow

Date, First Survey 30th September 1908

(Number of Visits)

July 1909

o. in Survey held at Penryn

eg. Book.

on the S/s Sand Grouse

Gross 2061
Net 1291

Master Roddick Built at Penryn

By whom built Tom Simons & Co Ltd 1909

Engines made at Penryn

By whom made Tom Simons & Co Ltd 1909

Boilers made at Penryn

By whom made Tom Simons & Co Ltd 1909

Registered Horse Power 226

Owners Government of Southern Nigeria Port belonging to Lagos

Tom. Horse Power as per Section 28 297

Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Twin Screw Suple

No. of Cylinders 6 No. of Cranks 6

Dia. of Cylinders 18" 25" 48" Length of Stroke 27" Revs. per minute 130

Dia. of Screw shaft as per rule 8.2" as fitted 9.2" Material of screw shaft Steel

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 caulked only 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

liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 3'-9"

Dia. of Tunnel shaft as per rule 2.3" as fitted 2.3" Dia. of Crank shaft journals as per rule 8.70" as fitted 9" Dia. of Crank pin 9" Size of Crank webs 6.2" 15" Dia. of thrust shaft under

collars 9" Dia. of screw 10-0 Pitch of Screw 11' 6" No. of Blades 4 State whether moveable No Total surface 58 ft

No. of Feed pumps 2 Diameter of ditto 3.2" Stroke 15" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 3.2" Stroke 15" Can one be overhauled while the other is at work Yes

No. of Donkey Engines 3 Sizes of Pumps 7" x 6" x 8" 6" x 6" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room three 2.2" + 5" stokehold In Holds, &c. two 2.2" in side pockets, two 2.2" in

fore pump room, two 2.2" in fore compartment Is a separate Donkey Suction fitted in Engine room & size Yes 2.2"

No. of Bilge Injections 2 sizes 5 Connected to condenser, or to circulating pump pump Are the sluices on Engine room bulkheads always accessible No

Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes Are the valves or cocks both

Are all connections with the sea direct on the skin of the ship Yes Are the Discharge Pipes above or below the deep water line above

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the Blow Off Cocks fitted with a spigot and brass covering plate Yes

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Yes How are they protected iron casing & flooring

What pipes are carried through the bunkers ash steam & bilge pipes 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 18/5/09 of Stern Tube 18/5/09 Screw shaft and Propeller 18/5/09

Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door Yes worked from Yes

BOILERS, &c.—(Letter for record S) Manufacturers of Steel D Colville Sons

Total Heating Surface of Boilers 5082 ft Is Forced Draft fitted No No. and Description of Boilers 3 Single ended return tube

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 5/3/09 No. of Certificate 9787

Can each boiler be worked separately Yes Area of fire grate in each boiler 57 ft No. and Description of Safety Valves to

each boiler 1 pair direct spring Area of each valve 5.9 sq ft 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 about 10 ft Mean dia. of boilers 13'-0" Length 10'-6" Material of shell plates Steel

Thickness 1 1/16" Range of tensile strength 28-32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap double

long. seams Triple butt Diameter of rivet holes in long. seams 1 3/16" Pitch of rivets 8 1/4" Lap of plates or width of butt straps 17 1/8"

Per centages of strength of longitudinal joint rivets 150 plate 85.6 Working pressure of shell by rules 182 lbs Size of manhole in shell 16" x 12"

Size of compensating ring M. Nuts No. and Description of Furnaces in each boiler 3 Dighton Material Steel Outside diameter 42 1/4"

Length of plain part top bottom Thickness of plates crown 1 1/2" bottom 1 1/2" Description of longitudinal joint welded No. of strengthening rings

Working pressure of furnace by the rules 180 lbs Combustion chamber plates: Material Steel Thickness: Sides 7/8" Back 7/8" Top 7/8" Bottom 3/4"

Pitch of stays to ditto: Sides 7 3/4" 7 1/8" Back 7 3/4" 7 1/8" Top 7 1/4" 8 1/4" If stays are fitted with nuts or riveted heads riveted Working pressure by rules 181

Material of stays Steel Diameter at smallest part 1.45" Area supported by each stay 55 sq ft Working pressure by rules 210 End plates in steam space:

Material Steel Thickness 1 1/16" Pitch of stays 19 x 18 How are stays secured 22 1/2" Working pressure by rules 185 lbs Material of stays Steel

Diameter at smallest part 6.1" Area supported by each stay 34 1/2" Working pressure by rules 186 Material of Front plates at bottom Steel

Thickness 1 1/16" Material of Lower back plate Steel Thickness 1 3/16" Greatest pitch of stays 12" Working pressure of plate by rules 234

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates Steel Thickness: Front 15/16" Back 13/16" Mean pitch of stays 10 1/8"

Pitch across wide water spaces 13 1/8" Working pressures by rules 232, 180 lbs Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 9 1/2" x 3/4" double Length as per rule 34 5/8" Distance apart 8 1/4" Number and pitch of stays in each (3) 17 1/4"

Working pressure by rules 200 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

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 <i>Iron</i>				
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 Top end bolts & nuts, 2 Bottom end bolts & nuts, 1 set of coupling bolts & nuts, 2 main bearing bolts & nuts, 1 set of fuel and barge pump valves, bolts & nuts & iron of various sizes, 2 propellers & shafts, 1 crank shaft, 1 D.P. cylinder bar, 1 set of piston packing rings, junk rings & pump etc.

The foregoing is a correct description,

James D. Murray Manufacturer.

Dates of Survey: During progress of work in shops— 1908: Sept. 30, Oct. 12, 13, 14, 20, 23, 26, Nov. 3, 9, 10, 12, 13, 18, 19, 21, 23, 24, 30, Dec. 5, 8, 10, 14.
During erection on board vessel— 1909: Jan. 12, 19, 22, Feb. 1, 4, 5, 11, 16, 22, 26, Mar. 5, 10, 16, 30, Apr. 9, 10, 29, May 6, 18, 24, June 1, 10, 21, 22, 29.
while building— July.
Total No. of visits— 49.

Is the approved plan of main boiler forwarded herewith *yes*

Dates of Examination of principal parts—Cylinders *4/11/08* Slides *23/11/08* Covers *4/12/08* Pistons *9/11/08* Rods *9/11/08*
Connecting rods *9/11/08* Crank shaft *10/12/08* Thrust shaft *18/11/08* Tunnel shafts — Screw shaft *18/11/08* Propellers *29.6.09*
Stern tube *12/11/09* Steam pipes tested *15/4/09* Engine and boiler seatings *10/3/09* Engines holding down bolts *30/3/09*
Completion of pumping arrangements *15/4/09* Boilers fixed *15/4/09* Engines tried under steam
Main boiler safety valves adjusted *10.6.09* Thickness of adjusting washers *Enc boiler PV. 3/8 S.V. 7/32* *Star & Lion PV. 3/8 S.V. 3/8*
Material of Crank shaft *Steel* Identification Mark on Do. *Support* Material of Thrust shaft *Steel* Identification Mark on Do. *Support*
Material of Tunnel shafts — Identification Marks on Do. — Material of Screw shafts *Steel* Identification Marks on Do. *Support*
Material of Steam Pipes *S.D. Steel & S.D. Copper* Test pressure. *540 lbs, 450 lbs.*

General Remarks (State quality of workmanship, opinions as to class, &c. The machinery of this vessel has been constructed under special survey and is in accordance with the rules. Materials and workmanship are good.
The machinery of this vessel is eligible in our opinion to be classed + LMC 7.09 Electric Light.

Note. The engines have not yet been seen working under steam, but it is intended to have this done before the certificate is handed over.

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

+ LMC 7.09

ARR Electric Light
7.7.09
4/7/09

A. McKeand & Harry Clarke
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee	£ 2 : 0 :	When applied for,
Special	£ 34 : 14 :	<i>6/1/09</i>
Donkey Boiler Fee	£ — :	When received,
Travelling Expenses (if any)	£ — :	<i>8.7.09</i>

Committee's Minute **GLASGOW 6 JUL 1909**

Assigned + LMC 7.09

MACHINERY CERTIFICATE
WRITTEN. *7.7.09*



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LMA 67209
Certificate (if required) to be sent to Committee's Minute.