

REPORT ON MACHINERY.

Port of Glasgow

Received at London Office **THUR. 9 MAY 1907**

No. in Survey held at Glasgow

Date, first Survey 25 July Last Survey 1-5-1907

Reg. Book. on the S/S "Kazembe"

(Number of Visits)

Master Built at Glasgow By whom built Alco Stephens & Sons Ltd Gross
Tons
Net
When built

Engines made at Glasgow By whom made Alco Stephens & Sons Ltd (421) when made 1907

Boilers made at ditto By whom made ditto (421) when made 1907

Registered Horse Power Owners Port belonging to

Nom. Horse Power as per Section 28 514 Is Refrigerating Machinery fitted for cargo purposes 90 Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 26-44-73 Length of Stroke 48 Revs. per minute Dia. of Screw shaft 14.5 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 Solid If two

liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 6-0

Dia. of Tunnel shaft 3.12 Dia. of Crank shaft journals 3.44 Dia. of Crank pin 4.2 Size of Crank webs 9.26 Dia. of thrust shaft under

collars 4.4 Dia. of screw 17.6 Pitch of Screw 16-6 No. of Blades 4 State whether moveable Yes Total surface 88

No. of Feed pumps 2 Diameter of ditto 4 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 5 Sizes of Pumps 2 Weirs 8.19, 8.21, 8.10, 8.12, 8.13, 8.14, 8.15, 8.16, 8.17, 8.18, 8.19, 8.20, 8.21, 8.22, 8.23, 8.24, 8.25, 8.26, 8.27, 8.28, 8.29, 8.30, 8.31, 8.32, 8.33, 8.34, 8.35, 8.36, 8.37, 8.38, 8.39, 8.40, 8.41, 8.42, 8.43, 8.44, 8.45, 8.46, 8.47, 8.48, 8.49, 8.50, 8.51, 8.52, 8.53, 8.54, 8.55, 8.56, 8.57, 8.58, 8.59, 8.60, 8.61, 8.62, 8.63, 8.64, 8.65, 8.66, 8.67, 8.68, 8.69, 8.70, 8.71, 8.72, 8.73, 8.74, 8.75, 8.76, 8.77, 8.78, 8.79, 8.80, 8.81, 8.82, 8.83, 8.84, 8.85, 8.86, 8.87, 8.88, 8.89, 8.90, 8.91, 8.92, 8.93, 8.94, 8.95, 8.96, 8.97, 8.98, 8.99, 8.100 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 3-3 1/2 Tunnel Will 3 1/2 In Holds, &c. No 1, 2, 3 Hold 2, 3 1/2 No 4, 1-3 1/2

Four Peak 1-3 1/2 After Peak 1-3 1/2

No. of Bilge Injections 1 sizes 8 1/4 Connected to condenser, or to circulating pump Co Is a separate Donkey Suction fitted in Engine room & size Yes 3 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 Now

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 2 1/2 Hold suction How are they protected wood

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 of Stern Tube Screw shaft and Propeller 8-4-07

Is the Screw Shaft Tunnel watertight apparently Is it fitted with a watertight door Yes worked from Upper E R platform

BOILERS, &c.—(Letter for record 8.) Manufacturers of Steel D. Bellville, Motherwell

Total Heating Surface of Boilers 6164 Is Forced Draft fitted Yes No. and Description of Boilers Two Single Ended

Working Pressure 180lb Tested by hydraulic pressure to 360lb Date of test 20.2.07.8-307 No. of Certificate 882578317

Can each boiler be worked separately Yes Area of fire grate in each boiler 634 No. and Description of Safety Valves to

each boiler 2 Double Spring Area of each valve 9-63 Pressure to which they are adjusted 180lb Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 18 Mean dia. of boilers 16-6 Length 12-0 Material of shell plates S

Thickness 1 1/2 Range of tensile strength 28-32 Are the shell plates welded or flanged 90 Descrip. of riveting: cir. seams double

long. seams TR D B S Diameter of rivet holes in long. seams 1 1/32 Pitch of rivets 9 1/4 Lap of plates or width of butt straps 19 1/16

Per centages of strength of longitudinal joint rivets 85.85 Working pressure of shell by rules 181lb Size of manhole in shell 16x12

Size of compensating ring M Heils No. and Description of Furnaces in each boiler 3 Doughton Material S Outside diameter 4 2 1/8

Length of plain part Thickness of plates 37/64 Description of longitudinal joint welded No. of strengthening rings

Working pressure of furnace by the rules 180lb Combustion chamber plates: Material S Thickness: Sides 5/8 Back 5/8 Top 5/8 Bottom 7/8

Pitch of stays to ditto: Sides 9x8 Back 8 3/4, 8 3/4 Top 9 1/4 x 8 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 182lb

Material of stays S Section Diameter at smallest part 1.78 Area supported by each stay 73 1/4 Working pressure by rules 219 End plates in steam space:

Material S Thickness 1 5/32 Pitch of stays 18x18 1/2 How are stays secured DN Working pressure by rules 180lb Material of stays S

Diameter at smallest part 6 Area supported by each stay 18x18 1/2 Working pressure by rules 183 Material of Front plates at bottom S

Thickness 7/8 Material of Lower back plate S Thickness 7/8 Greatest pitch of stays 14 1/2 Working pressure of plate by rules 189

Diameter of tubes 2 1/2 Pitch of tubes 3 7/8 x 3 3/4 Material of tube plates S Thickness: Front 7/8 Back 27/32 Mean pitch of stays 9.56

Pitch across wide water spaces 4 1/2 Working pressures by rules 180lb Girders to Chamber tops: Material S Depth and

thickness of girder at centre 9 1/4 x 13 1/4 Length as per rule 32 1/2 Distance apart 9 Number and pitch of stays in each 3-8

Working pressure by rules 201lb Superheater or Steam chest; how connected to boiler Now 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

W616-0226

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 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:— one Propeller shaft, 2 blades, one set of Feed & Purge pump valves & seats, one set of H.P. piston springs, 1 set of Clutch valves & set of safety valve springs, 2 top & bottom connecting rod bolts complete, 2 main bearing bolts with nuts, one set of coupling bolts, a quantity of assorted bolts & nuts & iron

The foregoing is a correct description,
 A. J. Scott, Secy. Manufacturer.

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|--------------------------------|----------------------------------|---|
| Dates of Survey while building | During progress of work in shops | 1906: July 25 Aug 8 21 Sep 26 Oct 30 Nov 12 14 28 Dec 28 1907 Jan 10 17 22 25 |
| | During erection on board vessel | Feb 11 19 20 26 Mar 5 8 12 14 18 23 25 Apr 2 10 15 16 19 26 27 9. Long Reports 30 May 1 |
| | Total No. of visits | 33 |

Is the approved plan of main boiler forwarded herewith Yes (3) No

Is the approved plan of donkey boiler forwarded herewith Yes No

| | | | | | |
|---|-------------------------------------|--------------------------------|---|------------------------------------|---------------------|
| Dates of Examination of principal parts | Cylinders 17-1-07 | Slides 17-1-07 | Covers 17-1-07 | Pistons 22-1-07 | Rods 22-1-07 |
| Connecting rods | 27-1-07 | Crank shaft 20-2-07 | Thrust shaft 22-1-07 | Tunnel shafts 22-1-07 | Screw shaft 20-2-07 |
| Stern tube | 11-2-07 | Steam pipes tested 15-4-07 | Engine and boiler seatings 17-4-07 | Engines holding down bolts 17-4-07 | |
| Completion of pumping arrangements | 10-4-07 | Boilers fixed 17-4-07 | Engines tried under steam 30-4-07 | | |
| Main boiler safety valves adjusted | 26-4-07 | Thickness of adjusting washers | SV 7/16" PV 3/8" SV 1/4" PV 1/16" AV 3/8" FV 3/8" | | |
| Material of Crank shaft | S | Identification Mark on Do. | 20-2-07 | Material of Thrust shaft | S |
| Material of Tunnel shafts | S | Identification Marks on Do. | 22-1-07 | Material of Screw shafts | Iron |
| Material of Steam Pipes | Copper Solid drawn, Lap welded iron | Test pressure | Copper 360° Iron 500lb° | | |

General Remarks (State quality of workmanship, opinions as to class, &c.) These Engines & Boilers have been constructed & fitted on board under Special Survey in accordance with the approved plan & the Requirements of the Rules & the workmanship & material have been found good. The Machinery is in my opinion eligible for the Record of

*** LMC 5.07**

It is submitted that this vessel is eligible for THE RECORD. * L.M.C. 5.07

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

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|------------------------------|---------|-------------------|------------|
| The amount of Entry Fee.. | £ 5.00 | When applied for. | 7 MAY 1907 |
| Special | £ 45.11 | When received. | 11.5.07 |
| Donkey Boiler Fee | £ | | |
| Travelling Expenses (if any) | £ | | |

Glasgow - 7 MAY 1907

Assigned *** LMC 5.07**

MACHINERY CERTIFICATE WRITTEN 95-07

Certificate (if required) to be sent to the Surveyors are requested not to write on or below the space for Committee's Minute.

