

REPORT ON MACHINERY.

Port of Sunderland

Received at London Office

21 MAY 1892

No. in Survey held at SunderlandDate, first Survey Nov. 12th 91 Last Survey 12th May 1892

Reg. Book.

(Number of Flats 28)on the S/S "Basuto"Tons { Gross 2,424.49
Net 1,764.28When built 1892Master _____ Built at Sland By whom built J. HainingEngines made at Sland By whom made G. Clark. Ld. when made 1892Boilers made at Sland By whom made G. Clark. Ld. when made 1892Registered Horse Power 500 Owners British Colonial S. N. Co. Ltd. Port belonging to LondonNom. Horse Power as per Section 28 284

ENGINES, &c.— Description of Engines Tri compound No. of Cylinders 3

Diameter of Cylinders 24" 38" 64" Length of Stroke 42" Revolutions per minute 65 Diameter of Screw shaft as per rule 10 7/10
as fitted 12"

Diameter of Tunnel shaft as per rule 10 7/10 Diameter of Crank shaft journals 12" Diameter of Crank pin 12" Size of Crank webs 85" x 23"
as fitted 11 1/2"

Diameter of screw 16 ft. Pitch of screw 16 ft. No. of blades 4 State whether moveable f Total surface 75.5 sq

No. of Feed pumps 2 Diameter of ditto 3 1/2" Stroke 26" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 26" Can one be overhauled while the other is at work yes

No. of Donkey Engines 2 Sizes of Pumps 5 1/2 x 3 1/2 x 5 + addies No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room 3 Suctions 2 of 2 1/2" & one of 3 1/2" In Holds, &c. 2 Suctions of 2 1/2" to No. 1 hold. 2 of 2 1/2" to No. 2 hold. 1 of 3" to hold well in No. 3 hold. 1 to tunnel well of 3"

No. of bilge injections 1 sizes 4" Connected to condenser, or to circulating pump C.P. Is a separate donkey suction fitted in Engine room & size yes 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 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 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

When were stern tube, propeller, screw shaft, and all connections examined in dry dock new vessel Is the screw shaft tunnel watertight ✓

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

BOILERS, &c.— (Letter for record R.) Total Heating Surface of Boilers 4542 sq

No. and Description of Boilers 2 Cyl. multi. Single ended Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs

Date of test 29.2.92 Can each boiler be worked separately yes Area of fire grate in each boiler 64.5 sq No. and Description of safety valves to each boiler direct spring Area of each valve 8.3 sq Pressure to which they are adjusted 165 lbs Are they fitted with easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork 13" Mean diameter of boilers 15' 6"

Length 11 feet Material of shell plates Steel Thickness 1 3/8" Description of riveting: circum. seams a. r. lap long. seams r. r. butt

Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 8 3/8" Lap of plates or width of butt straps 20" straps

Per centages of strength of longitudinal joint rivets 83.5 plate 95 Working pressure of shell by rules 160 lbs Size of manhole in shell 16" x 13"

Size of compensating ring 9 1/2" x 1 3/8" No. and Description of Furnaces in each boiler 3 Ribbed Material Steel Outside diameter 46 1/2"

Length of plain part top 7' 3" bottom 4' 6" Thickness of plates crown 1 1/2" bottom 3/2" Description of longitudinal joint — No. of strengthening rings —

Working pressure of furnace by the rules 163 lbs Combustion chamber plates: Material Steel Thickness: Sides 9/16" Back 3/2" + 9/16" Top 3/2" + 9/16" Bottom 1"

Pitch of stays to ditto: Sides 8 1/2" x 8" Back 8 1/2" x 8 1/2" Top 8 1/2" x 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 160 lbs

Material of stays iron Diameter at smallest part 1 1/2" Area supported by each stay 66 sq Working pressure by rules 160 lbs End plates in steam space: Material Steel Thickness 1 1/2" Pitch of stays 19 3/8" x 18 1/4" How are stays secured a. nuts Working pressure by rules 160 lbs Material of stays Steel

Diameter at smallest part 2 3/2" Area supported by each stay 348 sq Working pressure by rules 171 Material of Front plates at bottom Steel Thickness 2 3/2" Material of Lower back plate Steel Thickness 7/8" Greatest pitch of stays 13" Working pressure of plate by rules 179 lbs

Diameter of tubes 3 1/2" Pitch of tubes 4 1/4" x 4 7/8" Material of tube plates Steel Thickness: Front 3/4" Back 3/2" Mean pitch of stays 9 3/8"

Pitch across wide water spaces 15" Working pressures by rules 200 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 12" Length as per rule 33 1/2" Distance apart 8 1/2" Number and pitch of Stays in each 3 of 8 1/4"

Working pressure by rules 164 lbs 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 —

DONKEY BOILER— Description *Vertical 3 cross water tubes. (2 boilers)*
 Made at *Stockton* By whom made *Riley Bros.* When made *2/92* Where fixed *Stockholm*
 Working pressure *90 lbs* tested by hydraulic pressure to *180 lbs* No. of Certificate *405* Fire grate area *21 sq.* Description of safety valves *Spring*
 No. of safety valves *1* Area of each *7.07* Pressure to which they are adjusted *90 lbs* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Diameter of donkey boiler *6 feet* Length *11 feet* Material of shell plates *Steel* Thickness *7/16"*
 Description of riveting long. seams *Vert. lap. double* Diameter of rivet holes *7/16"* Whether punched or drilled *p.* Pitch of rivets *2 7/16"*
 Lap of plating *4 1/4"* Per centage of strength of joint *71.1* Thickness of shell crown plates *7/16"* Radius of do. *5 ft.* No. of Stays to do. *1*
 Dia. of stays *1 1/4" iron* Diameter of furnace Top *4'-10"* Bottom *5'-5"* Length of furnace *4'-4"* Thickness of furnace plates *5/8"* Do. joint *lap single* Thickness of furnace crown plates *7/16"* Stayed by *Same as shell crown* Working pressure of shell by rule *89.4 lbs*
 Working pressure of furnace by rules *89.4 lbs* Diameter of uptake *15"* Thickness of uptake plates *7/16"* Thickness of water tubes *7/16"*

SPARE GEAR. State the articles supplied:— *Spare gear supplied as per Rule and in addition 2 sets of crank pin brasses, 1 set of eccentric straps, propeller shaft and propeller.*

The foregoing is a correct description,
 FOR GEORGE CLARK LIMITED,
George Clark Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery and boiler of this vessel have been constructed under special survey materials and workmanship good and efficient; main steam pipes tested by hydraulic to twice the working pressure. In my opinion the machinery of this vessel is in good and safe working condition, eligible to have the notation S.M.C. 5792 in the Register Book.*

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 5792

Certificate (if required) to be sent to

The amount of Entry Fee.. £ *2 : 0 : 0* When applied for, *15 May 1892*
 Special £ *34 : 4 : 0*
 Donkey Boiler Fee £ *2 : - : -* When received, *20 May 1892*
 Travelling Expenses (if any) £ *2 : - : -*

Committee's Minute

TUES. 24 MAY 1892

Assigned

+ L.M.C. 5792

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



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