

REPORT ON MACHINERY.

140.
32137

Port of Newcastle

Received at London Office TUES. 13 AUG 1895

No. in Survey held at Newcastle
Reg. Book.

Date, first Survey January 10th Last Survey Aug 1st 1895
(Number of Visits 58)

on the S S Borneo

Tons ^{Gross} 4572.9
_{Net} 2943.5

Master Wilmer Built at Newcastle By whom built Messrs Palmers & Co Ltd When built 1895

Engines made at Newcastle By whom made Messrs Palmers & Co Ltd when made 1895

Boilers made at Newcastle By whom made Messrs Palmers & Co Ltd when made 1895

Registered Horse Power 600 Owners Messrs G & O Stm Nav. Co. Port belonging to Newcastle

Nom. Horse Power as per Section 28 ~~448~~ 506 NHP

ENGINES, &c.— Description of Engines Triple Expansive Inverted No. of Cylinders three
Diameter of Cylinders 28" 46" 44" Length of Stroke 54" Revolutions per minute 40 Diameter of Screw shaft as per rule 13.4
Diameter of Tunnel shaft as per rule 13.4 Diameter of Crank shaft journals 14 3/4" Diameter of Crank pin 14 3/4" Size of Crank webs 11 x 19 3/4"
Diameter of screw 18 ft Pitch of screw 19 ft No. of blades 4 State whether moveable yes Total surface 9.3 sq ft
No. of Feed pumps 2 Weirs Diameter of ditto 8" Stroke 18" Can one be overhauled while the other is at work yes
No. of Bilge pumps 2 Diameter of ditto 4 1/8" Stroke 30" Can one be overhauled while the other is at work yes
No. of Donkey Engines Two Sizes of Pumps 8" dia Ballast 11" No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room Four 3 1/2" dia In Holds, &c. No 1 hold 2-2 1/2" No 2 hold 2-3 1/2"
No 3 hold 2-3 1/2" dia No 4 hold 2-3 1/2" dia No 5 hold 3-2 1/2" + 3 1/2" dia
No. of bilge injections 2 sizes 3 1/2" dia Connected to condenser, or to circulating pump condenser Is a separate donkey suction fitted in Engine room & size yes 3 1/2" dia
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 water
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 ✓ 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 1-7-95 Is the screw shaft tunnel watertight yes
Is it fitted with a watertight door yes worked from upper deck

BOILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 6924.58 sq ft
No. and Description of Boilers Two double ended cyl mult Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs
Date of test 17.5.95 Can each boiler be worked separately yes Area of fire grate in each boiler 45 sq ft No. and Description of safety valves to each boiler two direct spring Area of each valve 11.04 sq Pressure to which they are adjusted 160 lbs Are they fitted with easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork 14" Mean diameter of boilers 13.8"
Length 18' 6" Material of shell plates Steel Thickness 1 1/2" Description of riveting: circum. seams Dr. Jut. riv lap long. seams Dr. riv butt
Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 7 1/2" Lap of plates or width of butt straps 17 3/4"
Per centages of strength of longitudinal joint 91.8 Working pressure of shell by rules 170 lbs Size of manhole in shell 12 x 16
Size of compensating ring ✓ McNeil No. and Description of Furnaces in each boiler 4 Morrisons Material Steel Outside diameter 48"
Length of plain part top Thickness of plates crown Description of longitudinal joint welded No. of strengthening rings ✓
bottom bottom Working pressure of furnace by the rules 183 lbs Combustion chamber plates: Material Steel Thickness: Sides 5" Back 5" Top 5" Bottom 3 1/2"
Pitch of stays to ditto: Sides 8 x 8 Back ✓ Top 8 1/2 x 9 1/2 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 162 lbs
Material of stays Steel Diameter at smallest part 1.49" Area supported by each stay 80 sq Working pressure by rules 160 lbs End plates in steam space:
Material Steel Thickness 1 1/4" Pitch of stays 14 x 18 1/2" How are stays secured Dr. nuts riv Working pressure by rules 180 lbs Material of stays Steel
Diameter at smallest part 2.7" Area supported by each stay 310 sq Working pressure by rules 168 lbs Material of Front plates at bottom Steel
Thickness 5" Material of Lower back plate ✓ Thickness ✓ Greatest pitch of stays ✓ Working pressure of plate by rules ✓
Diameter of tubes 2 1/2" Pitch of tubes 3 1/2" x 3 1/2" Material of tube plates Steel Thickness: Front 13 1/16" Back 13 1/16" Mean pitch of stays 7 1/2"
Pitch across wide water spaces 14" Working pressures by rules 164 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 7 1/2" x 1 1/4" Length as per rule 46 1/2" Distance apart 9 1/8" Number and pitch of Stays in each 4, 8 1/2" pitch
Working pressure by rules 208.5 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 ✓

NWC842-0151

DONKEY BOILER— Description *Single ended cyl. mult.*
Made at *Newcastle* By whom made *Messrs Palmers, & Co. Ltd.* When made *1895* Where fixed *Upper deck*
Working pressure *160 lbs* tested by hydraulic pressure to *320 lbs* No. of Certificate *4600* Fire grate area *32.4 sq ft* Description of safety valves *direct spring*
No. of safety valves *two* Area of each *5.74 sq ft* Pressure to which they are adjusted *160 lbs* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Diameter of donkey boiler *10 ft* Length *9.6* Material of shell plates *steel* Thickness *1/2*
Description of riveting long. seams *Spalt per butt* Diameter of rivet holes *1* Whether punched or drilled *drilled* Pitch of rivets *6 1/2*
Shape of plating *1/4* Per centage of strength of joint *98* Rivets *98* Thickness of shell *end* plates *1* Radius of do. *1/2* No. of Stays to do. *16 x 16 1/4*
Dia. of stays *2 1/2* Diameter of furnace Top *3 1/2* Bottom *3* Length of furnace *6.3* Thickness of furnace plates *3/16* Description of joint *welded* Thickness of *comb. cham.* furnace crown plates *9/16* Stays by *1 1/2 x 1 1/8 stays 8 1/2 pitch* Working pressure of shell by rules *160 lbs*
Working pressure of furnace by rules *179 lbs* Diameter of *uptake* *3* Thickness of *uptake* plates *3/16* Thickness of *uptake* tubes *8 1/2*

SPARE GEAR. State the articles supplied:— *3 crankshaft 1 propeller/shaft 2 propeller blades 1 A.P. piston/rod 1 A.P. piston complete 1 I.P. junk ring 1 set of packing/rings for each piston 1 A.P. valve/rod and piston valves 1 I.P. valve/rod 1 L.P. valve/rod 1 set of top and bottom end brasses 1 airpump bucket guards and rod 18 metallic valves 1 eccentric 2 con. rod top end & 2 bottom end bolts nuts &c.*

The foregoing is a correct description.

Palmer's Shipbuilding & Iron Co. Ltd. Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c.)

The Engines and Boilers of this vessel have been constructed under special survey in accordance with the Rules and the approved tracing they are of good material and workmanship and are now in good working condition and eligible in my opinion to receive the notification of *L.M.C. 8-95* in the Register Book

The boilers are fitted with Howden's system of forced draught
The Report on the Electric Light Installation is enclosed.

It is submitted that
this vessel is eligible for

THE RECORD. *+ L.M.C. 8, 95*

A.R.R.
13.8.95

Record F.D. & inserted

ms.

17.11.95

W. H. W. W.

Certificate (if required) to be sent to

The amount of Entry Fee.	£ 3 : 0 : 0	When applied for.
Special	£ 42 : 8 : 0	13.8.1895
Donkey Boiler Fee	£ 2 : 2 : 0	When received.
Travelling Expenses (if any)	£ : : 0	16.11.1895

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

Committee's Minute

Assigned

TUES. 20 AUG 1895

+ L.M.C. 8, 95



© 2021

Lloyd's Register
Foundation