

# REPORT ON MACHINERY.

Mar. No. 58402

Sh. No. 24415

Port of Sunderland

Received at London Office WED 20 APR 1910

No. in Survey held at Sunderland Date, first Survey Dec. 23 Last Survey 25<sup>th</sup> April 1910

Reg. Book. on the Steel Screw Steamer "Blacktoft" (Number of Visits \_\_\_\_\_)

Master \_\_\_\_\_ Built at Newcastle By whom built Wood & Co Tons { Gross \_\_\_\_\_ Net \_\_\_\_\_ When built 1910

Engines made at Sunderland By whom made S. Clark & Co when made 1910

Boilers made at d. By whom made d. when made 1910

Registered Horse Power \_\_\_\_\_ Owners \_\_\_\_\_ Port belonging to \_\_\_\_\_

Nom. Horse Power as per Section 28 169 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

**ENGINES, &c.**—Description of Engines Vertical Triple No. of Cylinders Three No. of Cranks Three  
 Dia. of Cylinders 18 1/2 - 30 - 50 Length of Stroke 33 Revs. per minute 65 Dia. of Screw shaft as per rule 10 1/2 Material of screw shaft Forged steel  
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube No liner 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 \_\_\_\_\_ If two liners are fitted, is the shaft lapped or protected between the liners \_\_\_\_\_ Length of stern bush 3'-8"  
 Dia. of Tunnel shaft as per rule 9.15 Dia. of Crank shaft journals as per rule 9.6 Dia. of Crank pin 9 5/8 Size of Crank webs 14 x 6 1/2 Dia. of thrust shaft under collars 10 1/8 Dia. of screw 12 - 1 1/2 Pitch of Screw 14 - 9 No. of Blades 4 State whether moveable No Total surface 50 sq ft  
 No. of Feed pumps Two Diameter of ditto 2 1/4 Stroke 18 Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps Two Diameter of ditto 3 Stroke 18 Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines Two Sizes of Pumps 5 1/2 x 3 x 5 8 x 8 x 8 No. and size of Suctions connected to both Bilge and Donkey pumps \_\_\_\_\_  
 In Engine Room Three 3" dia In Holds, &c. Sumner 2 1/2"

No. of Bilge Injections 1 sizes 4 dia Connected to condenser, or to circulating pump Pump Is a separate Donkey Suction fitted in Engine room & size Yes 4 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 \_\_\_\_\_  
 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  
 Dates of examination of completion of fitting of Sea Connections 25/4/10 of Stern Tube 8.4.10 Screw shaft and Propeller 8.4.10  
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from top platform

**BOILERS, &c.**—(Letter for record S.) Manufacturers of Steel Messrs. Colville & Sons Ltd. Motherwell.  
 Total Heating Surface of Boilers 2776 Is Forced Draft fitted No No. and Description of Boilers Two single end drum tubular  
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 31-3-10 No. of Certificate 2818  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 44 sq ft No. and Description of Safety Valves to each boiler Two direct spring Area of each valve 5.94 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 12 Mean dia. of boilers 12'-6" Length 10'-6" Material of shell plates Steel  
 Thickness 1 3/4 Range of tensile strength 28 3/4 to 32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams DR Pap  
 long. seams DRB. Best Diameter of rivet holes in long. seams 1 1/16 Pitch of rivets 2 3/8 Lap of plates or width of butt straps 16 1/8  
 Per centages of strength of longitudinal joint rivets 88.6 Working pressure of shell by rules 182 Size of manhole in shell End 16 x 13  
 Size of compensating ring dished end No. and Description of Furnaces in each boiler Three plain Material Steel Outside diameter 36 1/4  
 Length of plain part top 82 1/2 Thickness of plates crown 4 1/2 Description of longitudinal joint Weld No. of strengthening rings \_\_\_\_\_  
 Working pressure of furnace by the rules 188 Combustion chamber plates: Material Steel Thickness: Sides 1 1/16 Back 3/2 Top 1 1/16 Bottom 3/2  
 Pitch of stays to ditto: Sides 10 x 9 Back 10 3/4 x 9 Top 11 x 7 3/4 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 180  
 Material of stays Steel Diameter at smallest part 1 3/8 Area supported by each stay 96.60 Working pressure by rules 189 End plates in steam space: \_\_\_\_\_  
 Material Steel Thickness 1 1/2 Pitch of stays 18 x 20 How are stays secured Nuts Working pressure by rules 183 Material of stays Steel  
 Diameter at smallest part 2 1/8 Area supported by each stay 331 Working pressure by rules 190 Material of Front plates at bottom Steel  
 Thickness 1 3/16 Material of Lower back plate Steel Thickness 3/2 Greatest pitch of stays 14 3/4 to 15 1/2 Working pressure of plate by rules 180  
 Diameter of tubes 3 1/4 Pitch of tubes 4 1/2 x 4 3/8 Material of tube plates Steel Thickness: Front 1 1/16 Back 3/4 Mean pitch of stays 10.2  
 Pitch across wide water spaces 14 1/4 Working pressures by rules 262 Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9 1/2 x 1 3/4 Length as per rule 82 Distance apart 11 Number and pitch of stays in each Three 7 1/4  
 Working pressure by rules 182 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 \_\_\_\_\_

**VERTICAL DONKEY BOILER—** Manufacturers of Steel

No. \_\_\_\_\_ Description No donkey boiler  
 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:— Propeller, 2 each bolts & nuts for top & bottom ends and main bearing, set of coupling bolts & nuts, valves for all pumps, bolts, nuts & iron assorted, sundries etc.

The foregoing is a correct description,

James C. Clark, Manufacturer.

Dates of Survey while building  
 During progress of work in shops - - 1909 Dec 23 1910 Jan 6 11 20 25 Feb 8 14 18 24 Mar 3 4 15 16 18 21 24 31  
 During erection on board vessel - - Apr 6 8 12 13 14 18 1910 Apr 25 May 4 (at New)  
 Total No. of visits \_\_\_\_\_ Is the approved plan of main boiler forwarded herewith yes

Dates of Examination of principal parts—Cylinders 18.2.10 Slides 24.3.10 Covers 24.3.10 Pistons 24.3.10 Rods 14.2.10  
 Connecting rods 24.3.10 Crank shaft 14.2.10 Thrust shaft 3.3.10 Tunnel shafts 24.2.10 Screw shaft 18.3.10 Propeller 31.3.10  
 Stern tube 3.3.10 Steam pipes tested 13.4.10 Engine and boiler seatings 8.4.10 Engines holding down bolts 12.4.10  
 Completion of pumping arrangements 18.4.10 Boilers fixed 12.4.10 Engines tried under steam 18.4.10  
 Main boiler safety valves adjusted 18.4.10 Thickness of adjusting washers PORT 13 13 STARBOARD 13 13  
 Material of Crank shaft light steel Identification Mark on Do. 5086 Material of Thrust shaft light steel Identification Mark on Do. 1880 HK  
 Material of Tunnel shafts do Identification Marks on Do. 1879 HK 6596 J.M. 3481 PA Material of Screw shafts do Identification Marks on Do. 3468 PA  
 Material of Steam Pipes Seamless copper 2 lengths 4' dia x 6' long Test pressure 400 lbs

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

The machinery of this vessel has been constructed under special survey, the material & workmanship found good and efficient, fitted and tested in accordance with the rules and eligible in our opinion for classification with record of + L.M.C. 4-10

A report on the electric installation will be forwarded when received from the electricians

It is submitted that this vessel is eligible for THE RECORD, + L.M.C. 4.10.

J.M. J.W.D. 9/5/10

The amount of Entry Fee.. £ 2 : 0 :  
 Special .. £ 25 : 7 :  
 Donkey Boiler Fee .. £ : :  
 Travelling Expenses (if any) £ : :  
 When applied for, 19.4.10  
 When received, 6.5.10

E. J. Stoddart Field  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute  
 Assigned  
 TUES. 10 MAY 1910  
 + L.M.C. 4.10



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