

# REPORT ON MACHINERY.

45639

No. \_\_\_\_\_ Received at London Office **FRIDAY 11 DEC 1885**  
 No. in Survey held at London Date, first Survey 30 Oct Last Survey 20 Nov 1885  
 Reg. Book. 193 on the S. S. "Sandringham" (Number of Plates 7) Tons 738 net  
 Master E. Sinclair Built at Middlesbrough By whom built \_\_\_\_\_ When built 1872  
 Engines made at Hartlepool By whom made T. Richardson & Sons when made 1872  
 Boilers made at Leith By whom made Nawthorns & Co when made 1881 - 4 mo  
 Registered Horse Power 120 Owners Turnbull Martin & Co Port belonging to Glasgow

## ENGINES, &c.—

Description of Engines Inverted directacting compound.  
 Diameter of Cylinders 26 1/4 5 5/4 Length of Stroke 33 No. of Rev. per minute 58 Point of Cut off, High Pressure 1/2 Low Pressure 1/2  
 Diameter of Screw shaft 9 1/8 Diam. of Tunnel shaft 8 7/8 Diam. of Crank shaft journals 9 3/4 Diam. of Crank pin 9 3/4 size of Crank webs 6" x 11  
 Diameter of screw \_\_\_\_\_ Pitch of screw \_\_\_\_\_ No. of blades 4 state whether moveable yes total surface \_\_\_\_\_  
 No. of Feed pumps 1 diameter of ditto 3" Stroke 24" Can one be overhauled while the other is at work yes, can be used as feed  
 No. of Bilge pumps 1 diameter of ditto 3" Stroke 24" Can one be overhauled while the other is at work yes  
 Where do they pump from From engine room, bilge, sea and hotwell.  
 No. of Donkey Engines two Size of Pumps doubling { 7 1/2 x 9" 3 1/2 x 8" } Where do they pump from From bilge & centre of engine room, sea & hotwell. — Ballast from sea from Tank and starb. bilge  
 Are all the bilge suction pipes fitted with roses yes Are the roses always accessible yes Are the sluices on Engine room bulkheads always accessible \_\_\_\_\_  
 No. of bilge injections one and sizes 5" Are they connected to condenser, or to circulating pump Ballast pump (see above)  
 How are the pumps worked levers  
 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 no Are the discharge pipes above or below the deep water line below  
 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 accessible at all times yes  
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges yes  
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock 20 Nov 1885  
 Is the screw shaft tunnel watertight apparently and fitted with a sluice door yes worked from upper platform.

## BOILERS, &c.—

For particulars see attached report (Leith no 4475)

Number of Boilers \_\_\_\_\_ Description \_\_\_\_\_ Whether Steel or Iron \_\_\_\_\_  
 Working Pressure \_\_\_\_\_ Tested by hydraulic pressure to \_\_\_\_\_ Date of test \_\_\_\_\_  
 Description of superheating apparatus or steam chest \_\_\_\_\_  
 Can each boiler be worked separately \_\_\_\_\_ Can the superheater be shut off and the boiler worked separately \_\_\_\_\_  
 No. of square feet of fire grate surface in each boiler 50 Description of safety valves spring No. to each boiler two  
 Area of each valve 12.6 Are they fitted with easing gear yes No. of safety valves to superheater \_\_\_\_\_ area of each valve \_\_\_\_\_  
 Are they fitted with easing gear \_\_\_\_\_ Smallest distance between boilers and bunkers or woodwork 16" Diameter of boilers \_\_\_\_\_  
 Length of boilers \_\_\_\_\_ description of riveting of shell long. seams \_\_\_\_\_ circum. seams \_\_\_\_\_ Thickness of shell plates \_\_\_\_\_  
 Diameter of rivet holes \_\_\_\_\_ whether punched or drilled \_\_\_\_\_ pitch of rivets \_\_\_\_\_ Lap of plating \_\_\_\_\_  
 Per centage of strength of longitudinal joint \_\_\_\_\_ working pressure of shell by rules \_\_\_\_\_ size of manholes in shell \_\_\_\_\_  
 Size of compensating rings \_\_\_\_\_ No. of Furnaces in each boiler \_\_\_\_\_  
 Outside diameter \_\_\_\_\_ length, top \_\_\_\_\_ bottom \_\_\_\_\_ thickness of plates \_\_\_\_\_ description of joint \_\_\_\_\_ if rings are fitted \_\_\_\_\_  
 Greatest length between rings \_\_\_\_\_ working pressure of furnace by the rules \_\_\_\_\_ combustion chamber plating, thickness, sides \_\_\_\_\_ back \_\_\_\_\_ top \_\_\_\_\_  
 Pitch of stays to ditto, sides \_\_\_\_\_ back \_\_\_\_\_ top \_\_\_\_\_ If stays are fitted with nuts or riveted heads \_\_\_\_\_ working pressure of plating by rules \_\_\_\_\_  
 Diameter of stays at smallest part \_\_\_\_\_ working pressure of ditto by rules \_\_\_\_\_ end plates in steam space, thickness \_\_\_\_\_  
 Pitch of stays to ditto \_\_\_\_\_ how stays are secured \_\_\_\_\_ working pressure by rules \_\_\_\_\_ diameter of stays at smallest part \_\_\_\_\_  
 working pressure by rules \_\_\_\_\_ Front plates at bottom, thickness \_\_\_\_\_ Back plates, thickness \_\_\_\_\_  
 Greatest pitch of stays \_\_\_\_\_ working pressure by rules \_\_\_\_\_ Diameter of tubes \_\_\_\_\_ pitch of tubes \_\_\_\_\_ thickness of tube \_\_\_\_\_  
 plates, front \_\_\_\_\_ back \_\_\_\_\_ how stayed \_\_\_\_\_ pitch of stays \_\_\_\_\_ width of water spaces \_\_\_\_\_  
 Diameter of Superheater or Steam chest \_\_\_\_\_ length \_\_\_\_\_ thickness of plates \_\_\_\_\_ description of longitudinal joint \_\_\_\_\_ diam. of rivet holes \_\_\_\_\_  
 Pitch of rivets \_\_\_\_\_ working pressure of shell by rules \_\_\_\_\_ diameter of flue \_\_\_\_\_ thickness of plates \_\_\_\_\_ If stiffened with rings \_\_\_\_\_  
 Distance between rings \_\_\_\_\_ working pressure by rules \_\_\_\_\_ end plates of superheater, or steam chest; thickness \_\_\_\_\_ how stayed \_\_\_\_\_  
 Superheater or steam chest; how connected to boiler \_\_\_\_\_



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**DONKEY BOILER—** Description *Vertical cylindrical*  
 Made at *not known* by whom made *not known* when made *not known* where fixed *Stoke Newington*  
 Working pressure tested by hydraulic pressure to No. of Certificate fire grate area *16 ft.* description of safety valves *spring* No. of safety valves *one* area of each *8.3* if fitted with easing gear *yes* if steam from main boilers can enter the donkey boiler *no* diameter of donkey boiler *66"* length *9' 6"* description of riveting *double rivet lap*  
 Thickness of shell plates *9/16* diameter of rivet holes *not known* whether punched or drilled *known* pitch of rivets *3 1/4"* lap of plating  
 per centage of strength of joint *probably 60%* thickness of crown plates *1/2"* stayed by *uptake + 5 stays 2" large diam & drilled*  
 Diameter of furnace, top *53* bottom *53* length of furnace *4 ft* thickness of plates *1/2* description of joint *lap rivet & drilled*  
 Thickness of furnace crown plates *1/2* stayed by *uptake + 5 stays 2" large diam* working pressure of shell by rules *probably 82*  
 Working pressure of furnace by rules *73* diameter of uptake *16"* thickness of plates *3/8* thickness of water tubes *8" dia*

SPARE GEAR. State the articles supplied:—

The foregoing is a correct description,

Manufacturer.

**General Remarks** (State quality of workmanship, opinions as to class, &c. *This vessels crankshaft was found to be cracked and has been renewed. Examined the Sea-connections, tail and tunnel stuffing pumps, cylinders slide valves and safety valves & found them in a good condition. Examined Main & donkey boiler & found them in a good condition. These boilers are properly secured on board.*

*The safety valves of this vessel have not been set (see attached letter) as the vessel left London without submitting them.*

*As far as seen the machinery of this vessel is in a safe working condition and eligible in my opinion to have the notifications + N. B. 81 and B & M. S. 11.85 recorded in the Register Book provided the safety valves are set on the vessels return to this country in March 1886.*

*It is submitted that this vessel is eligible to have N. B. 81 and B & M. S. 11.85 recorded*  
*AM 10/12/85*

Damage £ 2.2. —

The amount of Entry Fee .. £ : : received by me,

Special .. .. £ 4 : 4 : —

Donkey Boiler Fee .. .. £ : : —

Certificate (if required) .. £ : 26 10.2 1886

To be sent as per margin.

(Travelling Expenses, if any, £ )

Committee's Minute

TUESDAY 15 DEC 1885

+ N.B. 81

B &amp; M. S. 11.85

Engineer Surveyor to Lloyd's Register of British &amp; Foreign Shipping.