

# REPORT ON MACHINERY.

(Received in London Office 69 1881)

No. 542 (Nov.)  
 No. in Survey held at Newcastle & Sunderland Date, first Survey 4 May 81 Last Survey 5th August 1881  
 Reg. Book. 1291.97  
on the Iron Screw Steamer "Gadalming" Tons 834.22  
 Master G Mason Built at Sunderland When built 1881  
 Engines made at Newcastle By whom made J Clarke & Co when made 1881  
 Boilers made at do By whom made do when made 1881  
 Registered Horse Power 130 Owners W Lambrough & Co Port belonging to London

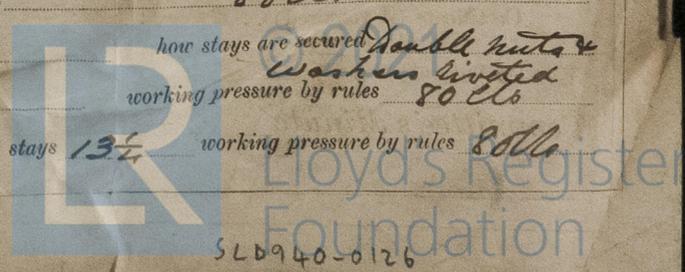
## ENGINES, &c.—

Description of Engines Inverted Compound Surface Condensing  
 Diameter of Cylinders 30 x 58 Length of Stroke 39 No. of Rev. per minute 66 Point of Cut off, High Pressure half Low Pressure half  
 Diameter of Screw shaft 10 1/2 Diameter of Tunnel shaft 10 Diameter of Crank shaft journals 10 1/2 Diameter of Crank pin 10 1/2 size of Crank webs 14 x 6  
 Diameter of screw 14 - 6 Pitch of screw 16 - 6 No. of blades 4 state whether moveable no total surface 54 Sq ft  
 No. of Feed pumps 2 diameter of ditto 4 Stroke 19 1/2 Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 diameter of ditto 4 Stroke 19 1/2 Can one be overhauled while the other is at work yes  
 Where do they pump from Engine space (5), fore hold (1), aft hold (1), all Tanks, Sea  
 No. of Donkey Engines Two Size of Pumps 8 x 10 & 4 x 10 Where do they pump from Engine space, fore hold, aft hold, all Tanks, Sea, Condenser  
 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 yes  
 No. of bilge injections 1 and sizes 4" Are they connected to condenser, or to circulating pump no  
 How are the pumps worked Lever over Condenser  
 Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Valves & Cocks  
 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 at line  
 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 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 new  
 Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from Top platform of engine room

## BOILERS, &c.—

Number of Boilers Two Description Cylindrical return tubes  
 Working Pressure 80 lb Tested by hydraulic pressure to 160 lb Date of test 27th May 1881  
 Description of ~~superheating apparatus on~~ steam chest Horizontal steam chest, between the boilers  
 Can each boiler be worked separately yes Can the superheater be shut off and the boiler worked separately —  
 No. of square feet of fire grate surface in each boiler 35 Description of safety valves Spring  
 No. to each boiler 2 area of each valve 12.5 sq" 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 10 inches  
 Diameter of boilers 12.3 Length of boilers 10-1 1/2 description of riveting of shell long. seams Welded circum. seams Double Cops  
 Thickness of shell plates 13/16" diameter of rivet holes — whether punched or drilled — pitch of rivets —  
 Lap of plating — per centage of strength of longitudinal joint 75 working pressure of shell by rules 82 lb  
 Size of manholes in shell 16 x 12 size of compensating rings 6 x 15/16"  
 No. of Furnaces in each boiler 2 outside diameter 3-7 length, top 7-0 bottom 9-4  
 Thickness of plates 35/64" description of joint Welded if rings are fitted half greatest length between rings 6-4  
 Working pressure of furnace by the rules 100 lb  
 Combustion chamber plating, thickness, sides 17/32" back 17/32" top 21/32"  
 thickness of stays to ditto sides 9 1/2 x 9 1/2 back 9 1/2 x 9 1/2 top Semicircular  
 stays are fitted with nuts or riveted heads Riveted working pressure of plating by rules 80 lb  
 diameter of stays at smallest part 1 1/2" working pressure of ditto by rules 80 lb  
 End plates in steam space, thickness 1/16" pitch of stays to ditto 15 in how stays are secured Double nuts & washers riveted  
 Working pressure by rules 80 lb diameter of stays at smallest part 1 1/2" working pressure by rules 80 lb  
 Front plates at bottom, thickness 1/16" Back plates, thickness 1/16" greatest pitch of stays 13 1/2 working pressure by rules 80 lb

Secd. 26/8/81  
 Report recd 29/8/81 sent to Gov.



Diameter of tubes  $3\frac{1}{2}$ " pitch of tubes  $5$ " thickness of tube plates, front  $\frac{3}{16}$ " back  $\frac{3}{16}$ "  
 How stayed *Stays* pitch of stays  $15" \times 15"$  width of water spaces  $11\frac{1}{2}$ "  
 Diameter of Superheater or Steam chest  $5'-9"$  length  $7'-6"$   
 Thickness of plates  $\frac{3}{16}$ " description of longitudinal joint *Double Caps* diameter of rivet holes  $\frac{3}{8}"$  pitch of rivets  $3"$   
 Working pressure of shell by rules  $93\frac{1}{2}$  lb Diameter of flue  $-$  thickness of plates  $-$   
 If stiffened with rings  $-$  distance between rings  $0$  Working pressure by rules  $-$   
 End plates of superheater, or steam chest; thickness  $\frac{13}{16}"$  How stayed *9 Stays 3 in diam*  
 Superheater or steam chest; how connected to boiler *Slip Cases & Pipes*

**DONKEY BOILER**— Description *Vertical water tubes in furnace*  
 Made at *Stockton* By whom made *Henry Tarter* when made *1881* Tested *14-6-81*  
 Where fixed *Stokehole* working pressure  $75\frac{1}{2}$  lb Tested by hydraulic pressure to  $150\frac{1}{2}$  lb No. of Certificate *538*  
 Fire grate area  $17\frac{1}{2}$  Sq ft Description of safety valves *1 Direct-weight* No. of safety valves *Two* area of each  $4\frac{1}{4}"$   
 If fitted with easing gear  $0$  If steam from main boilers can enter the donkey boiler  $0$   
 Diameter of donkey boiler  $5'-6"$  length  $12'-6"$  description of riveting *Long seams Double Caps*  
 thickness of shell plates  $\frac{1}{2}"$  diameter of rivet holes  $\frac{13}{16}"$  whether punched or drilled *Punched*  
 pitch of rivets  $2\frac{5}{16}"$  lap of plating  $1\frac{1}{4}"$  per centage of strength of joint  $70\%$   
 thickness of crown plates  $\frac{1}{2}"$  stayed by *6 Stays 1 1/2 in diam*  
 Diameter of furnace, top  $4'-6"$  bottom  $4'-11"$  length of furnace  $5'-9"$   
 thickness of plates  $\frac{17}{32}"$  description of joint *Single Caps*  
 thickness of furnace crown plates  $\frac{1}{2}"$  stayed by *6 Stays 1 1/2 in diam*  
 Working pressure of shell by rules  $82\frac{1}{2}$  lb working pressure of furnace by rules  $75\frac{1}{2}$  lb  
 diameter of uptake  $13"$  thickness of plates  $\frac{3}{8}"$  thickness of water tubes  $\frac{5}{16}"$

The foregoing is a correct description,  
*Thomas Cartwright* Manufacturer.

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

The machinery of this vessel has been specially surveyed during construction, the materials and workmanship are sound and satisfactory and eligible in my opinion to have the notation  $\times$  Lloyd's, W. C., in the Society's Register Books.

*It is not within the scope of this vessel is eligible to have the notation  $\times$  Lloyd's & should be recorded in 5/9/81*

The amount of Entry Fee .. £ 2 : - : - received by me,  
 Special .. £ 19 : 10 : - and remitted to Shields office  
 Certificate (if required) .. £ - : - : - 18/81  
 To be sent as per margin.  
 (Travelling Expenses, if any, £ 2. 2. 0 )

*John Brown*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

*North Shields*  
 Lloyd's Register  
 Foundation

Committee's Minute