

# REPORT ON MACHINERY.

No. 634

(Received in London Office)

No. in Survey held at Sunderland  
Reg. Book.

Date, first Survey April 4<sup>th</sup> Last Survey July 7<sup>th</sup> 1881

on the Iron Screw Steamer "KENT."

Tons 1044.83  
665.45

Master Brown Built at Sunderland When built 1881

Engines made at Sunderland By whom made H & M Engle when made 1881

Boilers made at do By whom made do when made "

Registered Horse Power 99 Owners Sambart Brothers Port belonging to London

## ENGINES, &c.—

Description of Engines Inverted Compound Direct Acting Surface Condensing.  
Diameter of Cylinders 29" x 56" Length of Stroke 36 No. of Rev. per minute 61 Point of Cut off, High Pressure  $\frac{1}{2}$  Low Pressure  $\frac{1}{2}$   
Diameter of Screw shaft 10" Diameter of Tunnel shaft 9 $\frac{1}{2}$ " Diameter of Crank shaft journals 10" Diameter of Crank pin 10" size of Crank webs 11 $\frac{1}{4}$ " x 7 $\frac{1}{4}$ "  
Diameter of screw 12" 6" Pitch of screw 19" 0" No. of blades 4 state whether moveable Not total surface 47 $\frac{1}{2}$  sq feet  
No. of Feed pumps 2 diameter of ditto 3 $\frac{1}{2}$ " Stroke 36 Can one be overhauled while the other is at work Yes  
No. of Bilge pumps 2 diameter of ditto 3 $\frac{1}{2}$ " Stroke 36 Can one be overhauled while the other is at work Yes  
Where do they pump from Main Pump, After well & Engine room bilges Port Pump, Engine room bilges  
No. of Donkey Engines 2 Size of Pumps 10" x 14" & 4" x 6" Where do they pump from All Ballast Tanks  
& K Bilges, After well, Condenser & Sea Feed Donkey the same  
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" diam Are they connected to condenser, or to circulating pump Circulating Pump  
How are the pumps worked Direct from Piston Rod Crossheads  
Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks 2 Valves & 5 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 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 A scupper pipe How are they protected Wood casing  
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 Vessel  
Is the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from Top Platform

## BOILERS, &c.—

Number of Boilers Two Description Cylindrical and Multitubular  
Working Pressure 80 lbs Tested by hydraulic pressure to 160 lbs Date of test 21<sup>st</sup> May 1881  
Description of ~~superheating apparatus or~~ steam chest Vertical Dome  
Can each boiler be worked separately Yes Can the superheater be shut off and the boiler worked separately No superheater  
No. of square feet of fire grate surface in each boiler 31.6 Description of safety valves Adams Patent Spring  
No. to each boiler 2 area of each valve 8.30 Are they fitted with easing gear Yes  
No. of safety valves to superheater No super area of each valve — are they fitted with easing gear —  
Smallest distance between boilers and bunkers or woodwork Six inches  
Diameter of boilers 11" 6" Length of boilers 9' 9 $\frac{1}{2}$ " description of riveting of shell long. seams Lap Tub riv circum. seams Lap Doub riv  
Thickness of shell plates  $\frac{13}{16}$ " diameter of rivet holes  $\frac{1}{8}$ " whether punched or drilled Dulled pitch of rivets 4 $\frac{1}{8}$ "  
Lap of plating 6 $\frac{1}{2}$ " per centage of strength of longitudinal joint 75% 80% working pressure of shell by rules 81 lbs  
Size of manholes in shell 16" x 12" size of compensating rings 6" x 1"  
No. of Furnaces in each boiler 2 outside diameter 3' 1" length, top 6' 6" Total bottom 8' 3"  
Thickness of plates  $\frac{1}{2}$ " description of joint Double butt straps if rings are fitted Half rings greatest length between rings 5' 0"  
Working pressure of furnace by the rules 100 lbs  
Combustion chamber plating, thickness, sides  $\frac{1}{2}$ " back  $\frac{1}{2}$ " top  $\frac{1}{2}$ "  
Pitch of stays to ditto sides 8 $\frac{7}{8}$ " x 8 $\frac{1}{2}$ " back 8 $\frac{7}{8}$ " x 8 $\frac{1}{2}$ " top Circular  
If stays are fitted with nuts or riveted heads Riveted heads working pressure of plating by rules 82 lbs  
Diameter of stays at smallest part  $\frac{1}{8}$ " working pressure of ditto by rules 114 lbs  
End plates in steam space, thickness  $\frac{15}{16}$ " pitch of stays to ditto 15" x 13" Two 17" x 15" how stays are secured Double nuts  
Working pressure by rules 81.8 lbs diameter of stays at smallest part 2" two 2 $\frac{1}{4}$ " working pressure by rules 82 lbs  
Front plates at bottom, thickness  $\frac{5}{8}$ " Back plates, thickness  $\frac{5}{8}$ " greatest pitch of stays 11" x 8 $\frac{7}{8}$ " working pressure by rules 82 lbs



Diameter of tubes  $3\frac{1}{2}$ " pitch of tubes  $5 \times 4\frac{5}{8}$  thickness of tube plates, front  $\frac{3}{16}$ " back  $\frac{3}{16}$ "  
 How stayed *Stay Tubes* pitch of stays  $15 \times 9\frac{1}{2}$  width of water spaces  $1\frac{1}{2}$ "  
 Diameter of ~~Superheater or~~ Steam chest  $3 \times 6$  length *6 ft. total*  
 Thickness of plates  $\frac{7}{16}$ " description of longitudinal joint *lap double rivet* diameter of rivet holes  $\frac{7}{8}$ " pitch of rivets  $2\frac{3}{4}$ "  
 Working pressure of shell by rules *110 lbs* 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  $\frac{5}{8}$ " How stayed *Dished 4 ft radius*  
 Superheater or steam chest; how connected to boiler *Neck 18" diam of  $\frac{1}{4}$ " plate flanged*  
**DONKEY BOILER—** Description *Vertical cylindrical with 3 water tubes*  
 Made at *Sunderland* By whom made *Welford & Wigham* when made *1881*  
 Where fixed *At the Hole* working pressure *60 lbs* Tested by hydraulic pressure to *120 lbs* No. of Certificate *380*  
 Fire grate area *19.29 ft<sup>2</sup>* Description of safety valves *1 spring & 1 lever* No. of safety valves *2* area of each *8.5 x 7.07*  
 If fitted with easing gear *Yes (the spring)* If steam from main boilers can enter the donkey boiler *No*  
 Diameter of donkey boiler *5' 6"* length *height 11' 6"* description of riveting *Vertical lap double rivet* *lap single*  
 thickness of shell plates  $\frac{3}{8}$ " diameter of rivet holes  $\frac{5}{16}$ " whether punched or drilled *Punched*  
 pitch of rivets *3"* lap of plating *4"* per centage of strength of joint *75% & 79%*  
 thickness of crown plates  $\frac{7}{16}$ " stayed by *Dished 5 ft radius & 4 stays  $1\frac{1}{2}$ " diameter*  
 Diameter of furnace, top *4' 6"* bottom *5' 0"* length of furnace *height 5 ft*  
 thickness of plates  $\frac{15}{32}$ " description of joint *lap single riveted*  
 thickness of furnace crown plates  $\frac{15}{32}$ " stayed by *Dished 5 ft radius & 4 stays  $1\frac{1}{2}$ " diameter*  
 Working pressure of shell by rules *64 lbs* working pressure of furnace by rules *69 lbs*  
 diameter of uptake *15"* thickness of plates  $\frac{3}{8}$ " thickness of water tubes  $\frac{5}{16}$ "

The foregoing is a correct description,  
 G. Mar. Insp. Co. *[Signature]* Manufacturer. except of the Donkey Boiler

General Remarks (State quality of workmanship, opinions as to class, &c. *The Engines and Boilers*

*of this vessel have been constructed under special survey, the material and workmanship found to be good and efficient. The Machinery has been tried under steam and found satisfactory and in my opinion eligible for the distinguishing mark of*  
*✠ LLOYD'S M.C. in the Register Book, being in good order and safe working condition.*

*It is submitted that this vessel is eligible to have the distinguishing mark of Lloyd's M.C. in the Register Book*  
*recorded in the Register Book*  
*M 13/7/81*

The amount of Entry Fee £ 2 : 0 : 0 received by me, *[Signature]*

Special .. £ 14 : 17 : 0

Certificate (if required) .. £ .. : .. : .. July 1881

To be sent as per margin.

(Travelling Expenses, if any, £ *£ 16 : 17 : 0*)

*Geo A. Milner.*

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

Committee's Minute

Friday, July, 15th 1881.

*Lloyd's M.C.*

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