

# REPORT ON MACHINERY.

6296

No. 6296.

Received at London Office MONDAY 7 Feb 1887

No. in Survey held at West Hartlepool.

Date, first Survey 10<sup>th</sup> Aug<sup>st</sup> 8<sup>th</sup> East Survey 27<sup>th</sup> Jan<sup>y</sup> 1887

Reg. Book.

(Number of Vests 37) Tons 2653.5 Gross Tons 1851 Net

on the Screw Steamer "Maryland"

Master R. J. Blacklin Built at West H'pool By whom built Wm Gray & Co When built 1886

Engines made at West H'pool By whom made Central Marine Engineer<sup>s</sup> Co<sup>y</sup> when made 1886

Boilers made at West H'pool By whom made Central Marine Engineer<sup>s</sup> Co<sup>y</sup> when made 1886

Registered Horse Power 300 Owners Baltimore Shipping Co<sup>y</sup> Port belonging to London.

## ENGINES, &c.—

Description of Engines Triple expansion, Inverted, Direct Acting, Surface Condensing

Diameter of Cylinders 25 3/8, 42 3/4 & 69 Length of Stroke 45 No. of Rev. per minute 65 Point of Cut off, High Pressure 1/2 Low Pressure 1/2

Diameter of Screw shaft 13 1/2 Diam. of Tunnel shaft 12 1/2 Diam. of Crank shaft journals 13 Diam. of Crank pin 13 size of Crank webs 8 1/2 x 13 1/2

Diameter of screw 17' 0" Pitch of screw Differential No. of blades 4 state whether moveable Yes total surface 82 sq: feet

No. of Feed pumps 2 diameter of ditto 3 1/4" Stroke 30" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 diameter of ditto 4" Stroke 30" Can one be overhauled while the other is at work Yes

Where do they pump from Sea, Engine Room, Bilges & Tunnel Well.

No. of Donkey Engines Two Size of Pumps Ballast 9x9 Feed 4x4 Where do they pump from Ballast, Sea, Engine room Bilges and Ballast tanks. Feed Sea, Hotwell, Engine Bilges, Ballast tanks and Tunnel.

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 Two and sizes 5" Are they connected to condenser, or to circulating pump One to circulating pump

How are the pumps worked By Levers from the crosshead of the after engine.

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 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 13<sup>th</sup> January 1887.

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 Multitube Double ended Whether Steel or Iron Steel

Working Pressure 150 lbs Tested by hydraulic pressure to 300 lbs Date of test 15<sup>th</sup> December 1886.

Description of superheating apparatus or steam chest None

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 83.25 Description of safety valves Spring No. to each boiler Two

Area of each valve 9.62 sq: ins 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 About 30" Diameter of boilers 13' 0"

Length of boilers 16' 6" description of riveting of shell long. seams Butt straps Treble circum. seams Lap Treble & Double thickness of shell plates 1/16"

Diameter of rivet holes 1 3/32" whether punched or drilled Drilled pitch of rivets Long 7/4 Cir. 5 1/2 & 4 1/4 Lap of plating Straps 16 3/8 Cir. 8 1/4 & 5 3/8

Per centage of strength of longitudinal joint 84.9 working pressure of shell by rules 150.36 lbs size of manholes in shell 16" x 12"

Size of compensating rings 7 1/4" x 1 1/8" Double riveted with 1 1/8" rivets No. of Furnaces in each boiler Six

Outside diameter 40" length, top 6' 7" bottom ✓ thickness of plates 1/2" description of joint Conjugated if rings are fitted ✓

Greatest length between rings ✓ working pressure of furnace by the rules 150 lbs combustion chamber plating, thickness, sides 5/8" back ✓ top 5/8"

Pitch of stays to ditto, sides 8" x 8 3/4" back ✓ top 7" x 8" If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 156.74

Diameter of stays at smallest part 1 3/8" working pressure of ditto by rules 140 lbs end plates in steam space, thickness 29/32"

Pitch of stays to ditto 13 3/4" x 14" how stays are secured Nuts & washers working pressure by rules 150.1 lbs diameter of stays at smallest part 2 1/8"

Greatest pitch of stays ✓ working pressure by rules 151.2 lbs Front plates at bottom, thickness 1/16" Back plates, thickness ✓

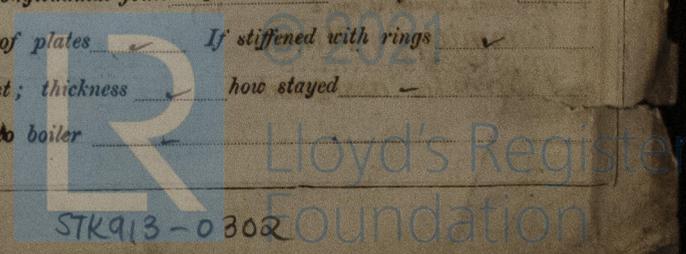
plates, front 15/16" back 15/16" how stayed Stay tubes pitch of stays 9" x 9" width of water spaces 1 1/4"

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



STK913-0302

<sup>Two</sup> DONKEY BOILERS

Description Vertical with four cross tubes.

Made at West Hpool by whom made Wm Gray & Co when made 1886 where fixed Stokehold  
Working pressure 75 lbs tested by hydraulic pressure to 150 lbs No. of Certificate 1366 fire grate area 21 Sq. feet description of safety valves Spring No. of safety valves 2 area of each 5.4 sq. in. fitted with easing gear Yes if steam from main boilers can enter the donkey boiler No diameter of donkey boiler 6' 0" length 13' 0" description of riveting Long Lap, double  
Thickness of shell plates 1/2" diameter of rivet holes 13/16" whether punched or drilled punched pitch of rivets 2 7/8" lap of plating 4 1/4"  
percentage of strength of joint 71.74 thickness of crown plates 8/16" stayed by Six stays 2" diameter  
Diameter of furnace, top 4' 7 1/2" bottom 5' 2 1/2" length of furnace 5' 8 1/2" thickness of plates 9/16" description of joint Lap, single riveted  
Thickness of furn. & crown plates 9/16" stayed by Same as shell crown working pressure of shell by rules 77.2 lbs  
Working pressure of furnace by rules 75 lbs diameter of uptake 13" thickness of plates 3/8" thickness of water tubes 3/8"

SPARE GEAR. State the articles supplied:— 2 Connecting Rod top end Bolts & Nuts, 2 do. bottom end Bolts & Nuts, 2 Main Bearing Bolts & Nuts, 1 Set coupling Bolts & Nuts, 1 Set each Feed & Bilge pump valves, 2 Iron Plates, 36 Bolts & Nuts, 2 Propeller Blades.

The foregoing is a correct description,

PER PRO CENTRAL MARINE ENGINEERING Manufacturer.

Thomas Mudd

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

The materials and workmanship throughout are of the best class.

These engines are slightly different in design, from those formerly made by this firm; the valves and pistons being all in one centre line fore and aft. The High and Intermediate pressure cylinders are fitted with piston valves, while the low pressure cylinder has an ordinary treble ported slide valve. The piston and slide valves are worked by Double Bar Link Gear, from two eccentric wheels on the crank shaft.

The Machinery and Boilers have been constructed under Special Survey, after being fitted on board, the Main Boilers were examined under steam and found tight, their safety valves being adjusted to retain a working pressure of 150 lbs per sq. inch. The Engines were tried and worked satisfactorily.

The Machinery and Boilers are now in good order and safe working condition and in my opinion eligible to have the notification L.M.C. 1,87. recorded in the Society's Register Book.

*Submitted that this vessel is eligible to have L.M.C. 1,87*  
*Wm R. Austin*  
*7-2-87*

The amount of Entry Fee .. £ 3 : " : " received by me,  
Special .. £ 35 : " : "  
Donkey Boiler Fee .. £ 2 : 2 :  
Certificate (if required) .. £ : : 4-2-1887  
To be sent as per margin.

(Travelling Expenses, if any, £ )

Committee's Minute

TUESDAY 8 FEB 1887

L.M.C.

Wm R. Austin  
Engineer Surveyor to Lloyd's Register of British & Foreign Ships



Lloyd's Register Foundation