

Bel No 2785 **REPORT ON MACHINERY** 2785

No. 5482  
 No. in Reg. Book. Survey held at Glasgow & Belfast Date, first Survey March 1881 Last Survey Aug 30<sup>th</sup> 1881  
 on the Screw Steamer "Othello" Tons 515.98  
 Master A. G. Walker Built at Belfast When built 1881  
 Engines made at Glasgow By whom made Muir & Houston when made 1881  
 Boilers made at " By whom made " when made 1881  
 Registered Horse Power 40 Owners Messrs Cabot, Lowden & Co Port belonging to Glasgow

**ENGINES, &c.—**

Description of Engines Compound Inverted Direct Acting  
 Diameter of Cylinders 22" & 40" Length of Stroke 30" No. of Rev. per minute 99 Point of Cut off, High Pressure 19" Low Pressure 16 1/2"  
 Diameter of Screw shaft 4 1/2" Diameter of Tunnel shaft 4" Diameter of Crank shaft journals 4 1/2" Diameter of Crank pin 4 1/2" size of Crank webs 25 1/2" x 9"  
 Diameter of screw 1 1/4" Pitch of screw 14" x 6" No. of blades 4 state whether moveable Yes total surface 36 sq feet  
 No. of Feed pumps One diameter of ditto 3 1/2" Stroke 18" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps One diameter of ditto 3 1/2" Stroke 18" Can one be overhauled while the other is at work Yes  
 Where do they pump from The Holds & Engine Room  
 No. of Donkey Engines One Size of Pumps Cyl 6" x 8" Where do they pump from The Sea Bilge, Hotwell, Ballast Tanks  
 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 One and sizes 3" Are they connected to condenser, or to circulating pumps Circulating pump  
 How are the pumps worked By 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 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  
 How are the pipes carried through the bunkers None How are they protected Yes  
 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  
 Have the stern tube, propeller, screw shaft, and all connections examined in dry dock On Slip before launching  
 Is the screw shaft tunnel watertight Yes and fitted with a sluice door yes worked from Upper platform

**BOILERS, &c.—**

Number of Boilers One Description Round Horizontal  
 Working Pressure 80 lbs Tested by hydraulic pressure to 160 lbs Date of test 13<sup>th</sup> July 1881  
 Description of superheating apparatus or steam chest Round Longitudinal Receiver  
 Can each boiler be worked separately Yes Can the superheater be shut off and the boiler worked separately no  
 Area of square feet of fire grate surface in each boiler 46 sq ft Description of safety valves Direct Spring  
 Number of safety valves to each boiler Two area of each valve 11.04" Are they fitted with easing gear Yes  
 Area of safety valves to superheater — area of each valve — are they fitted with easing gear —  
 Smallest distance between boilers and bunkers or woodwork 4"  
 Diameter of boilers 12 1/2" Length of boilers 10 ft description of riveting of shell long. seams Double riveted circum. seams Double riveted  
 Thickness of shell plates 29/32" diameter of rivet holes 1 1/4" whether punched or drilled Drilled pitch of rivets 5 1/4"  
 Thickness of plating 8" per centage of strength of longitudinal joint 74.2% working pressure of shell by rules 49 lbs  
 Diameter of manholes in shell 16 1/2" x 11 1/2" size of compensating rings 5 1/2" x 7 1/8"  
 Number of Furnaces in each boiler Three outside diameter 2' 11" length, top 6' 6" bottom 9' 4"  
 Thickness of plates 3/32" crown 5/16" bottoms description of joint Double Strapped if rings are fitted Half ring fitted on the bottom side  
 Working pressure of furnace by the rules 83 lbs  
 Thickness of combustion chamber plating, thickness, sides 3/16" back 3/16" top 3/16"  
 Thickness of stays to ditto sides 8" x 4 1/2" back 8" x 8" top 9" x 8 1/2" into 1 1/2" dia  
 Are stays fitted with nuts or riveted heads Nuts working pressure of plating by rules 91 lbs  
 Diameter of stays at smallest part 1 1/4" & 1 1/2" working pressure of ditto by rules 106 lbs  
 Thickness of plates in steam space, thickness 3/16" pitch of stays to ditto 15" x 15" how stays are secured By double nuts  
 Working pressure by rules 89 lbs diameter of stays at smallest part 2 1/8" working pressure by rules 93 lbs  
 Thickness of plates at bottom, thickness 3/16" Back plates, thickness 3/16" greatest pitch of stays 12" x 8" working pressure by rules Lloyd's Register Foundation

Workmanship.

Are the butts of plating planed or otherwise fitted? *planed*

Diameter of tubes *3 1/2"* pitch of tubes *4 3/4"* thickness of tube plates, front *1 1/16"* back *1 1/16"*  
 How stayed *By Tubes* pitch of stays *9 1/2" x 9 1/2" x 1 1/4"* width of water spaces *5"*  
 Diameter of Superheater or Steam chest *2' 6"* length *6' 6"*  
 Thickness of plates *1/16"* description of longitudinal joint *Cap double* diameter of rivet holes *1 3/16"* pitch of rivets *3 1/4"*  
 Working pressure of shell by rules *145 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 *1/16"* How stayed *By one bar stay 2 1/2" dia*  
 Superheater or steam chest; how connected to boiler *By one neck piece 1 1/2" dia x 1/16" thick*

DONKEY BOILER—

Description *Round vertical*

Made at *Glasgow* By whom made *Muir & Houston* when made *1881*  
 Where fixed *in St. Andrew's* working pressure *60 lbs* Tested by hydraulic pressure to *120 lbs* No. of Certificate *569*

Fire grate area *10 ft<sup>2</sup>* Description of safety valves *Direct Spring* No. of safety valves *One* area of each *7" area*

If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No*  
 Diameter of donkey boiler *4' 3"* length *9 1/2' high* description of riveting *Double & Single*

thickness of shell plates *1/16"* diameter of rivet holes *1 3/16"* whether punched or drilled *punched & drilled*  
 pitch of rivets *3 1/4"* lap of plating *4"* per centage of strength of joint *70%*

thickness of crown plates *1/16"* stayed by *Uptake & Palm Stays*  
 Diameter of furnace, top *3' 5"* bottom *3' 10"* length of furnace *4 ft*

thickness of plates *1/16"* description of joint *Cap*  
 thickness of furnace crown plates *1/16"* stayed by *Uptake*

Working pressure of shell by rules *80 lbs* working pressure of furnace by rules *Stayed by two cross tubes*  
 diameter of uptake *10"* thickness of plates *1/16"* thickness of water tubes *1/16" x 1 1/2" dia*

The foregoing is a correct description,  
*Muir & Houston* Manufacturer.

General Remarks

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

*These Engines & Boilers are of good workmanship and now in good order & safe working condition and eligible in our opinion to be noted in the Register Book. LLOYD'S M.C. 8. 81.*

*This submitted that this vessel is eligible to have the notification & Lloyd's M.C. recorded J.M. 9/9/81*

The amount of Entry Fee .. £ 2 : 0 : 0 received by me,

Special .. £ 10 : 10 : 0

Certificate (if required) .. £ gratis 7/9 1881

(Travelling Expenses, if any, £ 3 3 0)

Committee's Minute

Friday, September, 9th 1881

*Lloyd's*

James Morrison & Andrew G. Heron, Engineer Surveyors to Lloyd's Register of British & Foreign Shipping.

*Clyde District*

Lloyd's Register Foundation