

# REPORT ON MACHINERY.

3672

No. 3672.

THURSDAY 13 SEPT 1883

No. in Survey held at *Barrow-in-Furness* Date, first Survey *Nov 20/82* Last Survey *Sept 15 1883*

Reg. Book. on the *H.M. "Pembroke Castle"* (Number of Visits *64*) Tons *3936*  
*2560*

Master *J. B. Harrison* Built at *Barrow* By whom built *Barrow Ship Building Co.* When built *1883*

Engines made at *Barrow* By whom made *The Barrow Ship Building Co. Ltd.* When made *1883*

Boilers made at *Barrow* By whom made *Barrow Ship Building Co. Ltd.* when made *1883*

Registered Horse Power *450* Owners *Daniel Currie & Co.* Port belonging to *Funchal*

## ENGINES, &c.—

Description of Engines *Comp. Inverted Surface Condensing*  
Diameter of Cylinders *43-86* Length of Stroke *57* No. of Rev. per minute *60* Point of Cut off, High Pressure *7* Low Pressure *.6*

Diameter of Screw shaft *17* Diam. of Tunnel shaft *5 1/2* Diam. of Crank shaft journals *17* Diam. of Crank pin *17 1/4* size of Crank webs *29 1/2 x 12*

Diameter of screw *18-0* Pitch of screw *24-0* No. of blades *4* state whether moveable *yes* total surface *86.6 sq feet*

Feed pumps *Two* diameter of ditto *5 1/2* Stroke *28 1/2* Can one be overhauled while the other is at work *yes*

No. of Bilge pumps *Two* diameter of ditto *5 1/2* Stroke *28 1/2* Can one be overhauled while the other is at work *yes*

Where do they pump from *all compartments*  
No. of Donkey Engines *one 14" centrifugal* Size of Pumps *Centrifugal 14" diam* Where do they pump from *Centrifugal from Ballast*

*Two* Engine Room and No. 3 Hold. Feed from sea hot well, ballast tank & all compartments

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 *14" diam* Are they connected to condenser, or to circulating pump *circulating pumps*

How are the pumps worked *Special Circulating Pump by levers from both pistons and Crankshafts*

Are all connections with the sea direct on the skin of the ship *yes* Are they Valves or Cocks *both valves and 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 *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 *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 Double Ended* Whether Steel or Iron *Steel*

Working Pressure *90 lbs* Tested by hydraulic pressure to *180 lbs* Date of test *7th July 1883*

Description of superheating apparatus or steam chest *none fitted*

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 *144 sq* Description of safety valves *Spring* No. to each boiler *Three*

Area of each valve *93.76 sq* Are they fitted with casing gear *yes* No. of safety valves to superheater *—* area of each valve *—*

Are they fitted with casing gear *—* Smallest distance between boilers and bunkers or woodwork *10"* Diameter of boilers *15'-9"*

Length of boilers *17'-0"* description of riveting of shell long. seams *DB Shape Lap Riv.* circum. seams *Lap Riv.* Thickness of shell plates *7/16*

Diameter of rivet holes *1/8* whether punched or drilled *drilled* pitch of rivets *5 1/2* Lap of plating *Butt joint 1 1/2 wide*

Percentage of strength of longitudinal joint *79.5* working pressure of shell by rules *103 lbs* size of manholes in shell *16" diam*

Size of compensating rings *3/4" thick Circular riveted* No. of Furnaces in each boiler *Six*

Outside diameter *49'-5"* length, top *6'-0"* bottom *7'-6"* thickness of plates *7/16* description of joint *corrugated* if rings are fitted *—*

Greatest length between rings *—* working pressure of furnace by the rules *101 lbs* combustion chamber plating, thickness, sides *7/16* back *top 7/16*

Pitch of stays to ditto, sides *7 1/8 x 7 1/8* back *—* top *7 1/8 x 7 1/2* if stays are fitted with nuts or riveted heads *nuts* working pressure of plating by rules *93 lbs* Diameter of stays at smallest part *1.382* working pressure of ditto by rules *143 lbs* end plates in steam space, thickness *3/4*

Pitch of stays to ditto *15" x 15"* how stays are secured *nuts and washers* working pressure by rules *102 lbs* diameter of stays at smallest part *2 1/2* working pressure by rules *130 lbs* Front plates at bottom, thickness *7/16* Back plates, thickness *—*

Greatest pitch of stays *about 12"* working pressure by rules *119 lbs* Diameter of tubes *3 1/4* pitch of tubes *4 3/8* thickness of tube plates, front *3/4* back *7/16* how stayed *Stayed* pitch of stays *3 3/8 x 8 1/4* width of water spaces *4 1/2 between*

Diameter of Superheater or Steam chest *none* 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 *—*



**DONKEY BOILER**— Description *Cylindrical Multi-tubular*  
 Made at *Barnow* by whom made *Barnow Ship Building Co.* when made *27/9/83* where fixed *in Man*  
 Working pressure *90 lb* tested by hydraulic pressure to *180* No. of Certificate *44* fire grate area *27 1/4* feet description of safety  
 valves *Spring* No. of safety valves *Two* area of each *7.07* if fitted with easing gear *yes* if steam from main boilers can  
 enter the donkey boiler *no* diameter of donkey boiler *8-6* length *8-6* description of riveting *lap joints tubular*  
 Thickness of shell plates *3/32* diameter of rivet holes *3/4* whether punched or drilled *drilled* pitch of rivets *2 1/2*  
 per centage of strength of joint *70* thickness of ~~cover~~ plates *5/8* stayed by *through stays with double*  
 Diameter of furnace, top *33* bottom *—* length of furnace *6-0* thickness of plates *3/32* description of joint *welded*  
 Thickness of furnace crown plates *—* stayed by *—*  
 Working pressure of furnace by rules *95-66* diameter of uptake *—* thickness of plates *—* thickness of water tubes *—*

**SPARE GEAR.** State the articles supplied:— *all the gear required by the rules, also Spare Piston and Propeller shafts, one Piston rod - one connecting rod with braces Propeller Bars and Blades complete, Stern Bush, Air Pump, 40 lb pressure HP & LP Valve spindle, Cylinder Escape Valve Springs and*

The foregoing is a correct description,  
*Barnow Shipbuilding Co* Manufacturer.  
*G. Hodges*

**General Remarks** (State quality of workmanship, opinions as to class, &c.)  
*Natural and workmanship good and satisfactory.*  
*The Machinery and Boilers of this vessel are in good order and safe working condition and, in my opinion, suitable for the notification  Regd. M.C. 9-83 in the Register Books.*

95.00 submitted that this vessel is eligible to have the notification + 2 on 8 9.83 recorded  
 13/9/83

The amount of Entry Fee .. £ 3 : - : - received by me,  
 Special .. .. £ 42 : 10 : -  
 Donkey Boiler Fee .. .. £ - : - : -  
 Certificate (if required) .. £ - : - : - 0/9/1883  
 To be sent as per margin.  
 (Travelling Expenses, if any, £ - : - : -)

Committee's Minute FRIDAY 14 SEPT 1883  
 + L. M. C.

*Amicus Retative*  
 Engineer Surveyor to Lloyd's Register of British & Foreign

