

# REPORT ON MACHINERY.

No. 14148

Port of *Glasgow*

MON. DEC 30 1895

Received at London Office 18

No. in Survey held at *Glasgow* Date, first Survey *14<sup>th</sup> August* Last Survey *24<sup>th</sup> Dec 1895*  
 Reg. Book. *S. S. "Pembroke Castle"* (Number of Visits *34*)  
 on the *S. S. "Pembroke Castle"* Tons { Gross *3848* Net *2521*  
 Master *J. Kereagh* Built at *Barrow* By whom built *Barrow S. B. Coy.* When built *1883*  
 Engines made at *Barrow* By whom made *Barrow S. B. Coy* when made *1883*  
 Boilers made at *Barrow* By whom made *Barrow S. B. Coy* when made *1883*  
 Registered Horse Power *466* Owners *D. Currie & Coy* Port belonging to *London*  
 Nom. Horse Power as per Section 28

**ENGINES, &c.—** Description of Engines No. of Cylinders  
 Diameter of Cylinders Length of Stroke Revolutions per minute Diameter of Screw shaft as per rule as fitted  
 Diameter of Tunnel shaft as fitted Diameter of Crank shaft journals Diameter of Crank pin Size of Crank webs  
 Diameter of screw Pitch of screw No. of blades State whether moveable Total surface  
 No. of Feed pumps Diameter of ditto Stroke Can one be overhauled while the other is at work  
 No. of Bilge pumps Diameter of ditto Stroke Can one be overhauled while the other is at work  
 No. of Donkey Engines Sizes of Pumps No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room In Holds, &c.  
 No. of bilge injections sizes Connected to condenser, or to circulating pump Is a separate donkey suction fitted in Engine room & size  
 Are all the bilge suction pipes fitted with roses Are the roses in Engine room always accessible Are the sluices on Engine room bulkheads always accessible  
 Are all connections with the sea direct on the skin of the ship Are they Valves or Cocks  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the discharge pipes above or below the deep water line  
 Are they each fitted with a discharge valve always accessible on the plating of the vessel Are the blow off cocks fitted with a spigot and brass covering plate  
 What pipes are carried through the bunkers How are they protected  
 Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times  
 Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges  
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock Is the screw shaft tunnel watertight  
 Is it fitted with a watertight door worked from

**BOILERS, &c.—** (Letter for record) Total Heating Surface of Boilers  
 No. and Description of Boilers Working Pressure Tested by hydraulic pressure to  
 Date of test Can each boiler be worked separately Area of fire grate in each boiler No. and Description of safety valves to each boiler  
 Area of each valve Pressure to which they are adjusted Are they fitted with easing gear  
 Smallest distance between boilers or uptakes and bunkers or woodwork Mean diameter of boilers  
 Length Material of shell plates Thickness Description of riveting: circum. seams long. seams  
 Diameter of rivet holes in long. seams Pitch of rivets Lap of plates or width of butt straps  
 Per centages of strength of longitudinal joint rivets. plate Working pressure of shell by rules Size of manhole in shell  
 Size of compensating ring No. and Description of Furnaces in each boiler Material Outside diameter  
 Length of plain part top Thickness of plates crown Description of longitudinal joint No. of strengthening rings bottom  
 Working pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom  
 Pitch of stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules  
 Material of stays Diameter at smallest part Area supported by each stay Working pressure by rules End plates in steam space:  
 Material Thickness Pitch of stays How are stays secured Working pressure by rules Material of stays  
 Diameter at smallest part Area supported by each stay Working pressure by rules Material of Front plates at bottom  
 Thickness Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules  
 Diameter of tubes Pitch of tubes Material of tube plates Thickness: Front Back Mean pitch of stays  
 Pitch across wide water spaces Working pressures by rules Girders to Chamber tops: Material Depth and thickness of girder at centre  
 Length as per rule Distance apart Number and pitch of Stays in each  
 Working pressure by rules Superheater or Steam chest; how connected to boiler Can the superheater be shut off and the boiler worked separately  
 Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes  
 Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness  
 stiffened with rings Distance between rings Working pressure by rules End plates: Thickness How stayed  
 Working pressure of end plates Area of safety valves to superheater Are they fitted with easing gear

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DONKEY BOILER— Description *Multitubular*  
Made at *Glasgow* By whom made *Fairfield S. B. Eng. Co* When made *1895* Where fixed *deckhouse*  
Working pressure *90 lbs* tested by hydraulic pressure to *180 lbs* No. of Certificate *2966* Fire grate area *28* Description of safety valves *direct spring*  
No. of safety valves *2* Area of each *5.41* Pressure to which they are adjusted *90 lbs* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Diameter of donkey boiler *10'-0"* Length *8'-6"* Material of shell plates *steel* Thickness *5/8"*  
Description of riveting long. seams *treb riv. lap* Diameter of rivet holes *1 5/16* Whether punched or drilled *drilled* Pitch of rivets *4 1/4"*  
Lap of plating *7 1/4"* Per centage of strength of joint Rivets *86.5* Thickness of shell *end* plates *3/4"* Radius of do. *Pitch* No. of Stays to do. *14*  
Dia. of stays *2 1/4" iron* Diameter of furnace Top *36 7/8* Bottom *—* Length of furnace *6'-2"* Thickness of furnace plates *7/16* Description of joint *Purses* Thickness of furnace crown plates *1 5/8" & 1 1/2"* Stayed by *Steel screw stays 1 1/4" & 1 3/8"* Working pressure of shell by rules *122 lbs*  
Working pressure of furnace by rules *147 lbs* Diameter of uptake *3"* Thickness of uptake plates *1/16* Thickness of water tubes *—*

SPARE GEAR. State the articles supplied :—

The foregoing is a correct description,  
Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c. *S. S. H-3.*)

The Cylinders have been rebores, rods trued up and fitted with new bushes, pistons fitted with new junk and packing rings. Valves and faces dressed up and new piston valve for H.P. Cyl<sup>r</sup> fitted. All working parts overhauled and adjusted. Crank shaft examined, bearings for same refilled and lined up. Tunnel shafting exam<sup>d</sup> found in good order. Air & circulating pumps exam<sup>d</sup> new Chests fitted to feed pumps, bilge pumps examined. —

The Vessel has been placed in drydock, propeller shaft drawn and found in good condition, bush for same lined up. All sea cocks and valves overhauled and examined. —

The main boilers, which have been retubed at this time, have along with their mountings, including safety-valves, been examined over all parts and put in good order. Boilers <sup>tested</sup> under hydraulic pressure to 135 lbs per sq. in. Safety valves adjusted to a working pressure of 90 lbs under steam. —

A new donkey boiler has been fitted, built under special survey and of the dimensions given above, the boiler has been fitted on board in a satisfactory manner and adjusted under steam to 90 lbs working pressure. On completion of above repair the machinery was tried under steam with satisfactory results. —

This Vessel's machinery is now in my opinion in good working order and eligible to be noted: *-I-L.M.C. 12.95. + N.D.B. 95.*

Certificate (if required) to be sent to

The amount of Entry Fee. £	:	:	When applied for,
Special .. .. £	54	18	26/12/95
Donkey Boiler Fee .. .. £	2	3	When received,
Travelling Expenses (if any) £	:	:	31.12.95

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

Committee's Minute *TUES. DEC 31 1895*

Assigned *+ L.M.C. 12.95*  
*N.D.B. 95*

*Glasgow*  
FRI. JAN 3 1896  
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(The Surveyors are requested not to write on or below the space for Committee's Minute.)