

# REPORT ON MACHINERY.

9875

No. 9845 Port of Glasgow Received at London Office HURS 5 JUNE 1890  
 No. in Survey held at Glasgow Date, first Survey 4<sup>th</sup> Sept. 1889 Last Survey May 28<sup>th</sup> 1890.  
 Reg. Book. 1290 on the S. S. Cumberland (Number of Visits 34)  
 Master \_\_\_\_\_ Built at Glasgow By whom built Barclay Curle & Coy Tons { Gross 865  
 Net 552  
 When built 1866  
 Engines made at Glasgow By whom made Barclay Curle & Coy when made 1877  
 Boilers made at Glasgow By whom made Lindsay Burnet & Coy when made 1890.  
 Registered Horse Power 108 Owners Leith Hull & Hamburg St. Packet Coy. Port belonging to Leith

## ENGINES, &c.—

Description of Engines Compound S.S. No 3-10.77 \* A  
 S.S. No 2-86 No. of Cylinders Two  
 Diam. of Cylinders 29" & 49" Length of Stroke 36" Rev. per minute \_\_\_\_\_ Point of Cut off, High Pressure \_\_\_\_\_ Low Pressure \_\_\_\_\_  
 Diameter of Screw-shaft 9" Diam. of Tunnel shaft 9" Diam. of Crank shaft journals 9 1/2" Diam. of Crank pin 9 1/2" size of Crank webs 6 1/2" x 17"  
 Diameter of screw 12 ft. Pitch of screw 14 ft 6 in No. of blades four state whether moveable No total surface 34<sup>sq</sup> ft  
 No. of Feed pumps One diameter of ditto 4 1/2" Stroke 19" Can one be overhauled while the other is at work ✓  
 No. of Bilge pumps One diameter of ditto 4" Stroke 19" Can one be overhauled while the other is at work ✓  
 Where do they pump from Engine Room, Stokehold & Hold, & Hot well  
 No. of Donkey Engines One Size of Pumps 9" Cyl. 4 7/8" x 10" Where do they pump from Sea, hot well, Engine Room & Stokehold bilge & holds (& into condenser)  
 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 3 1/2" Are they connected to condenser, or to circulating pump both  
 How are the pumps worked Lever  
 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 30<sup>th</sup> April 1890.  
 Is the screw shaft tunnel watertight yes and fitted with a sluice door yes. worked from Engine Room.

## BOILERS, &c.—

No. of Boilers One Description Cylindrical Mult. Material Steel Letter (for record) S  
 Working Pressure 65 lbs. Tested by hydraulic pressure to 130 lbs. Date of test 31<sup>st</sup> March 1890.  
 Description of superheating apparatus or steam chest \_\_\_\_\_  
 Can each boiler be worked separately ✓ Can the superheater be shut off and the boiler worked separately \_\_\_\_\_  
 No. of square feet of fire grate surface in each boiler 63<sup>sq</sup> ft. Description of safety valves Direct Spring No. to each boiler Two  
 Area of each valve 15<sup>sq</sup> in. 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 11" Diameter of boilers 15' 9"  
 Length of boilers 9' 6" description of riveting of shell long. seams Lap joint 3 rows circum. seams Lap joint 2 rows Thickness of shell plates 3/4"  
 Diameter of rivet holes 1 1/8" whether punched or drilled drilled pitch of rivets 4" x 2" Lap of plating 7" x 5"  
 Per centage of strength of longitudinal joint 73% working pressure of shell by rules 66 lbs. size of manholes in shell Mc.ully patent 15" x 10"  
 Size of compensating rings Mc. Neills. No. of Furnaces in each boiler Three Description of Furnaces Foxes corrugated  
 Outside diameter 51" length 9' 0" thickness of plates 3/8" description of joint Welded if rings are fitted \_\_\_\_\_  
 Greatest length between rings \_\_\_\_\_ working pressure of furnace by the rules 78 lbs. combustion chamber plating, thickness, sides 1/2" back 1/2" top 1/2"  
 Pitch of stays to ditto, sides 9" x 10" back 10 1/4" x 10 1/8" top 10 1/2" x 10" If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 73 lbs. Diameter of stays at smallest part 1 1/8" working pressure of ditto by rules 75 lbs. bend plates in steam space, thickness 3/4"  
 Pitch of stays to ditto 18" x 18" how stays are secured D. nuts & washers working pressure by rules 71 lbs. diameter of stays at smallest part 2" working pressure by rules 63 lbs. Front plates at bottom, thickness 1 1/16" Back plates, thickness 3/4"  
 Greatest pitch of stays \_\_\_\_\_ working pressure by rules \_\_\_\_\_ Diameter of tubes 3 1/4" pitch of tubes 4 1/2" x 4 3/8" thickness of tube plates, front 3/4" back 3/4" how stayed S. Tube. pitch of stays 13 1/2" x 13 1/8" width of water spaces 5" to 12"  
 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 \_\_\_\_\_

It is also sent on the Hull of the Ship

Lloyd's Register Foundation

GLS160-0036 (1/2)

**DONKEY BOILER**— Description *Cylindrical Mult*  
 Made at *Glasgow* by whom made *Andrew Burnet & Co* when made *1890* where fixed *On Deck*  
 Working pressure *50 lbs* tested by hydraulic pressure to *100 lbs* No. of Certificate *2495* fire grate area *11.25* ft. description of say  
 valves *Direct Spring* No. of safety valves *Two* area of each *3.5* sq. in. if fitted with easing gear *yes* if steam from main boilers a  
 enter the donkey boiler *no* diameter of donkey boiler *7' 6"* length *7' 3"* description of riveting *Lap. double*  
 Thickness of shell plates *7/16"* diameter of rivet holes *13/16"* whether punched or drilled *drilled* pitch of rivets *2 1/2" x 1 3/8"* lap of plating *3 3/4" x 2 1/2"*  
 per centage of strength of joint *67 1/2* thickness of <sup>End</sup> crown plates *5/8"* stayed by *H Iron Stays* D. nuts & washers  
 diameter of furnace, top *36 3/4"* bottom *36"* length of furnace *4' 6"* thickness of plates *3/8"* description of joint *D. butt strap*  
 Thickness of furnace crown plates *1/4"* <sup>Comb. Chamber</sup> stayed by *1 1/2" steel stays* Pitch *4" x 9"* sides *10 1/2" x 9"* working pressure of shell by rules *69* lbs  
 Working pressure of furnace by rules *76* lbs. diameter of uptake *4"* thickness of plates *9/16"* & *1/8"* thickness of water tubes *1/2"*

**SPARE GEAR.** State the articles supplied:— *1 set of feed pump valves, 2 spares, 2 spare springs for Main Boiler safety valves, 1 spare spring for D. Boiler, 2 connecting rod top end bolts & nuts, 2 connecting rod bottom end bolts & nuts, 2 main bearing bolts, 1 set of coupling bolts, 1 set of bilge pump valves, 1 spare propeller.*

The foregoing is a correct description,  
*Barclay Curle & Co. Ltd.* Manufacturer.  
*By James Gilchrist*

(4875 G.C.)

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

*These Boilers have been constructed under Special Survey. The material is of good quality and workmanship. They have undergone a satisfactory hydraulic test in my presence, (as per Certificates).*

*They have been fitted on board the vessel by Barclay Curle & Co. Ltd. All parts of machinery opened out, and thoroughly overhauled. Vessel placed in Dry Dock, propeller shaft drawn in for examination and found in good condition.*

*All sea cocks and valves put in good working order. All the repairs to machinery have been completed in a satisfactory manner. No opportunity afforded for adjusting safety valves under steam; the vessel has sailed for Hamburg, and from thence to Leith, when the survey can be completed.*

*This vessel's machinery is in good and efficient working condition and eligible in my opinion to remain as classed in Register Book, with the additional notation **N.B. 90. L.M.C. 5, 90***

*Subject to Main & Donkey Boiler safety valves being adjusted under steam, and favourably reported on.*

*It is submitted that this vessel will be eligible to have + N.B. 90 & L.M.C. 5, 90 recorded, when the safety valves of the Main and donkey boilers have been adjusted under steam. W.A. 5-6-90*

The amount of Entry Fee £ : : : received by me,  
 Special .. £ 4 : 10 : 4/6/90  
 Main & Donkey Boiler Fee .. £ 6 : 6 : 29/4/90  
 Certificate (if required) .. £ : : : 18  
 To be sent as per margin.  
 (Travelling Expenses, if any, £ )

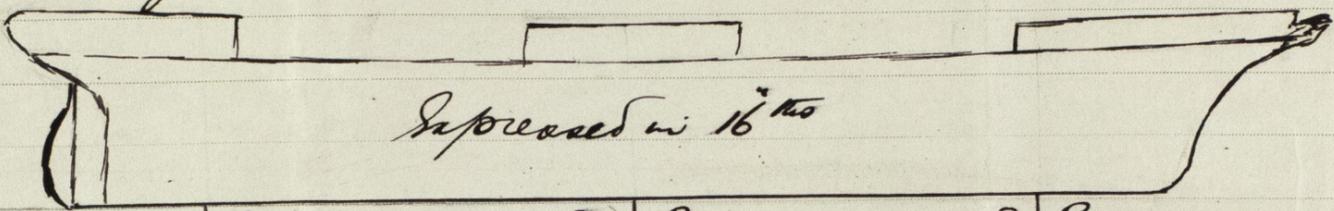
*A. Stewart*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute FRI 6 JUNE 1890 TUES 10 JUNE 1890

*Glasgow*  
 Lloyd's Register Foundation

Iron S.S. Cumberland

from M. L. to bulge keelsons each side. Angles to two lower deck beams in cross bunker, the bunker plating & tie plates on W.D. beams at sides of engine hatchway renewed. Several frames in Fette repaired and reversed frames fitted to all frames in poop & extended part of fore-castle. All the sparring renewed of 2 white pine. A new top hung into mizen mast. All standing rigging renewed of J.S. wire. A new windlass & four beam winches fitted on board. Steering gear repaired. The chain cables ranged & these with anchors examined. The inside of vessel repainted.



	S	P	S	P	S	P
Frame A	11	11	10	11 <sup>1/16</sup>	11	11
B	10	10	10	10 <sup>1/16</sup>	10	9
C	10	10	11	10 <sup>1/16</sup>	10	10
D	10	10	10	11 <sup>1/16</sup>	10	10
E	10	9	10	11 <sup>1/16</sup>	10	10
F	9	8	10	10 <sup>1/16</sup>	10	10
G	9	8	9	9 <sup>1/16</sup>	9	8
H	9	8	9	8 <sup>1/16</sup>	9	8
I	8	8	8	9 <sup>1/16</sup>	8	8
Double - J	8	8	8	9 <sup>1/16</sup>	8	8
K	1 3/16	1 3/16	1 3/16	1 3/16	1 3/16	1 3/16
				1 3/16	1 3/16	1 3/16

*[Handwritten signature]*