

## REPORT ON MACHINERY.

UES. 30 OCT 1900

Port of *Greenock*

Received at London Office

18

No. in Survey held at *Greenock* Date, first Survey *24<sup>th</sup> March 1899* Last Survey *19<sup>th</sup> Oct 1900*  
 Reg. Book. *308* on the *Screw Steamer "Persia"* (Number of Visits *181*)  
 Master *W. A. Wheeler* Built at *Greenock* By whom built *Caird & Co. (Lim<sup>d</sup>)* When built *1900*  
 Engines made at *Greenock* By whom made *Caird & Co. (Lim<sup>d</sup>)* when made *1900*  
 Boilers made at *do* By whom made *do* when made *1900*  
 Registered Horse Power *2500* Owners *Peninsular & Oriental S. N. Coy.* Port belonging to *Greenock*  
 Nom. Hors<sup>e</sup> Power as per Section 28 *1355* Is Refrigerating Machinery fitted *Yes for ship's use* Electric Light fitted *Yes*

ENGINES, &c.—Description of Engines No. of Cylinders No. of Cranks  
 Dia. of Cylinders Length of Stroke Revs. per minute Dia. of Screw shaft as per rule as fitted Lgth. of stern bush  
 Dia. of Tunnel shaft as per rule as fitted Dia. of Crank shaft journals as per rule as fitted Dia. of Crank pin Size of Crank webs Dia. of thrust shaft under collars  
 Dia. 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 *S*) Total Heating Surface of Boilers *7176* *firebricks* forced draft fitted *Yes*  
 No. and Description of Boilers *Single ended cylindrical* Working Pressure *170 lbs* Tested by hydraulic pressure to *340 lbs*  
 Date of test *28.6.00* Can each boiler be worked separately *Yes* Area of fire grate in each boiler *59 sq ft* No. and Description of safety valves to each boiler *Two direct spring* Area of each valve *9.24 sq in* Pressure to which they are adjusted *174 lbs* Are they fitted with easing gear *Yes*  
 Smallest distance between boilers or uptakes and bunkers or woodwork *16"* Mean dia. of boilers *15' 3"* Length *11' 6"* Material of shell plates *Steel*  
 Thickness *1 3/8"* Range of tensile strength *27 1/2 to 32 tons* Are they welded or flanged *no* Descrip. of riveting: cir. seams *Lap double strake* long. seams *2 AS strake*  
 Diameter of rivet holes in long. seams *1 3/8"* Pitch of rivets *8 3/4" x 4 3/8"* Lap of plates or width of butt straps *20" straps*  
 Per centages of strength of longitudinal joint rivets *88.6* Working pressure of shell by rules *193 lbs* Size of manhole in shell *16" x 12"*  
 Size of compensating ring *30" x 1 3/8"* No. and Description of Furnaces in each boiler *Three suspension* Material *Steel* Outside diameter *47"*  
 Length of plain part top bottom Thickness of plates crown bottom } *1 1/2"* Description of longitudinal joint *Welded* No. of strengthening rings *Two 6" x 3 1/2" in bottom*  
 Working pressure of furnace by the rules *200 lbs* Combustion chamber plates: Material *Steel* Thickness: Sides *3/8"* Back *3/8"* Top *2 1/2"* Bottom *1 1/2"*  
 Pitch of stays to ditto: Sides *7 3/8" x 7 3/8"* Back *8" x 8"* Top *8 1/2" x 8"* If stays are fitted with nuts or riveted heads *nuts riveted* Working pressure by rules *170 to 218 lbs*  
 Material of stays *Stays* Diameter at smallest part *1 3/8" x 1 1/2"* Area supported by each stay *52 1/2 to 68 sq in* Working pressure by rules *170 to 218 lbs* End plates in steam space:  
 Material *Steel* Thickness *1 1/4" rivet* Pitch of stays *7 1/2" x 16" x 17"* How are stays secured *double nuts* Working pressure by rules *189 lbs* Material of stays *Steel*  
 Diameter at smallest part *2 1/4"* Area supported by each stay *280 to 297 sq in* Working pressure by rules *204 lbs* Material of Front plates at bottom *Steel*  
 Thickness *3/8"* Material of Lower back plate *Steel* Thickness *1 1/2"* Greatest pitch of stays *11 1/2" to 12 3/8"* Working pressure of plate by rules *211 lbs*  
 Diameter of tubes *2 1/2"* Pitch of tubes *3 3/4" x 3 3/4" x 4 1/4"* Material of tube plates *Steel* Thickness: Front *3/4"* Back *3/4"* Mean pitch of stays *7 1/2" x 8"*  
 Pitch across wide water spaces *14"* Working pressures by rules *231 lbs* Girders to Chamber tops: Material *Steel* Depth and thickness of girder at centre *9 1/4" x 3 1/2" double* Length as per rule *31 1/2"* Distance apart *8 3/4"* Number and pitch of Stays in each *Three 8"*  
 Working pressure by rules *209 lbs* 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 —  
 If 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 —



**DONKEY BOILER—** No. Description

Made at By whom made When made Where fixed

Working pressure tested by hydraulic pressure to No. of Certificate Fire grate area Description of safety valves

No. of safety valves Area of each Pressure to which they are adjusted If fitted with easing gear If steam from main boilers enters the donkey boiler

Dia. of donkey boiler Length Material of shell plates Thickness Range of tensile strength

Descrip. of riveting long. seams Dia. of rivet holes Whether punched or drilled Pitch of rivets

Lap of plating Per centage of strength of joint Rivets Thickness of shell crown plates Radius of do. No. of Stays to do.

Dia. of stays. Diameter of furnace Top Bottom Length of furnace Thickness of furnace plates Description of joint

Thickness of furnace crown plates Stayed by Working pressure of shell by rules

Working pressure of furnace by rules Diameter of uptake Thickness of uptake plates Thickness of water tubes

**SPARE GEAR.** State the articles supplied:—

The foregoing is a correct description,  
**FOR CAIRD AND COMPANY, LIMITED.** Manufacturer.

During progress of work in shops - - - **SECRETARY**  
 Dates of Survey while building During erection on board vessel - - -  
 Total No. of visits

Is the approved plan of main boiler forwarded herewith

.. .. donkey .. ..

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

The amount of Entry Fee. £ : : When applied for.  
 Special .. .. £ : :  
 Donkey Boiler Fee .. .. £ : : When received.  
 Travelling Expenses (if any) £ : : .. ..

Committee's Minute **Glasgow. 29 OCT. 1900**

Assigned

See 1st Entry report attached. *Monk*

*A. B. Newnham R. Elliott*  
 Engineer Surveyors to Lloyd's Register of British & Foreign Shipping.  
 Greenock District.