

REPORT ON MACHINERY.

No. *4116*

Received at London Office TUESDAY 22 SEPT 1885

No. in Survey held at *Glasgow*
Reg. Book.

Date, first Survey *18th March* Last Survey *19th Sept 1885*

454 on the

S. S. Glenlyon

(Number of Vents *30*) Tons *1411*
2161

Master *Commers* Built at *Glasgow* By whom built *London & Glasgow C^o L^d* When built *1872*

Engines made at *Glasgow* By whom made *London & Glasgow C^o L^d* when made *1872*

Boilers made at *Do* By whom made *Do* when made *1885*

Registered Horse Power *275* Owners *M^r Gregor Gow & Co* Port belonging to *Glasgow*

ENGINES, &c.—

Description of Engines *Inverted direct acting - Compound - Surface Condensing*
Diameter of Cylinders *40 + 70* Length of Stroke *45* No. of Rev. per minute *50* Point of Cut off, High Pressure — Low Pressure —

Diameter of Screw shaft — Diam. of Tunnel shaft — Diam. of Crank shaft journals *13* Diam. of Crank pin — size of Crank webs —

Diameter of screw *17 1/4* Pitch of screw *21-6* No. of blades *Four* state whether moveable *Yes* total surface —

No. of Feed pumps *Two* diameter of ditto *6* Stroke *15* Can one be overhauled while the other is at work —

No. of Bilge pumps *Two* diameter of ditto *8* Stroke *12 1/2* Can one be overhauled while the other is at work —

Where do they pump from *Engine room bilges & holds*

No. of Donkey Engines *One* Size of Pumps *3 1/2 pump 1/2 inch* Where do they pump from *Sea bilges & holdwell*

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 —

No. of bilge injections — and sizes — Are they connected to condenser, or to circulating pump —

How are the pumps worked —

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 accessible at all times —

Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection 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 — and fitted with a sluice door — worked from —

BOILERS, &c.—

Number of Boilers *Two* Description *Cylindrical - Mult^{ple}* Whether Steel or Iron *Steel except superheater*

Working Pressure *75 lbs* Tested by hydraulic pressure to *150 lbs* Date of test *June 18th 1885*

Description of superheating apparatus or steam chest *Horizontal*

Can each boiler be worked separately *Yes* Can the superheater be shut off and the boiler worked separately *No*

No. of square feet of fire grate surface in each boiler *99* Description of safety valves *Direct springs* No. to each boiler *Two*

Area of each valve *25.96 sq 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~~ *15* Diameter of boilers *12-1*

Length of boilers *18-1 1/2* description of riveting of shell long. seams *Butt double* circum. seams *Lap double* Thickness of shell plates *5/8*

Diameter of rivet holes *15/16* whether punched or drilled *Drilled* pitch of rivets *4 1/8* Lap of plating *11 x 5/8 butt straps*

Per centage of strength of longitudinal joint *77* working pressure of shell by rules *83 lbs* size of manholes in shell *12 x 16*

Size of compensating rings *Riveted ring* No. of Furnaces in each boiler *Six*

Outside diameter *37* length, top *6-2 1/2* bottom *8-0* thickness of plates *1/2* description of joint *Butt + weld* if rings are fitted *Yes*

Greatest length between rings *5-9* working pressure of furnace by the rules *100 lbs* combustion chamber plating, thickness, sides *7/16* back *7/16* top *7/16*

Pitch of stays to ditto, sides *8 1/2* back *8 1/2* top *8 x 8 1/2* If stays are fitted with nuts or riveted heads *Nuts* working pressure of plating by rules *106 lbs*

Diameter of stays at smallest part *1 3/8* working pressure of ditto by rules *100 lbs* end plates in steam space, thickness *1/4*

Pitch of stays to ditto *15* how stays are secured *Nuts* working pressure by rules *75 lbs* diameter of stays at smallest part *2 1/8* ~~riveted bar~~ working pressure by rules *96 lbs*

Greatest pitch of stays — working pressure by rules — Diameter of tubes *3 1/2* pitch of tubes *4 3/4* thickness of tube plates, front *1/16* back *5/8* how stayed *Tubes*

Diameter of Superheater or Steam chest *4-3* length *17-0* thickness of plates *9/16* description of longitudinal joint *Lap double* diam. of rivet holes *15/16*

Pitch of rivets *3 1/4* working pressure of shell by rules *130 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 *5/8* how stayed *Ends drilled*

4 gunst stays 11 x 1/2 Superheater or steam chest; how connected to boiler *By Iron neck 16 dia x 3/4 thick*

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DONKEY BOILER— 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 _____ if fitted with easing gear _____ if steam from main boilers can enter the donkey boiler _____

diameter of donkey boiler _____ length _____ description of riveting _____

Thickness of shell plates _____ diameter of rivet holes _____ whether punched or drilled _____ pitch of rivets _____ lap of plating _____

per centage of strength of joint _____ thickness of crown plates _____ stayed by _____

Diameter of furnace, top _____ bottom _____ length of furnace _____ thickness of 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 plates _____ thickness of water tubes _____

SPARE GEAR. State the articles supplied :—

The foregoing is a correct description,
for the London & Glasgow Engineering & Shipbuilding Co. Ltd. Manufacturers of Main Boilers
J. Kelly, Secy

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

The new main boilers of this vessel, particulars of which are here given, have been constructed under special survey. They are of good material & workmanship, they have been satisfactorily fitted on board & tested under steam. Appended hereto is the approved tracing of these boilers & plate list. The whole of the machinery has been opened out for survey & repairs and there were examined the cylinders, slide valves, pistons, pumps, crankshaft & shafting, condenser &c.

When the vessel was in Dry dock the sea cocks, valves & connections were all examined & those in flack of ships bottom removed to bilges in an accessible position. Propeller & shaft removed. outer bearing in stern tube fitted with wood. Two new blades fitted to propeller. All bilge pipes overhauled and one extra suction fitted in aft hold.

The following repairs have been carried out.

New expansion valves & back plates. H.P. valve & spindle. New bottom brass tube plate in condenser. old one of cast iron cut out. Thrust shaft removed to shop & turned up in lathe. Thrust rings refitted to block and white metal faces attached. New go-astern eccentric sheave fitted to H.P. engine.

The old donkey boiler has been removed and the one now fitted on board has lately been repaired in London. See report attached.

Steam raised in main & donkey boilers & safety valves adjusted to 75 & 40 lbs respectively.

I am of opinion the machinery of this vessel is now in good & safe working condition & eligible to be placed
L.M.C. 9-85. N.B. 85. in the Register Book. Pressure 75 lbs.

The amount of Entry Fee £ 5 : 5 : ✓ received by me, (Signature)
Special .. £ 5 : 5 : ✓
new Main Donkey Boiler Fee .. £ 10 : 10 : ✓
Certificate (if required) .. £ 5 : 5 : ✓ 21/9/1885
To be sent as per margin.
(Travelling Expenses, if any, £ ..)

Committee's Minute **TUESDAY 22 SEPT 1885**

Walter E. Robson
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

