

# REPORT ON MACHINERY.

Port of Glasgow

No. in Survey held at Glasgow  
Reg. Book.

Date, first Survey 11<sup>th</sup> March Last Survey 24<sup>th</sup> August 1895

Received at London Office 18

(Number of Visits) 33

on the S. S. Penrhyn

Master G. Griffiths Built at Bowling By whom built Scott & Sons

Tons { Gross 365  
Net 44  
When built 1895

Engines made at Glasgow By whom made Ross & Duncan when made 1895

Boilers made at Glasgow By whom made Ross & Duncan when made 1895

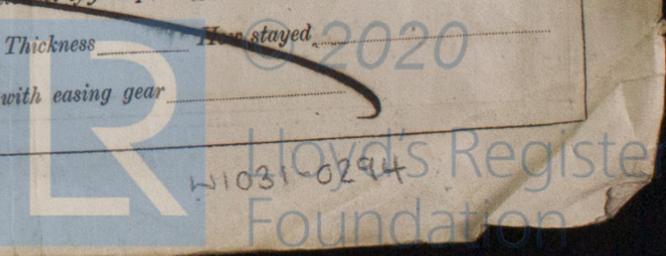
Registered Horse Power 64 Owners Anglesiey Shipping Co. Port belonging to Beaumaris

Nom. Horse Power as per Section 28 78 by the new rule.

**ENGINES, &c.** — Description of Engines Compound inverted directacting No. of Cylinders two  
 Diameter of Cylinders 18" and 40" Length of Stroke 27" Revolutions per minute 104 Diameter of Screw shaft as per rule 7 1/2"  
 Diameter of Tunnel shaft as per rule 7 1/4" Diameter of Crank shaft journals 7 1/2" Diameter of Crank pin 7 1/2" Size of Crank webs 14" x 5 1/4"  
 Diameter of screw 9" 9/16" Pitch of screw 11" 7/8" No. of blades 4 State whether moveable Solid Total surface 30 sq ft  
 No. of Feed pumps one Diameter of ditto 3" Stroke 13 1/2" Can one be overhauled while the other is at work —  
 No. of Bilge pumps one Diameter of ditto 3" Stroke 13 1/2" Can one be overhauled while the other is at work —  
 No. of Donkey Engines one and a pulsometer Sizes of Pumps 6" x 4" x 6" duplex No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room Three 2 1/2" In Holds, &c. two 2 1/2"

No. of bilge injections one sizes 3" Connected to condensers to circulating pump — Is a separate donkey suction fitted in Engine room & size 2 1/2"  
 Are all the bilge suction pipes fitted with roses yes Are the roses in Engine room always accessible yes Are the spaces on Engine room bulkheads always accessible none  
 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 two hold bilge suction How are they protected Cased in under ceiling  
 Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times yes  
 Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges before launching  
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock before launching Is the screw shaft tunnel watertight None  
 Is it fitted with a watertight door — worked from —

**BOILERS, &c.** — (Letter for record S) Total Heating Surface of Boilers 1257  
 No. and Description of Boilers one Cylindrical Working Pressure 120 Tested by hydraulic pressure to 240  
 Date of test 1869 Can each boiler be worked separately — Area of fire grate in each boiler 38.3 No. and Description of safety valves to each boiler two spring loaded Area of each valve 5.41 Pressure to which they are adjusted 125 lbs Are they fitted with easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork stand clear Mean diameter of boilers 150"  
 Length 91.6" Material of shell plates Steel Thickness 13/16" Description of riveting: circum. seams Lap 2 knots long. seams 8" Butt 4 knots  
 Diameter of rivet holes in long. seams 15/16" Pitch of rivets 6" Lap of plates or width of butt straps 14 1/2" x 5/8"  
 Per centages of strength of longitudinal joint rivets 84.5 Working pressure of shell by rules 124 lbs Size of manhole in shell 15" x 11 1/2"  
 Size of compensating ring 6" x 13/16" No. and Description of Furnaces in each boiler two plain Material Steel Outside diameter 47"  
 Length of plain part 6" Thickness of plates 2/32" Description of longitudinal joint weld No. of strengthening rings one partial  
 Working pressure of furnace by the rules 123 lbs Combustion chamber plates: Material Steel Thickness: Sides 1/2" Back 1/2" Top 1/2" Bottom 9/16"  
 Pitch of stays to ditto: Sides 8" Back 8" Top 8" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 120 lbs  
 Material of stays Steel Diameter at smallest part 1.07 Area supported by each stay 64 sq in Working pressure by rules 126 lbs End plates in steam space: Material Steel Thickness 7/8" Pitch of stays 16 3/4" How are stays secured Double nuts & washers Working pressure by rules 129 lbs Material of stays Steel  
 Diameter at smallest part 3.77 Area supported by each stay 276 sq in Working pressure by rules 123 lbs Material of Front plates at bottom Steel  
 Thickness 1/16" Material of Lower back plate Steel Thickness 7/8" Greatest pitch of stays 10 1/2" Working pressure of plate by rules 122 lbs  
 Diameter of tubes 3 1/2" Pitch of tubes 4 1/2" x 4 7/8" Material of tube plates Steel Thickness: Front 1/16 1/2" Back 1/16" Mean pitch of stays 11 3/8"  
 Pitch across wide water spaces 14 1/2" Working pressures by rules 150, 131 lbs Girders to Chamber tops: Material Iron Depth and thickness of girder at centre 6" x 2 1/4" Length as per rule 25" Distance apart 8" Number and pitch of Stays in each 2 x 8"  
 Working pressure by rules 143" Superheater or Steam chest; how connected to boiler None 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**— Description *Vertical with two cross tubes*  
 Made at *Motherwell* By whom made *J. Marshall & Co* When made *1895* Where fixed *Stokehold*  
 Working pressure *75 lbs* Tested by hydraulic pressure to *150 lbs* No. of Certificate *3775* Fire grate area *7' 4"* Description of safety valves *Spring loaded*  
 No. of safety valves *one* Area of each *3' 14"* Pressure to which they are adjusted *75 lbs* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Diameter of donkey boiler *48"* Length *8' 0"* Material of shell plates *Steel* Thickness *3/8"*  
 Description of riveting long. seams *Lap 2 Rivets* Diameter of rivet holes *3/4"* Whether punched or drilled *Drilled* Pitch of rivets *2 3/16"*  
 Lap of plating Per centage of strength of joint Rivets *72.5* Thickness of shell crown plates *1/2"* Radius of do. *48"* No. of Stays to do. *None*  
 Dia. of stays. — Diameter of furnace Top *40"* Bottom *44"* Length of furnace *4' 0"* Thickness of furnace plates *7/16"* Description *except uptake*  
 joint *welded* Thickness of furnace crown plates *1/2"* Stayed by *Uptake & divided* Working pressure of shell by rules *111 lbs*  
 Working pressure of furnace by rules *83 3/4 lbs* Diameter of uptake *9"* Thickness of uptake plates *7/16"* Thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *As required by the Rules.*

The foregoing is a correct description,  
*Joss Duncan* Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c. *These engines and boilers have been built under the conditions of Special Survey they have been securely fitted on board and satisfactorily tested under steam. The material and workmanship is good. In my opinion this vessel is eligible for the record + L.M.C. 8.95*

It is submitted that  
 the vessel is eligible for  
 THE RECORD + L.M.C. 8.95.

*J.S.*  
*2.9.95.*

Certificate (if required) to be sent to *Glasgow*

The amount of Entry Fee..	£	1 : 0 : 0	When applied for,
Special .. .. .	£	9 : 12 : 0	28/9 95
Donkey Boiler Fee .. .	£	:	When received,
Travelling Expenses (if any) £	:	:	30/9 95

*C. J. Cromeyer*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *TUES. 3 SEP 1895*  
 Assigned *+ L.M.C. 8.95*

