

# REPORT ON MACHINERY.

5691

No. 5691

(Received at London Office RECEIVED 1st. MAR 82.)

No. in Survey held at Glasgow Date, first Survey May 20<sup>th</sup> Last Survey April 3<sup>rd</sup> 1882  
 Reg. Book. 220 on the S.S. "Penfrynshire" Tons 506  
 Master R. Stirrey Built at Port-Glasgow When built 1870  
 Engines made at Port-Glasgow By whom made Black & Gordon when made 1870  
 Engines made at Glasgow By whom made Law Anderson & Co when made 1882  
 Registered Horse Power 90 Owners H.L. Seligmann & Co Port belonging to Glasgow

**ENGINES, &c.—**  
 Description of Engines Compound Inverted Surface Condensing  
 Number of Cylinders 4 Diameter of Cylinders 14" x 25" Length of Stroke 30" No. of Rev. per minute 70 Point of Cut off, High Pressure 1/2" Low Pressure 1/2"  
 Diameter of Screw shaft 8 1/2" Diameter of Tunnel shaft 8 1/2" Diameter of Crank shaft journals 8 1/2" Diameter of Crank pin 8 1/2" size of Crank webs 10" x 6 1/4"  
 Diameter of screw 10" x 2" Pitch of screw 14" x 4" No. of blades 4 state whether moveable No total surface 38.5 sq. ft.  
 No. of Feed pumps 2 diameter of ditto 3 1/4" Stroke 15" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 diameter of ditto 3" Stroke 15" Can one be overhauled while the other is at work Yes  
 Do they pump from Bilges of Engine Room and all compartments of Vessel  
 Donkey Engines one Size of Pumps 3" x 6" Where do they pump from Bilges of Engine Room and all compartments of Vessel

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 one and sizes 2 1/2" Are they connected to condenser, or to circulating pump Circulating Pump  
 How are the pumps worked By Levers from Crowheads of both Engines  
 Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Stop Valves & Cocks  
 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 At  
 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 Fore Hold Suctions How are they protected Wood Casing  
 Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times Yes except in Holds  
 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 Feb'y 10<sup>th</sup> 1882  
 Is the screw shaft tunnel watertight No and fitted with a sluice door Yes worked from Engine Room

**OILERS, &c.—**  
 Number of Boilers one Description Cylindrical & Multitubular  
 Working Pressure 70 lbs Tested by hydraulic pressure to 140 lbs Date of test 23<sup>rd</sup> January 1882  
 Description of superheating apparatus or steam chest None  
 Can each boiler be worked separately Yes Can the superheater be shut off and the boiler worked separately No Superheater  
 No. of square feet of fire grate surface in each boiler 46 Description of safety valves Direct Spring  
 No. to each boiler 2 area of each valve 14.1 sq. in. Are they fitted with easing gear Yes  
 No. of safety valves to superheater None area of each valve — are they fitted with easing gear —  
 Smallest distance between boilers and bunkers or woodwork 9 inches  
 Diameter of boilers 13" 0" Length of boilers 10' 0" description of riveting of shell long. seams Double Butt circum. seams Lap & r.  
 Thickness of shell plates 7/8" diameter of rivet holes 1 1/4" whether punched or drilled drilled pitch of rivets 4 1/4"  
 Lap of plating 10" per centage of strength of longitudinal joint 70 working pressure of shell by rules 100 lbs  
 Size of manholes in shell 15" x 12" size of compensating rings 6" x 7/8"  
 No. of Furnaces in each boiler 3 outside diameter 3' 2" length, top 6' 3" bottom 9' 3"  
 Thickness of plates 7/16" description of joint Double Butt if rings are fitted Yes greatest length between rings 6' 0"  
 Working pressure of furnace by the rules 76 lbs  
 Combustion chamber plating, thickness, sides 7/16" back 7/16" top 1/2"  
 Pitch of stays to ditto sides 8 1/4" x 8 1/4" back 8 1/4" x 8 1/4" top 8 1/4" x 8 1/2"  
 If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 79 lbs  
 Diameter of stays at smallest part 1 1/4" working pressure of ditto by rules 108 "  
 Front plates in steam space, thickness 3/4" pitch of stays to ditto 18" x 16 1/2" how stays are secured Nuts & Washers  
 Working pressure by rules 70 lbs diameter of stays at smallest part 2 3/8" working pressure by rules 88 lbs  
 Front plates at bottom, thickness 3/4" Back plates, thickness 3/4" greatest pitch of stays 12" x 8 1/2" working pressure by rules 72 lbs



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Diameter of tubes  $3/4"$  pitch of tubes  $4 5/8" \times 4 1/2"$  thickness of tube plates, front  $3/4"$  back  $5/8"$   
 How stayed *Cute stays* pitch of stays  $13 7/8" \times 9"$  width of water spaces  $6"$   
 Diameter of Superheater or Steam chest *None* length *—*  
 Thickness of plates *—* description of longitudinal joint *—* diameter 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 *—*

**DONKEY BOILER—** Description *Circular Vertical 3 Water Tubes in Shell*  
 Made at *Glasgow* By whom made *Geo Anderson & Co* when made *1882*  
 Where fixed *In Stevedore* working pressure *60 lbs* Tested by hydraulic pressure to *120 lbs* No. of Certificate *6*  
 Fire grate area *10.5 sq ft* Description of safety valves *direct spring* No. of safety valves *one* area of each *7 sq*  
 If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No*  
 Diameter of donkey boiler *4' 9"* length *11' 0"* description of riveting *Double Lap.*  
 thickness of shell plates *7/16"* diameter of rivet holes *13/16"* whether punched or drilled *punched*  
 pitch of rivets *3/4"* lap of plating *4 1/4"* per centage of strength of joint *43*  
 thickness of crown plates *1/2"* stayed by *3 Round-stays 1 1/2" dia effective*  
 Diameter of furnace, top *3' 8"* bottom *4' 2"* length of furnace *5' 9"*  
 thickness of plates *7/16"* description of joint *Lap single riveted*  
 thickness of furnace crown plates *7/16"* stayed by *Fixed to 3" 3 Rod. 3 Round-stays 1 1/2"*  
 Working pressure of shell by rules *64 lbs* working pressure of furnace by rules *60 lbs*  
 diameter of uptake *11" x 15"* thickness of plates *1/2"* thickness of water tubes *7/16"*

The foregoing is a correct description,  
 Manufacturers of Main & Donkey Boilers *Geo Anderson & Co*  
*per Sherrill*

**General Remarks** (State quality of workmanship, opinions as to class, &c. *New Main and Donkey Boilers*  
*supplied and fitted on board. Vessel placed on slipway. Propeller*  
*Shaft examined and found in good condition. A new Propeller fitted*  
*in place satisfactorily. Sea-cocks and connections examined and*  
*locks on flat of ship's bottom removed to upper turn of bilge*  
*brank and tunnel shafting examined and found in good*  
*order. Pistons, Slides with their rods and connections*  
*examined and put in good working order.*  
*Surface Condenser, Air circulating, & Feed & Bilge Pumps*  
*with their Valves, rods & connections, & suction pipes & hoses*  
*overhauled and repaired as required. a new Bilge Suction*  
*Valve fitted to circulating Pump.*  
*Spring safety Valves of main & donkey Boilers adjusted and*  
*tested under steam and found satisfactory.*

The Machinery of this vessel is now in good order and safe working  
 Condition. and eligible to be noted in the Society's Register under  
Lloyd's M.C. & N.B. H. 82.

The amount of Entry Fee £ 1: 0: 0 received by me,  
 Special £ 3: 3: 0  
*24/4/82*  
 Certificate (if required) .. £ 0: 0: 0  
*28/4/82*  
 To be sent as per margin.

The machinery of this vessel  
 is reported to be in good condition  
 It is submitted that she is eligible  
 to have the notification Lloyd's  
 + N.B. H. 82 received  
 J.M. Cheson  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

Committee's Minute 18  
*Lloyd's Reg 4/02*  
*28/4/82*  
 Clyde District  
 Lloyd's Register  
 Foundation