

# REPORT ON MACHINERY.

No. 487 on the S.S. Glennan (Received in London Office 20/5/80)  
 No. in Survey held at Newcastle Date, first Survey 16<sup>th</sup> June 179 Last Survey 5<sup>th</sup> April 1880  
 Reg. Book. 487 on the S.S. Glennan Tons 445  
 Master Mr. D. Ermid Built at North Shields When built 1871  
 Engines made at Newcastle By whom made P. & M. Hawthorn when made 1871  
 Boilers made at " By whom made " when made 1880  
 Registered Horse Power 98 Owners Elliott & Company Port belonging to Newcastle

## ENGINES, &c.—

Description of Engines Direct acting Surface Condensing  
 Diameter of Cylinders 25 9/8 Length of Stroke 30 No. of Rev. per minute 62 Point of Cut off, High Pressure .5 Low Pressure .56  
 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 1/2 x 6  
 Diameter of screw 12 x 0 Pitch of screw 14 x 0 No. of blades 4 state whether moveable Solid total surface  
 No. of Feed pumps 2 diameter of ditto 4 Stroke 15 Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 diameter of ditto 4 Stroke 15 Can one be overhauled while the other is at work yes  
 Where do they pump from Engine room and Tunnel well and after hold  
 No. of Donkey Engines 2 Size of Pumps 8 x 14 & 4 1/2 x 7 Where do they pump from Engine room, Tunnel well, after hold, sea, and Fore & aft Ballast tanks  
 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 1 and sizes 4 Are they connected to condenser, or to circulating pump Circulating pump  
 How are the pumps worked From Levers on both engines  
 Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks one valve & other 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 Below  
 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 24-3-80  
 Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from Engine room platform

## BOILERS, &c.—

Number of Boilers 1 Description Cylindrical, tubular  
 Working Pressure 65 Tested by hydraulic pressure to 130 Date of test 25-11-79  
 Description of superheating apparatus or steam chest Vertical dome  
 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 45 Description of safety valves Spring valves  
 No. to each boiler 2 area of each valve 12.5 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 10 ins  
 Diameter of boilers 11.6 Length of boilers 10 ft Description of riveting of shell long. seams Triple riveted circum. seams double Lap  
 Thickness of shell plates 7/16 diameter of rivet holes 1" whether punched or drilled drilled pitch of rivets L 3 1/2" C 3"  
 Lap of plating L 8 3/4" C 5" per centage of strength of longitudinal joint 71% working pressure of shell by rules 64.3  
 Size of manholes in shell 12" x 18" size of compensating rings 2 ft x 2' - 6 ins  
 No. of Furnaces in each boiler 3 outside diameter 3.1 length, top 6.6 bottom 9.6  
 Thickness of plates 7/16 description of joint Butt strap riv. if rings are fitted greatest length between rings "  
 Working pressure of furnace by the rules 71 lbs  
 Combustion chamber plating, thickness, sides 7/16 back 7/16 top 7/16  
 Pitch of stays to ditto sides 8 1/4 x 8 1/4 back 8 1/4 x 8 1/4 top Circular  
 If stays are fitted with nuts or riveted heads riveted heads working pressure of plating by rules 65 lbs  
 Diameter of stays at smallest part 1 1/2" working pressure of ditto by rules 69 lbs  
 End plates in steam space, thickness 5/8 pitch of stays to ditto 15 3/4 x 15 3/4 how stays are secured Double nuts  
 Working pressure by rules 65 lbs diameter of stays at smallest part 1 1/8 working pressure by rules 67  
 Front plates at bottom, thickness 5/8 Back plates, thickness 5/8 greatest pitch of stays 15 3/4 working pressure by rules 65 lbs

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Diameter of tubes  $3\frac{1}{2}$  pitch of tubes  $4\frac{3}{4}$  thickness of tube plates, front  $3\frac{1}{2}$  back  $\frac{1}{8}$   
 How stayed Tubes pitch of stays  $14\frac{1}{4} \times 15\frac{3}{4}$  width of water spaces 12 ins  
 Diameter of Superheater or Steam chest  $3'-6"$  length 4 ft  
 Thickness of plates  $\frac{3}{8}$  description of longitudinal joint D. Lap diameter of rivet holes  $\frac{3}{4}$  pitch of rivets  $2\frac{1}{2}$   
 Working pressure of shell by rules 82 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  $\frac{7}{16}$  How stayed Dished to  $3'-6"$  Radius  
 Superheater or steam chest; how connected to boiler Contracted neck

**DONKEY BOILER**— Description Vertical Crosstube  
 Made at S. Shields By whom made Hepple when made 8 Mo. 78  
 Where fixed Main Deck working pressure 40 lbs Tested by hydraulic pressure to 80 lbs No. of Certificate ✓  
 Fire grate area 11 ft Description of safety valves Spring No. of safety valves 1 area of each 12.5-  
 If fitted with casing gear geo If steam from main boilers can enter the donkey boiler No  
 Diameter of donkey boiler  $4'-6"$  length 9 ft description of riveting L. Double lap C. Single lap  
 thickness of shell plates  $\frac{1}{2}$  diameter of rivet holes  $\frac{3}{4}$  whether punched or drilled punched  
 pitch of rivets 2" lap of plating  $4\frac{1}{2}$ " per centage of strength of joint 70%  
 thickness of crown plates  $\frac{7}{16}$  stayed by 4 stays & dished to  $3'-6"$  Radius  
 Diameter of furnace, top  $3'-6\frac{1}{2}$  bottom  $3'-11\frac{1}{4}$  length of furnace  $4'-10"$   
 thickness of plates  $\frac{7}{16}$  description of joint Single lap  
 thickness of furnace crown plates  $\frac{7}{16}$  stayed by 4 stays & dished to  $3'-6"$  Radius  
 Working pressure of shell by rules 100 working pressure of furnace by rules 83 lbs  
 diameter of uptake 17 ins thickness of plates  $\frac{7}{16}$  thickness of water tubes  $\frac{3}{8}$

The foregoing is a correct description,  
 W. W. Ansthorpe Manufacturer of Marine Boilers

**General Remarks** (State quality of workmanship, opinions as to class, &c.)  
 The Engines of this vessel having been thoroughly overhauled and new boilers fitted, the Machinery is now in good order and safe working condition and eligible in my opinion to have the notification Lloyds M.C. in Red, recorded in the Societys Register book

The amount of Entry Fee .. £ — : — : — received by me,  
 Special .. .. . £ — : — : —  
 Certificate (if required) .. £ — : — : — 18—  
To be sent as per margin.  
 (Travelling Expenses, if any, £ — : — : —)

J. M. Brockat, Thomas Wilson  
 Engineer Surveyors to Lloyd's Register of British & Foreign Shipping.

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