

# REPORT ON MACHINERY.

16936

No. in Survey held at Newcastle Date, first Survey Dec 23/83 Last Survey July 17 1883  
 g. Book. 16936 (Number of Visits 23) Tons 1623.17  
 on the Screw steamer "Cardiganshire" Built at Newcastle When built 1883  
Courtesy By whom made R. W. Hawthorn when made 1883  
Newcastle By whom made do when made 1883  
do By whom made do when made 1883  
 Registered Horse Power 275 Owners D. J. Jenkins & Co Port belonging to LONDON

## ENGINES, &c.—

Description of Engines Compound inverted screw  
 Diameter of Cylinders 38 + 70 Length of Stroke 45 No. of Rev. per minute 60 Point of Cut off, High Pressure .6 Low Pressure .7  
 Diameter of Screw shaft 12 1/2 Diameter of Tunnel shaft 12 Diameter of Crank shaft journals 12 1/2 Diameter of Crank pin 12 1/2 size of Crank webs 15 x 8  
 Diameter of screw 16 ft Pitch of screw 14' 6" 20' No. of blades 4 state whether moveable yes total surface 70 sq  
 No. of Feed pumps two diameter of ditto 3 3/4 Stroke 22 1/2 Can one be overhauled while the other is at work yes  
 No. of Bilge pumps two diameter of ditto 3 3/4 Stroke 22 1/2 Can one be overhauled while the other is at work yes  
 Where do they pump from Star pump from bilges (2) + sea: port pumps from bilges, tunnel, hold  
 No. of Donkey Engines two Size of Pumps 8 x 14 + 3 1/2 x 8 Where do they pump from pull out from all tanks  
olds bilge tunnel thro condenser: feed from sea shotwell.  
 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 4 Are they connected to condenser, or to circulating pump circ pump  
 How are the pumps worked by cover over condenser from after engine  
 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 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 was overhauled  
 Is the screw shaft tunnel watertight — and fitted with a sluice door yes worked from deck

## OILERS, &c.—

Number of Boilers two Description cylinidrcal single-ended steel  
 Working Pressure 90 lbs Tested by hydraulic pressure to 180 lbs Date of test April 12/83 No 1215  
 Description of superheating apparatus or steam chest horizontal dome  
 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 75 sq Description of safety valves spring  
 No. to each boiler two area of each valve 14.190" 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 18"  
 Diameter of boilers 15.3 Length of boilers 10.6 description of riveting of shell long. seams Cap triple row 5 circum. seams Cap double row  
 Thickness of shell plates 29/32 diameter of rivet holes 1 3/8 whether punched or drilled drilled pitch of rivets 5 1/2  
 Lap of plating 1 1/2 per centage of strength of longitudinal joint 75 working pressure of shell by rules 90  
 Size of manholes in shell 12 x 16" size of compensating rings 24 x 28 x 3/4  
 No. of Furnaces in each boiler three outside diameter 45 length, top 7.6 bottom 9.6  
 Thickness of plates 1 1/2 description of joint welded if rings are fitted no greatest length between rings 9.6  
 Working pressure of furnace by the rules 90  
 Combustion chamber plating, thickness, sides 1 1/2 back 1 1/2 top 1 1/2  
 Pitch of stays to ditto, sides 8 3/4 back 9 3/6 top radial  
 If stays are fitted with nuts or riveted heads nuts working pressure of plating by rules 90  
 Diameter of stays at smallest part 1 1/8 working pressure of ditto by rules 92  
 End plates in steam space, thickness 29/32 pitch of stays to ditto 16 3/8 how stays are secured double nuts & washers  
 Working pressure by rules 92 diameter of stays at smallest part 2 working pressure by rules 90  
 Front plates at bottom, thickness 9/16 Back plates, thickness 5/8 greatest pitch of stays 13 working pressure by rules 90

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Boiler bracing sheets of steel also were forwarded

Diameter of tubes  $3\frac{1}{2}$  pitch of tubes  $4\frac{3}{4}$  thickness of tube plates, front  $\frac{25}{32}$  back  $\frac{25}{32}$   
 How stayed Tube pitch of stays  $14\frac{1}{4}$  width of water spaces 6  
 Diameter of Superheater or Steam chest 8.6 length 5.8  
 Thickness of plates  $\frac{3}{8}$  description of longitudinal joint lap double diameter of rivet holes  $\frac{3}{4}$  pitch of rivets  $2\frac{1}{2}$   
 Working pressure of shell by rules 116 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  $\frac{9}{16}$  How stayed 4.0 radius  
 Superheater or steam chest; how connected to boiler contracted neck  
**DONKEY BOILER**— Description vertical with four cross tubes  
 Made at Gateshead By whom made Clark Chapman when made 1883  
 Where fixed stockhold working pressure 80 lbs Tested by hydraulic pressure to 160 No. of Certificate 4871a  
 Fire grate area 23.7 sq Description of safety valves spring No. of safety valves two area of each 7.074  
 If fitted with casing gear If steam from main boilers can enter the donkey boiler no  
 Diameter of donkey boiler 6.6 length 13.6 description of riveting lap double wd  
 thickness of shell plates  $\frac{9}{16}$  diameter of rivet holes  $\frac{15}{16}$  whether punched or drilled punched  
 pitch of rivets  $3\frac{3}{8}$  lap of plating  $4\frac{1}{4}$  per centage of strength of joint 72  
 thickness of crown plates stayed by six stays  $1\frac{3}{4}$  diam  
 Diameter of furnace, top 5.2 bottom 5.6 length of furnace 5.6  
 thickness of plates description of joint lap single riveted  
 thickness of furnace crown plates  $\frac{9}{16}$  stayed by as above  
 Working pressure of shell by rules 85 working pressure of furnace by rules 68 + 20 lbs  
 diameter of uptake 15 thickness of plates  $\frac{3}{8}$  thickness of water tubes  $\frac{3}{8}$

The foregoing is a correct description,  
*Wm. Chapman* Manufacturers of Steam Engines & Boilers.

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

The machinery of this vessel has been constructed under special survey - the materials & workmanship are sound & good & are fitted in accordance with the rules & capable in my opinion to be classed L.M.C. 7.83 in the Society's Register Book.

It is submitted that this vessel is eligible to have the registration fee recorded.  
 24/7/83

The amount of Entry Fee £ 2 : - : - received by me,  
 Special £ 33 : 15 : -  
 Certificate (if required) £ 4 : - : - 23<sup>rd</sup> July 1883  
 (Travelling Expenses, if any, £ - : - : -)

*Geo. Walker*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute FRIDAY 27 JULY 1883 18

